

MP aes attributes backends basexx bit32 blobs  
boolean buffers builders caches callback  
callbacks catcodes characters chemistry  
commands containers context converters  
coroutine ctxrunner debug dir directives  
document documentdata drivers environment  
experiments figures file fio floats font fonts  
functions graphics gzip helper images  
interactions interfaces io job kpse language  
languages layouts lfs libraries lmx loaders  
logs lpdf lpeg lua luac luatex lxml math  
mathematics md5 metapost mime moduledata  
modules mp mplib noads node nodes number  
objects optional os package pagebuilders  
parametersets pdf pdfdecode pdfe physics  
pngdecode posit potrace publications qrcodegen  
regimes resolvers sandbox scripts serial set  
sha2 sio socket sorters sparse statistics  
status storage streams string structures table  
tex texconditionals texconfig texconstants  
texifs texio texpisdefined texmodes  
texsystemmodes thirddata token tokens tracers  
trackers typesetters updaters url userdata  
utf8 utilities vector visualizers xcomplex  
xdecimal xmath xml xzip zip zlib

# ConT<sub>E</sub>Xt LMTX

# global (alias: \_G)

|                            |          |                              |          |
|----------------------------|----------|------------------------------|----------|
| <b>CONTEXT</b>             | number   | <b>ctxrunner</b>             | table    |
| <b>LUAFORMAT</b>           | number   | <b>debug</b>                 | table    |
| <b>LUAMAJORVERSION</b>     | number   | <b>dimen</b>                 | function |
| <b>LUAMINORVERSION</b>     | number   | <b>dir</b>                   | table    |
| <b>LUATEXENGINE</b>        | string   | <b>directives</b>            | table    |
| <b>LUATEXFORMATID</b>      | number   | <b>document</b>              | table    |
| <b>LUATEXFUNCTIONALITY</b> | number   | <b>documentdata</b>          | table    |
| <b>LUATEXVERBOSE</b>       | string   | <b>dofile</b>                | function |
| <b>LUATEXVERSION</b>       | number   | <b>drivers</b>               | table    |
| <b>LUAVERSION</b>          | number   | <b>environment</b>           | table    |
| <b>MP</b>                  | function | <b>error</b>                 | function |
| <b>SAVEDREQUIRE</b>        | function | <b>experiments</b>           | table    |
| <b>aes</b>                 | table    | <b>figures</b>               | table    |
| <b>arg</b>                 | table    | <b>file</b>                  | table    |
| <b>asnumber_p</b>          | function | <b>fio</b>                   | table    |
| <b>assert</b>              | function | <b>floats</b>                | table    |
| <b>attributes</b>          | table    | <b>flushsimplerule</b>       | function |
| <b>backends</b>            | table    | <b>flushspecialrule</b>      | function |
| <b>basexx</b>              | table    | <b>font</b>                  | table    |
| <b>bit32</b>               | table    | <b>fonts</b>                 | table    |
| <b>blobs</b>               | table    | <b>functions</b>             | table    |
| <b>blockrequire</b>        | function | <b>getdepthprofile</b>       | function |
| <b>boolean</b>             | table    | <b>getheightprofile</b>      | function |
| <b>buffers</b>             | table    | <b>gethrpos</b>              | function |
| <b>builders</b>            | table    | <b>getmetatable</b>          | function |
| <b>caches</b>              | table    | <b>getscriptstatus</b>       | function |
| <b>callback</b>            | table    | <b>graphics</b>              | table    |
| <b>callbacks</b>           | table    | <b>gzip</b>                  | table    |
| <b>catcodes</b>            | table    | <b>handledefinitions</b>     | function |
| <b>characters</b>          | table    | <b>handletransformstring</b> | function |
| <b>checkimage</b>          | function | <b>helper</b>                | table    |
| <b>chemistry</b>           | table    | <b>images</b>                | table    |
| <b>collectgarbage</b>      | function | <b>inspect</b>               | function |
| <b>collectstructure</b>    | function | <b>interactions</b>          | table    |
| <b>combine</b>             | function | <b>interfaces</b>            | table    |
| <b>commands</b>            | table    | <b>io</b>                    | table    |
| <b>containers</b>          | table    | <b>ipairs</b>                | function |
| <b>context</b>             | function | <b>job</b>                   | table    |
| <b>converters</b>          | table    | <b>kpse</b>                  | table    |
| <b>coroutine</b>           | table    | <b>language</b>              | table    |
| <b>createmask</b>          | function | <b>languages</b>             | table    |

|                 |            |                   |          |
|-----------------|------------|-------------------|----------|
| last_pdf        | number     | pdfdecode         | table    |
| layouts         | table      | pdfe              | table    |
| lfs             | table      | physics           | table    |
| libraries       | table      | pngdecode         | table    |
| lmx             | table      | popleaderlevel    | function |
| load            | function   | posit             | table    |
| loaders         | data table | potrace           | table    |
| loadfile        | function   | potracefrompng    | function |
| loadstring      | function   | print             | function |
| logs            | table      | profilelines      | function |
| longestcommon   | function   | publications      | table    |
| lpdf            | table      | pushleaderlevel   | function |
| lpeg            | table      | qrcodegen         | table    |
| lua             | table      | rawequal          | function |
| luac            | table      | rawget            | function |
| luatex          | table      | rawlen            | function |
| lxml            | table      | rawset            | function |
| math            | table      | recolor           | function |
| mathematics     | table      | regimes           | table    |
| mathshapekern   | function   | require           | function |
| md5             | table      | resolvers         | table    |
| metapost        | table      | ruledspace        | function |
| mime            | table      | sandbox           | table    |
| moduledata      | table      | scripts           | table    |
| modules         | table      | select            | function |
| mp              | function   | serial            | table    |
| mplib           | table      | set               | table    |
| next            | function   | setinspector      | function |
| noads           | table      | setmathparameters | function |
| node            | table      | setmetatable      | function |
| nodes           | table      | sha2              | table    |
| number          | table      | shipbox_ref_h     | number   |
| objects         | table      | shipbox_ref_v     | number   |
| optional        | table      | sio               | table    |
| optionalrequire | function   | socket            | table    |
| os              | table      | sorters           | table    |
| p_number_p      | userdata   | sparse            | table    |
| p_number_u      | userdata   | statistics        | table    |
| package         | table      | status            | table    |
| pagebuilders    | table      | storage           | table    |
| pairs           | function   | streams           | table    |
| parametersets   | table      | string            | table    |
| pcall           | function   | structures        | table    |
| pdf             | table      | table             | table    |

|                        |            |                    |          |
|------------------------|------------|--------------------|----------|
| <b>tex</b>             | table      | <b>unpack</b>      | function |
| <b>texconditionals</b> | data table | <b>updaters</b>    | table    |
| <b>texconfig</b>       | table      | <b>url</b>         | table    |
| <b>texconstants</b>    | data table | <b>userdata</b>    | table    |
| <b>texifs</b>          | data table | <b>utf</b>         | table    |
| <b>texio</b>           | table      | <b>utf8</b>        | table    |
| <b>texisdefined</b>    | data table | <b>utilities</b>   | table    |
| <b>texmodes</b>        | data table | <b>vector</b>      | table    |
| <b>texsystemmodes</b>  | data table | <b>visualizers</b> | table    |
| <b>thirddata</b>       | table      | <b>warn</b>        | function |
| <b>toboollean</b>      | function   | <b>width</b>       | number   |
| <b>todecimal</b>       | function   | <b>xcomplex</b>    | table    |
| <b>token</b>           | table      | <b>xdecimal</b>    | table    |
| <b>tokens</b>          | table      | <b>xmath</b>       | table    |
| <b>tonumber</b>        | function   | <b>xml</b>         | table    |
| <b>tostring</b>        | function   | <b>xpcall</b>      | function |
| <b>tracers</b>         | table      | <b>xshift</b>      | number   |
| <b>trackers</b>        | table      | <b>xzip</b>        | table    |
| <b>type</b>            | function   | <b>zip</b>         | table    |
| <b>typesetters</b>     | table      | <b>zlib</b>        | table    |

## aes (extra lua)

**decode** function  
**encode** function

**random** function

# attributes (context)

## alternates table

- N attribute
- D data
- F enable
- F handler
- F register
- D registered
- D values

## applyoverloads function

## checkvalues function

## colorintents table

- N attribute
- D data
- F enable
- F handler
- F register
- D registered

## colors table

- N attribute
- F cmyk
- F cmyktogray
- F cmyktorgb
- F colorcomponents
- D counts
- B couple
- F currentmodel
- F currentnamedmodel
- D data
- N default
- F defineintermediatecolor
- F definemultitonecolor
- F defineprocesscolor
- F defineprocesscolordirect
- F definesimplegray
- F definespotcolor
- F definetransparency
- F enable
- F filter
- N forced
- F forcedmodel
- F forcesupport

- F formatcolor
- F formatgray
- F formatluminance
- F formatluminanceratio
- F getpagecolormodel
- F gray
- F graytohsb
- F handler
- T helpers
  - F complement
  - F inbetween
  - F justone
- F hsvtorgay
- F hsvtorgb
- F hwbtorgb
- F iccprofile
- F isblack
- F labtolch
- F labtorgb
- F labtoxyz
- F lchtolab
- F lchtorgb
- N main
- S model
- D models
- F mpcolor
- F mpnamedcolor
- F mpoptions
- F namedcolorattributes
- N none
- F popset
- F processcolorcomponents
- F pushset
- F register
- D registered
- F registerspotcolor
- F rgb
- F rgbbytes
- F rgbtocmyk
- F rgbtorgay
- F rgbtohsb

|                          |            |                       |            |
|--------------------------|------------|-----------------------|------------|
| F rgbtoxyz               |            | F register            |            |
| N selector               |            | D registered          |            |
| F setlist                |            | F set                 |            |
| F setmodel               |            | <b>numbers</b>        | data table |
| F setpagecolormodel      |            | <b>ofnode</b>         | function   |
| D sets                   |            | <b>private</b>        | function   |
| F spec                   |            | <b>public</b>         | function   |
| F spot                   |            | <b>registervalue</b>  | function   |
| F spotcolorname          |            | <b>restore</b>        | function   |
| F spotcolorparent        |            | <b>save</b>           | function   |
| F spotcolorvalue         |            | <b>setcleaner</b>     | function   |
| B supported              |            | <b>showcurrent</b>    | function   |
| F toattributes           |            | <b>states</b>         | table      |
| F transparencycomponents |            | F disabletriggering   |            |
| B triggering             |            | F enabletriggering    |            |
| F usecolors              |            | F finalize            |            |
| D valid                  |            | F initialize          |            |
| F value                  |            | F process             |            |
| D values                 |            | F selective           |            |
| B weightgray             |            | F simple              |            |
| F xyztolab               |            | F stacked             |            |
| F xyztorgb               |            | F stacker             |            |
| <b>counts</b>            | data table | <b>system</b>         | function   |
| <b>define</b>            | function   | <b>tooverloads</b>    | function   |
| <b>effects</b>           | table      | <b>transparencies</b> | table      |
| N attribute              |            | N attribute           |            |
| D data                   |            | D data                |            |
| F enable                 |            | F enable              |            |
| F handler                |            | F forcesupport        |            |
| F register               |            | F handler             |            |
| D registered             |            | T names               |            |
| D values                 |            | N color               |            |
| <b>getvalue</b>          | function   | N colorburn           |            |
| <b>getvalues</b>         | function   | N colordodge          |            |
| <b>handlers</b>          | table      | N darken              |            |
| <b>hasvalues</b>         | function   | N difference          |            |
| <b>list</b>              | data table | N exclusion           |            |
| <b>markasoverload</b>    | function   | N hardlight           |            |
| <b>names</b>             | data table | N hue                 |            |
| <b>negatives</b>         | table      | N lighten             |            |
| N attribute              |            | N luminosity          |            |
| D data                   |            | N multiply            |            |
| F enable                 |            | N none                |            |
| F handler                |            | N normal              |            |

|                     |            |                          |
|---------------------|------------|--------------------------|
| N overlay           |            | F definedlayoutcomponent |
| N saturation        |            | F enable                 |
| N screen            |            | F forcesupport           |
| N softlight         |            | F handler                |
| N none              |            | B hasorder               |
| F register          |            | D listwise               |
| D registered        |            | F register               |
| B supported         |            | D registered             |
| F toattribute       |            | F resolve_begin          |
| B triggering        |            | F resolve_end            |
| F value             |            | F resolve_reset          |
| D values            |            | F resolve_step           |
| <b>unsetvalue</b>   | number     | D scopes                 |
| <b>values</b>       | data table | F setfeatures            |
| <b>viewerlayers</b> | table      | F setup                  |
| N attribute         |            | F start                  |
| F cleanup           |            | F stop                   |
| D data              |            | B supported              |
| F define            |            | D values                 |



# backends (context)

**closeout** function

**codeinjections** table

F registerboxresource

F registerfont

F restoreboxresource

**current** string

**defaults** table

T codeinjections

F prerollreference

F setautoprefix

F vfstartcolor

F vfstopcolor

T nodeinjections

F cmykcolor

F destination

F graycolor

F injectknockout

F injectoverprint

F reference

F rgbcolor

F spotcolor

F transparency

T registrations

F transparency

D tables

**getcallbackstate** function

**included** table

B context

B date

B id

B metadata

B pdf

**initialize** function

**latelua** function

**nodeinjections** table

**nothing** function

**openout** function

**registered** table

T pdf

T codeinjections

F addbookmarks

F analyzenormalsymbol

F analyzesymbol

F attachmentid

F bitmap

F clonefield

F copyimage

F defaultprofile

F definefield

F definefieldset

F defineviewerlayer

F discardpages

F embedfile

F embedimage

F enabletags

F exportformdata

F fieldsurrounding

F flushmergelayer

F getbookmarks

F getboxresourcebox

F getdefaultfieldvalue

F getfieldcategory

F getfieldset

F getformatoption

F getinfo

F getlinkstructureparent

F getreferencestructureobject

F getrefobj

F insertrenderingwindow

F jp2

F jpg

F maptag

F mergebookmarks

F mergecomments

F mergefields

F mergereferences

F mergerenditions

F mergeviewerlayers

F newimage

F png

F prerollreference

F presetsymbol

F presetsymbollist  
 F processrendering  
 F registerdocumentcloseaction  
 F registerdocumentopenaction  
 F registeredsymbol  
 F registerfiguremask  
 F registerfigurerange  
 F registerpagecloseaction  
 F registerpageopenaction  
 F registerpattern  
 F registersymbol  
 F ruleactionbox  
 F ruleactiondraw  
 F ruleactionfill  
 F ruleactionmp  
 F ruleactionstroke  
 F saveboxresource  
 F scanimage  
 F setattachmentsupport  
 F setautoprefix  
 F setencryption  
 F setfieldcalculationset  
 F setfigurecolorspace  
 F setfiguremask  
 F setformat  
 F setformsmethod  
 F setjobcomment  
 F setpagetransition  
 F settaggingsupport  
 F setupviewerlayer  
 F setuserdata  
 F setxmpfile  
 F startactualtext  
 F startalternativetext  
 F startlayer  
 F startunicodetoactualtext  
 F startunicodetoactualtextdirect  
 F stopactualtext  
 F stopalternativetext  
 F stoplayer  
 F stopunicodetoactualtext  
 F stopunicodetoactualtextdirect  
 F supportedformats  
 F unicodetoactualtext

F useviewerlayer  
 F validcompactor  
 F validfield  
 F validfieldcategory  
 F validfieldset  
 F vfstartcolor  
 F vfstopcolor  
 F wrapimage  
 S name  
 T nodeinjections  
 F addtags  
 F annotation  
 F attachfile  
 F changestackedlayer  
 F cmykcolor  
 F comment  
 F destination  
 F effect  
 F getboxresourcedimensions  
 F graycolor  
 F injectbitmap  
 F insertu3d  
 F knockout  
 F negative  
 F overprint  
 F positive  
 F reference  
 F rgbcolor  
 F spotcolor  
 F startalternate  
 F startlayer  
 F startstackedlayer  
 F stopalternate  
 F stoplayer  
 F stopstackedlayer  
 F transparency  
 F typesetfield  
 F useboxresource  
 T registrations  
 F cmykindexcolor  
 F cmykspotcolor  
 F getspotcolorreference  
 F grayindexcolor  
 F grayspotcolor

F `rgbindexcolor`  
F `rgbspotcolor`  
F `spotcolorname`  
F `transparency`  
T `tables`

|                      |          |
|----------------------|----------|
| <b>registrations</b> | table    |
| <b>setencryption</b> | function |
| <b>tables</b>        | table    |
| <b>writeout</b>      | function |

## basexx (extra lua)

**decode16**    function

**decode64**    function

**decode85**    function

**decodeLZW**   function

**decodeRL**    function

**encode16**    function

**encode64**    function

**encode85**    function

**encodeLZW**   function

**encodeRL**    function

## bit32 (context)

**arshift** function  
**band** function  
**bnot** function  
**bor** function  
**btest** function  
**bxor** function

**extract** function  
**lrotate** function  
**lshift** function  
**replace** function  
**rrotate** function  
**rshift** function

## blobs (context)

|                   |          |
|-------------------|----------|
| <b>append</b>     | function |
| <b>dimensions</b> | function |
| <b>dispose</b>    | function |
| <b>new</b>        | function |
| <b>pack</b>       | function |
| <b>strdp</b>      | function |
| <b>strhd</b>      | function |

|                |          |
|----------------|----------|
| <b>strht</b>   | function |
| <b>strwd</b>   | function |
| <b>tohpack</b> | function |
| <b>tonodes</b> | function |
| <b>tovpack</b> | function |
| <b>write</b>   | function |

## boolean (context)

**tocontext** function

**tonumber** function

## buffers (context)

|                       |          |
|-----------------------|----------|
| <b>append</b>         | function |
| <b>assign</b>         | function |
| <b>collectcontent</b> | function |
| <b>empty</b>          | function |
| <b>erase</b>          | function |
| <b>exists</b>         | function |
| <b>get</b>            | function |
| <b>getcontent</b>     | function |
| <b>getctxlua</b>      | function |
| <b>getlines</b>       | function |
| <b>getmkvi</b>        | function |
| <b>gettex</b>         | function |
| <b>loadcontent</b>    | function |

|                        |          |
|------------------------|----------|
| <b>parallel</b>        | table    |
| F define               |          |
| F hassomecontent       |          |
| F next                 |          |
| F place                |          |
| F reset                |          |
| F save                 |          |
| <b>prepend</b>         | function |
| <b>raw</b>             | function |
| <b>run</b>             | function |
| <b>samplefile</b>      | function |
| <b>splitsamplefile</b> | function |
| <b>undent</b>          | function |



# builders (context)

|                        |          |   |                                   |
|------------------------|----------|---|-----------------------------------|
| <b>checkparcontext</b> | function | F start                                 |                                   |
| <b>checksidefloat</b>  | function | F stop                                  |                                   |
| <b>hpack</b>           | table    | F tag                                   |                                   |
| F qualityactions       |          |   | <b>parpassidentifier</b> function |
| F report               |          |   | <b>passnames</b> data table       |
| F show                 |          |   | <b>profiling</b> table            |
| <b>kernel</b>          | table    | F add                                   |                                   |
| F collapsing           |          | F adddrivers                            |                                   |
| F hyphenating          |          | F boxlinehandler                        |                                   |
| F kerning              |          | F distance                              |                                   |
| F ligaturing           |          | F fixedprofile                          |                                   |
| F mlisttohlist         |          | F get                                   |                                   |
| <b>paragraphs</b>      | table    | F getrivers                             |                                   |
| T constructors         |          | F list                                  |                                   |
| N attribute            |          | F pagehandler                           |                                   |
| F define               |          | F pagelinehandler                       |                                   |
| F disable              |          | F profilebox                            |                                   |
| F enable               |          | F profilelines                          |                                   |
| F handler              |          | F set                                   |                                   |
| T methods              |          | F setlines                              |                                   |
| F basic                |          | <b>registerpaspasscallback</b> function |                                   |
| F default              |          | <b>vpack</b> table                      |                                   |
| F hpack                |          | F qualityactions                        |                                   |
| F oneline              |          | F report                                |                                   |
| D names                |          | <b>vspacing</b> table                   |                                   |
| D numbers              |          | D categories                            |                                   |
| F set                  |          | F checkstrutdepth                       |                                   |
| F start                |          | F collapsevbox                          |                                   |
| F stop                 |          | T data                                  |                                   |
| T expansion            |          | D map                                   |                                   |
| F trace                |          | D skip                                  |                                   |
| F kepttogether         |          | D snapmethods                           |                                   |
| F registertogether     |          | F definesnapmethod                      |                                   |
| T solutions            |          | B fixed                                 |                                   |
| T splitters            |          | F flushcontributions                    |                                   |
| F define               |          | F forcepageflush                        |                                   |
| F optimize             |          | F forcestrutdepth                       |                                   |
| T registered           |          | F getnofpreviouslines                   |                                   |
| F reset                |          | F inject                                |                                   |
| F set                  |          | F injectdisable                         |                                   |
| F split                |          | F injectpenalty                         |                                   |

F injectskip  
F interceptsamepagecontent  
F pagehandler  
F pageoverflow  
F popatsame  
F pushatsame  
F setmap

F setskip  
F snapbox  
F synchronizepage  
F tocategories  
F tocategory  
F vboxhandler

## cache (context)

|                             |          |                             |          |
|-----------------------------|----------|-----------------------------|----------|
| <b>base</b>                 | string   | <b>loadcontent</b>          | function |
| <b>collapsecontent</b>      | function | <b>loaddata</b>             | function |
| <b>configfiles</b>          | function | <b>more</b>                 | string   |
| <b>contentstate</b>         | function | <b>savecontent</b>          | function |
| <b>defaults</b>             | table    | <b>savadata</b>             | function |
| <b>getfirstreadablefile</b> | function | <b>setfirstwritablefile</b> | function |
| <b>getreadablepaths</b>     | function | <b>setluanames</b>          | function |
| <b>getwritablepath</b>      | function | <b>treehash</b>             | function |
| <b>hashed</b>               | function | <b>usedpaths</b>            | function |
| <b>is_writable</b>          | function |                             |          |

## callback (basic tex)

|                        |          |                   |                     |
|------------------------|----------|-------------------|---------------------|
| <b>find</b>            | function | <b>list</b>       | function            |
| <b>getindex</b>        | function | <b>names</b>      | function            |
| <b>getoptions</b>      | function | <b>register</b>   | overloaded function |
| <b>getoptionvalues</b> | function | <b>setoptions</b> | function            |
| <b>getstate</b>        | function | <b>setstate</b>   | function            |
| <b>getstatevalues</b>  | function | <b>testonly</b>   | function            |
| <b>known</b>           | function | <b>usage</b>      | function            |

# callbacks (context)

|                     |          |                   |          |
|---------------------|----------|-------------------|----------|
| <b>freeze</b>       | function | <b>register</b>   | function |
| <b>functions</b>    | table    | <b>report</b>     | function |
| F start_page_number |          | <b>statecodes</b> | table    |
| F stop_page_number  |          | N disabled        |          |
| <b>known</b>        | function | N frozen          |          |
| <b>optimizer</b>    | function | N fundamental     |          |
| <b>optioncodes</b>  | table    | N private         |          |
| N direct            |          | N selective       |          |
| N trace             |          | N set             |          |
| <b>pop</b>          | function | N touched         |          |
| <b>push</b>         | function | N tracing         |          |

## catcodes (context)

**names** data table

**numbers** data table

**register** function

# characters (context)

|                          |            |                         |            |
|--------------------------|------------|-------------------------|------------|
| <b>addcharacternames</b> | function   | T after_postscript      |            |
| <b>adobename</b>         | function   | T after_subscript       |            |
| <b>bidirectional</b>     | data table | T anudatta              |            |
| <b>blockrange</b>        | function   | T before_half           |            |
| <b>blocks</b>            | data table | T before_main           |            |
| <b>can_have_space</b>    | data table | T before_postscript     |            |
| <b>casemap</b>           | table      | T before_subscript      |            |
| <b>categories</b>        | data table | T below_mark            |            |
| <b>category</b>          | function   | T consonant             |            |
| <b>categorytags</b>      | data table | T dependent_vowel       |            |
| <b>classifiers</b>       | table      | T halant                |            |
| <b>collapsed</b>         | data table | T independent_vowel     |            |
| <b>combined</b>          | data table | T nukta                 |            |
| <b>contextname</b>       | function   | T post_mark             |            |
| <b>csletters</b>         | data table | T pre_mark              |            |
| <b>data</b>              | data table | T ra                    |            |
| <b>decomposed</b>        | data table | T stress_tone_mark      |            |
| <b>description</b>       | function   | T twopart_mark          |            |
| <b>descriptions</b>      | data table | T vowel_modifier        |            |
| <b>detailtags</b>        | data table | <b>initialize</b>       | function   |
| <b>directions</b>        | table      | <b>is_character</b>     | data table |
| <b>emoji</b>             | table      | <b>is_command</b>       | data table |
| F compact                |            | <b>is_hyphenator</b>    | data table |
| F known                  |            | <b>is_letter</b>        | data table |
| F resolve                |            | <b>is_mark</b>          | data table |
| <b>emojized</b>          | function   | <b>is_nothing</b>       | data table |
| <b>encodes</b>           | data table | <b>is_punctuation</b>   | data table |
| <b>entities</b>          | data table | <b>is_spacing</b>       | data table |
| <b>fallbacks</b>         | data table | <b>is_symbol</b>        | data table |
| <b>filters</b>           | data table | <b>lcchars</b>          | data table |
| <b>fractions</b>         | table      | <b>lccode</b>           | function   |
| <b>fromnumber</b>        | function   | <b>lccodes</b>          | data table |
| <b>fschars</b>           | data table | <b>lettered</b>         | function   |
| <b>fscodes</b>           | data table | <b>lhash</b>            | data table |
| <b>getrange</b>          | function   | <b>linebreaks</b>       | data table |
| <b>graphemes</b>         | data table | <b>lower</b>            | function   |
| <b>hangul</b>            | data table | <b>mathlists</b>        | data table |
| <b>indicgroups</b>       | table      | <b>mirrors</b>          | table      |
| T above_mark             |            | <b>otfscripts</b>       | data table |
| T after_half             |            | <b>ranges</b>           | data table |
| T after_main             |            | <b>registerentities</b> | function   |

|                              |            |                     |            |
|------------------------------|------------|---------------------|------------|
| <b>remap_hangul_syllable</b> | function   | <b>tex</b>          | table      |
| <b>scripthash</b>            | table      | D accentmapping     |            |
| <b>setactivecatcodes</b>     | function   | D commandmapping    |            |
| <b>setlettercatcodes</b>     | function   | F defineaccents     |            |
| <b>setothercatcodes</b>      | function   | F safechar          |            |
| <b>shape</b>                 | function   | F strtoutf          |            |
| <b>shaped</b>                | function   | F strtoutfpattern   |            |
| <b>shash</b>                 | data table | F toutf             |            |
| <b>shchars</b>               | data table | F toutfpattern      |            |
| <b>shcodes</b>               | data table | <b>textclasses</b>  | table      |
| <b>showstring</b>            | function   | <b>tonumber</b>     | function   |
| <b>specialchars</b>          | data table | <b>ucchars</b>      | data table |
| <b>specials</b>              | data table | <b>uccode</b>       | function   |
| <b>splits</b>                | table      | <b>uccodes</b>      | data table |
| T char                       |            | <b>uhash</b>        | data table |
| T compat                     |            | <b>unicodechar</b>  | function   |
| <b>subscripts</b>            | table      | <b>upper</b>        | function   |
| <b>superscripts</b>          | table      | <b>verbosemarks</b> | data table |
| <b>synonyms</b>              | data table |                     |            |



## chemistry (context)

|                       |            |                       |          |
|-----------------------|------------|-----------------------|----------|
| <b>component</b>      | function   | <b>method</b>         | string   |
| <b>define</b>         | function   | <b>molecule</b>       | function |
| <b>definitions</b>    | data table | <b>moleculeparser</b> | userdata |
| <b>format</b>         | string     | <b>start</b>          | function |
| <b>inlinechemical</b> | function   | <b>stop</b>           | function |
| <b>instance</b>       | string     | <b>undefine</b>       | function |

## containers (context)

**cleannname** function  
**content** function  
**define** function  
**is\_usable** function

**is\_valid** function  
**read** function  
**usecache** boolean  
**write** function

## converters (context)

|                            |          |                            |            |
|----------------------------|----------|----------------------------|------------|
| <b>A</b>                   | function | <b>cn-a</b>                | function   |
| <b>A:es</b>                | function | <b>cn-c</b>                | function   |
| <b>A:ru</b>                | function | <b>cn-d</b>                | function   |
| <b>A:sl</b>                | function | <b>convert</b>             | function   |
| <b>AK</b>                  | function | <b>decimals</b>            | function   |
| <b>Alphabetic</b>          | function | <b>define</b>              | function   |
| <b>Alphabetic:es</b>       | function | <b>gregorian_to_hebrew</b> | function   |
| <b>Alphabetic:ru</b>       | function | <b>gregorian_to_jalali</b> | function   |
| <b>Alphabetic:sl</b>       | function | <b>hebrewnumerals</b>      | function   |
| <b>Character</b>           | function | <b>helpers</b>             | table      |
| <b>Characters</b>          | function | <b>hexstringtonumber</b>   | function   |
| <b>I</b>                   | function | <b>i</b>                   | function   |
| <b>KA</b>                  | function | <b>isleapyear</b>          | function   |
| <b>KR</b>                  | function | <b>jalali_to_gregorian</b> | function   |
| <b>R</b>                   | function | <b>lchexnumber</b>         | function   |
| <b>RK</b>                  | function | <b>lchexnumbers</b>        | function   |
| <b>Romannumerals</b>       | function | <b>leapyear</b>            | function   |
| <b>Russiannumerals</b>     | function | <b>lower</b>               | function   |
| <b>Sloveniannumerals</b>   | function | <b>max</b>                 | function   |
| <b>Spanishnumerals</b>     | function | <b>maxchrs</b>             | function   |
| <b>Word</b>                | function | <b>nicenumber</b>          | function   |
| <b>Words</b>               | function | <b>nofdays</b>             | function   |
| <b>a</b>                   | function | <b>number</b>              | function   |
| <b>a:es</b>                | function | <b>numbers</b>             | function   |
| <b>a:ru</b>                | function | <b>octnumber</b>           | function   |
| <b>a:sl</b>                | function | <b>octstringtonumber</b>   | function   |
| <b>abjadnodotnumerals</b>  | function | <b>ordinal</b>             | function   |
| <b>abjadnumerals</b>       | function | <b>r</b>                   | function   |
| <b>alphabetic</b>          | function | <b>romannumerals</b>       | function   |
| <b>alphabetic:es</b>       | function | <b>russiannumerals</b>     | function   |
| <b>alphabetic:ru</b>       | function | <b>sequences</b>           | data table |
| <b>alphabetic:sl</b>       | function | <b>settime</b>             | function   |
| <b>character</b>           | function | <b>sloveniannumerals</b>   | function   |
| <b>characters</b>          | function | <b>spaceddigits</b>        | function   |
| <b>chineseallnumerals</b>  | function | <b>spanishnumerals</b>     | function   |
| <b>chinesecapnumerals</b>  | function | <b>textime</b>             | function   |
| <b>chinesedatenumerals</b> | function | <b>toabjad</b>             | function   |
| <b>chinesenumerals</b>     | function | <b>tochinese</b>           | function   |
| <b>chr</b>                 | function | <b>tohebrew</b>            | function   |
| <b>chrs</b>                | function | <b>toroman</b>             | function   |
| <b>cn</b>                  | function | <b>totime</b>              | function   |

**uchexnumber**  
**uchexnumbers**  
**upper**  
**verbose**

D data

function  
function  
function  
table

F translate

**weekday**  
**word**  
**words**

function  
function  
function

## coroutine (basic lua)

**close**            function  
**create**        function  
**isyieldable**   function  
**resume**        function

**running**       function  
**status**        function  
**wrap**          function  
**yield**         function

# ctxrunner (context)

|                     |          |                  |            |
|---------------------|----------|------------------|------------|
| <b>load</b>         | function | <b>prepfiles</b> | data table |
| <b>preparedfile</b> | function | <b>resolve</b>   | function   |

## debug (basic lua)

**getinfo**    function  
**sethook**    function

**traceback**   function

## dir (context)

|                       |          |
|-----------------------|----------|
| <b>collectpattern</b> | function |
| <b>current</b>        | function |
| <b>expandlink</b>     | function |
| <b>expandname</b>     | function |
| <b>found</b>          | function |
| <b>glob</b>           | function |
| <b>globdirs</b>       | function |

|                    |          |
|--------------------|----------|
| <b>globfiles</b>   | function |
| <b>globpattern</b> | function |
| <b>ls</b>          | function |
| <b>makedirs</b>    | function |
| <b>makedirs</b>    | function |
| <b>pop</b>         | function |
| <b>push</b>        | function |



## directives (context)

|                |            |
|----------------|------------|
| <b>data</b>    | data table |
| <b>default</b> | function   |
| <b>disable</b> | function   |
| <b>done</b>    | table      |
| <b>enable</b>  | function   |
| <b>list</b>    | function   |
| <b>name</b>    | string     |

|                 |          |
|-----------------|----------|
| <b>register</b> | function |
| <b>report</b>   | function |
| <b>reset</b>    | function |
| <b>show</b>     | function |
| <b>value</b>    | function |
| <b>values</b>   | function |

# document (context)

|                            |            |                              |            |
|----------------------------|------------|------------------------------|------------|
| <b>arguments</b>           | data table | <b>pdf_cleanup_procsets</b>  | function   |
| <b>files</b>               | table      | <b>pdf_identify_content</b>  | function   |
| <b>functions</b>           | table      | <b>pdf_serialize_content</b> | function   |
| <b>getargument</b>         | function   | <b>pdf_strip_content</b>     | function   |
| <b>getfilename</b>         | function   | <b>pdf_strip_page</b>        | function   |
| <b>options</b>             | table      | <b>setargument</b>           | function   |
| T cmdline                  |            | <b>setcommandline</b>        | function   |
| D environments             |            | <b>setdefaultargument</b>    | function   |
| D modes                    |            | <b>setenvironments</b>       | function   |
| D modules                  |            | <b>setfilename</b>           | function   |
| T ctxfile                  |            | <b>setfilenames</b>          | function   |
| D environments             |            | <b>setmodes</b>              | function   |
| D modes                    |            | <b>setmodules</b>            | function   |
| D modules                  |            | <b>variables</b>             | data table |
| <b>pdf_cleanup_cidsets</b> | function   |                              |            |

# documentdata (context)

**variable** function

# drivers (context)

|                         |          |                   |
|-------------------------|----------|-------------------|
| <b>applyanchor</b>      | function | F rule            |
| <b>applyorientation</b> | function | F simplerule      |
| <b>convert</b>          | function | F specialrule     |
| <b>converters</b>       | table    | F updatefontstate |
| F analyze               |          | T Whatsit         |
| F engine                |          | S name            |
| F lmtx                  |          | T js              |
| F resyncbox             |          | T actions         |
| <b>enable</b>           | function | F cleanup         |
| <b>finalize</b>         | function | F convert         |
| <b>gethpos</b>          | function | F finalize        |
| <b>gethvrpos</b>        | function | F initialize      |
| <b>getpos</b>           | function | F outputfilename  |
| <b>getrpos</b>          | function | F prepare         |
| <b>getvpos</b>          | function | F wrapup          |
| <b>helpers</b>          | table    | T flushers        |
| <b>initialize</b>       | function | F character       |
| <b>install</b>          | function | F popleaderlevel  |
| <b>instances</b>        | table    | F pushleaderlevel |
| T empty                 |          | F rule            |
| T actions               |          | F setstate        |
| F convert               |          | F simplerule      |
| F prepare               |          | F specialrule     |
| T flushers              |          | F updatefontstate |
| F popleaderlevel        |          | T Whatsit         |
| F pushleaderlevel       |          | S name            |
| T Whatsit               |          | T lua             |
| S name                  |          | T actions         |
| T js                    |          | F cleanup         |
| T actions               |          | F convert         |
| F cleanup               |          | F finalize        |
| F convert               |          | F initialize      |
| F finalize              |          | F outputfilename  |
| F initialize            |          | F prepare         |
| F outputfilename        |          | F wrapup          |
| F prepare               |          | T flushers        |
| F wrapup                |          | F character       |
| T flushers              |          | F popleaderlevel  |
| F character             |          | F pushleaderlevel |
| F popleaderlevel        |          | F rule            |
| F pushleaderlevel       |          | F simplerule      |

|                   |                       |          |
|-------------------|-----------------------|----------|
| F specialrule     | T pdf                 |          |
| F updatefontstate | T actions             |          |
| T whatsit         | F cleanup             |          |
| S name            | F convert             |          |
| T mpo             | F finalize            |          |
| T actions         | F initialize          |          |
| F finalize        | F outputfilename      |          |
| F initialize      | F prepare             |          |
| T flushers        | F wrapup              |          |
| F character       | T flushers            |          |
| F popleaderlevel  | F character           |          |
| F pushleaderlevel | F flushimage          |          |
| F rule            | F fontchar            |          |
| F simplerule      | F group               |          |
| F specialrule     | F literal             |          |
| T whatsit         | F popleaderlevel      |          |
| S name            | F poporientation      |          |
| T mps             | F pushleaderlevel     |          |
| T actions         | F pushorientation     |          |
| F cleanup         | F restore             |          |
| F convert         | F rule                |          |
| F finalize        | F save                |          |
| F initialize      | F setmatrix           |          |
| F outputfilename  | F setstate            |          |
| F prepare         | F simplerule          |          |
| F wrapup          | F space               |          |
| T flushers        | F specialrule         |          |
| F character       | F startclipping       |          |
| F popleaderlevel  | F startmatrix         |          |
| F pushleaderlevel | F startmirroring      |          |
| F rule            | F startrotation       |          |
| F simplerule      | F startscaling        |          |
| F specialrule     | F stopclipping        |          |
| F updatefontstate | F stopmatrix          |          |
| T whatsit         | F stopmirroring       |          |
| S name            | F stoprotation        |          |
| T none            | F stopscaling         |          |
| T actions         | F updatefontstate     |          |
| T flushers        | T whatsit             |          |
| F popleaderlevel  | S name                |          |
| F pushleaderlevel | <b>lmtxversion</b>    | number   |
| T whatsit         | <b>outputfilename</b> | function |
| S name            | <b>report</b>         | function |

## environment (context)

|                            |            |                               |            |
|----------------------------|------------|-------------------------------|------------|
| <b>argument</b>            | function   | <b>luafilechunk</b>           | function   |
| <b>arguments</b>           | data table | <b>luatexengine</b>           | string     |
| <b>basicengines</b>        | data table | <b>luatexfunctionality</b>    | number     |
| <b>currentrun</b>          | number     | <b>luatexverbose</b>          | string     |
| <b>definefilefallback</b>  | function   | <b>luatexversion</b>          | number     |
| <b>definefilesynonym</b>   | function   | <b>maxnofruns</b>             | number     |
| <b>engineflags</b>         | data table | <b>oldhome</b>                | string     |
| <b>filename</b>            | string     | <b>originalarguments</b>      | data table |
| <b>filenames</b>           | table      | <b>outputfilename</b>         | string     |
| <b>files</b>               | table      | <b>ownbin</b>                 | string     |
| <b>filesynonyms</b>        | data table | <b>ownmain</b>                | string     |
| <b>forcedruns</b>          | number     | <b>ownname</b>                | string     |
| <b>getargument</b>         | function   | <b>ownpath</b>                | string     |
| <b>globfiles</b>           | function   | <b>prerollrun</b>             | boolean    |
| <b>homedir</b>             | string     | <b>rawarguments</b>           | data table |
| <b>initex</b>              | boolean    | <b>reconstructcommandline</b> | function   |
| <b>initexmode</b>          | boolean    | <b>relativepath</b>           | function   |
| <b>initializearguments</b> | function   | <b>setargument</b>            | function   |
| <b>initializefilenames</b> | function   | <b>splitarguments</b>         | function   |
| <b>inputfilebarename</b>   | string     | <b>suffix</b>                 | string     |
| <b>inputfilename</b>       | string     | <b>texfile</b>                | function   |
| <b>inputfilesuffix</b>     | string     | <b>texmfos</b>                | string     |
| <b>jobfilefullname</b>     | string     | <b>texos</b>                  | string     |
| <b>jobfilename</b>         | string     | <b>texroot</b>                | string     |
| <b>jobfilesuffix</b>       | string     | <b>truefilename</b>           | function   |
| <b>kindofrun</b>           | number     | <b>uselua module</b>          | function   |
| <b>lmtxmode</b>            | number     | <b>usemodules</b>             | function   |
| <b>loadexamodes</b>        | function   | <b>validengines</b>           | data table |
| <b>loadluafile</b>         | function   | <b>version</b>                | string     |
| <b>luafile</b>             | function   |                               |            |

## experiments (context)

|                |            |
|----------------|------------|
| <b>data</b>    | data table |
| <b>default</b> | function   |
| <b>disable</b> | function   |
| <b>enable</b>  | function   |
| <b>list</b>    | function   |
| <b>name</b>    | string     |

|                 |          |
|-----------------|----------|
| <b>register</b> | function |
| <b>report</b>   | function |
| <b>reset</b>    | function |
| <b>show</b>     | function |
| <b>value</b>    | function |
| <b>values</b>   | function |

# figures (context)

|                         |            |                         |            |
|-------------------------|------------|-------------------------|------------|
| <b>applyratio</b>       | function   | <b>F resetstore</b>     |            |
| <b>badname</b>          | function   | <b>F scan</b>           |            |
| <b>bases</b>            | data table | <b>F serialize</b>      |            |
| <b>bitmapimage</b>      | function   | <b>T sizes</b>          |            |
| <b>boxnumber</b>        | number     | <b>B art</b>            |            |
| <b>cachepaths</b>       | data table | <b>B bleed</b>          |            |
| <b>check</b>            | function   | <b>B crop</b>           |            |
| <b>checkers</b>         | data table | <b>B media</b>          |            |
| <b>conversions</b>      | data table | <b>B none</b>           |            |
| <b>converters</b>       | data table | <b>B trim</b>           |            |
| <b>current</b>          | function   | <b>F storedata</b>      |            |
| <b>defaultdepth</b>     | number     | <b>F totable</b>        |            |
| <b>defaultheight</b>    | number     | <b>T types</b>          |            |
| <b>defaultsearch</b>    | boolean    | <b>N jbig2</b>          |            |
| <b>defaultwidth</b>     | number     | <b>N jp2</b>            |            |
| <b>done</b>             | function   | <b>N jpg</b>            |            |
| <b>dummy</b>            | function   | <b>N none</b>           |            |
| <b>exists</b>           | data table | <b>N pdf</b>            |            |
| <b>exists</b>           | function   | <b>N png</b>            |            |
| <b>formats</b>          | data table | <b>N stream</b>         |            |
| <b>found</b>            | data table | <b>F wrap</b>           |            |
| <b>get</b>              | function   | <b>include</b>          | function   |
| <b>getinfo</b>          | function   | <b>includers</b>        | data table |
| <b>getpdfinfo</b>       | function   | <b>initialize</b>       | function   |
| <b>getrealpage</b>      | function   | <b>loaded</b>           | data table |
| <b>guess</b>            | function   | <b>localpaths</b>       | data table |
| <b>guessfromstring</b>  | function   | <b>magics</b>           | data table |
| <b>hash</b>             | function   | <b>mergegoodies</b>     | function   |
| <b>identifiers</b>      | data table | <b>nofmissing</b>       | number     |
| <b>identify</b>         | function   | <b>nofprocessed</b>     | number     |
| <b>images</b>           | table      | <b>order</b>            | data table |
| <b>F check</b>          |            | <b>paths</b>            | data table |
| <b>F checksize</b>      |            | <b>patterns</b>         | data table |
| <b>F copy</b>           |            | <b>pop</b>              | function   |
| <b>F create</b>         |            | <b>preferquality</b>    | boolean    |
| <b>F embed</b>          |            | <b>programs</b>         | data table |
| <b>F embedfromstore</b> |            | <b>push</b>             | function   |
| <b>F fetchdata</b>      |            | <b>qrcode</b>           | function   |
| <b>T keys</b>           |            | <b>registerpattern</b>  | function   |
| <b>F print</b>          |            | <b>registerresource</b> | function   |
| <b>F resetdata</b>      |            | <b>registersuffix</b>   | function   |



|                      |            |                   |            |
|----------------------|------------|-------------------|------------|
| <b>remappers</b>     | data table | <b>setlookups</b> | function   |
| <b>resources</b>     | data table | <b>setorder</b>   | function   |
| <b>scale</b>         | function   | <b>setpaths</b>   | function   |
| <b>set</b>           | function   | <b>suffixes</b>   | data table |
| <b>setconversion</b> | function   | <b>used</b>       | data table |

## file (basic lua)

|                          |          |
|--------------------------|----------|
| <b>addsuffix</b>         | function |
| <b>basename</b>          | function |
| <b>checksum</b>          | function |
| <b>collapsepath</b>      | function |
| <b>copy</b>              | function |
| <b>dirname</b>           | function |
| <b>expandname</b>        | function |
| <b>extname</b>           | function |
| <b>is_qualified_path</b> | function |
| <b>is_readable</b>       | function |
| <b>is_rootbased_path</b> | function |
| <b>is_writable</b>       | function |
| <b>isreadable</b>        | function |
| <b>iswritable</b>        | function |
| <b>join</b>              | function |
| <b>joinpath</b>          | function |
| <b>loadchecksum</b>      | function |
| <b>nameonly</b>          | function |
| <b>nametotable</b>       | function |
| <b>needs Updating</b>    | function |

|                      |          |
|----------------------|----------|
| <b>needsupdating</b> | function |
| <b>pathpart</b>      | function |
| <b>readdata</b>      | function |
| <b>removesuffix</b>  | function |
| <b>replacesuffix</b> | function |
| <b>reslash</b>       | function |
| <b>robustname</b>    | function |
| <b>savechecksum</b>  | function |
| <b>savedata</b>      | function |
| <b>size</b>          | function |
| <b>splitbase</b>     | function |
| <b>splitname</b>     | function |
| <b>splitpath</b>     | function |
| <b>strip</b>         | function |
| <b>suffix</b>        | function |
| <b>suffixes</b>      | function |
| <b>suffixesonly</b>  | function |
| <b>suffixonly</b>    | function |
| <b>syncmtimes</b>    | function |
| <b>withinbase</b>    | function |

## fio (extra lua)

|                          |          |
|--------------------------|----------|
| <b>getposition</b>       | function |
| <b>read2dot14</b>        | function |
| <b>readbytes</b>         | function |
| <b>readbytetable</b>     | function |
| <b>readcardinal1</b>     | function |
| <b>readcardinal1le</b>   | function |
| <b>readcardinal2</b>     | function |
| <b>readcardinal2le</b>   | function |
| <b>readcardinal3</b>     | function |
| <b>readcardinal3le</b>   | function |
| <b>readcardinal4</b>     | function |
| <b>readcardinal4le</b>   | function |
| <b>readcardinaltable</b> | function |
| <b>readcline</b>         | function |
| <b>readcstring</b>       | function |
| <b>readfixed2</b>        | function |
| <b>readfixed4</b>        | function |
| <b>readinteger1</b>      | function |

|                         |          |
|-------------------------|----------|
| <b>readinteger1le</b>   | function |
| <b>readinteger2</b>     | function |
| <b>readinteger2le</b>   | function |
| <b>readinteger3</b>     | function |
| <b>readinteger3le</b>   | function |
| <b>readinteger4</b>     | function |
| <b>readinteger4le</b>   | function |
| <b>readintegertable</b> | function |
| <b>setposition</b>      | function |
| <b>skipposition</b>     | function |
| <b>writecardinal1</b>   | function |
| <b>writecardinal1le</b> | function |
| <b>writecardinal2</b>   | function |
| <b>writecardinal2le</b> | function |
| <b>writecardinal3</b>   | function |
| <b>writecardinal3le</b> | function |
| <b>writecardinal4</b>   | function |
| <b>writecardinal4le</b> | function |

# floats (context)

|                         |          |                   |          |
|-------------------------|----------|-------------------|----------|
| <b>analysemethod</b>    | function | <b>nofstacked</b> | function |
| <b>checkedpagefloat</b> | function | <b>pop</b>        | function |
| <b>collect</b>          | function | <b>push</b>       | function |
| <b>consult</b>          | function | <b>resave</b>     | function |
| <b>flush</b>            | function | <b>save</b>       | function |
| <b>getvariable</b>      | function | <b>stacked</b>    | function |
| <b>hasstacked</b>       | function |                   |          |

## font (basic tex)

|                               |          |                               |          |
|-------------------------------|----------|-------------------------------|----------|
| <b>addcharacters</b>          | function | <b>getmathspec</b>            | function |
| <b>addquality</b>             | function | <b>getparameterfields</b>     | function |
| <b>current</b>                | function | <b>gettextcharacterfields</b> | function |
| <b>define</b>                 | function | <b>id</b>                     | function |
| <b>getfont</b>                | function | <b>max</b>                    | function |
| <b>getfontdimen</b>           | function | <b>nextid</b>                 | function |
| <b>getfontfields</b>          | function | <b>setfont</b>                | function |
| <b>getfontspec</b>            | function | <b>setfontdimen</b>           | function |
| <b>getmathcharacterfields</b> | function | <b>xscaled</b>                | function |
| <b>getmathindex</b>           | function | <b>yscaled</b>                | function |

# fonts (context)

|                           |       |                          |
|---------------------------|-------|--------------------------|
| <b>analyzers</b>          | table | F beforepassingfonttotex |
| D features                |       | D cache                  |
| D initializers            |       | F calculatescale         |
| D methods                 |       | F checkedfeatures        |
| F setstate                |       | F checkedfilename        |
| D states                  |       | F collectprocessors      |
| B useunicodemarks         |       | F currentfonthasfeature  |
| <b>callbacks</b>          | table | D designsizes            |
| F compile                 |       | F enhanceparameters      |
| F devirtualize            |       | T enhancers              |
| <b>checkers</b>           | table | T afm                    |
| F getmissing              |       | F apply                  |
| D mapping                 |       | F patch                  |
| F missing                 |       | T patches                |
| F placeholder             |       | F register               |
| <b>cid</b>                | table | F report                 |
| F getmap                  |       | F register               |
| F loadfile                |       | F report                 |
| <b>collections</b>        | table | T otf                    |
| F checkenabled            |       | F addfeature             |
| F clonevector             |       | F apply                  |
| F define                  |       | F enhance                |
| T definitions             |       | F patch                  |
| F direct                  |       | T patches                |
| F found                   |       | F register               |
| F prepare                 |       | F report                 |
| F process                 |       | F register               |
| F register                |       | F report                 |
| F registermain            |       | T tfm                    |
| F report                  |       | F apply                  |
| F reset                   |       | F patch                  |
| T rscales                 |       | T patches                |
| T vectors                 |       | F register               |
| <b>constructors</b>       | table | F report                 |
| F addcharacters           |       | F register               |
| F addcoreunicodes         |       | F report                 |
| F aftercopyingcharacters  |       | N factor                 |
| F applyfinalizers         |       | T features               |
| F applymanipulators       |       | D afm                    |
| F assignmathparameters    |       | D otf                    |
| F beforecopyingcharacters |       | D tfm                    |

|                            |   |
|----------------------------|---|
| F finalize                 | S defaultbasealternate                              |
| F getfeatureaction         | S defaultnodealternate                              |
| F getmathparameter         | D features  |
| F getprivate               | F featuresinitializer                               |
| T handlers                 | F featuresprocessor                                 |
| T afm                      | T fixers  |
| B autoprefixed             | F getactualtext                                     |
| D cache                    | F getalternate                                      |
| D features                 | F getgsub   |
| F getkern                  | F getkern   |
| T helpdata                 | F getmultiple                                       |
| D bothkerned               | F getstreamhash                                     |
| D leftkerned               | F getsubstitution                                   |
| D ligatures                | T handlers  |
| D rightkerned              | F ctx_camelcasing                                   |
| D texligatures             | F devanagari_remove_joiners                         |
| F load                     | F devanagari_reorder_matras                         |
| T readers                  | F devanagari_reorder_pre_base_reordering_consonants |
| F getinfo                  | F devanagari_reorder_reph                           |
| F loadfont                 | F gpos_context                                      |
| F loadshapes               | F gpos_contextchain                                 |
| F setfeatures              | F gpos_cursive                                      |
| B syncspace                | F gpos_mark2base                                    |
| N version                  | F gpos_mark2ligature                                |
| T otf                      | F gpos_mark2mark                                    |
| F addfeature               | F gpos_pair   |
| F basemodeinitializer      | F gpos_single                                       |
| D cache                    | F gsub_alternate                                    |
| F collectlookups           | F gsub_context                                      |
| T coverup                  | F gsub_contextchain                                 |
| T actions                  | F gsub_ligature                                     |
| F alternate                | F gsub_multiple                                     |
| F chainposition            | F gsub_reversecontextchain                          |
| F chainsubstitution        | F gsub_single                                       |
| F kern                     | F trigger_space_kerns                               |
| F ligature                 | T helpers   |
| F multiple                 | F blockligatures                                    |
| F pair                     | F pardirstate                                       |
| F single                   | F txtfirststate                                     |
| F substitution             | F load  |
| F register                 | F loadoutlinedata                                   |
| S stepkey                  | F loadstreamdata                                    |
| F dataset                  | F modeinitializer                                   |
| F datasetpositionprocessor | D mpscache  |

|                     |                               |
|---------------------|-------------------------------|
| D pdfcache          | T gsubhandlers                |
| F plugininitializer | F alternate                   |
| F pluginprocessor   | F chainedcontext              |
| T plugins           | F context                     |
| T text              | F extension                   |
| D pngcache          | F ligature                    |
| B pngenabled        | F multiple                    |
| T readers           | F reversechainedcontextsingle |
| F addunicodetable   | F single                      |
| F avar              | F gvar                        |
| F cbdt              | F head                        |
| F cblc              | T helpers                     |
| F cff               | F axistofactors               |
| F cff2              | F cleanname                   |
| T cffencoder        | F getaxisscale                |
| F checkhash         | F getfactors                  |
| F cmap              | F getscales                   |
| F colr              | F gotodatatable               |
| F compact           | F normalizedaxis              |
| F condense          | T normalizedaxisishash        |
| F cpal              | F readvariationdata           |
| F dsig              | F reportskippedtable          |
| F ebdt              | F setvariabledata             |
| F eblc              | F hhea                        |
| F ebsc              | F hmtx                        |
| F expand            | F hvar                        |
| F extend            | F kern                        |
| F fvar              | F loadfont                    |
| F gdef              | F loadshapes                  |
| F getcomponents     | F loca                        |
| F getinfo           | F math                        |
| F glyf              | F maxp                        |
| F gpos              | F mvar                        |
| T gposhandlers      | F name                        |
| F chainedcontext    | F os/2                        |
| F context           | F pack                        |
| F cursive           | F parsecharstrings            |
| F extension         | F post                        |
| F marktobase        | F potracetocff                |
| F marktoligature    | F registerextender            |
| F marktomark        | F rehash                      |
| F pair              | F sbix                        |
| F single            | F stat                        |
| F gsub              | T streamreader                |



|                     |                     |
|---------------------|---------------------|
| F close             | F writecardinal1    |
| F getposition       | F writecardinal1le  |
| F getsizes          | F writecardinal2    |
| F look              | F writecardinal2le  |
| F open              | F writecardinal3    |
| F read2dot14        | F writecardinal3le  |
| F readbyte          | F writecardinal4    |
| F readbytes         | F writecardinal4le  |
| F readbytetable     | F writeinteger1     |
| F readcardinal      | F writeinteger1le   |
| F readcardinal1     | F writeinteger2     |
| F readcardinal1le   | F writeinteger2le   |
| F readcardinal2     | F writeinteger3     |
| F readcardinal2le   | F writeinteger3le   |
| F readcardinal3     | F writeinteger4     |
| F readcardinal3le   | F writeinteger4le   |
| F readcardinal4     | F writestring       |
| F readcardinal4le   | F stripredundant    |
| F readcardinaltable | F svg               |
| F readchar          | N tableversion      |
| F readcline         | F unifymissing      |
| F readcstring       | F unpack            |
| F readfixed2        | F vhea              |
| F readfixed4        | F vmtx              |
| F readinteger       | F vorg              |
| F readinteger1      | F vvar              |
| F readinteger1le    | F woff2otf          |
| F readinteger2      | F registerpalette   |
| F readinteger2le    | F registerplugin    |
| F readinteger3      | F reorderlookups    |
| F readinteger3le    | F scriptandlanguage |
| F readinteger4      | F setdynamics       |
| F readinteger4le    | F setfeatures       |
| F readintegertable  | T statistics        |
| F readsignedbyte    | D usedfeatures      |
| F readstring        | D svgcache          |
| F readtag           | B svgenabled        |
| F setposition       | T tables            |
| F size              | D baselines         |
| F skip              | D features          |
| F skiplong          | D featuretypes      |
| F skipposition      | D languages         |
| F skipshort         | D scripts           |
| F writebyte         | F texthandler       |

|                   |                       |          |
|-------------------|-----------------------|----------|
| T vectors         | F combine             |          |
| T arab            | T combiner            |          |
| T gpos            | D commands            |          |
| N curs            | D helpers             |          |
| N kern            | D math                |          |
| N mark            | D predefined          |          |
| N mkmk            | N version             |          |
| T gsub            | D whatever            |          |
| N calt            | F hashfeatures        |          |
| N ccmp            | F hashinstance        |          |
| N cswh            | T hashmethods         |          |
| N dlig            | F normal              |          |
| N fina            | F virtual             |          |
| N init            | F initializefeatures  |          |
| N isol            | D loadedfonts         |          |
| N liga            | N noffontsloaded      |          |
| N medi            | N nofsharedfonts      |          |
| N mset            | N nofsharedhashes     |          |
| N rclt            | N nofsharedvectors    |          |
| N rlig            | N privateoffset       |          |
| N version         | D privateslots        |          |
| T pfb             | F readanddefine       |          |
| F filterencoding  | F registerfeature     |          |
| F filtermetadata  | F registerscriptset   |          |
| F loadvector      | F resetfeature        |          |
| N version         | B resolvevirtualtoo   |          |
| T tfm             | F scale               |          |
| D cache           | F scaled              |          |
| D features        | F setfactor           |          |
| N maxnestingdepth | F setfeature          |          |
| N maxnestingsize  | F setmathparameter    |          |
| T readers         | F setname             |          |
| F loadpk          | B sharefonts          |          |
| F loadtfm         | F trytosharefont      |          |
| F loadtfmvf       | N version             |          |
| F loadvf          | <b>current</b>        | function |
| F pktopdf         | <b>currentid</b>      | function |
| F potracetopdf    | <b>definers</b>       | table    |
| F showpk          | F addlookup           |          |
| F reencode        | F analyze             |          |
| F setfeatures     | F applypostprocessors |          |
| N version         | F checkedmode         |          |
| T vf              | F checkedscript       |          |
| T combinations    | S defaultlookup       |          |

- F define
- F getspecification
- F internal
- F loadfont
- F makespecification
- T methods
  - F install
  - D variants
- F read
- F register
- F registered
- F registerfallbackfont
- F registersplit
- F resetnullfont
- F resolve
- T resolvers
  - F file
  - F name
  - F spec

**definetypface**      function

**dropins**            table

- F clone
- F getshape
- F getshapes
- F nextid
- F provide
- F registerglyph
- F registerglyphs
- F swap
- F swapone

**effects**            table

**encodings**        table

- T agl
  - D ctxcodes
  - D extras
  - D synonyms
  - D unicodes
- D cache
- F is\_known
- D known
- F load
- F make\_unicode\_vector
- D math
- N version

**enhanceid**            function

**expansions**        data table

**formats**            data table

**getalternate**        function

**getindices**        function

**getkern**            function

**getmultiple**        function

**getsubstitution**    function

**getters**            table

- T alternate
  - F opentype
- T kern
  - F opentype
  - F type1
  - F type3
- T multiple
  - F opentype
- T substitution
  - F opentype

**goodies**            table

- D colorschemes
- T data
  - T common-math.lfg
    - S author
    - S comment
    - S copyright
  - B initialized
  - T mathematics
  - T tweaks
- T presets
  - F addmathkerns
  - F braille
  - F eulertocalligraphic
  - F fallbacks
  - F moderntocalligraphic
  - F moveintegrals
  - F moveitalics
  - F pagellaradical
  - F rsfstoscript
  - F rsfsuprighttoscript
  - F scripttocalligraphic
  - F smallldigits
  - F wipeanchors
  - F wipeitalics

- F xitsarabic
- S name
- S version
- T dejavu-math
  - S author
  - S comment
  - S copyright
  - B initialized
  - T mathematics
    - T alternates
      - T dotless
        - S comment
        - S feature
        - N value
    - T bigslots
    - T parameters
      - N AccentBaseDepth
      - N AccentTopShiftUp
      - N DelimiterDisplayPercent
      - N DelimiterDisplayShortfall
      - N DelimiterPercent
      - N DelimiterShortfall
      - N DisplayOperatorMinHeight
      - N FlattenedAccentTopShiftUp
      - N FractionRuleThickness
      - S PrimeBaselineDropMax
      - S PrimeShiftUp
      - S PrimeShiftUpCramped
      - N SubscriptShiftDown
      - S SubscriptShiftDownWithSuperscript
      - N SuperscriptShiftUp
    - T tweaks
      - T aftercopying
  - S name
  - S version
- T dejavu-text
  - S author
  - S comment
  - S copyright
  - T extensions
  - B initialized
    - S name
    - S version
- D designsizes

- D filenames
- F getcompositions
- T list
- F load
- F prepare\_features
- F register
- F registerpostprocessor
- F report
- T suffixes

|                 |       |
|-----------------|-------|
| <b>handlers</b> | table |
| <b>hashes</b>   | table |

- D characters
- D classes
- D csnames
- D descriptions
- D dynamics
- D emwidths
- D exheights
- D features
- D identifiers
- D italics
- D lastmathids
- D marks
- D mathparameters
- D modes
- D originals
- D parameters
- T processes
- D properties
- D quads
- D resources
- T setdynamics
- T shapes
- D spaces
- D spacings
- T streams
- D unicodes
- D unislots
- D variants
- D xheights

|                |       |
|----------------|-------|
| <b>helpers</b> | table |
|----------------|-------|

- F addextraprivate
- F addprivate
- F appendcommands

F appendcommandtable  
 F checkflags  
 F checkmerge  
 F checksteps  
 F collectanchors  
 F combineglyphs  
 D commands  
 F composecharacters  
 F descriptiontoslot  
 F dimenfactor  
 F expandglyph  
 D extraprivates  
 F fontpatternhassize  
 F getcoloredglyphs  
 F getdigitwidth  
 F getinstancespec  
 F getparameters  
 F getprivatecharornode  
 F getprivatenode  
 F getprivates  
 F getprivateslot  
 F glyphdimenfactor  
 F hasprivate  
 F indextoslot  
 F isprivate  
 F mathscriptslots  
 F name  
 F nametoslot  
 F newprivateslot  
 F prependcommands  
 F prependcommandtable  
 F privateslot  
 F registerglyphbox  
 F scalecommands  
 F setboxdirectly  
 F setboxglyph  
 F setboxglyphs  
 F setdigitwidth  
 F setmetaglyph  
 F setmetaglyphs  
 D sharedprivates  
 F splitfontpattern  
 F tochar  
 T vfinjectors

F startcolor  
 F stopcolor  
 T vfspecials  
 T backgrounds  
 T outlines

**infofont**                      function  
**iterators**                      table

F characters  
 F descriptions  
 F glyphs  
**loggers**                      table  
 F format  
 F onetimemessage  
 F register  
 F reportdefinedfonts  
 F reportusedfeatures

**mappings**                      table

F addtounicode  
 F fromunicode16  
 F getentry  
 F loadfile  
 F loadline  
 F makenameparser  
 D overloads  
 F reset  
 F tounicode  
 F tounicode16  
 F tounicode16sequence

**metapost**                      table

F baseline  
 F boundingbox  
 F boxtomp  
 F draw  
 F fill  
 F glyph  
 F maxbounds  
 F paths  
 F widthline  
 F zeroline

**mode**                              function  
**names**                              data table  
**nulldata**                              data table  
**privateoffsets**                      table

B keepnames

|                          |            |                           |       |
|--------------------------|------------|---------------------------|-------|
| N mathbase               |            | F registerfontalternative |       |
| N mathextrabase          |            | F registerfontfamily      |       |
| N textbase               |            | F textfallback            |       |
| N textextrabase          |            | F typeface                |       |
| <b>protrusions</b>       | data table | F typescript              |       |
| <b>readers</b>           | table      | F userdata                |       |
| F afm                    |            | <b>specifiers</b>         | table |
| F check_lua              |            | D contextmerged           |       |
| F check_tfm              |            | F contextnumber           |       |
| F lua                    |            | D contextnumbers          |       |
| F ofm                    |            | D contextsetups           |       |
| F opentype               |            | F contexttostring         |       |
| F otf                    |            | F definecontext           |       |
| F pfb                    |            | F mergecontext            |       |
| D sequence               |            | F presetcontext           |       |
| F tfm                    |            | F registercontext         |       |
| F ttc                    |            | T scriptsets              |       |
| F ttf                    |            | T af                      |       |
| F woff                   |            | S language                |       |
| <b>registersanitizer</b> | function   | N number                  |       |
| <b>reserveid</b>         | function   | S script                  |       |
| <b>select</b>            | table      | T always                  |       |
| D alternatives           |            | S autolanguage            |       |
| F bodyfont               |            | S autoscript              |       |
| D data                   |            | B checkmissing            |       |
| F default                |            | B curs                    |       |
| D defaults               |            | B kern                    |       |
| F definefallbackfamily   |            | B mark                    |       |
| F definefontfamily       |            | B mkmk                    |       |
| F definefontfamilypreset |            | S mode                    |       |
| D extras                 |            | N number                  |       |
| F fallback               |            | S script                  |       |
| D fallbacks              |            | S textcontrol             |       |
| F features               |            | B wipemath                |       |
| F filefallback           |            | T arabic                  |       |
| F fontdata               |            | B analyze                 |       |
| F fontfallback           |            | S autolanguage            |       |
| F fontsynonym            |            | S autoscript              |       |
| F goodies                |            | B calt                    |       |
| F mathfallback           |            | B ccmp                    |       |
| D methods                |            | B clig                    |       |
| D presets                |            | B curs                    |       |
| F registerfallback       |            | B dlig                    |       |
| F registerfiles          |            | B fina                    |       |

|                 |               |
|-----------------|---------------|
| B init          | S script      |
| B isol          | B watu        |
| B kern          | T bengali-two |
| S language      | B abvm        |
| B liga          | B abvs        |
| B mark          | B akhn        |
| B medi          | B blwf        |
| B mkmk          | B blwm        |
| S mode          | B blws        |
| N number        | B calt        |
| B rlig          | B cjct        |
| S script        | B dist        |
| T ba            | B half        |
| S language      | B haln        |
| N number        | S indic       |
| S script        | B init        |
| T bandw:overlay | B kern        |
| B ccmp          | S language    |
| B dist          | B locl        |
| N number        | S mode        |
| T bengali-one   | B nukt        |
| B abvm          | N number      |
| B abvs          | B pres        |
| B akhn          | B pstf        |
| B blwf          | B psts        |
| B blwm          | B rphf        |
| B blws          | S script      |
| B calt          | B watu        |
| B cjct          | T boldened    |
| B dist          | S effect      |
| B half          | N number      |
| B haln          | T boldened-10 |
| S indic         | S effect      |
| B init          | N number      |
| B kern          | T boldened-15 |
| S language      | S effect      |
| B locl          | N number      |
| S mode          | T boldened-20 |
| B nukt          | S effect      |
| N number        | N number      |
| B pres          | T boldened-25 |
| B pstf          | S effect      |
| B psts          | N number      |
| B rphf          | T boldened-30 |

|                 |                  |
|-----------------|------------------|
| S effect        | N number         |
| N number        | S script         |
| T ca            | S textcontrol    |
| S language      | B wipemath       |
| N number        | T cy             |
| S script        | S language       |
| T camelcasing   | N number         |
| B camelcasing   | S script         |
| N number        | T cz             |
| T cn            | S language       |
| S language      | N number         |
| N number        | S script         |
| S script        | T de             |
| T color         | S language       |
| B ccmp          | N number         |
| S color         | S script         |
| B dist          | T default        |
| N number        | S autolanguage   |
| T color:bitmap  | S autoscript     |
| B ccmp          | B checkmissing   |
| B dist          | B curs           |
| N number        | B itlc           |
| B sbix          | B kern           |
| T color:overlay | B liga           |
| B ccmp          | B mark           |
| B colr          | B mkmk           |
| B dist          | S mode           |
| N number        | N number         |
| T color:svg     | S script         |
| B ccmp          | S textcontrol    |
| B dist          | B wipemath       |
| N number        | T deo            |
| B svg           | S language       |
| T complete      | N number         |
| S autolanguage  | S script         |
| S autoscript    | T devanagari-one |
| B checkmissing  | B abvm           |
| B compose       | B abvs           |
| B curs          | B akhn           |
| B kern          | B blwf           |
| B liga          | B blwm           |
| B mark          | B blws           |
| B mkmk          | B calt           |
| S mode          | B cjct           |



|                  |               |
|------------------|---------------|
| B dist           | N number      |
| B half           | B unicoding   |
| B haln           | T es          |
| S indic          | S language    |
| B kern           | N number      |
| S language       | S script      |
| B locl           | T et          |
| S mode           | S language    |
| B nukt           | N number      |
| N number         | S script      |
| B pres           | T f:fractions |
| B psts           | B frac        |
| B rkrf           | N number      |
| B rphf           | T f:inferiors |
| S script         | N number      |
| B vatu           | B subs        |
| T devanagari-two | T f:kern      |
| B abvm           | B kern        |
| B abvs           | N number      |
| B akhn           | T f:kerns     |
| B blwf           | B kern        |
| B blwm           | N number      |
| B blws           | T f:oldstyle  |
| B calt           | N number      |
| B cjct           | B onum        |
| B dist           | T f:smallcaps |
| B half           | N number      |
| B haln           | B smcp        |
| S indic          | T f:superiors |
| B kern           | N number      |
| S language       | B sups        |
| B locl           | T f:tabular   |
| S mode           | N number      |
| B nukt           | B tnum        |
| N number         | T fi          |
| B pres           | S language    |
| B psts           | N number      |
| B rkrf           | S script      |
| B rphf           | T followtext  |
| S script         | B liga        |
| B vatu           | N number      |
| T dingbats       | T fr          |
| S goodies        | S language    |
| S mode           | N number      |

|                  |                |
|------------------|----------------|
| S script         | B cjct         |
| T fullprotrusion | B dist         |
| N number         | B half         |
| S protrusion     | B haln         |
| T gr             | S indic        |
| S language       | B kern         |
| N number         | S language     |
| S script         | B locl         |
| T grek           | S mode         |
| N number         | B nukt         |
| S script         | N number       |
| T gujarati-one   | B pres         |
| B abvm           | B psts         |
| B abvs           | B rkrf         |
| B akhn           | B rphf         |
| B blwf           | S script       |
| B blwm           | B vatu         |
| B blws           | T gurmukhi-one |
| B calt           | B abvm         |
| B cjct           | B abvs         |
| B dist           | B akhn         |
| B half           | B blwf         |
| B haln           | B blwm         |
| S indic          | B blws         |
| B kern           | B calt         |
| S language       | B cjct         |
| B locl           | B dist         |
| S mode           | B half         |
| B nukt           | B haln         |
| N number         | S indic        |
| B pres           | B kern         |
| B psts           | S language     |
| B rkrf           | B locl         |
| B rphf           | S mode         |
| S script         | B nukt         |
| B vatu           | N number       |
| T gujarati-two   | B pres         |
| B abvm           | B pstf         |
| B abvs           | B psts         |
| B akhn           | B rphf         |
| B blwf           | S script       |
| B blwm           | B vatu         |
| B blws           | T gurmukhi-two |
| B calt           | B abvm         |

B abvs  
 B akhn  
 B blwf  
 B blwm  
 B blws  
 B calt  
 B cjct  
 B dist  
 B half  
 B haln  
 S indic  
 B kern  
 S language  
 B locl  
 S mode  
 B nukl  
 N number  
 B pres  
 B pstf  
 B psts  
 B rphf  
 S script  
 B vatu  
 T hebrew  
 B analyze  
 S autolanguage  
 S autoscript  
 B calt  
 B cmp  
 B clig  
 B curs  
 B dlig  
 B fina  
 B init  
 B isol  
 B kern  
 S language  
 B liga  
 B mark  
 B medi  
 B mkmk  
 S mode  
 N number  
 B reordercombining

B rlig  
 S script  
 T hr  
 S language  
 N number  
 S script  
 T hu  
 S language  
 N number  
 S script  
 T indic-common  
 B abvm  
 B abvs  
 B akhn  
 B blwm  
 B blws  
 B calt  
 B dist  
 B haln  
 S indic  
 B kern  
 S language  
 B locl  
 S mode  
 B nukl  
 N number  
 B pres  
 B psts  
 B rphf  
 T inlinenumbers  
 N number  
 B pnun  
 B tnum  
 T is  
 S language  
 N number  
 S script  
 T it  
 S language  
 N number  
 S script  
 T ja  
 S language  
 N number

|               |                 |
|---------------|-----------------|
| S script      | B dist          |
| T jamoforms   | B half          |
| B ljmo        | B haln          |
| N number      | S indic         |
| B tjmo        | B kern          |
| B vjmo        | S language      |
| T just-os     | B locl          |
| S mode        | S mode          |
| N number      | B nukt          |
| B onum        | N number        |
| T kannada-one | B pref          |
| B abvm        | B pres          |
| B abvs        | B pstf          |
| B akhn        | B psts          |
| B blwf        | B rphf          |
| B blwm        | S script        |
| B blws        | T la            |
| B calt        | S language      |
| B cjct        | N number        |
| B dist        | S script        |
| B half        | T latn          |
| B haln        | N number        |
| S indic       | S script        |
| B kern        | T letterspacing |
| S language    | B ccmp          |
| B locl        | B clig          |
| S mode        | B dlig          |
| B nukt        | S keepligatures |
| N number      | B liga          |
| B pref        | N number        |
| B pres        | B rlig          |
| B pstf        | T ligatures     |
| B psts        | S autolanguage  |
| B rphf        | S autoscript    |
| S script      | B checkmissing  |
| T kannada-two | B curs          |
| B abvm        | B kern          |
| B abvs        | B liga          |
| B akhn        | B mark          |
| B blwf        | B mkmk          |
| B blwm        | S mode          |
| B blws        | N number        |
| B calt        | S script        |
| B cjct        | S textcontrol   |

B wipemath  
 T lm-math-bold  
 S effect  
 N number  
 T lowercasing  
 B lowercasing  
 N number  
 T malayalam-one  
 B abvm  
 B abvs  
 B akhn  
 B blwf  
 B blwm  
 B blws  
 B calt  
 B cjct  
 B dist  
 B half  
 B haln  
 S indic  
 B kern  
 S language  
 B locl  
 S mode  
 B nukt  
 N number  
 B pref  
 B pres  
 B pstf  
 B psts  
 B rphf  
 S script  
 T malayalam-two  
 B abvm  
 B abvs  
 B akhn  
 B blwf  
 B blwm  
 B blws  
 B calt  
 B cjct  
 B dist  
 B half  
 B haln

S indic  
 B kern  
 S language  
 B locl  
 S mode  
 B nukt  
 N number  
 B pref  
 B pres  
 B pstf  
 B psts  
 B rphf  
 S script  
 T math  
 B compactmath  
 B flattenaccents  
 B kern  
 S language  
 B mathalternates  
 S mathexpansion  
 S mode  
 N number  
 S script  
 B ssty  
 B wipemath  
 T math-script  
 B compactmath  
 B flattenaccents  
 B kern  
 S language  
 B mathalternates  
 S mathexpansion  
 S mode  
 N number  
 S script  
 N ssty  
 B wipemath  
 T math-scriptscript  
 B compactmath  
 B flattenaccents  
 B kern  
 S language  
 B mathalternates  
 S mathexpansion

S mode  
 N number  
 S script  
 N ssty  
 B wipemath  
 T math-text  
   B compactmath  
   B flattenaccents  
   B kern  
   S language  
   B mathalternates  
   S mathexpansion  
   S mode  
   N number  
   S script  
   B ssty  
   B wipemath  
 T mathematics  
   B compactmath  
   B flattenaccents  
   B kern  
   S language  
   B mathalternates  
   S mathexpansion  
   S mode  
   N number  
   S script  
   B wipemath  
 T mixed  
 T mongolian  
   S autolanguage  
   S autoscript  
   B calt  
   B checkmissing  
   B curs  
   B fina  
   B init  
   B isol  
   B itlc  
   B kern  
   B liga  
   B mark  
   B medi  
   B mkmk

S mode  
 S mset  
 N number  
 B rclt  
 B rlig  
 S script  
 S textcontrol  
 B wipemath  
 T nl  
   S language  
   N number  
   S script  
 T none  
   B features  
   S mode  
   N number  
 T oldstyle  
   S autolanguage  
   S autoscript  
   B checkmissing  
   B curs  
   B kern  
   B liga  
   B mark  
   B mkmk  
   S mode  
   N number  
   B onum  
   S script  
   S textcontrol  
   B wipemath  
 T oldstylenumbers  
   N number  
   B onum  
 T original  
   S autolanguage  
   S autoscript  
   B checkmissing  
   B curs  
   B itlc  
   B kern  
   B liga  
   B mark  
   B mkmk

|               |                    |
|---------------|--------------------|
| S mode        | B nukt             |
| N number      | N number           |
| S script      | B pres             |
| S textcontrol | B pstf             |
| B wipemath    | B psts             |
| T oriya-one   | B rphf             |
| B abvm        | S script           |
| B abvs        | T pl               |
| B akhn        | S language         |
| B blwf        | N number           |
| B blwm        | S script           |
| B blws        | T primes           |
| B calt        | N number           |
| B cjct        | B primes           |
| B dist        | T pt               |
| B haln        | S language         |
| S indic       | N number           |
| B kern        | S script           |
| S language    | T quality          |
| B locl        | S expansion        |
| S mode        | N number           |
| B nukt        | S protrusion       |
| N number      | T reordercombining |
| B pres        | N number           |
| B pstf        | B reordercombining |
| B psts        | T ro               |
| B rphf        | S language         |
| S script      | N number           |
| T oriya-two   | S script           |
| B abvm        | T ru               |
| B abvs        | S language         |
| B akhn        | N number           |
| B blwf        | S script           |
| B blwm        | T semitic-complete |
| B blws        | B analyze          |
| B calt        | S autolanguage     |
| B cjct        | S autoscript       |
| B dist        | B calt             |
| B haln        | B ccmp             |
| S indic       | B clig             |
| B kern        | B curs             |
| S language    | B dlig             |
| B locl        | B fina             |
| S mode        | B init             |

|                  |                |
|------------------|----------------|
| B isol           | N number       |
| B kern           | B rlig         |
| S language       | S script       |
| B liga           | T simplehebrew |
| B mark           | B analyze      |
| B medi           | S autolanguage |
| B mkmk           | S autoscript   |
| S mode           | B calt         |
| N number         | B ccmp         |
| B rlig           | B curs         |
| T semitic-simple | B fina         |
| B analyze        | B init         |
| S autolanguage   | B isol         |
| S autoscript     | B kern         |
| B calt           | S language     |
| B ccmp           | B mark         |
| B curs           | B medi         |
| B fina           | B mkmk         |
| B init           | S mode         |
| B isol           | N number       |
| B kern           | B rlig         |
| S language       | S script       |
| B mark           | T sk           |
| B medi           | S language     |
| B mkmk           | N number       |
| S mode           | S script       |
| N number         | T sl           |
| B rlig           | S language     |
| T simplearabic   | N number       |
| B analyze        | S script       |
| S autolanguage   | T slanted      |
| S autoscript     | N number       |
| B calt           | N slant        |
| B ccmp           | T smallcaps    |
| B curs           | S autolanguage |
| B fina           | S autoscript   |
| B init           | B checkmissing |
| B isol           | B curs         |
| B kern           | B kern         |
| S language       | B mark         |
| B mark           | B mkmk         |
| B medi           | S mode         |
| B mkmk           | N number       |
| S mode           | S script       |



|                  |             |
|------------------|-------------|
| B smcp           | T tamil-one |
| S textcontrol    | B abvm      |
| B wipemath       | B abvs      |
| T sv             | B akhn      |
| S language       | B blwm      |
| N number         | B blws      |
| S script         | B calt      |
| T syriac         | B dist      |
| B analyze        | B half      |
| S autolanguage   | B haln      |
| S autoscript     | S indic     |
| B calt           | B kern      |
| B ccmp           | S language  |
| B clig           | B locl      |
| B curs           | S mode      |
| B dlig           | B nukt      |
| B fin2           | N number    |
| B fin3           | B pref      |
| B fina           | B pres      |
| B init           | B psts      |
| B isol           | B rphf      |
| B kern           | S script    |
| S language       | T tamil-two |
| B liga           | B abvm      |
| B mark           | B abvs      |
| B med2           | B akhn      |
| B medi           | B blwm      |
| B mkmk           | B blws      |
| S mode           | B calt      |
| N number         | B dist      |
| B rlig           | B half      |
| S script         | B haln      |
| T system:tabnum  | S indic     |
| B lnum           | B kern      |
| N number         | S language  |
| B tnum           | B locl      |
| T tabledigits    | S mode      |
| N number         | B nukt      |
| B tabledigits    | N number    |
| B tnum           | B pref      |
| T tabularnumbers | B pres      |
| N number         | B psts      |
| B pnum           | B rphf      |
| B tnum           | S script    |

T telugu-one

B abvm  
B abvs  
B akhn  
B blwf  
B blwm  
B blws  
B calt  
B cjct  
B dist  
B half  
B haln  
S indic  
B kern  
S language  
B locl  
S mode  
B nukt  
N number  
B pref  
B pres  
B pstf  
B psts  
B rphf  
S script

T telugu-two

B abvm  
B abvs  
B akhn  
B blwf  
B blwm  
B blws  
B calt  
B cjct  
B dist  
B half  
B haln  
S indic  
B kern  
S language  
B locl  
S mode  
B nukt  
N number

B pref

B pres

B pstf

B psts

B rphf

S script

T th

S language

N number

S script

T tibetan

B abvm

B abvs

S autolanguage

S autoscript

B blwm

B blws

B calt

B ccmp

B checkmissing

B curs

B kern

S language

B liga

B locl

B mark

B mkmk

S mode

N number

S script

S textcontrol

B wipemath

T tr

S language

N number

S script

T uk

S language

N number

S script

T uppercasing

N number

B uppercasing

T us

S language  
 N number  
 S script  
 T virtualmath  
   B compactmath  
   B flattenaccents  
   B kern  
   S language  
   B mathalternates  
   S mathexpansion  
   S mode  
   N number  
   S script  
   B wipemath  
 T vn  
   S language  
   N number  
   S script  
 T zero  
   N number  
   B zero

F showcontext  
 F splitcontext  
 D synonyms  
 D variants  
**symbols**                   table  
   T emoji  
   F checked  
   F resolved  
   F uselibrary  
**tables**                   table  
**toeffect**               function  
**tracers**               table  
**treatments**           table  
   F applyfixes  
   D data  
   S filename  
   F ignoredfile  
   F report  
   F trace  
**typefaces**           table

# functions (context)

**dummy** function

# graphics (context)

|                    |          |                             |          |
|--------------------|----------|-----------------------------|----------|
| <b>backgrounds</b> | table    | <b>identify</b>             | function |
| F fetchmultipar    |          | <b>registerpdfcompactor</b> | function |
| F pair             |          | <b>registerpdffont</b>      | function |
| F path             |          | <b>synchronizers</b>        | table    |
| F point            |          | F collapse                  |          |
| <b>bitmaps</b>     | table    | F collect                   |          |
| F flush            |          | F extend                    |          |
| F new              |          | F getbottom                 |          |
| F placeholder      |          | F getd                      |          |
| F tocontext        |          | F geth                      |          |
| <b>bpsize</b>      | function | F getkind                   |          |
| <b>colorspaces</b> | table    | F getsize                   |          |
| <b>identifiers</b> | table    | F gettask                   |          |
| F bitmap           |          | F gettop                    |          |
| F jp2              |          | F getw                      |          |
| F jpeg             |          | F getx                      |          |
| F jpg              |          | F gety                      |          |
| F png              |          | F prune                     |          |

## gzip (context)

**compress**    function  
**compressed** function  
**decompress** function

**load**        function  
**save**        function  
**suffix**      function

## helper (context)

|                    |          |
|--------------------|----------|
| <b>getprofile</b>  | function |
| <b>mathnested</b>  | function |
| <b>mathprocess</b> | function |
| <b>mathstep</b>    | function |
| <b>snapindeed</b>  | function |

|                            |          |
|----------------------------|----------|
| <b>snplist</b>             | function |
| <b>traversecharmmethod</b> | function |
| <b>traverseglyphmethod</b> | function |
| <b>traversehorizontal</b>  | function |
| <b>traversevertical</b>    | function |

# images (context)

|                       |          |  |                  |          |
|-----------------------|----------|--|------------------|----------|
| <b>check</b>          | function |  | B crop           |          |
| <b>checksize</b>      | function |  | B media          |          |
| <b>copy</b>           | function |  | B none           |          |
| <b>create</b>         | function |  | B trim           |          |
| <b>embed</b>          | function |  | <b>storedata</b> | function |
| <b>embedfromstore</b> | function |  | <b>totable</b>   | function |
| <b>fetchdata</b>      | function |  | <b>types</b>     | table    |
| <b>keys</b>           | table    |  | N jbig2          |          |
| <b>print</b>          | function |  | N jp2            |          |
| <b>resetdata</b>      | function |  | N jpg            |          |
| <b>resetstore</b>     | function |  | N none           |          |
| <b>scan</b>           | function |  | N pdf            |          |
| <b>serialize</b>      | function |  | N png            |          |
| <b>sizes</b>          | table    |  | N stream         |          |
| B art                 |          |  | <b>wrap</b>      | function |
| B bleed               |          |  |                  |          |



# interactions (context)

**attachments** data table

**fields** table

- F clone
- F define
- F defineset
- F insert

**general** table

- F getidentity
- F getidentityvariable

**help** table

- F collect
- F reference
- F register

**javascripts** table

- F addtopreamble
- F code
- D codes
- F flushpreambles

D functions

D preambles

F setpreamble

F storecode

F storepreamble

F usepreamblenow

F usescripts

**linkedList**s data table

**pages** table

F setpagetransition

F setupcanvas

**references** table

F setcloseddocumentaction

F setclosepageaction

F setopendocumentaction

F setopenpageaction

**renderings** data table

# interfaces (context)

|                             |            |                          |            |
|-----------------------------|------------|--------------------------|------------|
| <b>arrays</b>               | table      | <b>namesofscanners</b>   | table      |
| <b>cachedsetups</b>         | data table | <b>namespaces</b>        | table      |
| <b>cachesetup</b>           | function   | F define                 |            |
| <b>cardinals</b>            | table      | F list                   |            |
| <b>checkedspecification</b> | function   | <b>numbers</b>           | table      |
| <b>complete</b>             | data table | <b>registernamespace</b> | function   |
| <b>constants</b>            | data table | <b>registerscanner</b>   | function   |
| <b>corenamespaces</b>       | data table | <b>scanners</b>          | data table |
| <b>currentinterface</b>     | string     | <b>setconstant</b>       | function   |
| <b>currentresponse</b>      | string     | <b>setcount</b>          | function   |
| <b>definecommand</b>        | function   | <b>setdimen</b>          | function   |
| <b>defined</b>              | function   | <b>setelement</b>        | function   |
| <b>doifelsemessage</b>      | function   | <b>setformat</b>         | function   |
| <b>elements</b>             | data table | <b>setmacro</b>          | function   |
| <b>floats</b>               | table      | <b>setmessage</b>        | function   |
| <b>formats</b>              | data table | <b>setmessages</b>       | function   |
| <b>getmessage</b>           | function   | <b>settranslation</b>    | function   |
| <b>getnamespace</b>         | function   | <b>setupstrings</b>      | data table |
| <b>getsetupstring</b>       | function   | <b>setvariable</b>       | function   |
| <b>hashedsetups</b>         | data table | <b>showmessage</b>       | function   |
| <b>implement</b>            | function   | <b>storedscanners</b>    | data table |
| <b>integers</b>             | table      | <b>tolist</b>            | function   |
| <b>interfacedcommand</b>    | function   | <b>translations</b>      | data table |
| <b>interfaces</b>           | table      | <b>usednamespaces</b>    | data table |
| <b>knownscanner</b>         | function   | <b>variables</b>         | data table |
| <b>message</b>              | function   | <b>writestatus</b>       | function   |
| <b>nameofscanner</b>        | function   |                          |            |

## io (basic lua)

|                      |                     |                      |                     |
|----------------------|---------------------|----------------------|---------------------|
| <b>ask</b>           | function            | <b>open</b>          | overloaded function |
| <b>bytes</b>         | function            | <b>output</b>        | overloaded function |
| <b>characters</b>    | function            | <b>pathseparator</b> | string              |
| <b>close</b>         | function            | <b>popen</b>         | overloaded function |
| <b>copydata</b>      | function            | <b>read</b>          | function            |
| <b>exists</b>        | function            | <b>readall</b>       | function            |
| <b>fileseparator</b> | string              | <b>readnumber</b>    | function            |
| <b>flush</b>         | function            | <b>readstring</b>    | function            |
| <b>gobble</b>        | function            | <b>savedata</b>      | function            |
| <b>input</b>         | overloaded function | <b>size</b>          | function            |
| <b>lines</b>         | overloaded function | <b>stderr</b>        | userdata            |
| <b>loadchunk</b>     | function            | <b>stdin</b>         | userdata            |
| <b>loaddata</b>      | function            | <b>stdout</b>        | userdata            |
| <b>loadlines</b>     | function            | <b>tmpfile</b>       | function            |
| <b>newreader</b>     | function            | <b>type</b>          | function            |
| <b>noflines</b>      | function            | <b>write</b>         | function            |

# job (context)

|                          |          |                    |       |
|--------------------------|----------|--------------------|-------|
| <b>comment</b>           | function | D collected        |       |
| <b>datasets</b>          | table    | F countervalue     |       |
| D collected              |          | F extend           |       |
| F extend                 |          | F realpage         |       |
| F getdata                |          | F realpageorder    |       |
| F setdata                |          | F setstate         |       |
| D tobesaved              |          | D tobesaved        |       |
| <b>disablesave</b>       | function | <b>parwrappers</b> | table |
| <b>embedded</b>          | table    | D collected        |       |
| D collected              |          | D tobesaved        |       |
| D tobesaved              |          | <b>positions</b>   | table |
| <b>fileobjreferences</b> | table    | F b_column         |       |
| D collected              |          | F b_region         |       |
| D tobesaved              |          | F c                |       |
| <b>files</b>             | table    | D collected        |       |
| D collected              |          | F column           |       |
| F context                |          | F columnofpos      |       |
| B forcerun               |          | F copy             |       |
| F run                    |          | F depth            |       |
| D tobesaved              |          | F e_column         |       |
| <b>getrandomseed</b>     | function | F e_region         |       |
| <b>initialize</b>        | function | F enhance          |       |
| <b>linkedlists</b>       | table    | F extra            |       |
| D collected              |          | F get              |       |
| D tobesaved              |          | F getcolumndata    |       |
| <b>load</b>              | function | F getfree          |       |
| <b>loadother</b>         | function | F gethpos          |       |
| <b>meshedup</b>          | table    | F gethvrpos        |       |
| D collected              |          | F getpos           |       |
| D tobesaved              |          | F getreserved      |       |
| <b>objects</b>           | table    | F getrpos          |       |
| D collected              |          | F getsync          |       |
| F get                    |          | F gettobesaved     |       |
| F number                 |          | F getvpos          |       |
| F page                   |          | F hangafter        |       |
| F save                   |          | F hangindent       |       |
| F set                    |          | F height           |       |
| D tobesaved              |          | F hsize            |       |
| <b>pack</b>              | boolean  | N lastr            |       |
| <b>packversion</b>       | number   | N lastx            |       |
| <b>pagestates</b>        | table    | N lasty            |       |

|                    |                  |          |
|--------------------|------------------|----------|
| F leftskip         | F whd            |          |
| F lowerleft        | F width          |          |
| F lowerright       | F x              |          |
| F markregionbox    | F xy             |          |
| F n                | F y              |          |
| F onsamepage       | <b>register</b>  | function |
| F overlapping      | <b>save</b>      | function |
| F p                | <b>structure</b> | table    |
| F page             | D collected      |          |
| F paragraph        | T components     |          |
| F parindent        | T namestack      |          |
| F position         | T tobesaved      |          |
| F r                | T branches       |          |
| F region           | S name           |          |
| F registerhandlers | S type           |          |
| F replace          | <b>variables</b> | table    |
| F rightskip        | D checksums      |          |
| F set              | D collected      |          |
| F setall           | F getchecksum    |          |
| F setregionbox     | F makechecksum   |          |
| F setspec          | F restore        |          |
| F settobesaved     | F save           |          |
| D tobesaved        | F setchecksum    |          |
| F upperleft        | D tobesaved      |          |
| F upperright       | <b>version</b>   | number   |
| F used             |                  |          |

## language (basic tex)

|                         |          |
|-------------------------|----------|
| <b>clean</b>            | function |
| <b>clearhyphenation</b> | function |
| <b>clearpatterns</b>    | function |
| <b>current</b>          | function |
| <b>gethjcode</b>        | function |
| <b>has_language</b>     | function |
| <b>hyphenate</b>        | function |
| <b>hyphenation</b>      | function |
| <b>hyphenationmin</b>   | function |

|                         |          |
|-------------------------|----------|
| <b>id</b>               | function |
| <b>new</b>              | function |
| <b>patterns</b>         | function |
| <b>postexhyphenchar</b> | function |
| <b>posthyphenchar</b>   | function |
| <b>preexhyphenchar</b>  | function |
| <b>prehyphenchar</b>    | function |
| <b>sethjcode</b>        | function |
| <b>setwordhandler</b>   | function |

# languages (context)

|                        |            |                               |            |
|------------------------|------------|-------------------------------|------------|
| <b>addgoodiesdata</b>  | function   | F installmethod               |            |
| <b>addgoodiesfile</b>  | function   | F lasttrace                   |            |
| <b>appliedoptions</b>  | table      | F loadpatterns                |            |
| <b>associate</b>       | function   | F registerexception           |            |
| <b>associated</b>      | data table | F registerpattern             |            |
| <b>association</b>     | function   | F setfeatures                 |            |
| <b>counters</b>        | data table | <b>installed</b>              | function   |
| <b>current</b>         | function   | <b>installhandler</b>         | function   |
| <b>data</b>            | data table | <b>labels</b>                 | table      |
| <b>decimals</b>        | data table | F define                      |            |
| <b>define</b>          | function   | F split                       |            |
| <b>explicitthyphen</b> | function   | <b>loadable</b>               | function   |
| <b>flatten</b>         | function   | <b>loadwords</b>              | function   |
| <b>frequencies</b>     | table      | <b>logger</b>                 | table      |
| F averagecharwidth     |            | F report                      |            |
| F getdata              |            | <b>nofflattened</b>           | function   |
| <b>getdata</b>         | function   | <b>numbers</b>                | data table |
| <b>getnumber</b>       | function   | <b>postexhyphenchar</b>       | function   |
| <b>goodiefiles</b>     | function   | <b>posthyphenchar</b>         | function   |
| <b>hjcounts</b>        | table      | <b>preexhyphenchar</b>        | function   |
| <b>hyphenate</b>       | function   | <b>prehyphenchar</b>          | function   |
| <b>hyphenators</b>     | table      | <b>registered</b>             | data table |
| T dictionaries         |            | <b>registeredactions</b>      | table      |
| D featuresets          |            | <b>replacements</b>           | table      |
| F handler              |            | F add                         |            |
| T methods              |            | F addlist                     |            |
| F expanded             |            | F handler                     |            |
| B none                 |            | F set                         |            |
| F original             |            | <b>serializediscretionary</b> | function   |
| F tex                  |            | <b>setexceptions</b>          | function   |
| F traditional          |            | <b>setgoodieshandler</b>      | function   |
| F popmethod            |            | <b>setoptions</b>             | function   |
| F pushmethod           |            | <b>setpatterns</b>            | function   |
| F setmethod            |            | <b>setsynonym</b>             | function   |
| F setup                |            | <b>setwordhandler</b>         | function   |
| F showhyphenationtrace |            | <b>showdiscretionaries</b>    | function   |
| T traditional          |            | <b>strippedgoodiewords</b>    | function   |
| F definefeatures       |            | <b>tolang</b>                 | function   |
| F gettrace             |            | <b>transliteration</b>        | table      |
| F hyphenate            |            | F exception                   |            |
| F injectthyphens       |            | F handler                     |            |

|                  |          |                          |          |
|------------------|----------|--------------------------|----------|
| F register       |          | visualizediscretionaries | function |
| F set            |          | words                    | table    |
| F use            |          | F check                  |          |
| <b>unload</b>    | function | T data                   |          |
| <b>urls</b>      | table    | F disable                |          |
| D characters     |          | F enable                 |          |
| N lefthyphenmin  |          | T enablers               |          |
| D mapping        |          | B enables                |          |
| B packslashes    |          | F found                  |          |
| N righthyphenmin |          | F load                   |          |
| F setcharacters  |          | T methods                |          |
| <b>version</b>   | number   | N threshold              |          |



# layouts (context)

**getcanvas**                   function  
**getpagedimensions**       function  
**setupcanvas**               function

**status**                   table  
    F isleftpage  
    F lefttorrightpageaction

## lfs (extra lua)

|                        |                     |
|------------------------|---------------------|
| <b>attributes</b>      | overloaded function |
| <b>chdir</b>           | overloaded function |
| <b>currentdir</b>      | function            |
| <b>dir</b>             | overloaded function |
| <b>isdir</b>           | overloaded function |
| <b>isfile</b>          | overloaded function |
| <b>isfound</b>         | function            |
| <b>isreadabledir</b>   | function            |
| <b>isreadablefile</b>  | function            |
| <b>iswriteabledir</b>  | function            |
| <b>iswriteablefile</b> | function            |

|                      |                     |
|----------------------|---------------------|
| <b>link</b>          | overloaded function |
| <b>mkdir</b>         | overloaded function |
| <b>mkdirs</b>        | function            |
| <b>modification</b>  | function            |
| <b>readlink</b>      | function            |
| <b>rmdir</b>         | overloaded function |
| <b>setexecutable</b> | function            |
| <b>symlink</b>       | function            |
| <b>symlinktarget</b> | function            |
| <b>touch</b>         | overloaded function |
| <b>walkdir</b>       | function            |

# libraries (context)

**basiclua** data table

**basictex** data table

**builtin** data table

**extralua** data table

**extratex** data table

**functions** data table

**globals** data table

**optional** data table

# lmx (context)

|                          |          |
|--------------------------|----------|
| <b>color</b>             | function |
| <b>convert</b>           | function |
| <b>convertfile</b>       | function |
| <b>convertstring</b>     | function |
| <b>einject</b>           | function |
| <b>eprint</b>            | function |
| <b>escape</b>            | function |
| <b>finalized</b>         | function |
| <b>finject</b>           | function |
| <b>fprint</b>            | function |
| <b>get</b>               | function |
| <b>getvariables</b>      | function |
| <b>htmfile</b>           | function |
| <b>html</b>              | table    |
| F a                      |          |
| F td                     |          |
| F th                     |          |
| <b>include</b>           | function |
| <b>inherited</b>         | table    |
| S color-background-four  |          |
| S color-background-one   |          |
| S color-background-three |          |
| S color-background-two   |          |
| S title                  |          |
| <b>initialize</b>        | function |
| <b>inject</b>            | function |

|                           |          |
|---------------------------|----------|
| <b>lmxfile</b>            | function |
| <b>loadedfile</b>         | function |
| <b>make</b>               | function |
| <b>new</b>                | function |
| <b>popupfile</b>          | function |
| <b>print</b>              | function |
| <b>pv</b>                 | function |
| <b>report</b>             | function |
| <b>reset</b>              | function |
| <b>result</b>             | function |
| <b>set</b>                | function |
| <b>show</b>               | function |
| <b>stripcss</b>           | function |
| <b>tv</b>                 | function |
| <b>type</b>               | function |
| <b>urlescape</b>          | function |
| <b>variable</b>           | function |
| <b>variables</b>          | table    |
| S color-background-blue   |          |
| S color-background-body   |          |
| S color-background-green  |          |
| S color-background-main   |          |
| S color-background-purple |          |
| S color-background-yellow |          |
| S title-default           |          |

# logs (context)

|                             |          |                            |          |
|-----------------------------|----------|----------------------------|----------|
| <b>application</b>          | function | <b>setformats</b>          | function |
| <b>categories</b>           | function | <b>setformatters</b>       | function |
| <b>direct</b>               | function | <b>setlogfile</b>          | function |
| <b>disable</b>              | function | <b>setmessenger</b>        | function |
| <b>enable</b>               | function | <b>setprocessor</b>        | function |
| <b>finalactions</b>         | function | <b>settarget</b>           | function |
| <b>flush</b>                | function | <b>settimedlog</b>         | function |
| <b>loggingerrors</b>        | function | <b>settranslations</b>     | function |
| <b>messenger</b>            | function | <b>show</b>                | function |
| <b>new</b>                  | function | <b>start_page_number</b>   | function |
| <b>newline</b>              | function | <b>start_run</b>           | function |
| <b>poplogfile</b>           | function | <b>startererrorlogging</b> | function |
| <b>poptarget</b>            | function | <b>startfilelogging</b>    | function |
| <b>private</b>              | table    | <b>status</b>              | function |
| F enablepagetiming          |          | <b>stop_page_number</b>    | function |
| F getpagetiming             |          | <b>stoperrorlogging</b>    | function |
| <b>pushlogfile</b>          | function | <b>stopfilelogging</b>     | function |
| <b>pushtarget</b>           | function | <b>subdirect</b>           | function |
| <b>registerfinalactions</b> | function | <b>subreport</b>           | function |
| <b>report</b>               | function | <b>system</b>              | function |
| <b>reporter</b>             | function | <b>texerrormessage</b>     | function |
| <b>resetlogfile</b>         | function | <b>writer</b>              | function |

# lpdf (context)

|                                |            |                                 |          |
|--------------------------------|------------|---------------------------------|----------|
| <b>action</b>                  | function   | <b>copystring</b>               | function |
| <b>adddocumentcolorspace</b>   | function   | <b>copyunicode</b>              | function |
| <b>adddocumenttextgstate</b>   | function   | <b>deferredobject</b>           | function |
| <b>adddocumentpattern</b>      | function   | <b>delayedobject</b>            | function |
| <b>adddocumentshade</b>        | function   | <b>destinationspecification</b> | function |
| <b>addtocatalog</b>            | function   | <b>dictionary</b>               | function |
| <b>addtoinfo</b>               | function   | <b>docstring</b>                | function |
| <b>addtonames</b>              | function   | <b>encodingvalues</b>           | table    |
| <b>addtopageattributes</b>     | function   | N base16                        |          |
| <b>addtopageresources</b>      | function   | N base85                        |          |
| <b>addtopagesattributes</b>    | function   | N decoded                       |          |
| <b>addxmpinfo</b>              | function   | N encoded                       |          |
| <b>annotationspecification</b> | function   | N plain                         |          |
| <b>array</b>                   | function   | N utf16be                       |          |
| <b>attachmentsymbols</b>       | function   | N utf16le                       |          |
| <b>boolean</b>                 | function   | <b>epdf</b>                     | table    |
| <b>border</b>                  | function   | F allcontent                    |          |
| <b>checkedkey</b>              | function   | F analyzefonts                  |          |
| <b>checkedresources</b>        | function   | F contentplugin                 |          |
| <b>checkedvalue</b>            | function   | F contenttostring               |          |
| <b>circularshade</b>           | function   | F contenttotext                 |          |
| <b>close</b>                   | function   | D encryptioncodes               |          |
| <b>cmykcode</b>                | function   | F expanded                      |          |
| <b>collectedresources</b>      | function   | F expandwidths                  |          |
| <b>color</b>                   | function   | F fontplugin                    |          |
| <b>colorspace</b>              | function   | F getpagecontent                |          |
| <b>colorspaceconstants</b>     | data table | F getstructure                  |          |
| <b>colorspec</b>               | function   | T helpers                       |          |
| <b>colorvalue</b>              | function   | F tounicodetable                |          |
| <b>colorvalues</b>             | function   | T image                         |          |
| <b>commentssymbols</b>         | function   | F close                         |          |
| <b>compressdata</b>            | function   | F copy                          |          |
| <b>compresslevel</b>           | function   | F new                           |          |
| <b>constant</b>                | function   | F open                          |          |
| <b>copyarray</b>               | function   | F query                         |          |
| <b>copyboolean</b>             | function   | F load                          |          |
| <b>copyconstant</b>            | function   | F mergewidths                   |          |
| <b>copydictionary</b>          | function   | D objectcodes                   |          |
| <b>copyfloat</b>               | function   | F objectrange                   |          |
| <b>copyinteger</b>             | function   | F objecttype                    |          |
| <b>copynumber</b>              | function   | F pageplugin                    |          |

|                               |          |                              |            |
|-------------------------------|----------|------------------------------|------------|
| F parsecontent                |          | N Password                   |            |
| F producer                    |          | N PopUp                      |            |
| T resolvers                   |          | N PushButton                 |            |
| F destinations                |          | N Radio                      |            |
| F embeddedfiles               |          | N RadiosInUnison             |            |
| F javascripts                 |          | N ReadOnly                   |            |
| F layers                      |          | N Required                   |            |
| F pages                       |          | N RichText                   |            |
| F structure                   |          | N Sort                       |            |
| F widgets                     |          | N file                       |            |
| F unload                      |          | N fixed                      |            |
| F verboseobject               |          | N nocheck                    |            |
| <b>escaped</b>                | function | N protected                  |            |
| <b>finalizeddocument</b>      | function | N readonly                   |            |
| <b>finalizepage</b>           | function | N required                   |            |
| <b>finalizesignature</b>      | function | N sorted                     |            |
| <b>finishtransparencycode</b> | function | N unavailable                |            |
| <b>flags</b>                  | table    | <b>flushfonts</b>            | function   |
| T annotations                 |          | <b>flushgroup</b>            | function   |
| N AutoView                    |          | <b>flushobject</b>           | function   |
| N Hidden                      |          | <b>flushstreamfileobject</b> | function   |
| N Invisible                   |          | <b>flushstreamobject</b>     | function   |
| N Locked                      |          | <b>fonts</b>                 | table      |
| N LockedContents              |          | F color_direct               |            |
| N NoRotate                    |          | F color_indirect             |            |
| N NoView                      |          | <b>formats</b>               | data table |
| N NoZoom                      |          | <b>frombytes</b>             | function   |
| N Print                       |          | <b>fromeight</b>             | function   |
| N Printable                   |          | <b>frompdfdoc</b>            | function   |
| N ReadOnly                    |          | <b>fromsixteen</b>           | function   |
| N ToggleNoView                |          | <b>getcatalog</b>            | function   |
| N auto                        |          | <b>getcompression</b>        | function   |
| N hidden                      |          | <b>getfontname</b>           | function   |
| N printable                   |          | <b>getfontobjectnumber</b>   | function   |
| T widgets                     |          | <b>getformatoption</b>       | function   |
| N Comb                        |          | <b>getinfo</b>               | function   |
| N CommitOnSelChange           |          | <b>getmatrix</b>             | function   |
| N DoNotScroll                 |          | <b>getnofpages</b>           | function   |
| N DoNotSpellCheck             |          | <b>getpageproperties</b>     | function   |
| N Edit                        |          | <b>getpagereference</b>      | function   |
| N FileSelect                  |          | <b>getpagetags</b>           | function   |
| N MultiLine                   |          | <b>getpos</b>                | function   |
| N NoExport                    |          | <b>gettrailerid</b>          | function   |
| N NoToggleToOff               |          | <b>getversion</b>            | function   |

|                            |          |                                  |          |
|----------------------------|----------|----------------------------------|----------|
| <b>getxformname</b>        | function | N assemble                       |          |
| <b>graycode</b>            | function | N extract                        |          |
| <b>h_hex_2</b>             | table    | N fillin                         |          |
| S                          |          | N modify                         |          |
| S                          |          | N print                          |          |
| S                          |          | N quality                        |          |
| S                          |          | <b>preparesignature</b>          | function |
| S                          |          | <b>print</b>                     | function |
| S (                        |          | <b>procset</b>                   | function |
| S )                        |          | <b>protectresources</b>          | boolean  |
| S \                        |          | <b>quads</b>                     | function |
| <b>h_hex_4</b>             | table    | <b>rectangle</b>                 | function |
| <b>hasmatrix</b>           | function | <b>reference</b>                 | function |
| <b>immediateobject</b>     | function | <b>registerannotation</b>        | function |
| <b>includeimage</b>        | function | <b>registerdestination</b>       | function |
| <b>initialize</b>          | function | <b>registerdocumentfinalizer</b> | function |
| <b>injectors</b>           | table    | <b>registerfontmethod</b>        | function |
| F bitmap                   |          | <b>registerinitializer</b>       | function |
| F jp2                      |          | <b>registerpagefinalizer</b>     | function |
| F jpg                      |          | <b>registerpattern</b>           | function |
| F png                      |          | <b>registersignature</b>         | function |
| <b>injectxmpinfo</b>       | function | <b>replacexmpinfo</b>            | function |
| <b>insertxmpinfo</b>       | function | <b>reserveobject</b>             | function |
| <b>lastreferredpage</b>    | function | <b>rgbcode</b>                   | function |
| <b>layerreference</b>      | function | <b>rotationcm</b>                | function |
| <b>limited</b>             | function | <b>setcompression</b>            | function |
| <b>linearshade</b>         | function | <b>setencryption</b>             | function |
| <b>literal</b>             | function | <b>setpageorder</b>              | function |
| <b>majorversion</b>        | function | <b>setpagestate</b>              | function |
| <b>makenametree</b>        | function | <b>setpagetag</b>                | function |
| <b>minorversion</b>        | function | <b>setversion</b>                | function |
| <b>noffontregistries</b>   | function | <b>sharedobject</b>              | function |
| <b>nofpages</b>            | function | <b>shareobject</b>               | function |
| <b>null</b>                | function | <b>shareobjectreference</b>      | function |
| <b>number</b>              | function | <b>spotcode</b>                  | function |
| <b>object</b>              | function | <b>stream</b>                    | function |
| <b>objectcompresslevel</b> | function | <b>string</b>                    | function |
| <b>pagereference</b>       | function | <b>supportedformats</b>          | function |
| <b>patternstream</b>       | function | <b>tocidset</b>                  | function |
| <b>pdfcolor</b>            | function | <b>toeight</b>                   | function |
| <b>pdftimestamp</b>        | function | <b>topdfdoc</b>                  | function |
| <b>permissions</b>         | table    | <b>topermissions</b>             | function |
| N access                   |          | <b>tosixteen</b>                 | function |
| N add                      |          | <b>transparency</b>              | function |



|                           |          |                               |            |
|---------------------------|----------|-------------------------------|------------|
| <b>transparencycode</b>   | function | N dejavusansmonoboldttf-1-0-0 |            |
| <b>transparencygroups</b> | table    | <b>usedfontobjects</b>        | table      |
| B none                    |          | N dejavusansmonoboldttf-1-0-0 |            |
| <b>transparencyvalue</b>  | function | <b>usedfontstreams</b>        | data table |
| <b>unicode</b>            | function | <b>usedindices</b>            | table      |
| <b>usedcharacters</b>     | table    | T dejavusansmonoboldttf-1-0-0 |            |
| <b>usedfontnames</b>      | table    | <b>verbose</b>                | function   |

## lpeg (basic lua)

|                     |          |                              |            |
|---------------------|----------|------------------------------|------------|
| <b>B</b>            | function | <b>firstofsplit</b>          | function   |
| <b>C</b>            | function | <b>frontstripper</b>         | function   |
| <b>Carg</b>         | function | <b>instringchecker</b>       | function   |
| <b>Cb</b>           | function | <b>is_lpeg</b>               | function   |
| <b>Cc</b>           | function | <b>keeper</b>                | function   |
| <b>Cf</b>           | function | <b>locale</b>                | function   |
| <b>Cg</b>           | function | <b>match</b>                 | function   |
| <b>Cmt</b>          | function | <b>oneof</b>                 | function   |
| <b>Cp</b>           | function | <b>patterns</b>              | data table |
| <b>Cs</b>           | function | <b>pcode</b>                 | function   |
| <b>Ct</b>           | function | <b>print</b>                 | function   |
| <b>P</b>            | function | <b>ptree</b>                 | function   |
| <b>R</b>            | function | <b>replacer</b>              | function   |
| <b>S</b>            | function | <b>secondofsplit</b>         | function   |
| <b>UP</b>           | function | <b>setmaxstack</b>           | function   |
| <b>UR</b>           | function | <b>setutfcasers</b>          | function   |
| <b>US</b>           | function | <b>split</b>                 | function   |
| <b>V</b>            | function | <b>splitat</b>               | function   |
| <b>afterprefix</b>  | function | <b>splitter</b>              | function   |
| <b>anywhere</b>     | function | <b>stripper</b>              | function   |
| <b>append</b>       | function | <b>times</b>                 | function   |
| <b>balancer</b>     | function | <b>tsplitat</b>              | function   |
| <b>beforesuffix</b> | function | <b>tsplitter</b>             | function   |
| <b>checkedsplit</b> | function | <b>type</b>                  | function   |
| <b>containsws</b>   | function | <b>utfR</b>                  | function   |
| <b>counter</b>      | function | <b>utfchartabletopattern</b> | function   |
| <b>endstripper</b>  | function | <b>utfreplacer</b>           | function   |
| <b>finder</b>       | function | <b>version</b>               | string     |

## lua (basic tex)

|                            |                     |                                |            |
|----------------------------|---------------------|--------------------------------|------------|
| <b>addnibble</b>           | function            | <b>getruntime</b>              | function   |
| <b>bytecode</b>            | table               | <b>getstacktop</b>             | function   |
| <b>bytedata</b>            | data table          | <b>getstartupfile</b>          | function   |
| <b>bytdone</b>             | table               | <b>getstringkeys</b>           | function   |
| <b>callbytecode</b>        | function            | <b>getversion</b>              | function   |
| <b>comparekeys</b>         | function            | <b>lastbytecode</b>            | number     |
| <b>finalizeinitex</b>      | function            | <b>messages</b>                | data table |
| <b>firstbytecode</b>       | number              | <b>newindex</b>                | function   |
| <b>get_functions_table</b> | function            | <b>newtable</b>                | function   |
| <b>getallkeys</b>          | function            | <b>numbers</b>                 | data table |
| <b>getbytecode</b>         | function            | <b>registercode</b>            | function   |
| <b>getcheckedkeys</b>      | function            | <b>registeredcodes</b>         | function   |
| <b>getcurrenttime</b>      | function            | <b>registerinitexfinalizer</b> | function   |
| <b>getdebuginfo</b>        | function            | <b>registername</b>            | function   |
| <b>getexitcode</b>         | function            | <b>setbytecode</b>             | function   |
| <b>getfunctionstable</b>   | overloaded function | <b>setexitcode</b>             | function   |
| <b>getnibble</b>           | function            | <b>setnibble</b>               | function   |
| <b>getnumerickeys</b>      | function            | <b>startupfile</b>             | string     |
| <b>getpreciseseconds</b>   | function            | <b>subnibble</b>               | function   |
| <b>getpreciseticks</b>     | function            | <b>version</b>                 | string     |

## luac (extra lua)

```
inspect function  
print    function
```

# luatex (context)

|                             |          |                    |          |
|-----------------------------|----------|--------------------|----------|
| <b>abort</b>                | function | F disable          |          |
| <b>cleanup</b>              | function | F enable           |          |
| <b>cleanuptempfiles</b>     | function | F finish           |          |
| <b>currentfile</b>          | function | F pause            |          |
| <b>currentlevel</b>         | function | F popline          |          |
| <b>currenttotal</b>         | function | F pushline         |          |
| <b>poprunstate</b>          | function | F registerdisabler |          |
| <b>pushrunstate</b>         | function | F registerenabler  |          |
| <b>registerdumpactions</b>  | function | F resetfilename    |          |
| <b>registerpageactions</b>  | function | F resume           |          |
| <b>registerstartactions</b> | function | F setfilename      |          |
| <b>registerstopactions</b>  | function | F setup            |          |
| <b>registertempfile</b>     | function | F start            |          |
| <b>starttime</b>            | number   | F stop             |          |
| <b>synctex</b>              | table    | F wrapup           |          |
| F blockfilename             |          | <b>wrapup</b>      | function |
| F collect                   |          |                    |          |

# lxml (context)

|                          |            |                         |                     |
|--------------------------|------------|-------------------------|---------------------|
| <b>addindex</b>          | function   | <b>filter</b>           | function            |
| <b>all</b>               | function   | <b>filterlist</b>       | function            |
| <b>applyfunction</b>     | function   | <b>first</b>            | function            |
| <b>applyselectors</b>    | function   | <b>flush</b>            | function            |
| <b>att</b>               | function   | <b>flushlinewise</b>    | function            |
| <b>attribute</b>         | function   | <b>flushsetups</b>      | function            |
| <b>badinclusions</b>     | function   | <b>flushspacewise</b>   | function            |
| <b>chainattribute</b>    | function   | <b>get_id</b>           | <del>function</del> |
| <b>checkindex</b>        | function   | <b>getid</b>            | function            |
| <b>collected</b>         | function   | <b>getindex</b>         | function            |
| <b>command</b>           | function   | <b>id</b>               | function            |
| <b>concat</b>            | function   | <b>idsplitter</b>       | userdata            |
| <b>concatrange</b>       | function   | <b>ifatt</b>            | function            |
| <b>content</b>           | function   | <b>ifattempty</b>       | function            |
| <b>context</b>           | function   | <b>include</b>          | function            |
| <b>convert</b>           | function   | <b>inclusion</b>        | function            |
| <b>count</b>             | function   | <b>inclusions</b>       | function            |
| <b>delete</b>            | function   | <b>index</b>            | function            |
| <b>depth</b>             | function   | <b>inlineverbatimim</b> | function            |
| <b>direct</b>            | function   | <b>installsetup</b>     | function            |
| <b>directives</b>        | table      | <b>last</b>             | function            |
| F after                  |            | <b>lastatt</b>          | function            |
| F before                 |            | <b>lastmatch</b>        | function            |
| F handle                 |            | <b>lastpar</b>          | function            |
| F load                   |            | <b>load</b>             | function            |
| F setup                  |            | <b>loadbuffer</b>       | function            |
| <b>displayverbatimim</b> | function   | <b>loaddata</b>         | function            |
| <b>doif</b>              | function   | <b>loaded</b>           | table               |
| <b>doifelse</b>          | function   | <b>main</b>             | function            |
| <b>doifelseempty</b>     | function   | <b>match</b>            | function            |
| <b>doifelsetext</b>      | function   | <b>name</b>             | function            |
| <b>doifempty</b>         | function   | <b>namespace</b>        | function            |
| <b>doifnot</b>           | function   | <b>nonspace</b>         | function            |
| <b>doifnotempty</b>      | function   | <b>par</b>              | function            |
| <b>doifnottext</b>       | function   | <b>param</b>            | function            |
| <b>doiftext</b>          | function   | <b>parameter</b>        | function            |
| <b>element</b>           | function   | <b>path</b>             | function            |
| <b>elements</b>          | function   | <b>popmatch</b>         | function            |
| <b>entities</b>          | data table | <b>pos</b>              | function            |
| <b>fileline</b>          | function   | <b>position</b>         | function            |
| <b>filename</b>          | function   | <b>pure</b>             | function            |

|                         |          |
|-------------------------|----------|
| <b>pushmatch</b>        | function |
| <b>raw</b>              | function |
| <b>rawroot</b>          | function |
| <b>rawtex</b>           | function |
| <b>refatt</b>           | function |
| <b>register</b>         | function |
| <b>registerentity</b>   | function |
| <b>removesetup</b>      | function |
| <b>replace</b>          | function |
| <b>resetcdata</b>       | function |
| <b>resetsetups</b>      | function |
| <b>resolvedentity</b>   | function |
| <b>root</b>             | function |
| <b>save</b>             | function |
| <b>serialize</b>        | function |
| <b>setaction</b>        | function |
| <b>setatt</b>           | function |
| <b>setattribute</b>     | function |
| <b>setcdata</b>         | function |
| <b>setcommandtonone</b> | function |
| <b>setcommandtotext</b> | function |
| <b>setpar</b>           | function |
| <b>setparam</b>         | function |
| <b>setparameter</b>     | function |
| <b>setsetup</b>         | function |
| <b>snippet</b>          | function |

|                         |            |
|-------------------------|------------|
| <b>sorters</b>          | table      |
| F add                   |            |
| F compare               |            |
| F flush                 |            |
| F reset                 |            |
| F show                  |            |
| F sort                  |            |
| <b>splitid</b>          | function   |
| <b>startraw</b>         | function   |
| <b>startunesescaped</b> | function   |
| <b>stopraw</b>          | function   |
| <b>stopunesescaped</b>  | function   |
| <b>store</b>            | function   |
| <b>strip</b>            | function   |
| <b>stripped</b>         | function   |
| <b>tag</b>              | function   |
| <b>texatt</b>           | function   |
| <b>text</b>             | function   |
| <b>tobuffer</b>         | function   |
| <b>tofile</b>           | function   |
| <b>toparameters</b>     | function   |
| <b>toverbatim</b>       | function   |
| <b>verbatim</b>         | function   |
| <b>withindex</b>        | function   |
| <b>xmltexhandler</b>    | data table |

## math (basic lua)

|                    |          |                       |                     |
|--------------------|----------|-----------------------|---------------------|
| <b>abs</b>         | function | <b>min</b>            | function            |
| <b>acos</b>        | function | <b>mininteger</b>     | number              |
| <b>asin</b>        | function | <b>mod</b>            | function            |
| <b>atan</b>        | function | <b>modf</b>           | function            |
| <b>atan2</b>       | function | <b>odd</b>            | function            |
| <b>ceil</b>        | function | <b>pi</b>             | number              |
| <b>ceiling</b>     | function | <b>pow</b>            | function            |
| <b>cos</b>         | function | <b>rad</b>            | function            |
| <b>cosd</b>        | function | <b>random</b>         | overloaded function |
| <b>cosh</b>        | function | <b>randomseed</b>     | function            |
| <b>deg</b>         | function | <b>round</b>          | function            |
| <b>div</b>         | function | <b>setrandomseedi</b> | function            |
| <b>even</b>        | function | <b>sin</b>            | function            |
| <b>exp</b>         | function | <b>sind</b>           | function            |
| <b>floor</b>       | function | <b>sinh</b>           | function            |
| <b>fmod</b>        | function | <b>sqrt</b>           | function            |
| <b>huge</b>        | number   | <b>tan</b>            | function            |
| <b>initialseed</b> | number   | <b>tand</b>           | function            |
| <b>ldexp</b>       | function | <b>tanh</b>           | function            |
| <b>log</b>         | function | <b>tointeger</b>      | function            |
| <b>log10</b>       | function | <b>type</b>           | function            |
| <b>max</b>         | function | <b>ult</b>            | function            |
| <b>maxinteger</b>  | number   |                       |                     |



# mathematics (context)

|                               |            |                             |            |
|-------------------------------|------------|-----------------------------|------------|
| <b>addfallbacks</b>           | function   | <b>familyname</b>           | function   |
| <b>addvariant</b>             | function   | <b>functiontype</b>         | function   |
| <b>alphabets</b>              | data table | <b>gaps</b>                 | data table |
| <b>alternatives</b>           | data table | <b>getblobindex</b>         | function   |
| <b>beforepassingfonttotex</b> | function   | <b>getboth</b>              | function   |
| <b>big</b>                    | function   | <b>getdomainname</b>        | function   |
| <b>boldmap</b>                | data table | <b>getextensibledata</b>    | function   |
| <b>categories</b>             | table      | <b>getmathblob</b>          | function   |
| D functions                   |            | <b>getoptionallabel</b>     | function   |
| <b>charactersets</b>          | data table | <b>getstyle</b>             | function   |
| <b>checkaftercopyingfont</b>  | function   | <b>gettextblob</b>          | function   |
| <b>classes</b>                | data table | <b>getverboselabel</b>      | function   |
| <b>classnames</b>             | data table | <b>horizontalcode</b>       | function   |
| <b>codes</b>                  | data table | <b>initializeparameters</b> | function   |
| <b>define</b>                 | function   | <b>makefont</b>             | function   |
| <b>dictionaries</b>           | table      | <b>mapremap</b>             | data table |
| D data                        |            | <b>markblobindexdone</b>    | function   |
| D defaults                    |            | <b>overloadparameters</b>   | function   |
| D groups                      |            | <b>preset</b>               | function   |
| F groupset                    |            | <b>presets</b>              | table      |
| F groupsetgroup               |            | T less                      |            |
| F name                        |            | T more                      |            |
| D names                       |            | T zero                      |            |
| F registercharacter           |            | <b>privatebase</b>          | number     |
| F registergroup               |            | <b>registerextensible</b>   | function   |
| F registergroupset            |            | <b>registersimplematrix</b> | function   |
| D sets                        |            | <b>registerverboselabel</b> | function   |
| D variants                    |            | <b>remapalphabets</b>       | function   |
| <b>dimensions</b>             | function   | <b>renderextensible</b>     | function   |
| <b>disablecollecting</b>      | function   | <b>renderings</b>           | table      |
| <b>domainlabels</b>           | table      | D mappings                  |            |
| <b>domainnames</b>            | table      | D numbers                   |            |
| N default                     |            | D sets                      |            |
| <b>enablecollecting</b>       | function   | <b>renderset</b>            | function   |
| <b>extensiblecode</b>         | function   | <b>resetattributes</b>      | function   |
| <b>extensibles</b>            | data table | <b>scaleparameters</b>      | function   |
| <b>extrabase</b>              | number     | <b>setextensibledata</b>    | function   |
| <b>fallbacks</b>              | table      | <b>setmathsymbol</b>        | function   |
| F apply                       |            | <b>sets</b>                 | data table |
| F install                     |            | <b>setsnapping</b>          | function   |
| <b>fallbackstyleattr</b>      | function   | <b>setvariant</b>           | function   |

|                               |            |                        |
|-------------------------------|------------|------------------------|
| <b>styles</b>                 | data table | F fixaccents           |
| <b>syncboth</b>               | function   | F fixellipses          |
| <b>syncname</b>               | function   | F fixintegrals         |
| <b>syncstyle</b>              | function   | F fixoldschool         |
| <b>tagging</b>                | table      | F fixprimes            |
| B mfenced                     |            | F fixradicals          |
| <b>toengineclass</b>          | function   | F fixslashes           |
| <b>toname</b>                 | function   | F fixvariants          |
| <b>tostyle</b>                | function   | F flattenaccents       |
| <b>tweakaftercopyingfont</b>  | function   | F fontname             |
| <b>tweakbeforecopyingfont</b> | function   | F inspect              |
| <b>tweaks</b>                 | table      | F keepbases            |
| F accentdimensions            |            | F kernpairs            |
| F action                      |            | F kerns                |
| F addactuarian                |            | T kernsets             |
| F addarrows                   |            | T .,                   |
| F addbars                     |            | F margins              |
| F addcomposites               |            | F message              |
| F addequals                   |            | F moveitalics          |
| F addfourier                  |            | F movelimits           |
| F addmirrors                  |            | F parameters           |
| F addparts                    |            | F radicalbodymargins   |
| F addprivates                 |            | F radicaldegreeanchors |
| F addrules                    |            | F replace              |
| F addscripts                  |            | F replacealphabets     |
| F bigslots                    |            | F replacerules         |
| F checkaccents                |            | F setoptions           |
| F checkspacing                |            | F setovershoots        |
| F copyaccents                 |            | F showinfo             |
| T datasets                    |            | F simplifykerns        |
| T accentdimensions            |            | F sortvariants         |
| T accent                      |            | F staircase            |
| T over                        |            | T subsets              |
| T under                       |            | T acenorsuvxz          |
| T addarrows                   |            | T bhklt                |
| T addscripts                  |            | T d                    |
| T checkspacing                |            | T dotless              |
| T copyaccents                 |            | T f                    |
| T fixprimes                   |            | T gjqy                 |
| T fixslashes                  |            | T horizontalfences     |
| T wipecues                    |            | T i                    |
| F dimensions                  |            | T integrals            |
| F extendaccents               |            | T letterlike           |
| F fallbacks                   |            | T mw                   |

|                |                       |            |
|----------------|-----------------------|------------|
| T p            | <b>utfmathaccent</b>  | function   |
| F substitute   | <b>utfmathclass</b>   | function   |
| F topanchors   | <b>utfmathcommand</b> | function   |
| F tweaks       | <b>utfmathfiller</b>  | function   |
| F version      | <b>utfmathstretch</b> | function   |
| F wipeanchors  | <b>variantcode</b>    | function   |
| F wipecues     | <b>variantcount</b>   | function   |
| F wipeitalics  | <b>virtualize</b>     | function   |
| F wipevariants | <b>virtualized</b>    | data table |

## md5 (extra lua)

|            |          |
|------------|----------|
| <b>HEX</b> | function |
| <b>dec</b> | function |
| <b>hex</b> | function |

|                |          |
|----------------|----------|
| <b>sum</b>     | function |
| <b>sumHEXA</b> | function |
| <b>sumhexa</b> | function |

# metapost (context)

|                           |          |                   |
|---------------------------|----------|-------------------|
| <b>checkformat</b>        | function | N newinternal     |
| <b>checktracingonline</b> | function | N nullary         |
| <b>cm</b>                 | function | N numeric         |
| <b>codes</b>              | table    | N of              |
| N addto                   |          | N ofbinary        |
| N ampersand               |          | N onlyset         |
| N and                     |          | N parametertype   |
| N assignment              |          | N pathconnect     |
| N atleast                 |          | N pathjoin        |
| N begingroup              |          | N plusorminus     |
| N btex                    |          | N primarybinary   |
| N capsule                 |          | N primarydef      |
| N colon                   |          | N property        |
| N comma                   |          | N protection      |
| N controls                |          | N relax           |
| N curl                    |          | N repeatloop      |
| N cycle                   |          | N rightbrace      |
| N definedmacro            |          | N rightbracket    |
| N delimiters              |          | N rightdelimiter  |
| N endgroup                |          | N runscript       |
| N equals                  |          | N save            |
| N etex                    |          | N scantokens      |
| N everyjob                |          | N secondarybinary |
| N exittest                |          | N secondarydef    |
| N expandafter             |          | N semicolon       |
| N fiorelse                |          | N setbounds       |
| N if                      |          | N shipout         |
| N input                   |          | N show            |
| N interim                 |          | N slash           |
| N internal                |          | N step            |
| N iteration               |          | N stop            |
| N leftbrace               |          | N str             |
| N leftbracket             |          | N string          |
| N leftdelimiter           |          | N tag             |
| N let                     |          | N tension         |
| N macrodef                |          | N tertiarybinary  |
| N macrospecial            |          | N tertiarydef     |
| N maketext                |          | N thingstoadd     |
| N message                 |          | N to              |
| N mode                    |          | N typename        |
| N newbytemap              |          | N unary           |

|                          |            |                             |          |
|--------------------------|------------|-----------------------------|----------|
| N undefinedcs            |            | <b>getparameter</b>         | function |
| N until                  |            | <b>getparameterpreset</b>   | function |
| N void                   |            | <b>getparameterset</b>      | function |
| N with                   |            | <b>getrecord</b>            | function |
| N within                 |            | <b>getstatistics</b>        | function |
| N write                  |            | <b>gettext</b>              | function |
| <b>colorinitializer</b>  | function   | <b>gettolerance</b>         | function |
| <b>convert</b>           | function   | <b>graphic</b>              | function |
| <b>currentmpx</b>        | function   | <b>graphic_base_pass</b>    | function |
| <b>currentmpxstatus</b>  | function   | <b>hascurvature</b>         | function |
| <b>defaultformat</b>     | string     | <b>includesvgbuffer</b>     | function |
| <b>defaultinstance</b>   | string     | <b>includesvgfile</b>       | function |
| <b>defaultmethod</b>     | string     | <b>installplugin</b>        | function |
| <b>directrun</b>         | function   | <b>isobject</b>             | function |
| <b>escaped</b>           | function   | <b>knownparameters</b>      | table    |
| <b>exectime</b>          | table      | <b>lastlog</b>              | string   |
| <b>extensiondata</b>     | data table | <b>load</b>                 | function |
| <b>filterclippath</b>    | function   | <b>maketext</b>             | function |
| <b>flush</b>             | function   | <b>mesh</b>                 | function |
| <b>flushers</b>          | table      | <b>metafonts</b>            | table    |
| T pdf                    |            | <b>metafun</b>              | table    |
| F flushfigure            |            | F interpolate               |          |
| F startfigure            |            | F topath                    |          |
| F stopfigure             |            | <b>mptopdf</b>              | table    |
| F textfigure             |            | F convertmpstopdf           |          |
| F tocomment              |            | N nofconverted              |          |
| <b>flushnormalpath</b>   | function   | <b>n</b>                    | number   |
| <b>fonts</b>             | table      | <b>newlogger</b>            | function |
| F define                 |            | <b>nofruns</b>              | number   |
| <b>format_number</b>     | function   | <b>nofscriptruns</b>        | function |
| <b>format_string</b>     | function   | <b>nvformat</b>             | function |
| <b>formatnumber</b>      | function   | <b>pdf literals</b>         | function |
| <b>getbackendoption</b>  | function   | <b>pluginactions</b>        | function |
| <b>getbendtolerance</b>  | function   | <b>popformat</b>            | function |
| <b>getbuffer</b>         | function   | <b>popscriptrunner</b>      | function |
| <b>getclippath</b>       | function   | <b>popvariable</b>          | function |
| <b>getextensions</b>     | function   | <b>popvariables</b>         | function |
| <b>getextradata</b>      | function   | <b>preparetexttextsdata</b> | function |
| <b>gethashentries</b>    | function   | <b>process</b>              | function |
| <b>getinstancebyname</b> | function   | <b>processing</b>           | function |
| <b>getinstanceinfo</b>   | function   | <b>processplugins</b>       | function |
| <b>getinstancenames</b>  | function   | <b>properties</b>           | table    |
| <b>getjobdata</b>        | function   | <b>pushformat</b>           | function |
| <b>getmovetolerance</b>  | function   | <b>pushscriptrunner</b>     | function |

|                            |          |                         |          |
|----------------------------|----------|-------------------------|----------|
| <b>pushvariable</b>        | function | <b>N bp</b>             |          |
| <b>pushvariables</b>       | function | <b>N cm</b>             |          |
| <b>quionerror</b>          | boolean  | <b>N em</b>             |          |
| <b>reducetogray</b>        | boolean  | <b>N ex</b>             |          |
| <b>registerdirect</b>      | function | <b>N in</b>             |          |
| <b>registerscript</b>      | function | <b>N mm</b>             |          |
| <b>registertokens</b>      | function | <b>N pc</b>             |          |
| <b>remappedtext</b>        | function | <b>N pt</b>             |          |
| <b>remaptext</b>           | function | <b>N px</b>             |          |
| <b>reporterror</b>         | function | <b>svgglyphtomp</b>     | function |
| <b>reportsvgfonts</b>      | function | <b>svgshapetomp</b>     | function |
| <b>reset</b>               | function | <b>svgshapestopdf</b>   | function |
| <b>resetbackendoptions</b> | function | <b>svgsplitcolor</b>    | function |
| <b>resetlastlog</b>        | function | <b>svgtomp</b>          | function |
| <b>resetplugins</b>        | function | <b>svgtopdf</b>         | function |
| <b>run</b>                 | function | <b>sxsy</b>             | function |
| <b>runinternal</b>         | function | <b>tex</b>              | table    |
| <b>runscript</b>           | function | <b>F get</b>            |          |
| <b>scanparameters</b>      | function | <b>F reset</b>          |          |
| <b>scriptindex</b>         | function | <b>F set</b>            |          |
| <b>setbendtolerance</b>    | function | <b>F setfrombuffer</b>  |          |
| <b>setbuffer</b>           | function | <b>texerrors</b>        | boolean  |
| <b>setextensions</b>       | function | <b>texexp</b>           | function |
| <b>setlogging</b>          | function | <b>theclippath</b>      | function |
| <b>setmovetolerance</b>    | function | <b>tographic</b>        | function |
| <b>setoutercolor</b>       | function | <b>totable</b>          | function |
| <b>setparameter</b>        | function | <b>types</b>            | table    |
| <b>setparameterset</b>     | function | <b>N boolean</b>        |          |
| <b>setrecord</b>           | function | <b>N cmykcolor</b>      |          |
| <b>settext</b>             | function | <b>N color</b>          |          |
| <b>settolerance</b>        | function | <b>N dependent</b>      |          |
| <b>setvariable</b>         | function | <b>N independent</b>    |          |
| <b>showlog</b>             | boolean  | <b>N known</b>          |          |
| <b>showsvgpage</b>         | function | <b>N nep</b>            |          |
| <b>simple</b>              | function | <b>N numeric</b>        |          |
| <b>splitprescript</b>      | function | <b>N pair</b>           |          |
| <b>startgraphic</b>        | function | <b>N path</b>           |          |
| <b>startsvghashing</b>     | function | <b>N pen</b>            |          |
| <b>stopgraphic</b>         | function | <b>N picture</b>        |          |
| <b>stopsvghashing</b>      | function | <b>N protodependent</b> |          |
| <b>svformat</b>            | function | <b>N string</b>         |          |
| <b>svgcolorremapper</b>    | function | <b>N structured</b>     |          |
| <b>svgfactors</b>          | table    | <b>N suffixedmacro</b>  |          |
| <b>N %</b>                 |          | <b>N tokenlist</b>      |          |

|                  |                      |          |
|------------------|----------------------|----------|
| N transform      | N unsuffixedmacro    |          |
| N unknownboolean | N vacuous            |          |
| N unknownnep     | <b>typesvgpage</b>   | function |
| N unknownpath    | <b>unload</b>        | function |
| N unknownpen     | <b>untagvariable</b> | function |
| N unknownpicture | <b>variables</b>     | table    |
| N unknownstring  |                      |          |



## mime (context)

**b64** function

**decode** function

**decodet** table

F base64

F quoted-printable

**dot** function

**encode** function

**encodet** table

F base64

F quoted-printable

**eol** function

**normalize** function

**qp** function

**qpwrp** function

**report** function

**stuff** function

**unb64** function

**unqp** function

**wrap** function

**wrapt** table

F base64

F default

F quoted-printable

F text

**wrp** function

# mp (context)

|                               |          |                                      |          |
|-------------------------------|----------|--------------------------------------|----------|
| <b>autoinject</b>             | function | <b>format</b>                        | function |
| <b>aux</b>                    | function | <b>formatted</b>                     | function |
| F boolean                     |          | <b>fprint</b>                        | function |
| F color                       |          | <b>get</b>                           | table    |
| F direct                      |          | F hashentry                          |          |
| F draw                        |          | <b>getbytemap</b>                    | function |
| F fill                        |          | <b>getbytemapdata</b>                | function |
| F flush                       |          | <b>getlastaddtype</b>                | function |
| F fprint                      |          | <b>graphformat</b>                   | function |
| F integer                     |          | <b>inject</b>                        | function |
| F number                      |          | F boolean                            |          |
| F numeric                     |          | F cmykcolor                          |          |
| F pair                        |          | F color                              |          |
| F pairpoints                  |          | F integer                            |          |
| F path                        |          | F number                             |          |
| F pathpoints                  |          | F numeric                            |          |
| F points                      |          | F pair                               |          |
| F print                       |          | F path                               |          |
| F quadruple                   |          | F pt                                 |          |
| F quadruplepoints             |          | F quadruplet                         |          |
| F quoted                      |          | F string                             |          |
| F size                        |          | F transform                          |          |
| F string                      |          | F triplet                            |          |
| F transform                   |          | F vector                             |          |
| F triplet                     |          | F vectors                            |          |
| F tripletpoints               |          | F whatever                           |          |
| F vprint                      |          | F whd                                |          |
| <b>boolean</b>                | function | F xy                                 |          |
| <b>bytemap_load_from_file</b> | function | <b>integer</b>                       | function |
| <b>cleaned</b>                | function | <b>lmt_color_functions</b>           | table    |
| <b>color</b>                  | function | F shade                              |          |
| <b>dataset</b>                | function | F step                               |          |
| <b>datasets</b>               | function | <b>lmt_contours_bitmap_get</b>       | function |
| F load                        |          | <b>lmt_contours_bitmap_set</b>       | function |
| <b>direct</b>                 | function | <b>lmt_contours_cleanup</b>          | function |
| <b>draw</b>                   | function | <b>lmt_contours_color</b>            | function |
| <b>expandtex</b>              | function | <b>lmt_contours_edge_get_band</b>    | function |
| <b>fill</b>                   | function | <b>lmt_contours_edge_get_cell</b>    | function |
| <b>fillbytemap</b>            | function | <b>lmt_contours_edge_paths</b>       | function |
| <b>flatten</b>                | function | <b>lmt_contours_edge_set</b>         | function |
| <b>flush</b>                  | function | <b>lmt_contours_edge_set_by_band</b> | function |

|                                      |          |                               |          |
|--------------------------------------|----------|-------------------------------|----------|
| <b>lmt_contours_edge_set_by_cell</b> | function | <b>mf_blob_dimensions</b>     | function |
| <b>lmt_contours_format</b>           | function | <b>mf_blob_index</b>          | function |
| <b>lmt_contours_function</b>         | function | <b>mf_blob_new</b>            | function |
| <b>lmt_contours_maxmean</b>          | function | <b>mf_blob_raw_content</b>    | function |
| <b>lmt_contours_maxz</b>             | function | <b>mf_blob_raw_dimensions</b> | function |
| <b>lmt_contours_minmean</b>          | function | <b>mf_blob_raw_reset</b>      | function |
| <b>lmt_contours_minz</b>             | function | <b>mf_blob_raw_toutf</b>      | function |
| <b>lmt_contours_nofvalues</b>        | function | <b>mf_blob_raw_wipe</b>       | function |
| <b>lmt_contours_nx</b>               | function | <b>mf_blob_size</b>           | function |
| <b>lmt_contours_ny</b>               | function | <b>mf_blob_width</b>          | function |
| <b>lmt_contours_range</b>            | function | <b>mf_external_figure</b>     | function |
| <b>lmt_contours_shade_paths</b>      | function | <b>mf_finish_saving_data</b>  | function |
| <b>lmt_contours_shade_set</b>        | function | <b>mf_formatted_text</b>      | function |
| <b>lmt_contours_shape_paths</b>      | function | <b>mf_get_outline_text</b>    | function |
| <b>lmt_contours_start</b>            | function | <b>mf_graphic_text</b>        | function |
| <b>lmt_contours_stop</b>             | function | <b>mf_inject_blob</b>         | function |
| <b>lmt_contours_value</b>            | function | <b>mf_map_move</b>            | function |
| <b>lmt_contours_xrange</b>           | function | <b>mf_map_text</b>            | function |
| <b>lmt_contours_yrange</b>           | function | <b>mf_named_color</b>         | function |
| <b>lmt_function_x</b>                | function | <b>mf_outline_text</b>        | function |
| <b>lmt_glyphshape_accent</b>         | function | <b>mf_save_data</b>           | function |
| <b>lmt_glyphshape_baseline</b>       | function | <b>mf_script_index</b>        | function |
| <b>lmt_glyphshape_boundingbox</b>    | function | <b>mf_start_saving_data</b>   | function |
| <b>lmt_glyphshape_depth</b>          | function | <b>mf_stop_saving_data</b>    | function |
| <b>lmt_glyphshape_height</b>         | function | <b>mode</b>                   | function |
| <b>lmt_glyphshape_italic</b>         | function | <b>n</b>                      | function |
| <b>lmt_glyphshape_llx</b>            | function | <b>newbytemap</b>             | function |
| <b>lmt_glyphshape_n</b>              | function | <b>number</b>                 | function |
| <b>lmt_glyphshape_path</b>           | function | <b>numeric</b>                | function |
| <b>lmt_glyphshape_start</b>          | function | <b>pair</b>                   | function |
| <b>lmt_glyphshape_stop</b>           | function | <b>pairpoints</b>             | function |
| <b>lmt_glyphshape_usedbox</b>        | function | <b>path</b>                   | function |
| <b>lmt_glyphshape_usedline</b>       | function | <b>pathpoints</b>             | function |
| <b>lmt_glyphshape_width</b>          | function | <b>points</b>                 | function |
| <b>lmt_mesh_set</b>                  | function | <b>print</b>                  | function |
| <b>lmt_mesh_update</b>               | function | F boolean                     |          |
| <b>lmt_poisson_generate</b>          | function | F color                       |          |
| <b>lmt_start_potrace</b>             | function | F direct                      |          |
| <b>lmt_step_potrace</b>              | function | F draw                        |          |
| <b>lmt_stop_potrace</b>              | function | F fill                        |          |
| <b>lmt_surface_do</b>                | function | F flush                       |          |
| <b>lmt_svg_include</b>               | function | F fprint                      |          |
| <b>mesh_register</b>                 | function | F integer                     |          |
| <b>mf_blob_add</b>                   | function | F number                      |          |

|                        |          |                      |          |
|------------------------|----------|----------------------|----------|
| F numeric              |          | F next               |          |
| F pair                 |          | F number             |          |
| F pairpoints           |          | F numeric            |          |
| F path                 |          | F pair               |          |
| F pathpoints           |          | F path               |          |
| F points               |          | F pen                |          |
| F print                |          | F property           |          |
| F quadruple            |          | F string             |          |
| F quadruplepoints      |          | F symbol             |          |
| F quoted               |          | F token              |          |
| F size                 |          | T tokenscanners      |          |
| F string               |          | F transform          |          |
| F transform            |          | T typescanners       |          |
| F triplet              |          | F whatever           |          |
| F tripletpoints        |          | <b>set</b>           | table    |
| F vprint               |          | <b>setbytemap</b>    | function |
| <b>processingmode</b>  | function | <b>size</b>          | function |
| <b>quadruple</b>       | function | <b>skip</b>          | table    |
| <b>quadruplepoints</b> | function | F token              |          |
| <b>quoted</b>          | function | <b>solve</b>         | function |
| <b>report</b>          | function | <b>string</b>        | function |
| <b>scan</b>            | table    | <b>systemmode</b>    | function |
| F boolean              |          | <b>transform</b>     | function |
| F cmykcolor            |          | <b>triplet</b>       | function |
| F color                |          | <b>tripletpoints</b> | function |
| F expression           |          | <b>vprint</b>        | function |
| F integer              |          |                      |          |

## mplib (extra tex)

|                           |          |                        |                     |
|---------------------------|----------|------------------------|---------------------|
| <b>execute</b>            | function | <b>injectpair</b>      | function            |
| <b>expandtex</b>          | function | <b>injectpath</b>      | function            |
| <b>fillbyte</b>           | function | <b>injectstring</b>    | function            |
| <b>finder</b>             | function | <b>injecttransform</b> | function            |
| <b>finders</b>            | table    | <b>injectvector</b>    | function            |
| F file                    |          | <b>injectvectors</b>   | function            |
| F mpstemplate             |          | <b>injectwhatever</b>  | function            |
| <b>finish</b>             | function | <b>new</b>             | overloaded function |
| <b>getbytemap</b>         | function | <b>newbytemap</b>      | function            |
| <b>getbytemapdata</b>     | function | <b>peninfo</b>         | function            |
| <b>getcallbackstate</b>   | function | <b>propertycodes</b>   | table               |
| <b>getcodes</b>           | function | <b>realtimelogging</b> | boolean             |
| <b>getcolormodels</b>     | function | <b>scanboolean</b>     | function            |
| <b>getfields</b>          | function | <b>scancmykcolor</b>   | function            |
| <b>gethashentries</b>     | function | <b>scancolor</b>       | function            |
| <b>gethashentry</b>       | function | <b>scanexpression</b>  | function            |
| <b>getinternalactions</b> | function | <b>scaninteger</b>     | function            |
| <b>getknotstates</b>      | function | <b>scannext</b>        | function            |
| <b>getlastaddtype</b>     | function | <b>scannumber</b>      | function            |
| <b>getlogtargets</b>      | function | <b>scannumeric</b>     | function            |
| <b>getobjecttypes</b>     | function | <b>scanpair</b>        | function            |
| <b>getresultstatus</b>    | function | <b>scanpath</b>        | function            |
| <b>getscantypes</b>       | function | <b>scanpen</b>         | function            |
| <b>getstates</b>          | function | <b>scanproperty</b>    | function            |
| <b>getstatistics</b>      | function | <b>scanstring</b>      | function            |
| <b>getstatus</b>          | function | <b>scansymbol</b>      | function            |
| <b>gettolerance</b>       | function | <b>scantoken</b>       | function            |
| <b>gettype</b>            | function | <b>scantransform</b>   | function            |
| <b>gettypes</b>           | function | <b>setbytemap</b>      | function            |
| <b>injectboolean</b>      | function | <b>settolerance</b>    | function            |
| <b>injectcmykcolor</b>    | function | <b>showcontext</b>     | function            |
| <b>injectcolor</b>        | function | <b>skiptoken</b>       | function            |
| <b>injectinteger</b>      | function | <b>solvepath</b>       | function            |
| <b>injectnumber</b>       | function | <b>version</b>         | function            |
| <b>injectnumeric</b>      | function |                        |                     |

# noads (context)

|                 |       |                      |              |
|-----------------|-------|----------------------|--------------|
| <b>handlers</b> | table |                      | F snap       |
| F alternates    |       |                      | F spacing    |
| F autofences    |       |                      | F suspicious |
| F classes       |       |                      | F tags       |
| F collapse      |       |                      | F unscript   |
| F dictionaries  |       |                      | F unstack    |
| F export        |       |                      | F variants   |
| F families      |       | <b>process</b>       | function     |
| F fencing       |       | <b>processnested</b> | function     |
| F intervals     |       | <b>processors</b>    | table        |
| F kernpairs     |       | T dictionaries       |              |
| F makeup        |       | T intervals          |              |
| F normalize     |       | T suspicious         |              |
| F numbers       |       | T unscript           |              |
| F relocate      |       | T unstack            |              |
| F render        |       | <b>processouter</b>  | function     |
| F showtree      |       |                      |              |

# node (basic tex)

|                             |          |                           |
|-----------------------------|----------|---------------------------|
| <b>checkdiscretionaries</b> | function | F getanchors              |
| <b>checkdiscretionary</b>   | function | F getattribute            |
| <b>copy</b>                 | function | F getattributelist        |
| <b>copylist</b>             | function | F getattributes           |
| <b>count</b>                | function | F getboth                 |
| <b>currentattributes</b>    | function | F getbottom               |
| <b>dimensions</b>           | function | F getbottomdelimiter      |
| <b>direct</b>               | table    | F getbox                  |
| F addmargins                |          | F getcachestate           |
| F addxoffset                |          | F getchar                 |
| F addxymargins              |          | F getchardict             |
| F addyoffset                |          | F getcharspec             |
| F appendaftertail           |          | F getchoice               |
| F appendcurrenttail         |          | F getclass                |
| F beginofmath               |          | F getcontrol              |
| F checkdiscretionaries      |          | F getcornerkerns          |
| F checkdiscretionary        |          | F getcurrenttail          |
| F collapsing                |          | F getdata                 |
| F copy                      |          | F getdegree               |
| F copylist                  |          | F getdelimiter            |
| F copyonly                  |          | F getdenominator          |
| F count                     |          | F getdepth                |
| F currentattributes         |          | F getdirection            |
| F dimensions                |          | F getdisc                 |
| F effectiveglue             |          | F getdiscpart             |
| F endofmath                 |          | F getexcept               |
| F exchange                  |          | F getexpansion            |
| F fields                    |          | F getfam                  |
| F findattribute             |          | F getfield                |
| F findattributerange        |          | F getfielderror           |
| F findnode                  |          | F getfirstdirectioninlist |
| F firstchar                 |          | F getfont                 |
| F firstglyph                |          | F getgeometry             |
| F firstglyphnode            |          | F getglue                 |
| F firstitalicglyph          |          | F getglyphdata            |
| F flattendiscretionaries    |          | F getglyphdimensions      |
| F flattenleaders            |          | F getheight               |
| F flushlist                 |          | F getid                   |
| F flushnode                 |          | F getidsubtype            |
| F free                      |          | F getidsubtypenext        |
| F freeze                    |          | F getindex                |

F getinputfields  
F getkern  
F getkerndimension  
F getlanguage  
F getleader  
F getleftdelimiter  
F getlist  
F getlistdimensions  
F getmvlolist  
F getnext  
F getnodes  
F getnormalizedline  
F getnucleus  
F getnumerator  
F getoffsets  
F getoptions  
F getorientation  
F getparstate  
F getpenalty  
F getpost  
F getpre  
F getprev  
F getprime  
F getpropertystable  
F getproperty  
F getreplace  
F getrightdelimiter  
F getruledimensions  
F getscale  
F getscales  
F getscrip  
F getscripts  
F getshift  
F getslant  
F getspeciallist  
F getstate  
F getsub  
F getsubpre  
F getsubtype  
F getsup  
F getsuppre  
F gettop  
F gettopdelimiter  
F gettotal

F getusage  
F getusedattributes  
F getweight  
F getwhd  
F getwidth  
F getwordrange  
F getxscale  
F getxyscales  
F getsyscale  
F gluetostring  
F hasattribute  
F hasdimensions  
F hasdiscoption  
F hasfield  
F hasgeometry  
F hasglyph  
F hasglyphoption  
F hasidsubtype  
F hasusage  
F hpack  
F hyphenating  
F id  
F ignoremathskip  
F insertafter  
F insertbefore  
F insertcurrentthead  
F isboth  
F ischar  
F isdirect  
F isglyph  
F isitalicglyph  
F isloop  
F isnext  
F isnextchar  
F isnextglyph  
F isnode  
F isprev  
F isprevchar  
F isprevglyph  
F issimilarglyph  
F isspeciallist  
F isvalid  
F iszeroglue  
F kerning



|                        |                     |
|------------------------|---------------------|
| F lastnode             | F setdenominator    |
| F length               | F setdepth          |
| F ligaturing           | F setdirection      |
| F makeextensible       | F setdisc           |
| F migrate              | F setdiscpart       |
| F mlisttohlist         | F setexcept         |
| F naturalhsize         | F setexpansion      |
| F naturalwidth         | F setfam            |
| F new                  | F setfield          |
| F newcontinuationatom  | F setfielderror     |
| F newmathglyph         | F setfont           |
| F newtextglyph         | F setgeometry       |
| F patchattributes      | F setglue           |
| F patchparshape        | F setglyphdata      |
| F prependbeforehead    | F setheight         |
| F prependcurrenttail   | F setindex          |
| F protectglyph         | F setinputfields    |
| F protectglyphs        | F setkern           |
| F protectglyphsbase    | F setlanguage       |
| F protectglyphsnone    | F setleader         |
| F protrusionskipppable | F setleftdelimiter  |
| F rangedimensions      | F setlink           |
| F remove               | F setlist           |
| F removefromlist       | F setnext           |
| F repack               | F setnucleus        |
| F reverse              | F setnumerator      |
| F serialized           | F setoffsets        |
| F setanchors           | F setoptions        |
| F setattribute         | F setorientation    |
| F setattributelist     | F setpenalty        |
| F setattributes        | F setpost           |
| F setboth              | F setpre            |
| F setbottom            | F setprev           |
| F setbottomdelimiter   | F setprime          |
| F setbox               | F setproperty       |
| F setchar              | F setreplace        |
| F setchardict          | F setrightdelimiter |
| F setchoice            | F setruledimensions |
| F setclass             | F setscale          |
| F setcontrol           | F setscales         |
| F setcurrenttail       | F setscript         |
| F setdata              | F setscripts        |
| F setdegree            | F setshift          |
| F setdelimiter         | F setslant          |

|                         |                               |          |
|-------------------------|-------------------------------|----------|
| F setspeciallist        | F usesfont                    |          |
| F setsplit              | F vbalance                    |          |
| F setstate              | F verticalbreak               |          |
| F setsub                | F vpack                       |          |
| F setsubpre             | F write                       |          |
| F setsubtype            | F xscaled                     |          |
| F setup                 | F yscaled                     |          |
| F setsuppre             | <b>effectiveglue</b>          | function |
| F settop                | <b>endofmath</b>              | function |
| F settopdelimiter       | <b>family_font</b>            | function |
| F settotal              | <b>fields</b>                 | function |
| F setweight             | <b>findattribute</b>          | function |
| F setwhd                | <b>flattendiscretionaries</b> | function |
| F setwidth              | <b>flushlist</b>              | function |
| F show                  | <b>flushnode</b>              | function |
| F size                  | <b>free</b>                   | function |
| F slide                 | <b>getattribute</b>           | function |
| F softenhyphens         | <b>getcachestate</b>          | function |
| F startofpar            | <b>getfield</b>               | function |
| F subtypes              | <b>getfielderror</b>          | function |
| F tail                  | <b>getglue</b>                | function |
| F todirect              | <b>getpropertystable</b>      | function |
| F tonode                | <b>getproperty</b>            | function |
| F toString              | <b>gluetostring</b>           | function |
| F tovaliddirect         | <b>hasattribute</b>           | function |
| F traverse              | <b>hasfield</b>               | function |
| F traversechar          | <b>hasglyph</b>               | function |
| F traversecontent       | <b>hpack</b>                  | function |
| F traverseglyph         | <b>hyphenating</b>            | function |
| F traverseid            | <b>id</b>                     | function |
| F traverseitalic        | <b>insertafter</b>            | function |
| F traverseleader        | <b>insertbefore</b>           | function |
| F traverselist          | <b>instock</b>                | function |
| F type                  | <b>inuse</b>                  | function |
| F types                 | <b>isnode</b>                 | function |
| F unprotectglyph        | <b>iszeroglue</b>             | function |
| F unprotectglyphs       | <b>kerning</b>                | function |
| F unsetattribute        | <b>lastnode</b>               | function |
| F unsetattributes       | <b>length</b>                 | function |
| F updatefirstandbotmark | <b>ligaturing</b>             | function |
| F updatefirstmarks      | <b>makeextensible</b>         | function |
| F updatemarks           | <b>mlisttohlist</b>           | function |
| F updatetopmarks        | <b>new</b>                    | function |
| F usedlist              | <b>protectglyph</b>           | function |

|                           |          |                        |          |
|---------------------------|----------|------------------------|----------|
| <b>protectglyphs</b>      | function | <b>todirect</b>        | function |
| <b>protrusionskipable</b> | function | <b>tonode</b>          | function |
| <b>rangedimensions</b>    | function | <b>tostring</b>        | function |
| <b>remove</b>             | function | <b>traverse</b>        | function |
| <b>serialized</b>         | function | <b>traverseid</b>      | function |
| <b>setattribute</b>       | function | <b>type</b>            | function |
| <b>setfield</b>           | function | <b>types</b>           | function |
| <b>setfielderror</b>      | function | <b>unprotectglyph</b>  | function |
| <b>setglue</b>            | function | <b>unprotectglyphs</b> | function |
| <b>setproperty</b>        | function | <b>unsetattribute</b>  | function |
| <b>show</b>               | function | <b>usedlist</b>        | function |
| <b>size</b>               | function | <b>usesfont</b>        | function |
| <b>slide</b>              | function | <b>vpack</b>           | function |
| <b>subtypes</b>           | function | <b>write</b>           | function |
| <b>tail</b>               | function |                        |          |

# nodes (context)

|                          |            |                           |            |
|--------------------------|------------|---------------------------|------------|
| <b>accentcodes</b>       | data table | <b>directionvalues</b>    | data table |
| <b>adaptive</b>          | table      | <b>dirvalues</b>          | data table |
| F handlehorizontal       |            | <b>disccodes</b>          | data table |
| F handlevertical         |            | <b>discretionarycodes</b> | data table |
| T methods                |            | <b>fencecodes</b>         | data table |
| F set                    |            | <b>fields</b>             | function   |
| <b>aligned</b>           | function   | <b>fieldtypes</b>         | table      |
| <b>append</b>            | function   | <b>fillcodes</b>          | data table |
| <b>apply</b>             | function   | <b>fillvalues</b>         | data table |
| <b>applyvisuals</b>      | function   | <b>firstdirinbox</b>      | function   |
| <b>astable</b>           | function   | <b>flush</b>              | function   |
| <b>attributecodes</b>    | data table | <b>flushlist</b>          | function   |
| <b>basepoints</b>        | function   | <b>flushnode</b>          | function   |
| <b>boundarycodes</b>     | data table | <b>fractioncodes</b>      | data table |
| <b>boxes</b>             | table      | <b>fullhpack</b>          | function   |
| F count                  |            | <b>getattr</b>            | function   |
| F dimensions             |            | <b>getattribute</b>       | function   |
| F direct                 |            | <b>getboth</b>            | function   |
| F dispose                |            | <b>getbox</b>             | function   |
| F found                  |            | <b>getchar</b>            | function   |
| F prune                  |            | <b>getfield</b>           | function   |
| F reset                  |            | <b>getfont</b>            | function   |
| F restore                |            | <b>getid</b>              | function   |
| F save                   |            | <b>getleader</b>          | function   |
| F savenode               |            | <b>getlist</b>            | function   |
| <b>builders</b>          | table      | <b>getnext</b>            | function   |
| <b>choicecodes</b>       | data table | <b>getprev</b>            | function   |
| <b>concat</b>            | function   | <b>getproperty</b>        | function   |
| <b>copy</b>              | function   | <b>getsubtype</b>         | function   |
| <b>copy_node</b>         | function   | <b>gluecodes</b>          | data table |
| <b>copyleft</b>          | function   | <b>glyphcodes</b>         | data table |
| <b>countall</b>          | function   | <b>handlers</b>           | table      |
| <b>currentattributes</b> | function   | F adjusters               |            |
| <b>delete</b>            | function   | F aligncharacter          |            |
| <b>destinations</b>      | table      | F backgrounds             |            |
| N attribute              |            | F backgroundspace         |            |
| T done                   |            | F backgroundsvbox         |            |
| F handler                |            | F characters              |            |
| T stack                  |            | F checkglyphs             |            |
| <b>dircodes</b>          | data table | F checkparcounter         |            |
| <b>directioncodes</b>    | data table | F cleanupbox              |            |

|                        |          |                                |            |
|------------------------|----------|--------------------------------|------------|
| F cleanuppage          |          | F setspacekerns                |            |
| F export               |          | <b>insertafter</b>             | function   |
| F finalizebox          |          | <b>insertbefore</b>            | function   |
| F finalizelist         |          | <b>insertlistafter</b>         | function   |
| F flatten              |          | <b>installattributehandler</b> | function   |
| F flattenline          |          | <b>is_display_math</b>         | function   |
| T linebreakchecks      |          | <b>isdirect</b>                | function   |
| F mathalignrelocate    |          | <b>isnode</b>                  | function   |
| F mathmatrixornaments  |          | <b>isnut</b>                   | function   |
| F mathmatrixrules      |          | <b>kerncodes</b>               | data table |
| F migrate              |          | <b>leftmarginwidth</b>         | function   |
| F protectglyphs        |          | <b>linefillers</b>             | table      |
| F recolor              |          | F filler                       |            |
| F show                 |          | F handler                      |            |
| F showhyphenation      |          | F set                          |            |
| F showpreamble         |          | <b>lines</b>                   | table      |
| F stripping            |          | T boxed                        |            |
| F tabulateskip         |          | F addlinenumbers               |            |
| F textbackgrounds      |          | F register                     |            |
| F unprotectglyphs      |          | F setup                        |            |
| F visualizehyphenation |          | D data                         |            |
| F wipe                 |          | F finalize                     |            |
| <b>hasattribute</b>    | function | F number                       |            |
| <b>hasfield</b>        | function | <b>link</b>                    | function   |
| <b>hpack</b>           | function | <b>linked</b>                  | function   |
| <b>idsandsubtypes</b>  | function | <b>list</b>                    | function   |
| <b>idstostring</b>     | function | <b>listcodes</b>               | data table |
| <b>injections</b>      | table    | <b>listtoutf</b>               | function   |
| F copy                 |          | <b>literalvalues</b>           | data table |
| F getligaindex         |          | <b>locate</b>                  | function   |
| F getthreshold         |          | <b>markcodes</b>               | data table |
| F handler              |          | <b>markers</b>                 | table      |
| F installgetspaceboth  |          | F get                          |            |
| F installnewkern       |          | F set                          |            |
| F isspace              |          | <b>mathcodes</b>               | data table |
| F keepcounts           |          | <b>mathvalues</b>              | data table |
| F reset                |          | <b>maxboxwidth</b>             | function   |
| F resetcounts          |          | <b>migrations</b>              | table      |
| F setcursive           |          | F setinserts                   |            |
| F setkern              |          | F setmarks                     |            |
| F setligaindex         |          | <b>new</b>                     | function   |
| F setmark              |          | <b>noadcodes</b>               | data table |
| F setmove              |          | <b>nodecodes</b>               | data table |
| F setposition          |          | <b>nopts</b>                   | function   |

**nuts**

F addmargins  
F addxoffset  
F addxymargins  
F addyoffset  
F append  
F appendaftertail  
F apply  
F applyvisuals  
F beginofmath  
F checkdiscretionaries  
F checkdiscretionary  
F checkslide  
F collapsing  
T colors  
F set  
T components  
F copynocomponents  
F copyonlyglyphs  
F count  
F flush  
F get  
F set  
F concat  
F copy  
F copy\_properties  
F copyleft  
F copynode  
F copyonly  
F copyvisual  
F count  
F countall  
F currentattributes  
F delete  
F dimensions  
F dirdimensions  
F effectiveglue  
F endofmath  
F exchange  
F findattribute  
F findattributerange  
F findnode  
F firstchar  
F firstglyph

**table**

F firstglyphnode  
F firstitalicglyph  
F flattendiscretionaries  
F flattenleaders  
F flush  
F flushlist  
F flushnode  
F free  
F freeze  
F fullhpack  
F getanchors  
F getattr  
F getattribute  
F getattributelist  
F getattributes  
F getattrlist  
F getattrs  
F getboth  
F getbottom  
F getbottomdelimiter  
F getbox  
F getboxglue  
F getchar  
F getchardict  
F getcharspec  
F getchoice  
F getclass  
F getcomponents  
F getcornerkerns  
F getdata  
F getdegree  
F getdelimiter  
F getdenominator  
F getdepth  
F getdirection  
F getdisc  
F getdiscpart  
F getdiscretionary  
F getexcept  
F getexpansion  
F getfam  
F getfield  
F getfirstdirectioninlist  
F getfont

F getgeometry  
F getglue  
F getglyphdata  
F getglyphdimensions  
F getheight  
F getid  
F getidsubtype  
F getidsubtypenext  
F getindex  
F getinputfields  
F getkern  
F getkerndimension  
F getlang  
F getlanguage  
F getleader  
F getleftdelimiter  
F getlist  
F getlistdimensions  
F getmiddle  
F getmiddledelimiter  
F getmvllist  
F getnext  
F getnormalizedline  
F getnucleus  
F getnumerator  
F getoffsets  
F getoptions  
F getorientation  
F getparstate  
F getpenalty  
F getpost  
F getpre  
F getprev  
F getprime  
F getprop  
F getreplace  
F getrightdelimiter  
F getruledata  
F getruledimensions  
F getscale  
F getscales  
F getscrip  
F getscripts  
F getshift

F getslant  
F getspeciallist  
F getstate  
F getsub  
F getsubpre  
F getsubtype  
F getsup  
F getsuppre  
F getsurround  
F gettop  
F gettopdelimiter  
F gettotal  
F getusedattributes  
F getvalue  
F getweight  
F getwhd  
F getwidth  
F getwordrange  
F getxscale  
F getxyscales  
F getsyscale  
F gluetostring  
F hasattribute  
F hasdimensions  
F hasdiscoption  
F hasfield  
F hasgeometry  
F hasglyph  
F hasglyphoption  
F hasidsubtype  
F hpack  
F hyphenating  
F ignoremathskip  
F insertafter  
F insertbefore  
F insertlistafter  
F is\_display\_math  
F isboth  
F ischar  
F isdirect  
F isdone  
F isglyph  
F isitalicglyph  
F isnext

|                       |                    |
|-----------------------|--------------------|
| F isnextchar          | F glue             |
| F isnextglyph         | F gluespec         |
| F isnode              | F glyph            |
| F isnut               | F hlist            |
| F isprev              | F imagerule        |
| F isprevchar          | F indentskip       |
| F isprevglyph         | F italiccorrection |
| F issimilarglyph      | F italicern        |
| F iszeroglue          | F kern             |
| F kerning             | F latelua          |
| F lastnode            | F leader           |
| F length              | F lefthangskip     |
| F ligaturing          | F leftmarginkern   |
| F link                | F leftskip         |
| F linked              | F lineskip         |
| F locate              | F literal          |
| F migrate             | F luaboundary      |
| F migratebox          | F mathchar         |
| F mlisttohlist        | F mathtextchar     |
| F naturalsize         | F negatedglue      |
| F naturalwidth        | F noad             |
| F nestedtracedslide   | F originliteral    |
| F new                 | F outlinerule      |
| F newcontinuationatom | F pageliteral      |
| F newmathglyph        | F penalty          |
| F openup              | F radical          |
| F patchattributes     | F rawliteral       |
| F patchparshape       | F register         |
| T pool                | F restore          |
| F accent              | F righthangskip    |
| F baselineskip        | F rightmarginkern  |
| F boundary            | F rightskip        |
| F boxrule             | F rule             |
| F choice              | F save             |
| F cleanup             | F savepos          |
| F delim               | F setmatrix        |
| F delimiter           | F setstate         |
| F direction           | F shrink           |
| F directliteral       | F spacefontkern    |
| F disc                | F spacingrule      |
| F emptyrule           | F startrotation    |
| F fence               | F startscaling     |
| F fontkern            | F stock            |
| F fraction            | F stoprotation     |



|                      |                      |
|----------------------|----------------------|
| F stopscaling        | F setattribute       |
| F stretch            | F setattributelist   |
| F strurule           | F setattributes      |
| F subbox             | F setattrlist        |
| F sublist            | F setattrrs          |
| F temp               | F setboth            |
| F usage              | F setbottom          |
| F userdefined        | F setbox             |
| T userids            | F setboxglue         |
| F usernode           | F setchar            |
| F userrule           | F setchardict        |
| F virtualrule        | F setchoice          |
| F vlist              | F setclass           |
| F wordboundary       | F setcomponents      |
| F prepend            | F setdata            |
| F prependbeforehead  | F setdegree          |
| F processranges      | F setdelimiter       |
| F processwords       | F setdenominator     |
| F protectglyph       | F setdepth           |
| F protectglyphs      | F setdirection       |
| F protectglyphsbase  | F setdisc            |
| F protectglyphsnone  | F setdiscpart        |
| F protrusionskipable | F setdiscretionary   |
| F rangedimensions    | F setexcept          |
| F rawprop            | F setexpansion       |
| F reference          | F setfam             |
| F rehpack            | F setfield           |
| F remove             | F setfont            |
| F removefromlist     | F setgeometry        |
| F repack             | F setglue            |
| F repackhlist        | F setglyphdata       |
| F replace            | F setheight          |
| F reverse            | F setinputfields     |
| T rules              | F setkern            |
| T ruleactions        | F setlang            |
| F box                | F setlanguage        |
| F draw               | F setleader          |
| F fill               | F setleftdelimiter   |
| F mp                 | F setlink            |
| F stroke             | F setlist            |
| F userrule           | F setmiddledelimiter |
| F serialized         | F setnext            |
| F setanchors         | F setnucleus         |
| F setattr            | F setnumerator       |

|                     |                     |
|---------------------|---------------------|
| F setoffsets        | F tail              |
| F setoptions        | F takeattr          |
| F setorientation    | F takebox           |
| F setparproperty    | F takelist          |
| F setpenalty        | F theprop           |
| F setpost           | F tonode            |
| F setpre            | F tonodes           |
| F setprev           | F tonut             |
| F setprime          | F tosequence        |
| F setprop           | F toString          |
| F setreplace        | F tracedslide       |
| F setrightdelimiter | F traverse          |
| F setruledata       | F traversesechar    |
| F setruledimensions | F traversesecontent |
| F setscale          | F traverseseglyph   |
| F setscales         | F traverseseid      |
| F setscript         | F traverseseitalic  |
| F setscripts        | F traverseseleader  |
| F setshift          | F traverselist      |
| F setslant          | T traversers        |
| F setspeciallist    | F alignrecord       |
| F setsplit          | F boundary          |
| F setstate          | F char              |
| F setsub            | F content           |
| F setsubpre         | F dir               |
| F setsubtype        | F disc              |
| F setup             | F glue              |
| F setsuppre         | F glyph             |
| F setsurround       | F hlist             |
| F settop            | F leader            |
| F setvalue          | F list              |
| F setvisual         | F mark              |
| F setvisuals        | F next              |
| F setweight         | F node              |
| F setwhd            | F penalty           |
| F setwidth          | F rule              |
| F show              | F unset             |
| F slide             | F vlist             |
| F softenhyphens     | F whatsit           |
| F somepenalty       | T treversers        |
| F somespace         | F char              |
| F splitbox          | F content           |
| F startofpar        | F glyph             |
| F striprange        | F leader            |

|                         |            |                         |            |
|-------------------------|------------|-------------------------|------------|
| F list                  |            | F baselineskip          |            |
| F node                  |            | F cleanup               |            |
| T typesetters           |            | F directliteral         |            |
| F tohbox                |            | F glyph                 |            |
| F tohpack               |            | F hlist                 |            |
| F tonodes               |            | F latelua               |            |
| F to vbox               |            | F leader                |            |
| F to vpack              |            | F lineskip              |            |
| F unprotectglyph        |            | F literal               |            |
| F unprotectglyphs       |            | F originliteral         |            |
| F unsetattribute        |            | F register              |            |
| F unsetattributes       |            | F restore               |            |
| F untracedslide         |            | F save                  |            |
| F updatefirstandbotmark |            | F savepos               |            |
| F updatefirstmarks      |            | F setmatrix             |            |
| F updatemarks           |            | F stock                 |            |
| F updatetopmarks        |            | F usage                 |            |
| F usedlist              |            | F usernode              |            |
| F usesfont              |            | F vlist                 |            |
| F verticalbreak         |            | <b>prepend</b>          | function   |
| F vianodes              |            | <b>print</b>            | function   |
| F vianuts               |            | <b>processors</b>       | table      |
| F vpack                 |            | F trace_glyph_run_a     |            |
| F write                 |            | F trace_glyph_run_b     |            |
| F xscaled               |            | <b>properties</b>       | table      |
| F yscaled               |            | T data                  |            |
| <b>packlist</b>         | function   | <b>pts</b>              | function   |
| <b>parcodes</b>         | data table | <b>radicalcodes</b>     | data table |
| <b>penaltycodes</b>     | data table | <b>references</b>       | table      |
| <b>plugindata</b>       | table      | N attribute             |            |
| F finalizer             |            | T done                  |            |
| F initializer           |            | F handler               |            |
| S name                  |            | T stack                 |            |
| T namespace             |            | <b>reheapack</b>        | function   |
| N attribute             |            | <b>remove</b>           | function   |
| D data                  |            | <b>repackhlist</b>      | function   |
| F enable                |            | <b>replace</b>          | function   |
| F handler               |            | <b>report</b>           | function   |
| F register              |            | <b>rightmarginwidth</b> | function   |
| D registered            |            | <b>rulecodes</b>        | data table |
| D values                |            | <b>rules</b>            | table      |
| F processor             |            | F handler               |            |
| <b>points</b>           | function   | F process               |            |
| <b>pool</b>             | table      | F set                   |            |

|                                    |            |                                     |          |
|------------------------------------|------------|-------------------------------------|----------|
| <b>F</b> <code>userrule</code>     |            | <b>takeattr</b>                     | function |
| <b>serialize</b>                   | function   | <b>takebox</b>                      | function |
| <b>serializebox</b>                | function   | <b>tasks</b>                        | table    |
| <b>serialized</b>                  | function   | <b>F</b> <code>actions</code>       |          |
| <b>setattr</b>                     | function   | <b>F</b> <code>appendaction</code>  |          |
| <b>setattribute</b>                | function   | <b>F</b> <code>disableaction</code> |          |
| <b>setattrrlist</b>                | function   | <b>F</b> <code>disablegroup</code>  |          |
| <b>setboth</b>                     | function   | <b>F</b> <code>enableaction</code>  |          |
| <b>setbox</b>                      | function   | <b>F</b> <code>enablegroup</code>   |          |
| <b>setboxtonaturalwd</b>           | function   | <b>F</b> <code>freeze</code>        |          |
| <b>setchar</b>                     | function   | <b>F</b> <code>freezegroup</code>   |          |
| <b>setfield</b>                    | function   | <b>F</b> <code>new</code>           |          |
| <b>setfont</b>                     | function   | <b>F</b> <code>prependaction</code> |          |
| <b>setleader</b>                   | function   | <b>F</b> <code>removeaction</code>  |          |
| <b>setlink</b>                     | function   | <b>F</b> <code>replaceaction</code> |          |
| <b>setlist</b>                     | function   | <b>F</b> <code>restart</code>       |          |
| <b>setnext</b>                     | function   | <b>F</b> <code>setaction</code>     |          |
| <b>setprev</b>                     | function   | <b>F</b> <code>showactions</code>   |          |
| <b>setproperty</b>                 | function   | <b>F</b> <code>table</code>         |          |
| <b>shadows</b>                     | table      | <b>tobasepoints</b>                 | function |
| <b>F</b> <code>handler</code>      |            | <b>tocentimeters</b>                | function |
| <b>F</b> <code>set</code>          |            | <b>tociceros</b>                    | function |
| <b>shifts</b>                      | table      | <b>todidots</b>                     | function |
| <b>F</b> <code>handler</code>      |            | <b>todimen</b>                      | function |
| <b>F</b> <code>set</code>          |            | <b>toinches</b>                     | function |
| <b>showboxes</b>                   | function   | <b>tomillimeters</b>                | function |
| <b>showlist</b>                    | function   | <b>tonode</b>                       | function |
| <b>showsimplelist</b>              | function   | <b>tonodes</b>                      | function |
| <b>skipcodes</b>                   | data table | <b>tonut</b>                        | function |
| <b>snapshots</b>                   | table      | <b>topics</b>                       | function |
| <b>F</b> <code>getsamples</code>   |            | <b>topoints</b>                     | function |
| <b>F</b> <code>resetsamples</code> |            | <b>toscaledpoints</b>               | function |
| <b>F</b> <code>takesample</code>   |            | <b>tosequence</b>                   | function |
| <b>somepenalty</b>                 | function   | <b>tostring</b>                     | function |
| <b>somespace</b>                   | function   | <b>totable</b>                      | function |
| <b>specialskipcodes</b>            | table      | <b>totree</b>                       | function |
| <b>splitbox</b>                    | function   | <b>toutf</b>                        | function |
| <b>startofpar</b>                  | function   | <b>tracers</b>                      | table    |
| <b>stripdiscretionaries</b>        | function   | <b>T</b> <code>colors</code>        |          |
| <b>stripping</b>                   | table      | <b>F</b> <code>reset</code>         |          |
| <b>T</b> <code>glyphs</code>       |            | <b>F</b> <code>set</code>           |          |
| <b>F</b> <code>set</code>          |            | <b>F</b> <code>setlist</code>       |          |
| <b>subtypes</b>                    | data table | <b>F</b> <code>directions</code>    |          |
| <b>tail</b>                        | function   | <b>F</b> <code>fontchar</code>      |          |

|                           |          |                     |          |
|---------------------------|----------|---------------------|----------|
| T frequencies             |          | <b>vianodes</b>     | function |
| F register                |          | <b>vianuts</b>      | function |
| T pool                    |          | <b>visualizebox</b> | function |
| T nodes                   |          | <b>visualizers</b>  | table    |
| F rule                    |          | F attribute         |          |
| T nuts                    |          | T attributes        |          |
| F rule                    |          | F box               |          |
| F resetproperties         |          | F definelayer       |          |
| F rule                    |          | F enable            |          |
| F setlist                 |          | T filters           |          |
| F setproperties           |          | N continuation      |          |
| F start                   |          | N hglue             |          |
| T steppers                |          | N hkern             |          |
| F check                   |          | N hpenalty          |          |
| F codes                   |          | N toddler           |          |
| F features                |          | N vglue             |          |
| F font                    |          | N vkern             |          |
| F glyphs                  |          | N vpenalty          |          |
| F message                 |          | F getusedfont       |          |
| F messages                |          | F handler           |          |
| F nofsteps                |          | F markfonts         |          |
| F register                |          | T modes             |          |
| F reset                   |          | N boundary          |          |
| F start                   |          | N depth             |          |
| F stop                    |          | N dir               |          |
| F stop                    |          | N discretionary     |          |
| T transparencies          |          | N expansion         |          |
| F reset                   |          | N fontkern          |          |
| F set                     |          | N glue              |          |
| F setlist                 |          | N glyph             |          |
| <b>traverse</b>           | function | N hbox              |          |
| <b>traverseid</b>         | function | N hglue             |          |
| <b>typesetters</b>        | table    | N hkern             |          |
| F hbox                    |          | N hpenalty          |          |
| F hpack                   |          | N insert            |          |
| F tohbox                  |          | N italic            |          |
| F tohpack                 |          | N kern              |          |
| F tonodes                 |          | N line              |          |
| F tovbox                  |          | N marginkern        |          |
| F tovpack                 |          | N mark              |          |
| F vpack                   |          | N math              |          |
| <b>unsetattribute</b>     | function | N mathglue          |          |
| <b>upcomingproperties</b> | function | N mathkern          |          |
| <b>usedlist</b>           | function | N origin            |          |

N par  
N penalty  
N simple  
N simplehbox  
N simplevbox  
N simplevtop  
N space  
N strut  
N toddler  
N user  
N vbox  
N vglue  
N vkern

N vpenalty  
N vtop  
N whatsit  
F register  
F registercache  
F setfont  
F setlayer  
F setruledglyph  
F setvisual

**vpack**  
**whatsitcodes**  
**write**

function  
data table  
function

## number (context)

|                       |            |
|-----------------------|------------|
|                       | function   |
| <b>basepoints</b>     | function   |
| <b>bytetodecimal</b>  | function   |
| <b>compactfloat</b>   | function   |
| <b>decimaltobyte</b>  | function   |
| <b>dimenfactors</b>   | data table |
| <b>formatted</b>      | function   |
| <b>formattedfloat</b> | function   |
| <b>fractiontobyte</b> | function   |
| <b>idiv</b>           | function   |
| <b>maxdimen</b>       | number     |
| <b>nopts</b>          | function   |
| <b>nubasepoints</b>   | function   |
| <b>nupoints</b>       | function   |
| <b>percent</b>        | function   |
| <b>points</b>         | function   |
| <b>pts</b>            | function   |
| <b>signed</b>         | function   |
| <b>sparseexponent</b> | function   |
| <b>splitdimen</b>     | function   |

|                       |          |
|-----------------------|----------|
| <b>tol6dot16</b>      | function |
| <b>tobasepoints</b>   | function |
| <b>tobitstring</b>    | function |
| <b>tocentimeters</b>  | function |
| <b>toxiceros</b>      | function |
| <b>tocontext</b>      | function |
| <b>to didots</b>      | function |
| <b>todimen</b>        | function |
| <b>toediths</b>       | function |
| <b>toevenhex</b>      | function |
| <b>toinches</b>       | function |
| <b>tomillimeters</b>  | function |
| <b>tonumberf</b>      | function |
| <b>tonumberg</b>      | function |
| <b>topicas</b>        | function |
| <b>topoints</b>       | function |
| <b>toscaled</b>       | function |
| <b>toscaledpoints</b> | function |
| <b>totoves</b>        | function |
| <b>valid</b>          | function |

## objects (context)

|                   |          |                  |          |
|-------------------|----------|------------------|----------|
| <b>data</b>       | table    | <b>page</b>      | function |
| <b>dimensions</b> | function | <b>reference</b> | function |
| <b>found</b>      | function | <b>register</b>  | function |
| <b>n</b>          | number   | <b>restore</b>   | function |



# optional (context)

## **curl** table

F escape  
F fetch  
F getversion  
F initialize  
F unescape

## **foreign** table

F abivalues  
F getbuffer  
F initialize  
F load  
F newbuffer  
F totable  
F types

## **ghostscript** table

F execute  
F initialize

## **graphicsmagick** table

F execute  
F getnoisetypes  
F initialize

## **hb** table

F getshapers  
F getversion  
F initialize  
F loadfont  
F shapestring

## **imagemagick** table

F execute  
F initialize

## **kpse** table

F expand\_braces  
F expand\_path  
F expand\_var  
F find\_file  
F find\_files  
F get\_file\_types  
F initialize  
F readable\_file  
F set\_program\_name  
F var\_value

## **library** table

F load

## **loaded** table

## **lz4** table

F compress  
F decompresssize  
F framecompress  
F framedecompress  
F initialize

## **lzma** table

F compress  
F decompress  
F initialize

## **lzo** table

F compress  
F decompresssize  
F initialize

## **mujs** table

F dofile  
F execute  
F initialize  
F reset  
F setclosefile  
F setconsole  
F setfindfile  
F setopenfile  
F setreadfile  
F setseekfile

## **mysql** table

F close  
F execute  
F getmessage  
F initialize  
F open

## **openssl** table

F getversion  
F initialize  
F sign  
F verify

## **postgres** table

F close

|               |       |              |       |
|---------------|-------|--------------|-------|
| F execute     |       | F open       |       |
| F getmessage  |       | <b>zint</b>  | table |
| F initialize  |       | F execute    |       |
| F open        |       | F initialize |       |
| <b>sqlite</b> | table | <b>zstd</b>  | table |
| F close       |       | F compress   |       |
| F execute     |       | F decompress |       |
| F getmessage  |       | F initialize |       |
| F initialize  |       |              |       |

## os (basic lua)

|                       |                     |                      |                     |
|-----------------------|---------------------|----------------------|---------------------|
| <b>__getenv__</b>     | function            | <b>platform</b>      | string              |
| <b>__setenv__</b>     | function            | <b>remove</b>        | overloaded function |
| <b>binsuffix</b>      | string              | <b>rename</b>        | overloaded function |
| <b>binsuffixes</b>    | table               | <b>resultof</b>      | function            |
| <b>bits</b>           | number              | <b>runtime</b>       | function            |
| <b>clock</b>          | function            | <b>selfarg</b>       | table               |
| <b>converttime</b>    | function            | <b>selfbin</b>       | string              |
| <b>date</b>           | overloaded function | <b>selfcore</b>      | string              |
| <b>difftime</b>       | function            | <b>selfdir</b>       | string              |
| <b>enableansi</b>     | function            | <b>selflink</b>      | string              |
| <b>env</b>            | data table          | <b>selfname</b>      | string              |
| <b>execute</b>        | overloaded function | <b>selfpath</b>      | string              |
| <b>exit</b>           | overloaded function | <b>serialwrite</b>   | function            |
| <b>fulltime</b>       | function            | <b>setenv</b>        | overloaded function |
| <b>getcodepage</b>    | function            | <b>setexitcode</b>   | function            |
| <b>getenv</b>         | overloaded function | <b>setlocale</b>     | overloaded function |
| <b>getnamevalues</b>  | function            | <b>sleep</b>         | function            |
| <b>gettimeofday</b>   | function            | <b>startuptime</b>   | function            |
| <b>gettypevalues</b>  | function            | <b>time</b>          | function            |
| <b>getunamefields</b> | function            | <b>timezone</b>      | function            |
| <b>isleapyear</b>     | function            | <b>tmpname</b>       | function            |
| <b>launch</b>         | function            | <b>today</b>         | function            |
| <b>libsuffix</b>      | string              | <b>type</b>          | string              |
| <b>localtime</b>      | function            | <b>uname</b>         | function            |
| <b>name</b>           | string              | <b>uuid</b>          | function            |
| <b>newline</b>        | string              | <b>validdatetime</b> | function            |
| <b>nofdays</b>        | function            | <b>weekday</b>       | function            |
| <b>now</b>            | function            | <b>where</b>         | function            |
| <b>pipeto</b>         | function            | <b>which</b>         | function            |

## package (basic lua)

|                      |          |                    |          |
|----------------------|----------|--------------------|----------|
| <b>config</b>        | string   | <b>loadlib</b>     | function |
| <b>cpath</b>         | string   | <b>luapaths</b>    | function |
| <b>extralibpath</b>  | function | <b>path</b>        | string   |
| <b>extralibpaths</b> | function | <b>poplibpath</b>  | function |
| <b>extralupath</b>   | function | <b>popluapath</b>  | function |
| <b>extralupaths</b>  | function | <b>preload</b>     | table    |
| <b>helpers</b>       | table    | <b>pushlibpath</b> | function |
| <b>libpaths</b>      | function | <b>pushluapath</b> | function |
| <b>loaded</b>        | table    | <b>searchers</b>   | table    |
| <b>loaders</b>       | table    | <b>searchpath</b>  | function |

# pagebuilders (context)

## **columnsets**      table

F add  
F addmvl  
F block  
F blockrows  
F check  
F clean  
T data  
F define  
F definesub  
F delayedsheet  
F finishflush  
F flushareas  
F flushcolumn  
F goto  
F gotoslot  
F limit  
F noto  
F prepareflush  
F presetsheets  
F presetspreadsheets  
F put  
F putdirect  
F registerarea  
F registersheet  
F registerspreadsheets  
F reset  
F resetdirect

F reshape  
F setarea  
F setextra  
F sethsize  
F sethspan  
F setlines  
F setmvl  
F setpresent  
F setproperties  
F setstart  
F shape  
F showshape  
F state  
F status  
F submvl  
F submvlbalance

## **injections**      table

F flushafter  
F flushbefore  
F save

## **mixedcolumns**      table

F cleanup  
F finalize  
F getlist  
F getrest  
F getsplit  
F setsplit

pdf (context)

**immediateobj** function

## pdf (extra tex)

|                          |          |
|--------------------------|----------|
| <b>arraytotable</b>      | function |
| <b>close</b>             | function |
| <b>closestream</b>       | function |
| <b>dictionarytotable</b> | function |
| <b>getarray</b>          | function |
| <b>getboolean</b>        | function |
| <b>getbox</b>            | function |
| <b>getcatalag</b>        | function |
| <b>getdictionary</b>     | function |
| <b>getencodingvalues</b> | function |
| <b>getfieldtypes</b>     | function |
| <b>getfromarray</b>      | function |
| <b>getfromdictionary</b> | function |
| <b>getfromobject</b>     | function |
| <b>getfromreference</b>  | function |
| <b>getfromstream</b>     | function |
| <b>getinfo</b>           | function |
| <b>getinteger</b>        | function |
| <b>getmemoryusage</b>    | function |
| <b>getname</b>           | function |
| <b>getnofobjects</b>     | function |
| <b>getnofpages</b>       | function |

|                        |          |
|------------------------|----------|
| <b>getnumber</b>       | function |
| <b>getobjectrange</b>  | function |
| <b>getpage</b>         | function |
| <b>getpages</b>        | function |
| <b>getpermissions</b>  | function |
| <b>getsize</b>         | function |
| <b>getstatus</b>       | function |
| <b>getstatusvalues</b> | function |
| <b>getstream</b>       | function |
| <b>getstring</b>       | function |
| <b>gettrailer</b>      | function |
| <b>getversion</b>      | function |
| <b>new</b>             | function |
| <b>open</b>            | function |
| <b>openfile</b>        | function |
| <b>openstream</b>      | function |
| <b>pagestotable</b>    | function |
| <b>readfromstream</b>  | function |
| <b>readwholestream</b> | function |
| <b>type</b>            | function |
| <b>unencrypt</b>       | function |

# physics (context)

|              |          |                |
|--------------|----------|----------------|
| <b>units</b> | table    | F registerunit |
| F registers  | shortcut | D tables       |



## pngdecode (extra tex)

**applyfilter** function  
**expand** function  
**interlace** function  
**makemask** function

**splitmask** function  
**tocmyk** function  
**tomask** function

## posit (extra lua)

|                   |          |                  |          |
|-------------------|----------|------------------|----------|
| <b>NaN</b>        | function | <b>exp2</b>      | function |
| <b>NaR</b>        | function | <b>expand</b>    | function |
| <b>__add</b>      | function | <b>floor</b>     | function |
| <b>__band</b>     | function | <b>frombyte</b>  | function |
| <b>__bor</b>      | function | <b>fromchar</b>  | function |
| <b>__bxor</b>     | function | <b>fromposit</b> | function |
| <b>__div</b>      | function | <b>integer</b>   | function |
| <b>__eq</b>       | function | <b>log</b>       | function |
| <b>__le</b>       | function | <b>log10</b>     | function |
| <b>__lt</b>       | function | <b>log1p</b>     | function |
| <b>__mul</b>      | function | <b>log2</b>      | function |
| <b>__name</b>     | string   | <b>logb</b>      | function |
| <b>__pow</b>      | function | <b>max</b>       | function |
| <b>__shl</b>      | function | <b>min</b>       | function |
| <b>__shr</b>      | function | <b>modf</b>      | function |
| <b>__sub</b>      | function | <b>new</b>       | function |
| <b>__tostring</b> | function | <b>pow</b>       | function |
| <b>__unm</b>      | function | <b>rotate</b>    | function |
| <b>abs</b>        | function | <b>round</b>     | function |
| <b>acos</b>       | function | <b>rounded</b>   | function |
| <b>asin</b>       | function | <b>shift</b>     | function |
| <b>atan</b>       | function | <b>sin</b>       | function |
| <b>band</b>       | function | <b>sqr</b>       | function |
| <b>bor</b>        | function | <b>tan</b>       | function |
| <b>bxor</b>       | function | <b>tobyte</b>    | function |
| <b>ceil</b>       | function | <b>tochar</b>    | function |
| <b>conj</b>       | function | <b>tonumber</b>  | function |
| <b>copy</b>       | function | <b>toposit</b>   | function |
| <b>cos</b>        | function | <b>tostring</b>  | function |
| <b>exp</b>        | function |                  |          |

## potrace (extra tex)

|                    |          |
|--------------------|----------|
| <b>checked</b>     | function |
| <b>concat</b>      | function |
| <b>contourplot</b> | function |
| <b>convert</b>     | function |
| <b>count</b>       | function |
| <b>flush</b>       | function |
| <b>free</b>        | function |
| <b>fromfile</b>    | function |
| <b>getbitmap</b>   | function |

|                         |          |
|-------------------------|----------|
| <b>getnewfields</b>     | function |
| <b>getpolicyvalues</b>  | function |
| <b>getprocessfields</b> | function |
| <b>new</b>              | function |
| <b>process</b>          | function |
| <b>setbitmap</b>        | function |
| <b>stripped</b>         | function |
| <b>totable</b>          | function |
| <b>trace</b>            | function |

# publications (context)

|                         |            |                             |          |
|-------------------------|------------|-----------------------------|----------|
| <b>addtexentry</b>      | function   | <b>concatstate</b>          | function |
| <b>analyze</b>          | function   | <b>converttoxml</b>         | function |
| <b>anywhere</b>         | function   | <b>currentspecification</b> | table    |
| <b>authorcache</b>      | data table | S author                    |          |
| <b>authorcollapsers</b> | data table | T categories                |          |
| <b>authorhashers</b>    | table      | T article                   |          |
| F invertedshort         |            | S category                  |          |
| F normal                |            | T extra                     |          |
| F normalinverted        |            | T fields                    |          |
| F normalshort           |            | S author                    |          |
| F sequential            |            | S editor                    |          |
| F sequentialshort       |            | S journal                   |          |
| F short                 |            | S keywords                  |          |
| <b>authormap</b>        | data table | S note                      |          |
| <b>authortoregister</b> | function   | S number                    |          |
| <b>btx</b>              | table      | S pages                     |          |
| <b>casters</b>          | table      | S title                     |          |
| F author                |            | S volume                    |          |
| F keyword               |            | S year                      |          |
| F pagenumber            |            | T optional                  |          |
| F range                 |            | T required                  |          |
| <b>checkeddataset</b>   | function   | T sets                      |          |
| <b>citevariants</b>     | table      | T author                    |          |
| F author                |            | T virtual                   |          |
| F authornum             |            | T book                      |          |
| F authoryear            |            | S category                  |          |
| F authoryears           |            | T extra                     |          |
| F category              |            | T fields                    |          |
| F default               |            | S address                   |          |
| F entry                 |            | S author                    |          |
| F index                 |            | S edition                   |          |
| F keywords              |            | S editor                    |          |
| F num                   |            | S keywords                  |          |
| F page                  |            | S note                      |          |
| F short                 |            | S number                    |          |
| F tag                   |            | S publisher                 |          |
| F textnum               |            | S subtitle                  |          |
| F year                  |            | S title                     |          |
| <b>collected</b>        | data table | S volume                    |          |
| <b>components</b>       | table      | S year                      |          |
| F author                |            | T optional                  |          |

|                |                        |            |
|----------------|------------------------|------------|
| T required     | S page                 |            |
| T sets         | S pages                |            |
| T author       | S volume               |            |
| T editionset   | S version              |            |
| T virtual      | D virtual              |            |
| T demo-a       | T virtualfields        |            |
| S category     | B authornum            |            |
| T extra        | B authoryear           |            |
| T fields       | B authoryears          |            |
| S author       | B num                  |            |
| S institution  | B suffix               |            |
| S organization | <b>datasets</b>        | table      |
| S subtitle     | <b>detailed</b>        | table      |
| S title        | <b>endnotes_to_btx</b> | function   |
| S year         | <b>enhancer</b>        | table      |
| T optional     | S arguments            |            |
| T required     | T askip                |            |
| T sets         | B dirty                |            |
| T author       | T gskip                |            |
| T virtual      | T kind                 |            |
| T demo-b       | T list                 |            |
| S category     | T system               |            |
| T extra        | T order                |            |
| T fields       | N steps                |            |
| S author       | <b>enhancers</b>       | table      |
| S institution  | F details              |            |
| S organization | F order                |            |
| S subtitle     | F suffixes             |            |
| S title        | <b>finder</b>          | function   |
| S year         | <b>firstofrange</b>    | function   |
| T optional     | <b>found</b>           | function   |
| T required     | <b>get</b>             | function   |
| T sets         | <b>getcasted</b>       | function   |
| T authors      | <b>getdetail</b>       | function   |
| T virtual      | <b>getdirect</b>       | function   |
| S comment      | <b>getfaster</b>       | function   |
| S copyright    | <b>getfield</b>        | function   |
| T fields       | <b>getfuzzy</b>        | function   |
| S name         | <b>getindex</b>        | function   |
| T types        | <b>inspectors</b>      | data table |
| S author       | <b>journals</b>        | table      |
| S editor       | F abbreviated          |            |
| S keywords     | F add                  |            |
| S number       | F expanded             |            |

|                           |          |                            |          |
|---------------------------|----------|----------------------------|----------|
| F load                    |          | F endnote                  |          |
| F save                    |          | F json                     |          |
| <b>lastofrange</b>        | function | F lua                      |          |
| <b>lists</b>              | table    | F refman                   |          |
| F collectentries          |          | F registercleaner          |          |
| F combiinlist             |          | F xml                      |          |
| F fetchentries            |          | <b>loadreplacementfile</b> | function |
| F filterall               |          | <b>meanings</b>            | table    |
| F flushcombi              |          | <b>new</b>                 | function |
| F flushentry              |          | <b>okay</b>                | function |
| F flushtag                |          | <b>oneorange</b>           | function |
| T methods                 |          | <b>parenttag</b>           | function |
| F dataset                 |          | <b>permitted</b>           | function |
| F force                   |          | <b>prerollcmdstring</b>    | function |
| F global                  |          | <b>refman_to_btx</b>       | function |
| F label                   |          | <b>resolvedname</b>        | function |
| F local                   |          | <b>save</b>                | function |
| F nofregistered           |          | <b>savers</b>              | table    |
| F prepareentries          |          | F bib                      |          |
| F register                |          | F lua                      |          |
| F sameasprevious          |          | F xml                      |          |
| T sorters                 |          | <b>search</b>              | function |
| F cite                    |          | <b>setcategory</b>         | function |
| F dataset                 |          | <b>setspecification</b>    | function |
| F default                 |          | <b>singularorplural</b>    | function |
| F index                   |          | <b>sortedentries</b>       | function |
| F list                    |          | <b>sortmethods</b>         | table    |
| F reference               |          | T authortitle              |          |
| F short                   |          | T sequence                 |          |
| F used                    |          | T authoryear               |          |
| F uservariable            |          | T sequence                 |          |
| <b>listvariants</b>       | table    | T dataset                  |          |
| F default                 |          | T sequence                 |          |
| F index                   |          | T key                      |          |
| F num                     |          | T sequence                 |          |
| F short                   |          | <b>specifications</b>      | table    |
| F tag                     |          | T default                  |          |
| <b>load</b>               | function | S author                   |          |
| <b>loadbibdata</b>        | function | S comment                  |          |
| <b>loaddefinitionfile</b> | function | S copyright                |          |
| <b>loaders</b>            | table    | S name                     |          |
| F bbl                     |          | S version                  |          |
| F bib                     |          | D virtual                  |          |
| F buffer                  |          | <b>splitauthor</b>         | function |

|                       |          |                           |          |
|-----------------------|----------|---------------------------|----------|
| <b>splitoneauthor</b> | function | F showdatasetcompleteness |          |
| <b>statistics</b>     | table    | F showdatasetfields       |          |
| N nofbytes            |          | F showentry               |          |
| N nofdatasets         |          | F showfields              |          |
| N nofdefinitions      |          | F showhashedauthors       |          |
| N nofshortcuts        |          | F showtables              |          |
| <b>tables</b>         | table    | F showvariants            |          |
| D implicits           |          | <b>typesetters</b>        | table    |
| D origins             |          | F author                  |          |
| D privates            |          | F string                  |          |
| D sets                |          | <b>usedataset</b>         | function |
| D specials            |          | <b>usedentries</b>        | function |
| D types               |          | <b>writers</b>            | table    |
| D virtuals            |          | F author                  |          |
| <b>tags</b>           | function | F keyword                 |          |
| <b>tracers</b>        | table    | F pagenumber              |          |
| F showdatasetauthors  |          | F range                   |          |

## qrcodegen (context)

**bitmap**    function  
**generate**   function



## regimes (context)

|                    |            |
|--------------------|------------|
| <b>backmapping</b> | data table |
| <b>cleanup</b>     | function   |
| <b>disable</b>     | function   |
| <b>enable</b>      | function   |
| <b>fromregime</b>  | function   |
| <b>list</b>        | function   |

|                  |            |
|------------------|------------|
| <b>mapping</b>   | data table |
| <b>pop</b>       | function   |
| <b>process</b>   | function   |
| <b>push</b>      | function   |
| <b>toregime</b>  | function   |
| <b>translate</b> | function   |

# resolvers (context)

|                                     |            |                                |            |
|-------------------------------------|------------|--------------------------------|------------|
| <b>allprefixes</b>                  | function   | <b>findfiles</b>               | function   |
| <b>appendhash</b>                   | function   | <b>findgivenfile</b>           | function   |
| <b>automount</b>                    | function   | <b>findgivenfiles</b>          | function   |
| <b>booleanvariable</b>              | function   | <b>findlib</b>                 | function   |
| <b>cacheversion</b>                 | string     | <b>findpath</b>                | function   |
| <b>checkedvariable</b>              | function   | <b>findpk</b>                  | function   |
| <b>cleanedpathlist</b>              | function   | <b>findtexfile</b>             | function   |
| <b>cleaners</b>                     | data table | <b>findwildcardfile</b>        | function   |
| <b>cleanpath</b>                    | function   | <b>findwildcardfiles</b>       | function   |
| <b>cleanpathlist</b>                | function   | <b>formatofsuffix</b>          | function   |
| <b>cleanupbinfile</b>               | function   | <b>formatofvariable</b>        | function   |
| <b>concatinators</b>                | data table | <b>formats</b>                 | data table |
| <b>configbanner</b>                 | string     | <b>foundintree</b>             | function   |
| <b>configurationfiles</b>           | function   | <b>foundintrees</b>            | function   |
| <b>dangerous</b>                    | data table | <b>generators</b>              | data table |
| <b>datastate</b>                    | function   | <b>get_from_content</b>        | function   |
| <b>decompressors</b>                | table      | <b>getenv</b>                  | function   |
| F register                          |            | <b>getextrapaths</b>           | function   |
| F unregister                        |            | <b>getfilehashes</b>           | function   |
| <b>defaultsuffixes</b>              | table      | <b>gethashes</b>               | function   |
| <b>dirstatus</b>                    | function   | <b>getownpath</b>              | function   |
| <b>dowithfilesandreport</b>         | function   | <b>getreadfilename</b>         | function   |
| <b>dowithfilesintree</b>            | function   | <b>hashers</b>                 | data table |
| <b>dowithpath</b>                   | function   | <b>homedir</b>                 | string     |
| <b>dowithvariable</b>               | function   | <b>ignorelibrary</b>           | function   |
| <b>executers</b>                    | table      | <b>initialized</b>             | function   |
| <b>expandbraces</b>                 | function   | <b>installinputfilehandler</b> | function   |
| <b>expandedpathfromlist</b>         | function   | <b>installinputlinehandler</b> | function   |
| <b>expandedpathlist</b>             | function   | <b>jobpath</b>                 | function   |
| <b>expandedpathlistfromvariable</b> | function   | <b>jobs</b>                    | table      |
| <b>expandpath</b>                   | function   | F collectstructure             |            |
| <b>expandpathfromvariable</b>       | function   | F currentcomponent             |            |
| <b>expansion</b>                    | function   | F currentenvironment           |            |
| <b>extendtexmfvariable</b>          | function   | F currentproduct               |            |
| <b>filtered_from_content</b>        | function   | F currentproject               |            |
| <b>find_file</b>                    | function   | F currentstructure             |            |
| <b>find_files</b>                   | function   | F justacomponent               |            |
| <b>findbinfile</b>                  | function   | F namelist                     |            |
| <b>findctxfile</b>                  | function   | D processors                   |            |
| <b>finders</b>                      | data table | F productcomponent             |            |
| <b>findfile</b>                     | function   | F usefile                      |            |

|                          |            |                               |            |
|--------------------------|------------|-------------------------------|------------|
| <b>joinpath</b>          | function   | <b>registerfile</b>           | function   |
| <b>knownvariables</b>    | function   | <b>registerfilehash</b>       | function   |
| <b>libraries</b>         | table      | <b>registerintrees</b>        | function   |
| F optionalloaded         |            | <b>registermethod</b>         | function   |
| F validoptional          |            | <b>registerzipfile</b>        | function   |
| <b>load</b>              | function   | <b>relations</b>              | data table |
| <b>loadbinfile</b>       | function   | <b>renew</b>                  | function   |
| <b>loaders</b>           | data table | <b>renewcache</b>             | function   |
| <b>loadlualib</b>        | function   | <b>repath</b>                 | function   |
| <b>loadtexfile</b>       | function   | <b>reset</b>                  | function   |
| <b>loadtime</b>          | function   | <b>resetextrapaths</b>        | function   |
| <b>locateformat</b>      | function   | <b>resetresolve</b>           | function   |
| <b>locators</b>          | data table | <b>resolve</b>                | function   |
| <b>luacnffallback</b>    | string     | <b>savers</b>                 | data table |
| <b>luacnfname</b>        | string     | <b>scandata</b>               | function   |
| <b>luacnfspec</b>        | string     | <b>scanfiles</b>              | function   |
| <b>luacnfstate</b>       | string     | <b>schemes</b>                | table      |
| <b>macros</b>            | table      | T cleaners                    |            |
| F convertfile            |            | F md5                         |            |
| F decodecomment          |            | F none                        |            |
| F enablecomment          |            | F strip                       |            |
| F encodecomment          |            | F cleannname                  |            |
| F preprocessed           |            | F fetchstring                 |            |
| F processmk              |            | F fetchtable                  |            |
| F processmklx            |            | F install                     |            |
| F processmkvi            |            | <b>setdynamic</b>             | function   |
| F version                |            | <b>setenv</b>                 | function   |
| <b>maxreadlevel</b>      | number     | <b>showpath</b>               | function   |
| <b>methodhandler</b>     | function   | <b>simplescanfiles</b>        | function   |
| <b>missinglibrary</b>    | function   | <b>splitconfigurationpath</b> | function   |
| <b>openbinfile</b>       | function   | <b>splitexpansions</b>        | function   |
| <b>openers</b>           | data table | <b>splitmethod</b>            | function   |
| <b>openfile</b>          | function   | <b>splitpath</b>              | function   |
| <b>opentexfile</b>       | function   | <b>stackpath</b>              | function   |
| <b>ownpath</b>           | string     | <b>starttiming</b>            | function   |
| <b>popextrapath</b>      | function   | <b>stoptiming</b>             | function   |
| <b>popinputname</b>      | function   | <b>suffixes</b>               | data table |
| <b>poppath</b>           | function   | <b>suffixmap</b>              | data table |
| <b>prefixes</b>          | data table | <b>suffixofformat</b>         | function   |
| <b>prependhash</b>       | function   | <b>texdatablob</b>            | function   |
| <b>pushextrapath</b>     | function   | <b>toppath</b>                | function   |
| <b>pushinputname</b>     | function   | <b>tracers</b>                | data table |
| <b>pushpath</b>          | function   | <b>unexpandedpath</b>         | function   |
| <b>registerextrapath</b> | function   | <b>unexpandedpathlist</b>     | function   |

|                        |            |                                 |          |
|------------------------|------------|---------------------------------|----------|
| <b>unresolve</b>       | function   | <b>validatedpath</b>            | function |
| <b>updaterelations</b> | function   | <b>variable</b>                 | function |
| <b>updatescript</b>    | function   | <b>variableofformat</b>         | function |
| <b>uselibrary</b>      | function   | <b>variableofformatorsuffix</b> | function |
| <b>usertypes</b>       | data table | <b>wildcardpattern</b>          | function |
| <b>usezipfile</b>      | function   |                                 |          |

## sandbox (context)

|                         |          |
|-------------------------|----------|
| <b>disablelibraries</b> | function |
| <b>disablerunners</b>   | function |
| <b>enable</b>           | function |
| <b>filehandlerone</b>   | function |
| <b>filehandlertwo</b>   | function |
| <b>finalizer</b>        | function |
| <b>getrunner</b>        | function |
| <b>initializer</b>      | function |
| <b>iohandler</b>        | function |
| <b>logcalls</b>         | function |
| <b>logfiles</b>         | function |
| <b>original</b>         | function |
| <b>overload</b>         | function |

|                          |          |
|--------------------------|----------|
| <b>possiblepath</b>      | function |
| <b>redefine</b>          | function |
| <b>register</b>          | function |
| <b>registerbinary</b>    | function |
| <b>registerlibrary</b>   | function |
| <b>registerroot</b>      | function |
| <b>registerrunner</b>    | function |
| <b>report</b>            | function |
| <b>setfilenamelogger</b> | function |
| <b>setlogger</b>         | function |
| <b>setreporter</b>       | function |
| <b>settrace</b>          | function |
| <b>validfilename</b>     | function |

# scripts (context)

**autofontfeature** table

F disable  
F enable  
F handler

**colors** data table

**decomposehangul** function

**defaults** table

N inter\_char\_half\_shrink\_factor  
N inter\_char\_half\_stretch\_factor  
N inter\_char\_hangul\_penalty  
N inter\_char\_quarter\_shrink\_factor  
N inter\_char\_quarter\_stretch\_factor  
N inter\_char\_shrink\_factor  
N inter\_char\_stretch\_factor  
N inter\_word\_stretch\_factor

**getdata** function

**getinjector** function

**getsplitter** function

**getstatus** function

**handlers** data table

**helpers** data table

**injectors** data table

**inserters** table

F nobreakspace\_after

F nobreakspace\_before

F space\_after

F space\_before

F zerowidthspace\_after

F zerowidthspace\_before

**installdataset** function

**installmethod** function

**numbertodataset** data table

**numbertohandler** data table

**reset** function

**set** function

**setstatus** function

**splitters** data table

## serial (context)

|                   |          |
|-------------------|----------|
| <b>__gc</b>       | function |
| <b>__name</b>     | string   |
| <b>__tostring</b> | function |
| <b>close</b>      | function |

|                 |          |
|-----------------|----------|
| <b>open</b>     | function |
| <b>send</b>     | function |
| <b>tostring</b> | function |
| <b>write</b>    | function |

## set (context)

**contains**    function

**create**     function

**tolist**     function

**tonumber**   function

**totable**    function



## sha2 (extra lua)

|                  |          |
|------------------|----------|
| <b>HASH256</b>   | function |
| <b>HASH384</b>   | function |
| <b>HASH512</b>   | function |
| <b>HEX256</b>    | function |
| <b>HEX384</b>    | function |
| <b>HEX512</b>    | function |
| <b>digest256</b> | function |
| <b>digest384</b> | function |
| <b>digest512</b> | function |

|                |          |
|----------------|----------|
| <b>hash256</b> | function |
| <b>hash384</b> | function |
| <b>hash512</b> | function |
| <b>hex256</b>  | function |
| <b>hex384</b>  | function |
| <b>hex512</b>  | function |
| <b>sum256</b>  | function |
| <b>sum384</b>  | function |
| <b>sum512</b>  | function |

## sio (extra lua)

|                          |          |
|--------------------------|----------|
| <b>read2dot14</b>        | function |
| <b>readbytes</b>         | function |
| <b>readbytetable</b>     | function |
| <b>readcardinal1</b>     | function |
| <b>readcardinal1le</b>   | function |
| <b>readcardinal2</b>     | function |
| <b>readcardinal2le</b>   | function |
| <b>readcardinal3</b>     | function |
| <b>readcardinal3le</b>   | function |
| <b>readcardinal4</b>     | function |
| <b>readcardinal4le</b>   | function |
| <b>readcardinaltable</b> | function |
| <b>readcline</b>         | function |
| <b>readcstring</b>       | function |
| <b>readfixed2</b>        | function |
| <b>readfixed4</b>        | function |
| <b>readinteger1</b>      | function |

|                         |          |
|-------------------------|----------|
| <b>readinteger1le</b>   | function |
| <b>readinteger2</b>     | function |
| <b>readinteger2le</b>   | function |
| <b>readinteger3</b>     | function |
| <b>readinteger3le</b>   | function |
| <b>readinteger4</b>     | function |
| <b>readinteger4le</b>   | function |
| <b>readintegertable</b> | function |
| <b>tocardinal1</b>      | function |
| <b>tocardinal1le</b>    | function |
| <b>tocardinal2</b>      | function |
| <b>tocardinal2le</b>    | function |
| <b>tocardinal3</b>      | function |
| <b>tocardinal3le</b>    | function |
| <b>tocardinal4</b>      | function |
| <b>tocardinal4le</b>    | function |

# socket (extra lua)

|                       |          |                             |
|-----------------------|----------|-----------------------------|
| <b>BLOCKSIZE</b>      | number   | S content-range             |
| <b>_SETSIZE</b>       | number   | S content-transfer-encoding |
| <b>_SOCKETINVALID</b> | number   | S content-type              |
| <b>bind</b>           | function | S cookie                    |
| <b>choose</b>         | function | S date                      |
| <b>connect</b>        | function | S diagnostic-code           |
| <b>connect4</b>       | function | S dsn-gateway               |
| <b>connect6</b>       | function | S etag                      |
| <b>dns</b>            | table    | S expect                    |
| F getaddrinfo         |          | S expires                   |
| F gethostname         |          | S final-log-id              |
| F getnameinfo         |          | S final-recipient           |
| F tohostname          |          | S from                      |
| F toip                |          | S host                      |
| <b>gettime</b>        | function | S if-match                  |
| <b>headers</b>        | table    | S if-modified-since         |
| T canonic             |          | S if-none-match             |
| S accept              |          | S if-range                  |
| S accept-charset      |          | S if-unmodified-since       |
| S accept-encoding     |          | S in-reply-to               |
| S accept-language     |          | S keywords                  |
| S accept-ranges       |          | S last-attempt-date         |
| S action              |          | S last-modified             |
| S age                 |          | S location                  |
| S allow               |          | S max-forwards              |
| S alternate-recipient |          | S message-id                |
| S arrival-date        |          | S mime-version              |
| S authorization       |          | S original-envelope-id      |
| S bcc                 |          | S original-recipient        |
| S cache-control       |          | S pragma                    |
| S cc                  |          | S proxy-authenticate        |
| S comments            |          | S proxy-authorization       |
| S connection          |          | S range                     |
| S content-description |          | S received                  |
| S content-disposition |          | S received-from-mta         |
| S content-encoding    |          | S references                |
| S content-id          |          | S referer                   |
| S content-language    |          | S remote-mta                |
| S content-length      |          | S reply-to                  |
| S content-location    |          | S reporting-mta             |
| S content-md5         |          | S resent-bcc                |

S resent-cc  
 S resent-date  
 S resent-from  
 S resent-message-id  
 S resent-reply-to  
 S resent-sender  
 S resent-to  
 S retry-after  
 S return-path  
 S sender  
 S server  
 S smtp-remote-recipient  
 S status  
 S subject  
 S te  
 S to  
 S trailer  
 S transfer-encoding  
 S upgrade  
 S user-agent  
 S vary  
 S via  
 S warning  
 S will-retry-until  
 S www-authenticate  
 S x-mailer  
 F lower  
 F normalize  
**http**                      table  
 N TIMEOUT  
 S USERAGENT  
 F genericform  
 F open  
 F request

**newtry**                      function  
**protect**                    function  
**report**                     function  
**select**                    function  
**sink**                        function  
**sinkt**                     table  
     F close-when-done  
     F default  
     F http-chunked  
     F keep-open  
**skip**                        function  
**sleep**                      function  
**source**                     function  
**sourcecet**                 table  
     F by-length  
     F default  
     F http-chunked  
     F until-closed  
**tcp**                         function  
**tcp4**                        function  
**tcp6**                        function  
**tp**                          table  
     N TIMEOUT  
     F connect  
**try**                         function  
**url**                         table  
     F absolute  
     F build  
     F build\_path  
     F escape  
     F parse  
     F parse\_path  
     F unescape

# sorters (context)

**basicsorter** function

**comparers** table

F basic

**constants** table

S defaultdigits

S defaultlanguage

S defaultmethod

N digitmaximum

N digitoffset

N ignoredoffset

N replacementoffset

T validmethods

B ch

B mc

B mm

B pc

B pm

B uc

B zc

B zm

**definitions** data table

**firstofsplit** function

**packch** function

**packuc** function

**replacementlist** function

**setlanguage** function

**sort** function

**splitters** table

F utf

**strip** function

**tracers** data table

**update** function

## sparse (extra lua)

|               |          |
|---------------|----------|
| <b>concat</b> | function |
| <b>get</b>    | function |
| <b>max</b>    | function |
| <b>min</b>    | function |
| <b>new</b>    | function |

|                 |          |
|-----------------|----------|
| <b>range</b>    | function |
| <b>restore</b>  | function |
| <b>set</b>      | function |
| <b>traverse</b> | function |
| <b>wipe</b>     | function |

## statistics (context)

|                       |          |                      |          |
|-----------------------|----------|----------------------|----------|
| <b>benchmarktimer</b> | function | <b>resettiming</b>   | function |
| <b>checkfmtstatus</b> | function | <b>runtime</b>       | function |
| <b>currenttime</b>    | function | <b>savefmtstatus</b> | function |
| <b>elapsed</b>        | function | <b>show</b>          | function |
| <b>elapsedindeed</b>  | function | <b>showmemory</b>    | function |
| <b>elapsedseconds</b> | function | <b>showusage</b>     | function |
| <b>elapsedtime</b>    | function | <b>starttiming</b>   | function |
| <b>enable</b>         | boolean  | <b>stoptiming</b>    | function |
| <b>formatruntime</b>  | function | <b>threshold</b>     | number   |
| <b>hastiming</b>      | function | <b>timed</b>         | function |
| <b>memused</b>        | function | <b>tracefunction</b> | function |
| <b>register</b>       | function |                      |          |

## status (basic tex)

|                              |          |                          |          |
|------------------------------|----------|--------------------------|----------|
| <b>getbalancestate</b>       | function | <b>getluastate</b>       | function |
| <b>getbufferstate</b>        | function | <b>getmarkstate</b>      | function |
| <b>getcallbackstate</b>      | function | <b>getmvlstate</b>       | function |
| <b>getconstants</b>          | function | <b>getneststate</b>      | function |
| <b>geterrorlinestate</b>     | function | <b>getnodestate</b>      | function |
| <b>geterrorstate</b>         | function | <b>getparameterstate</b> | function |
| <b>getexpandstate</b>        | function | <b>getpoolstate</b>      | function |
| <b>getfilestate</b>          | function | <b>getreadstate</b>      | function |
| <b>getfontstate</b>          | function | <b>getsavestate</b>      | function |
| <b>gethalferrorlinestate</b> | function | <b>getsparsestate</b>    | function |
| <b>gethashstate</b>          | function | <b>getstringstate</b>    | function |
| <b>gethyphenationstate</b>   | function | <b>gettexstate</b>       | function |
| <b>getinputstate</b>         | function | <b>gettokenstate</b>     | function |
| <b>getinsertstate</b>        | function | <b>getwarningstate</b>   | function |
| <b>getlanguagestate</b>      | function | <b>iocodes</b>           | table    |
| <b>getlinebreakstate</b>     | function | <b>list</b>              | function |
| <b>getlookupstate</b>        | function | <b>resetmessages</b>     | function |



## storage (context)

|                   |          |                        |            |
|-------------------|----------|------------------------|------------|
| <b>allocate</b>   | function | <b>noftables</b>       | number     |
| <b>data</b>       | table    | <b>register</b>        | function   |
| <b>mark</b>       | function | <b>shared</b>          | data table |
| <b>marked</b>     | function | <b>storedfunctions</b> | data table |
| <b>max</b>        | number   | <b>strip</b>           | boolean    |
| <b>min</b>        | number   | <b>tofmodules</b>      | number     |
| <b>nofmodules</b> | number   | <b>toftables</b>       | number     |

## streams (context)

|                   |          |
|-------------------|----------|
| <b>collect</b>    | function |
| <b>disable</b>    | function |
| <b>enable</b>     | function |
| <b>flush</b>      | function |
| <b>initialize</b> | function |

|                    |          |
|--------------------|----------|
| <b>push</b>        | function |
| <b>start</b>       | function |
| <b>stop</b>        | function |
| <b>synchronize</b> | function |

## string (basic lua)

|                        |          |                        |          |
|------------------------|----------|------------------------|----------|
| <b>autodouble</b>      | function | <b>octtointeger</b>    | function |
| <b>autosingle</b>      | function | <b>optionalquoted</b>  | function |
| <b>booleanstring</b>   | function | <b>pack</b>            | function |
| <b>byte</b>            | function | <b>packrowscolumns</b> | function |
| <b>bytepairs</b>       | function | <b>packsize</b>        | function |
| <b>bytes</b>           | function | <b>quote</b>           | function |
| <b>bytetable</b>       | function | <b>quoted</b>          | function |
| <b>char</b>            | function | <b>rep</b>             | function |
| <b>characterpairs</b>  | function | <b>replacenewlines</b> | function |
| <b>characters</b>      | function | <b>reverse</b>         | function |
| <b>checkedsplit</b>    | function | <b>split</b>           | function |
| <b>chrtointeger</b>    | function | <b>splitlines</b>      | function |
| <b>collapsespaces</b>  | function | <b>splitup</b>         | function |
| <b>containsws</b>      | function | <b>strip</b>           | function |
| <b>count</b>           | function | <b>sub</b>             | function |
| <b>dectointeger</b>    | function | <b>texhashed</b>       | function |
| <b>dump</b>            | function | <b>texnewlines</b>     | function |
| <b>escapedpattern</b>  | function | <b>tformat</b>         | function |
| <b>escapedquotes</b>   | function | <b>toHEX</b>           | function |
| <b>explode</b>         | function | <b>toboolean</b>       | function |
| <b>f6</b>              | function | <b>tobytes</b>         | function |
| <b>find</b>            | function | <b>tocontext</b>       | function |
| <b>format</b>          | function | <b>todec</b>           | function |
| <b>formatter</b>       | function | <b>todimen</b>         | function |
| <b>formatters</b>      | function | <b>tohex</b>           | function |
| <b>fullstrip</b>       | function | <b>tonodes</b>         | function |
| <b>gmatch</b>          | function | <b>topattern</b>       | function |
| <b>gsub</b>            | function | <b>totable</b>         | function |
| <b>hextocharacters</b> | function | <b>tounicode16</b>     | function |
| <b>hextointeger</b>    | function | <b>toutf</b>           | function |
| <b>is_boolean</b>      | function | <b>toutf32</b>         | function |
| <b>is_empty</b>        | function | <b>toutf8</b>          | function |
| <b>itself</b>          | function | <b>tracedchar</b>      | function |
| <b>len</b>             | function | <b>tracedchars</b>     | table    |
| <b>limit</b>           | function | <b>unescapedquotes</b> | function |
| <b>linetable</b>       | function | <b>unpack</b>          | function |
| <b>longtostring</b>    | function | <b>unquote</b>         | function |
| <b>lower</b>           | function | <b>unquoted</b>        | function |
| <b>match</b>           | function | <b>upper</b>           | function |
| <b>nospaces</b>        | function | <b>utf16toutf8</b>     | function |
| <b>nspaces</b>         | table    | <b>utfcharacter</b>    | function |

|                                  |          |
|----------------------------------|----------|
| <b>utfcharacters</b>             | function |
| <b>utfcharacter</b> <b>table</b> | function |
| <b>utflength</b>                 | function |
| <b>utfpadd</b>                   | function |
| <b>utfpadding</b>                | function |

|                              |          |
|------------------------------|----------|
| <b>utfvalue</b>              | function |
| <b>utfvalues</b>             | function |
| <b>utfvalue</b> <b>table</b> | function |
| <b>valid</b>                 | function |
| <b>wordsplitter</b>          | function |

# structures (context)

|                   |          |                                      |
|-------------------|----------|--------------------------------------|
| <b>atlocation</b> | function | F last                               |
| <b>blocks</b>     | table    | F next                               |
| D collected       |          | F prev                               |
| F define          |          | F previous                           |
| F empty           |          | F raw                                |
| F print           |          | F record                             |
| F save            |          | F reset                              |
| F select          |          | F restart                            |
| F setstate        |          | F restore                            |
| D states          |          | F save                               |
| D tobesaved       |          | F set                                |
| F uservariable    |          | F setlevel                           |
| <b>bookmarks</b>  | table    | F setoffset                          |
| T extras          |          | F setown                             |
| F get             |          | F setstate                           |
| F mergesections   |          | F setvalue                           |
| F register        |          | T specials                           |
| F reset           |          | F userpage                           |
| F tosections      |          | F subs                               |
| F finalize        |          | D tobesaved                          |
| F flatten         |          | F value                              |
| F installhandler  |          | F way                                |
| F merge           |          | <b>currentsectionnumber</b> function |
| S method          |          | <b>descriptions</b> table            |
| F overload        |          | <b>documents</b> table               |
| F place           |          | D data                               |
| F register        |          | F initialize                         |
| F setopened       |          | F preset                             |
| F setup           |          | F reset                              |
| <b>counters</b>   | table    | <b>floats</b> table                  |
| F add             |          | <b>formulas</b> table                |
| F analyze         |          | <b>helpers</b> table                 |
| F check           |          | F analyze                            |
| D collected       |          | F formulanumber                      |
| F compact         |          | F merged                             |
| F converted       |          | F page                               |
| F currentvalue    |          | F pageofinternal                     |
| D data            |          | F prefix                             |
| F define          |          | F prefixlastpage                     |
| F first           |          | F prefixpage                         |
| F get             |          | F simplify                           |

|                   |              |
|-------------------|--------------|
| F title           |              |
| F touserdata      |              |
| <b>inserts</b>    | <b>table</b> |
| F attach          |              |
| D data            |              |
| F define          |              |
| F detach          |              |
| F getdata         |              |
| F getlocation     |              |
| F getname         |              |
| F getnumber       |              |
| F nofdetached     |              |
| F setlocation     |              |
| F setup           |              |
| D stored          |              |
| <b>itemgroups</b> | <b>table</b> |
| D collected       |              |
| D tobesaved       |              |
| <b>lists</b>      | <b>table</b> |
| F addto           |              |
| F analyze         |              |
| D cached          |              |
| D collected       |              |
| F discard         |              |
| F enhance         |              |
| T enhancers       |              |
| F external        |              |
| F filter          |              |
| F formulainumber  |              |
| F getresult       |              |
| F groupindex      |              |
| F hasnumberdata   |              |
| F haspagedata     |              |
| F hastitledata    |              |
| F integrate       |              |
| F iscached        |              |
| D kinds           |              |
| F label           |              |
| F location        |              |
| D names           |              |
| F number          |              |
| D ordered         |              |
| F page            |              |
| F popnesting      |              |

|                            |              |
|----------------------------|--------------|
| F prefix                   |              |
| F prefixednumber           |              |
| F prefixedpage             |              |
| F process                  |              |
| D pushed                   |              |
| F pushnesting              |              |
| F rawnumber                |              |
| F rawrealpage              |              |
| F rawuserpage              |              |
| F realpage                 |              |
| F reorder                  |              |
| F reordered                |              |
| T result                   |              |
| F savedlistnumber          |              |
| F savedlistprefixednumber  |              |
| F savedlisttitle           |              |
| D sectionblocks            |              |
| F sectionnumber            |              |
| F size                     |              |
| F title                    |              |
| D tobesaved                |              |
| F use                      |              |
| F userdata                 |              |
| F userpage                 |              |
| F uservalue                |              |
| <b>marks</b>               | <b>table</b> |
| F number                   |              |
| F title                    |              |
| <b>notes</b>               | <b>table</b> |
| F check_spacing            |              |
| F checkpagechange          |              |
| F define                   |              |
| F doifonsamepageasprevious |              |
| F flushrange               |              |
| F get                      |              |
| F getdeltapage             |              |
| F getinternal              |              |
| F getn                     |              |
| F getstate                 |              |
| F hascontent               |              |
| F internal                 |              |
| F internalid               |              |
| F listindex                |              |
| D numbers                  |              |

|                     |                                  |
|---------------------|----------------------------------|
| F ordered           | T files                          |
| F postpone          | T data                           |
| F resetpostponed    | F define                         |
| F restore           | F found                          |
| F save              | F get                            |
| F setstate          | F filter                         |
| D states            | F filterdefault                  |
| F store             | D filters                        |
| <b>pages</b>        | D flaginternals                  |
| F allmarked         | F forceinnermode                 |
| F analyze           | F from                           |
| D collected         | D functions                      |
| F fraction          | F get                            |
| F getlabels         | F getcurrentlabel                |
| F in_body           | F getcurrentmetadata             |
| F is_odd            | F getcurrentprefixspec           |
| F mark              | F getinnermethod                 |
| F marked            | F getinternalcachedlistreference |
| F markedlist        | F getinternallistreference       |
| N nopages           | F getinternalreference           |
| F number            | F getoutermethod                 |
| F on_right          | D handlers                       |
| F save              | F identify                       |
| D tobesaved         | F import                         |
| F toranges          | F inject                         |
| <b>references</b>   | F injectcurrentset               |
| F analyze           | S innermethod                    |
| F checked           | F integrate                      |
| F checkedfile       | D internals                      |
| F checkedfileorurl  | F load                           |
| F checkedprogram    | F loadpresets                    |
| F checkedrealpage   | F mark                           |
| F checkedurl        | S outermethod                    |
| D collected         | F pagefromhash                   |
| U componentsplitter | D pages                          |
| F currentmetadata   | U prefixsplitter                 |
| F currentorder      | D productdata                    |
| D currentset        | T programs                       |
| F define            | T data                           |
| D defined           | F define                         |
| D derived           | F get                            |
| F enhance           | F realpageofpage                 |
| D executers         | U referencesplitter              |
| F export            | D referred                       |
| <b>table</b>        |                                  |
| <b>table</b>        |                                  |

- F referredpage
- F registerfinalizer
- F registerinitializer
- F registerpage
- F reset
- D runners
- F set
- F setandgetattribute
- F setinternalreference
- F setlinkmethod
- F setnextinternal
- F setnextorder
- F setreferencerealpage
- F setstructure
- D specials
- F splitcomponent
- F splitprefix
- F splitreference
- F synchronizepage
- T testrunners
  - F inner
  - F special
  - F special operation
  - F special operation with arguments
- T testspecials
  - F deltapage
  - F i
  - F internal
  - F page
  - F realpage
  - F section
  - F userpage
- D tobereferred
- D tobesaved
- D tracedpages
- T urls
  - T data
  - F define
  - F found
  - F get
  - F untex
- D usedinternals
- D usedviews
- F valid

## registers

- F analyze
- D collected
- F compare
- F define
- F enhance
- F extend
- F filter
- F filtercollected
- F finalize
- F findinternal
- F flush
- F get
- F integrate
- F prepare
- F process
- F setmethod
- F sort
- F store
- D tobesaved
- F tweak
- F unique
- F use
- F userdata

## sections

- F autodepth
- F cct
- D collected
- F current
- F currentblock
- F currentid
- F currentlevel
- F currentsectionindex
- F depthnumber
- F finddata
- F findnumber
- F fullnumber
- F getcurrentlevel
- F getlevel
- F getnumber
- F internalreference
- D levelmap
- D levels
- F matchingtilldepth

## table

## table



- F numberatdepth
- F numbers
- F popblock
- F prefixedconverted
- F pushblock
- F register
- D registered
- F reportstructure
- F save
- T sectionblockdata
  - T bodypart
    - S bookmark
- F set
- F setblock
- F setchecker
- F setentry
- F setinitialblock
- F setlevel
- F setnumber
- F showstructure
- F structuredata
- F title
- D tobesaved
- F typesetnumber
- F userdata
- B verbose

## sets table

- F define
- F get
- F getall
- D setlist

## specials table

- D collected
- F retrieve
- F store
- D tobesaved

## synonyms table

- F analyzed
- D collected
- F compare
- F define
- F enhance
- F filter
- F finalize

- F flush
- F isshown
- F isused
- F meaning
- F pages
- F prepare
- F process
- F register
- F registershown
- F registerused
- F reset
- F resetall
- F resetlist
- F resetshown
- F resetused
- F sort
- F synonym
- D tobesaved

## tags table

- T backend
- T checks
  - F marginanchor
  - F margintext
  - F math
  - F mrow
  - F mtable
- T destinationhash
- T extras
  - F adddestination
  - F addimplicit
  - F addinternal
  - F addreference
  - F combination
  - F combinationpair
  - F delimitedsymbol
  - F description
  - F descriptionsymbol
  - F document
  - F float
  - F formulacontent
  - F image
  - F item
  - F itemgroup
  - F link

|                     |                            |
|---------------------|----------------------------|
| F listitem          | F gettablecell             |
| F mmultiscripts     | F gettabulatecell          |
| F mover             | F handler                  |
| F msub              | T ignored                  |
| F msubsup           | F initializeexport         |
| F msup              | D labels                   |
| F munder            | F last                     |
| F munderover        | F lastinchain              |
| F paragraph         | F localexport              |
| F publication       | F locatedtag               |
| F reference         | D overloads                |
| F registerlocation  | T patterns                 |
| F registerpages     | U splitter                 |
| F registerseparator | F pop                      |
| F section           | D properties               |
| F sorting           | F push                     |
| F subsentencesymbol | F registerextradata        |
| F synonym           | F registermetadata         |
| F tablecell         | F restart                  |
| F tabulate          | F setaspect                |
| F tabulatecell      | F setattributefield        |
| T finalizers        | F setcodepoint             |
| F descriptions      | F setcombination           |
| T fixes             | F setcombinationpair       |
| F linenumber        | F setconstruct             |
| F fontfaced         | F setfigure                |
| T listdata          | F setfloat                 |
| T referencehash     | F setformulacontent        |
| F setattribute      | F sethighlight             |
| F tofontface        | F setitem                  |
| T usedimages        | F setitemgroup             |
| T image             | F setlist                  |
| T usedstyles        | F setnotation              |
| T construct         | F setnotationsymbol        |
| T highlight         | F setparagraph             |
| F current           | F setproperty              |
| F elementtag        | F setpublication           |
| F enabled           | F setregister              |
| F exportbox         | F setsorting               |
| F finishexport      | F setsynonym               |
| F getextradata      | F settablecell             |
| F getid             | F settabulatecell          |
| F getitemgroup      | F settagdelimitedsymbol    |
| F getmetadata       | F settagssubsentencesymbol |

F setupexport

F setuserproperties

D specifications

F start

F stop

F strip

D taglist

T usewithcare

## table (basic lua)

|                        |          |                             |          |
|------------------------|----------|-----------------------------|----------|
| <b>allkeys</b>         | function | <b>orderedhash</b>          | function |
| <b>append</b>          | function | <b>pack</b>                 | function |
| <b>are_equal</b>       | function | <b>prepend</b>              | function |
| <b>collapsed</b>       | function | <b>print</b>                | function |
| <b>collapsedhash</b>   | function | <b>remove</b>               | function |
| <b>combine</b>         | function | <b>reverse</b>              | function |
| <b>compact</b>         | function | <b>reversed</b>             | function |
| <b>concat</b>          | function | <b>save</b>                 | function |
| <b>contains</b>        | function | <b>sequenced</b>            | function |
| <b>copy</b>            | function | <b>serialize</b>            | function |
| <b>count</b>           | function | <b>setmetatablecall</b>     | function |
| <b>create</b>          | function | <b>setmetatableindex</b>    | function |
| <b>derive</b>          | function | <b>setmetatableindices</b>  | function |
| <b>deserialize</b>     | function | <b>setmetatablekey</b>      | function |
| <b>drop</b>            | function | <b>setmetatablenewindex</b> | function |
| <b>fastcopy</b>        | function | <b>sort</b>                 | function |
| <b>fastserialize</b>   | function | <b>sorted</b>               | function |
| <b>filtered</b>        | function | <b>sortedhash</b>           | function |
| <b>flattened</b>       | function | <b>sortedhashkeys</b>       | function |
| <b>fromhash</b>        | function | <b>sortedhashonly</b>       | function |
| <b>getmetatablekey</b> | function | <b>sortedindexonly</b>      | function |
| <b>getn</b>            | function | <b>sortedkeys</b>           | function |
| <b>has_one_entry</b>   | function | <b>sortedpairs</b>          | function |
| <b>hashed</b>          | function | <b>sparse</b>               | function |
| <b>identical</b>       | function | <b>strip</b>                | function |
| <b>imerge</b>          | function | <b>sub</b>                  | function |
| <b>imerged</b>         | function | <b>swapped</b>              | function |
| <b>insert</b>          | function | <b>tocontext</b>            | function |
| <b>is_empty</b>        | function | <b>tocsv</b>                | function |
| <b>is_simple_table</b> | function | <b>tofile</b>               | function |
| <b>keys</b>            | function | <b>tohandle</b>             | function |
| <b>load</b>            | function | <b>tohash</b>               | function |
| <b>loweredkeys</b>     | function | <b>toxml</b>                | function |
| <b>makewweak</b>       | function | <b>twowaymapper</b>         | function |
| <b>merge</b>           | function | <b>unique</b>               | function |
| <b>merged</b>          | function | <b>unnest</b>               | function |
| <b>mirrored</b>        | function | <b>unpack</b>               | function |
| <b>move</b>            | function | <b>values</b>               | function |
| <b>ordered</b>         | function |                             |          |

# tex (basic tex)

|                              |            |                                      |            |
|------------------------------|------------|--------------------------------------|------------|
| <b>amcode</b>                | table      | <b>discpartcodes</b>                 | data table |
| <b>attribute</b>             | table      | <b>dontcomplain</b>                  | function   |
| <b>automigrationcodes</b>    | data table | <b>doublescriptoptioncodes</b>       | data table |
| <b>autoparagraphcodes</b>    | data table | <b>enableprimitives</b>              | function   |
| <b>badness</b>               | function   | <b>error</b>                         | function   |
| <b>badnessmodecodes</b>      | data table | <b>expandasvalue</b>                 | function   |
| <b>balance</b>               | function   | <b>experiments</b>                   | data table |
| <b>balancecallbackcodes</b>  | data table | <b>extraprimitives</b>               | function   |
| <b>boundaries</b>            | table      | <b>fatalerror</b>                    | function   |
| D names                      |            | <b>fillcodes</b>                     | data table |
| D numbers                    |            | <b>flagcodes</b>                     | data table |
| F system                     |            | <b>fontidentifier</b>                | function   |
| <b>box</b>                   | table      | <b>fontname</b>                      | function   |
| <b>boxoptioncodes</b>        | data table | <b>forcehmode</b>                    | function   |
| <b>boxresources</b>          | table      | <b>forceinputstatefile</b>           | function   |
| F getbox                     |            | <b>forceinputstateline</b>           | function   |
| F getdimensions              |            | <b>fprint</b>                        | function   |
| F save                       |            | <b>frozenparcodes</b>                | data table |
| F use                        |            | <b>get</b>                           | function   |
| <b>breakcodes</b>            | data table | <b>getadjustoptionvalues</b>         | function   |
| <b>buildcodes</b>            | data table | <b>getalignmentcontextvalues</b>     | function   |
| <b>catcode</b>               | table      | <b>getamcode</b>                     | function   |
| <b>cccode</b>                | table      | <b>getappendadjustcontextvalues</b>  | function   |
| <b>charactercontrolcodes</b> | data table | <b>getappendmigratecontextvalues</b> | function   |
| <b>charactertagcodes</b>     | data table | <b>getattribute</b>                  | function   |
| <b>chardef</b>               | function   | <b>getautomigrationvalues</b>        | function   |
| <b>classoptioncodes</b>      | data table | <b>getautoparagraphvalues</b>        | function   |
| <b>codes</b>                 | table      | <b>getbadnessmodevalues</b>          | function   |
| <b>conditionals</b>          | data table | <b>getbalancecallbackvalues</b>      | function   |
| <b>constants</b>             | data table | <b>getbalanceparameterfields</b>     | function   |
| <b>count</b>                 | table      | <b>getbalanceresultfields</b>        | function   |
| <b>cprint</b>                | function   | <b>getbalancestepoptionvalues</b>    | function   |
| <b>ctdcatcodes</b>           | number     | <b>getbox</b>                        | function   |
| <b>ctxcatcodes</b>           | number     | <b>getboxdir</b>                     | function   |
| <b>definefont</b>            | function   | <b>getboxoptionvalues</b>            | function   |
| <b>delcode</b>               | table      | <b>getboxresourcebox</b>             | function   |
| <b>dimen</b>                 | table      | <b>getboxresource dimensions</b>     | function   |
| <b>dimensiondef</b>          | function   | <b>getbreakcontextvalues</b>         | function   |
| <b>directioncodes</b>        | data table | <b>getbuildcontextvalues</b>         | function   |
| <b>directives</b>            | data table | <b>getcardinalvalue</b>              | function   |
| <b>discoptioncodes</b>       | data table | <b>getcatcode</b>                    | function   |

|                                    |          |                                    |          |
|------------------------------------|----------|------------------------------------|----------|
| <b>getcccode</b>                   | function | <b>getinsertwidth</b>              | function |
| <b>getcharactercontrolvalues</b>   | function | <b>getintegervalue</b>             | function |
| <b>getcharactertagvalues</b>       | function | <b>getinteraction</b>              | function |
| <b>getcount</b>                    | function | <b>getinteractionmodes</b>         | function |
| <b>getcurrentmvl</b>               | function | <b>getiovalues</b>                 | function |
| <b>getdelcode</b>                  | function | <b>getkerneloptionvalues</b>       | function |
| <b>getdelcodes</b>                 | function | <b>getkernoptionvalues</b>         | function |
| <b>getdimen</b>                    | function | <b>getlargestusedmark</b>          | function |
| <b>getdimensionvalue</b>           | function | <b>getlccode</b>                   | function |
| <b>getdirectionvalues</b>          | function | <b>getlinebreakparameterfields</b> | function |
| <b>getdiscoptionvalues</b>         | function | <b>getlinebreakresultfields</b>    | function |
| <b>getdiscpartvalues</b>           | function | <b>getlinebreakstatevalues</b>     | function |
| <b>getdoublescriptoptionvalues</b> | function | <b>getlinedir</b>                  | function |
| <b>getemptyparagraphmodevalues</b> | function | <b>getlist</b>                     | function |
| <b>geterrorvalues</b>              | function | <b>getlistanchorvalues</b>         | function |
| <b>getfillvalues</b>               | function | <b>getlistfields</b>               | function |
| <b>getflagvalues</b>               | function | <b>getlistgeometryvalues</b>       | function |
| <b>getfloat</b>                    | function | <b>getlistsignvalues</b>           | function |
| <b>getfontoffamily</b>             | function | <b>getlocalbox</b>                 | function |
| <b>getfrozenparvalues</b>          | function | <b>getlocalboxlocations</b>        | function |
| <b>getglue</b>                     | function | <b>getlocallevel</b>               | function |
| <b>getglueoptionvalues</b>         | function | <b>getmark</b>                     | function |
| <b>getglyphdata</b>                | function | <b>getmarknames</b>                | function |
| <b>getglyphdiscvalues</b>          | function | <b>getmath</b>                     | function |
| <b>getglyphoptionvalues</b>        | function | <b>getmathclassoptionvalues</b>    | function |
| <b>getglyphprotectionvalues</b>    | function | <b>getmathcode</b>                 | function |
| <b>getglyphscales</b>              | function | <b>getmathcodes</b>                | function |
| <b>getglyphscript</b>              | function | <b>getmathcontrolvalues</b>        | function |
| <b>getglyphstate</b>               | function | <b>getmathdir</b>                  | function |
| <b>getgroupvalues</b>              | function | <b>getmathgluevalues</b>           | function |
| <b>gethccode</b>                   | function | <b>getmathoptionvalues</b>         | function |
| <b>gethelptext</b>                 | function | <b>getmathparametervalues</b>      | function |
| <b>gethmcode</b>                   | function | <b>getmathscriptordervalue</b>     | function |
| <b>gethyphenationvalues</b>        | function | <b>getmathscriptsmodevalues</b>    | function |
| <b>getiftypes</b>                  | function | <b>getmathstylenamevalues</b>      | function |
| <b>getinputstatefile</b>           | function | <b>getmathstylevalues</b>          | function |
| <b>getinputstateline</b>           | function | <b>getmathstylevariant</b>         | function |
| <b>getinputstatemode</b>           | function | <b>getmathsurroundvalues</b>       | function |
| <b>getinsertcontent</b>            | function | <b>getmathvariantpresets</b>       | function |
| <b>getinsertdepth</b>              | function | <b>getmathvariantvalues</b>        | function |
| <b>getinsertdistance</b>           | function | <b>getmeasure</b>                  | function |
| <b>getinsertheight</b>             | function | <b>getmissingcharactervalues</b>   | function |
| <b>getinsertlimit</b>              | function | <b>getmode</b>                     | function |
| <b>getinsertmultiplier</b>         | function | <b>getmodevalues</b>               | function |

|                                     |          |                               |            |
|-------------------------------------|----------|-------------------------------|------------|
| <b>getmuglue</b>                    | function | <b>getusedmarks</b>           | function   |
| <b>getmuskip</b>                    | function | <b>getvsplitcontextvalues</b> | function   |
| <b>getmvloptionvalues</b>           | function | <b>glue</b>                   | table      |
| <b>getnest</b>                      | function | <b>glueoptioncodes</b>        | data table |
| <b>getnestfields</b>                | function | <b>glyphdiscodes</b>          | data table |
| <b>getnestlevel</b>                 | function | <b>glyphoptioncodes</b>       | data table |
| <b>getnoadoptionvalues</b>          | function | <b>groupcodes</b>             | data table |
| <b>getnormalizelinevalues</b>       | function | <b>hashtokens</b>             | function   |
| <b>getnormalizeparvalues</b>        | function | <b>hccode</b>                 | table      |
| <b>getoutputactive</b>              | function | <b>hmcode</b>                 | table      |
| <b>getpacktypevalues</b>            | function | <b>hshcatcodes</b>            | number     |
| <b>getpagecontextvalues</b>         | function | <b>hyphenationcodes</b>       | data table |
| <b>getpagestate</b>                 | function | <b>ifs</b>                    | data table |
| <b>getpagestatevalues</b>           | function | <b>inimatcodes</b>            | number     |
| <b>getparametermodevalues</b>       | function | <b>integerdef</b>             | function   |
| <b>getparcontextvalues</b>          | function | <b>interactioncodes</b>       | data table |
| <b>getpardataspecifications</b>     | function | <b>isattribute</b>            | function   |
| <b>getpardir</b>                    | function | <b>isbox</b>                  | function   |
| <b>getparmodevalues</b>             | function | <b>iscount</b>                | function   |
| <b>getparstate</b>                  | function | <b>isdefined</b>              | function   |
| <b>getparstatefields</b>            | function | <b>isdimen</b>                | function   |
| <b>getpartriggervalue</b>           | function | <b>isfloat</b>                | function   |
| <b>getpenaltyoptionvalues</b>       | function | <b>isglue</b>                 | function   |
| <b>getpositvalue</b>                | function | <b>ismuglue</b>               | function   |
| <b>getprepoststatevalues</b>        | function | <b>ismuskip</b>               | function   |
| <b>getprimitiveorigins</b>          | function | <b>isprintable</b>            | function   |
| <b>getprotrusionboundaryvalues</b>  | function | <b>isskip</b>                 | function   |
| <b>getregisterindex</b>             | function | <b>istoks</b>                 | function   |
| <b>getruleoptionvalues</b>          | function | <b>lastnodetype</b>           | function   |
| <b>getrunstate</b>                  | function | <b>lccode</b>                 | table      |
| <b>getrunstatevalues</b>            | function | <b>linebreak</b>              | function   |
| <b>getsfcode</b>                    | function | <b>linebreakstatecodes</b>    | data table |
| <b>getshapingpenaltiesvalues</b>    | function | <b>listanchorcodes</b>        | data table |
| <b>getskip</b>                      | function | <b>listgeometrycodes</b>      | data table |
| <b>getsnappingvalues</b>            | function | <b>lists</b>                  | table      |
| <b>getspecialmathclassvalues</b>    | function | <b>listsigncodes</b>          | data table |
| <b>getspecification</b>             | function | <b>luacatcodes</b>            | number     |
| <b>getspecificationoptionvalues</b> | function | <b>magicconstants</b>         | table      |
| <b>gettextcontrolvalues</b>         | function |                               |            |
| <b>gettextdir</b>                   | function | S activecharacternamespace    |            |
| <b>gettoks</b>                      | function | N allfitnessvalues            |            |
| <b>getuccode</b>                    | function | N assumedmathcontrol          |            |
| <b>getuleaderlocationvalues</b>     | function | N awfulbad                    |            |
| <b>getunitclassvalues</b>           | function | N decentcriterion             |            |
|                                     |          | N defaultcatcodetable         |            |

|                              |                           |
|------------------------------|---------------------------|
| N defaultcharactercontrol    | N maxintegerregisterindex |
| N defaultdeadcycles          | N maxintregisterindex     |
| N defaulteqnogapstep         | N maxlimitedscale         |
| N defaultthangafter          | N maxmarkindex            |
| N defaultoutputbox           | N maxmathclasscode        |
| N defaultpredisplaygap       | N maxmathfamilyindex      |
| N defaultrule                | N maxmathscalingfactor    |
| N defaultspacefactor         | N maxmathstylescale       |
| N defaulttolerance           | N maxmugluregisterindex   |
| N deplorable                 | N maxmvlindex             |
| N ejectpenalty               | N maxnewlinecharacter     |
| N ignoredepth                | N maxnofbytecodes         |
| N infinitebad                | N maxnofcatcodetables     |
| N infinitepenalty            | N maxnoffitnessvalues     |
| N infinity                   | N maxnoffonts             |
| N largewidthexcess           | N maxnoflanguages         |
| N loosecriterion             | N maxnofmarks             |
| N mathallclass               | N maxnofmathfamilies      |
| N mathbeginclass             | N maxquarterword          |
| N mathdefaultpenalty         | N maxscalefactor          |
| N mathendclass               | N maxsizeofword           |
| N mathfirstuserclass         | N maxspacefactor          |
| N mathlastuserclass          | N maxtoksregisterindex    |
| N maxattributeregisterindex  | N maxtwinlength           |
| N maxboxregisterindex        | N mincardinal             |
| N maxbytecodeindex           | N mindatavalue            |
| N maxcalculatedbadness       | N mindimen                |
| N maxcardinal                | N mindimension            |
| N maxcharactercode           | N minhalfword             |
| N maxdatavalue               | N mininfinity             |
| N maxdimen                   | N mininteger              |
| N maxdimenregisterindex      | N minmvlindex             |
| N maxdimension               | N minnoffitnessvalues     |
| N maxdimensionregisterindex  | N minquarterword          |
| N maxendlinecharacter        | N minscalefactor          |
| N maxfloatregisterindex      | N minspacefactor          |
| N maxfontadjustshrinkfactor  | N nocatcodetable          |
| N maxfontadjuststep          | N null                    |
| N maxfontadjuststretchfactor | N nullflag                |
| N maxfunctionreference       | N nullfont                |
| N maxgluregisterindex        | N onebp                   |
| N maxhalfvalue               | N presetrulethickness     |
| N maxhalfword                | N runningrule             |
| N maxinteger                 | N smallstretchability     |



|                             |            |                                |            |
|-----------------------------|------------|--------------------------------|------------|
| N specialspacefactor        |            | <b>preparelinebreak</b>        | function   |
| N texeqtbsize               |            | <b>primitives</b>              | function   |
| N texhashprime              |            | <b>print</b>                   | function   |
| N texhashsize               |            | <b>protrusionboundarycodes</b> | data table |
| N two                       |            | <b>prtcatcodes</b>             | number     |
| N undefinedmathparameter    |            | <b>pushlocal</b>               | function   |
| N unity                     |            | <b>pushsavelevel</b>           | function   |
| N unusedattributevalue      |            | <b>quitlocal</b>               | function   |
| N unusedmathfamily          |            | <b>quittoks</b>                | function   |
| N unusedmathstyle           |            | <b>resetparagraph</b>          | function   |
| N unusedscriptvalue         |            | <b>rlncatcodes</b>             | number     |
| N unusedstatevalue          |            | <b>romannumeral</b>            | function   |
| N zeroglu                   |            | <b>round</b>                   | function   |
| <b>mathchardef</b>          | function   | <b>ruleoptioncodes</b>         | data table |
| <b>mathcode</b>             | table      | <b>runlocal</b>                | function   |
| <b>mathcontrolcodes</b>     | data table | <b>runstatecodes</b>           | data table |
| <b>mathoptioncodes</b>      | data table | <b>runstring</b>               | function   |
| <b>mathparametercodes</b>   | data table | <b>runtoks</b>                 | function   |
| <b>mathscriptordercodes</b> | data table | <b>saveboxresource</b>         | function   |
| <b>mathscriptsmodecodes</b> | data table | <b>scale</b>                   | function   |
| <b>modelevels</b>           | table      | <b>scantoks</b>                | function   |
| N horizontal                |            | <b>set</b>                     | function   |
| N math                      |            | <b>setamcode</b>               | function   |
| N unset                     |            | <b>setattribute</b>            | function   |
| N vertical                  |            | <b>setbalanceshape</b>         | function   |
| <b>modes</b>                | data table | <b>setbox</b>                  | function   |
| <b>mprint</b>               | function   | <b>setboxdir</b>               | function   |
| <b>muglue</b>               | table      | <b>setcardinalvalue</b>        | function   |
| <b>muskip</b>               | table      | <b>setcatcode</b>              | function   |
| <b>mvloptioncodes</b>       | data table | <b>setcccode</b>               | function   |
| <b>nest</b>                 | table      | <b>setconditional</b>          | function   |
| <b>nilcatcodes</b>          | number     | <b>setcount</b>                | function   |
| <b>noadoptioncodes</b>      | data table | <b>setdelcode</b>              | function   |
| <b>normalizelinecodes</b>   | data table | <b>setdimen</b>                | function   |
| <b>normalizeparcodes</b>    | data table | <b>setdimensionvalue</b>       | function   |
| <b>notcatcodes</b>          | number     | <b>setfloat</b>                | function   |
| <b>number</b>               | function   | <b>setglue</b>                 | function   |
| <b>parcontextcodes</b>      | data table | <b>setglyphdata</b>            | function   |
| <b>partriggercodes</b>      | data table | <b>setglyphscript</b>          | function   |
| <b>penaltyoptioncodes</b>   | data table | <b>setglyphstate</b>           | function   |
| <b>poplocal</b>             | function   | <b>sethccode</b>               | function   |
| <b>popsavelevel</b>         | function   | <b>sethmcode</b>               | function   |
| <b>posit</b>                | table      | <b>setinputstatefile</b>       | function   |
| <b>positdef</b>             | function   | <b>setinputstateline</b>       | function   |

|                              |                     |                                 |            |
|------------------------------|---------------------|---------------------------------|------------|
| <b>setinputstatemode</b>     | function            | <b>skip</b>                     | table      |
| <b>setinsertcontent</b>      | function            | <b>snappingcodes</b>            | data table |
| <b>setinsertdistance</b>     | function            | <b>snapshotpar</b>              | function   |
| <b>setinsertlimit</b>        | function            | <b>sp</b>                       | function   |
| <b>setinsertmultiplier</b>   | function            | <b>specialmathclasscodes</b>    | data table |
| <b>setintegervalue</b>       | function            | <b>specificationoptioncodes</b> | data table |
| <b>setinteraction</b>        | function            | <b>splitbox</b>                 | function   |
| <b>setlcode</b>              | function            | <b>splitcodes</b>               | data table |
| <b>setlinedir</b>            | function            | <b>sprint</b>                   | function   |
| <b>setlist</b>               | function            | <b>stringtocodesbitmap</b>      | function   |
| <b>setlocalbox</b>           | function            | <b>systemmodes</b>              | data table |
| <b>setmath</b>               | function            | <b>takebox</b>                  | function   |
| <b>setmathcode</b>           | function            | <b>texcatcodes</b>              | number     |
| <b>setmathdir</b>            | function            | <b>textcontrolcodes</b>         | data table |
| <b>setmuglue</b>             | function            | <b>toks</b>                     | table      |
| <b>setmuskip</b>             | function            | <b>tonumber</b>                 | function   |
| <b>setnest</b>               | function            | <b>toscaled</b>                 | function   |
| <b>setpardir</b>             | function            | <b>tpacatcodes</b>              | number     |
| <b>setpositvalue</b>         | function            | <b>tpbcacodes</b>               | number     |
| <b>setrunstate</b>           | overloaded function | <b>tpprint</b>                  | function   |
| <b>setsfcode</b>             | function            | <b>trackers</b>                 | data table |
| <b>setskip</b>               | function            | <b>triggerbuildpage</b>         | function   |
| <b>settexmdir</b>            | function            | <b>txtcatcodes</b>              | number     |
| <b>settoks</b>               | function            | <b>uccode</b>                   | table      |
| <b>setuccode</b>             | function            | <b>uprint</b>                   | function   |
| <b>sfcode</b>                | table               | <b>useboxresource</b>           | function   |
| <b>shapingpenaltiescodes</b> | data table          | <b>userdiscoptioncodes</b>      | data table |
| <b>shiftparshape</b>         | function            | <b>userglyphoptioncodes</b>     | data table |
| <b>shipout</b>               | function            | <b>vrbcacodes</b>               | number     |
| <b>showcontext</b>           | function            | <b>write</b>                    | function   |

# texconfig (basic tex)

|  |                     |   |        |
|--|---------------------|---|--------|
| <b>buffer</b> <b>size</b>                        | table               | <b>language</b> <b>size</b>                   | table  |
| N size   |                     | N size  |        |
| N step   |                     | N step  |        |
| <b>error</b> <b>line</b> <b>size</b>             | table               | <b>mark</b> <b>size</b>                       | table  |
| N size   |                     | N size  |        |
| <b>expand</b> <b>size</b>                        | table               | N step  |        |
| N size   |                     | <b>nest</b> <b>size</b>                       | table  |
| <b>file</b> <b>size</b>                          | table               | N size  |        |
| N size   |                     | N step  |        |
| N step   |                     | <b>node</b> <b>size</b>                       | table  |
| <b>first</b> <b>line</b>                         | string              | N size  |        |
| <b>font</b> <b>size</b>                          | table               | N step  |        |
| N size   |                     | <b>param</b> <b>eter</b> <b>size</b>          | table  |
| N step   |                     | N size  |        |
| <b>format</b> <b>name</b>                        | string              | N step  |        |
| <b>function</b> <b>size</b>                      | number              | <b>pool</b> <b>size</b>                       | table  |
| <b>half</b> <b>error</b> <b>line</b> <b>size</b> | table               | N size  |        |
| N size   |                     | N step  |        |
| <b>hash</b> <b>size</b>                          | table               | <b>prop</b> <b>erti</b> <b>ess</b> <b>ize</b> | number |
| N size   |                     | <b>save</b> <b>size</b>                       | table  |
| N step   |                     | N size  |        |
| <b>init</b>                                      | overloaded function | N step  |        |
| <b>input</b> <b>size</b>                         | table               | <b>shell_</b> <b>escape</b>                   | string |
| N size   |                     | <b>string</b> <b>size</b>                     | table  |
| N step   |                     | N size  |        |
| <b>insert</b> <b>size</b>                        | table               | N step  |        |
| N size   |                     | <b>token</b> <b>size</b>                      | table  |
| N step   |                     | N size  |        |
| <b>kpse_</b> <b>init</b>                         | boolean             | N step  |        |

## texio (basic tex)

|                          |          |
|--------------------------|----------|
| <b>closeinput</b>        | function |
| <b>forceendoffile</b>    | function |
| <b>getinputindex</b>     | function |
| <b>getselectorvalues</b> | function |
| <b>getsourcefilename</b> | function |
| <b>setlogfile</b>        | function |
| <b>terminal</b>          | function |

|                        |          |
|------------------------|----------|
| <b>write</b>           | function |
| <b>write_nl</b>        | function |
| <b>writeln</b>         | function |
| <b>writeselector</b>   | function |
| <b>writeselectorlf</b> | function |
| <b>writeselectornl</b> | function |

## token (basic tex)

|                         |          |                           |          |
|-------------------------|----------|---------------------------|----------|
| <b>create</b>           | function | <b>getexpandable</b>      | function |
| <b>expand</b>           | function | <b>getexpansion</b>       | function |
| <b>expand_macro</b>     | function | <b>getfields</b>          | function |
| <b>expandmacro</b>      | function | <b>getflags</b>           | function |
| <b>future_expand</b>    | function | <b>getfrozen</b>          | function |
| <b>futureexpand</b>     | function | <b>getfunctionvalues</b>  | function |
| <b>get_active</b>       | function | <b>getid</b>              | function |
| <b>get_cmdchrscs</b>    | function | <b>getimmutable</b>       | function |
| <b>get_cmdname</b>      | function | <b>getindex</b>           | function |
| <b>get_command</b>      | function | <b>getinstance</b>        | function |
| <b>get_csname</b>       | function | <b>getinteger</b>         | function |
| <b>get_cstoken</b>      | function | <b>getmacro</b>           | function |
| <b>get_dimension</b>    | function | <b>getmeaning</b>         | function |
| <b>get_expandable</b>   | function | <b>getnoaligned</b>       | function |
| <b>get_fields</b>       | function | <b>getparameters</b>      | function |
| <b>get_flags</b>        | function | <b>getpermanent</b>       | function |
| <b>get_frozen</b>       | function | <b>getprimitive</b>       | function |
| <b>get_id</b>           | function | <b>getprimitives</b>      | function |
| <b>get_immutable</b>    | function | <b>getprotected</b>       | function |
| <b>get_index</b>        | function | <b>getrange</b>           | function |
| <b>get_instance</b>     | function | <b>gettok</b>             | function |
| <b>get_integer</b>      | function | <b>gettolerant</b>        | function |
| <b>get_macro</b>        | function | <b>gobble</b>             | function |
| <b>get_meaning</b>      | function | <b>gobble_dimension</b>   | function |
| <b>get_noaligned</b>    | function | <b>gobble_integer</b>     | function |
| <b>get_parameters</b>   | function | <b>gobbledimension</b>    | function |
| <b>get_permanent</b>    | function | <b>gobbleinteger</b>      | function |
| <b>get_primitive</b>    | function | <b>grab</b>               | function |
| <b>get_protected</b>    | function | <b>is_defined</b>         | function |
| <b>get_range</b>        | function | <b>is_next_char</b>       | function |
| <b>get_tok</b>          | function | <b>is_token</b>           | function |
| <b>get_tolerant</b>     | function | <b>isactivestring</b>     | function |
| <b>getactive</b>        | function | <b>isdefined</b>          | function |
| <b>getcmdchrscs</b>     | function | <b>isnextchar</b>         | function |
| <b>getcmdname</b>       | function | <b>istoken</b>            | function |
| <b>getcommand</b>       | function | <b>locatemacro</b>        | function |
| <b>getcommandvalues</b> | function | <b>new</b>                | function |
| <b>getconstant</b>      | function | <b>peek_next</b>          | function |
| <b>getcsname</b>        | function | <b>peek_next_char</b>     | function |
| <b>getcstoken</b>       | function | <b>peek_next_expanded</b> | function |
| <b>getdimension</b>     | function | <b>peeknext</b>           | function |

|                             |          |                              |          |
|-----------------------------|----------|------------------------------|----------|
| <b>peeknextchar</b>         | function | <b>scan_word</b>             | function |
| <b>peeknextexpanded</b>     | function | <b>scanargument</b>          | function |
| <b>pop_macro</b>            | function | <b>scanbox</b>               | function |
| <b>popmacro</b>             | function | <b>scancardinal</b>          | function |
| <b>push_macro</b>           | function | <b>scanchar</b>              | function |
| <b>pushmacro</b>            | function | <b>scancmdchr</b>            | function |
| <b>put_back</b>             | function | <b>scancmdchrexplanded</b>   | function |
| <b>put_next</b>             | function | <b>scancode</b>              | function |
| <b>putback</b>              | function | <b>scancsname</b>            | function |
| <b>putnext</b>              | function | <b>scanctoken</b>            | function |
| <b>save_lua</b>             | function | <b>scandelimited</b>         | function |
| <b>savelua</b>              | function | <b>scandetokened</b>         | function |
| <b>scan_argument</b>        | function | <b>scandimen</b>             | function |
| <b>scan_box</b>             | function | <b>scandimenargument</b>     | function |
| <b>scan_cardinal</b>        | function | <b>scandimension</b>         | function |
| <b>scan_char</b>            | function | <b>scandimensionargument</b> | function |
| <b>scan_cmdchr</b>          | function | <b>scanfloat</b>             | function |
| <b>scan_cmdchr_expanded</b> | function | <b>scan glue</b>             | function |
| <b>scan_code</b>            | function | <b>scanint</b>               | function |
| <b>scan_csname</b>          | function | <b>scaninteger</b>           | function |
| <b>scan_delimited</b>       | function | <b>scanintegerargument</b>   | function |
| <b>scan_dimen</b>           | function | <b>scankey</b>               | function |
| <b>scan_float</b>           | function | <b>scankeyword</b>           | function |
| <b>scan_glue</b>            | function | <b>scankeywordcs</b>         | function |
| <b>scan_integer</b>         | function | <b>scanletters</b>           | function |
| <b>scan_key</b>             | function | <b>scanluacardinal</b>       | function |
| <b>scan_keyword</b>         | function | <b>scanluainteger</b>        | function |
| <b>scan_keyword_cs</b>      | function | <b>scanluanumber</b>         | function |
| <b>scan_letters</b>         | function | <b>scannext</b>              | function |
| <b>scan_luacardinal</b>     | function | <b>scannextchar</b>          | function |
| <b>scan_luainteger</b>      | function | <b>scannextexpanded</b>      | function |
| <b>scan_luanumber</b>       | function | <b>scanposit</b>             | function |
| <b>scan_next</b>            | function | <b>scanreal</b>              | function |
| <b>scan_next_char</b>       | function | <b>scanscale</b>             | function |
| <b>scan_next_expanded</b>   | function | <b>scanskip</b>              | function |
| <b>scan_real</b>            | function | <b>scanstring</b>            | function |
| <b>scan_scale</b>           | function | <b>scantoken</b>             | function |
| <b>scan_skip</b>            | function | <b>scantokencode</b>         | function |
| <b>scan_string</b>          | function | <b>scantokenlist</b>         | function |
| <b>scan_token</b>           | function | <b>scantokenstring</b>       | function |
| <b>scan_token_code</b>      | function | <b>scantoks</b>              | function |
| <b>scan_tokenlist</b>       | function | <b>scanvalue</b>             | function |
| <b>scan_toks</b>            | function | <b>scanword</b>              | function |
| <b>scan_value</b>           | function | <b>serialize</b>             | function |

|                      |          |                           |          |
|----------------------|----------|---------------------------|----------|
| <b>set_dimension</b> | function | <b>setmacrofrommark</b>   | function |
| <b>set_integer</b>   | function | <b>skip_next</b>          | function |
| <b>set_lua</b>       | function | <b>skip_next_expanded</b> | function |
| <b>set_macro</b>     | function | <b>skipnext</b>           | function |
| <b>setdimension</b>  | function | <b>skipnextexpanded</b>   | function |
| <b>setinteger</b>    | function | <b>type</b>               | function |
| <b>setlua</b>        | function | <b>undefine_macro</b>     | function |
| <b>setmacro</b>      | function | <b>undefinemacro</b>      | function |

# tokens (context)

|                   |            |                       |            |          |
|-------------------|------------|-----------------------|------------|----------|
| <b>accessors</b>  | table      |                       | S todimen  |          |
| F active          |            |                       | S toglue   |          |
| F cmd             |            |                       | S tonumber |          |
| F cmdchrsc        |            |                       | S tostring |          |
| F cmdname         |            | <b>create</b>         |            | function |
| F command         |            | <b>defined</b>        |            | function |
| F csname          |            | <b>flags</b>          |            | function |
| F expandable      |            | <b>getinteger</b>     |            | function |
| F frozen          |            | <b>getters</b>        |            | table    |
| F index           |            | F box                 |            |          |
| F name            |            | F count               |            |          |
| F protected       |            | F cstoken             |            |          |
| F range           |            | F dimen               |            |          |
| <b>astable</b>    | function   | F glue                |            |          |
| <b>bits</b>       | table      | F macro               |            |          |
| N active          |            | F meaning             |            |          |
| N alignment       |            | F skip                |            |          |
| N begingroup      |            | F token               |            |          |
| N character       |            | <b>gobble</b>         |            | function |
| N close           |            | <b>isactivestring</b> |            | function |
| N comment         |            | <b>isdefined</b>      |            | function |
| N endgroup        |            | <b>istoken</b>        |            | function |
| N endoffline      |            | <b>new</b>            |            | function |
| N escape          |            | <b>pickup</b>         |            | function |
| N ignore          |            | <b>popmacro</b>       |            | function |
| N invalid         |            | <b>presets</b>        |            | table    |
| N letter          |            | T 1 argument          |            |          |
| N mathshift       |            | T 1 integer           |            |          |
| N open            |            | T 1 optional          |            |          |
| N other           |            | T 1 string            |            |          |
| N parameter       |            | T 2 arguments         |            |          |
| N space           |            | T 2 integers          |            |          |
| N subscript       |            | T 2 optionals         |            |          |
| N superscript     |            | T 2 strings           |            |          |
| N whitespace      |            | T 3 arguments         |            |          |
| <b>cache</b>      | data table | T 3 integers          |            |          |
| <b>commands</b>   | data table | T 3 optionals         |            |          |
| <b>compile</b>    | function   | T 3 strings           |            |          |
| <b>constant</b>   | function   | T 4 arguments         |            |          |
| <b>converters</b> | table      | T 4 integers          |            |          |
| S toboolean       |            | T 4 optionals         |            |          |



|                     |          |                   |          |
|---------------------|----------|-------------------|----------|
| T 4 strings         |          | F luainteger      |          |
| T 5 strings         |          | F luanumber       |          |
| T 6 strings         |          | F lxmlid          |          |
| T 7 strings         |          | F next            |          |
| T 8 strings         |          | F nextchar        |          |
| <b>pushmacro</b>    | function | F nextexpanded    |          |
| <b>scanners</b>     | table    | F number          |          |
| F argument          |          | F optional        |          |
| F argumentasis      |          | F peek            |          |
| F array             |          | F peekchar        |          |
| F boolean           |          | F peekexpanded    |          |
| F box               |          | F posit           |          |
| F bracketed         |          | F real            |          |
| F bracketedasis     |          | F scanclose       |          |
| F cardinal          |          | F scanopen        |          |
| F char              |          | F skip            |          |
| F cmdchr            |          | F skipexpanded    |          |
| F cmdchrexploded    |          | F string          |          |
| F code              |          | F table           |          |
| F conditional       |          | F token           |          |
| F count             |          | F tokencode       |          |
| F csname            |          | F tokenlist       |          |
| F csnameunchecked   |          | F tokens          |          |
| F delimited         |          | F tokenstring     |          |
| F detokened         |          | F toks            |          |
| F dimen             |          | F value           |          |
| F dimension         |          | F vbox            |          |
| F dimensionargument |          | F verbatim        |          |
| F float             |          | F vtop            |          |
| F glue              |          | F whd             |          |
| F gluespec          |          | F word            |          |
| F gluevalues        |          | <b>setinteger</b> | function |
| F hash              |          | <b>setters</b>    | table    |
| F hbox              |          | F box             |          |
| F integer           |          | F char            |          |
| F integerargument   |          | F count           |          |
| F ischar            |          | F dimen           |          |
| F key               |          | F glue            |          |
| F keyword           |          | F lua             |          |
| F keywordcs         |          | F macro           |          |
| F letters           |          | F skip            |          |
| F list              |          | <b>shortcuts</b>  | table    |
| F lua               |          | T bits            |          |
| F luacardinal       |          | N active          |          |

|               |                    |
|---------------|--------------------|
| N alignment   | F atan             |
| N begingroup  | F band             |
| N character   | F bor              |
| N close       | F bxor             |
| N comment     | F ceil             |
| N endgroup    | F conj             |
| N endofline   | F copy             |
| N escape      | F cos              |
| N ignore      | F exp              |
| N invalid     | F exp2             |
| N letter      | F expand           |
| N mathshift   | F floor            |
| N open        | F frombyte         |
| N other       | F fromchar         |
| N parameter   | F fromposit        |
| N space       | F integer          |
| N subscript   | F log              |
| N superscript | F log10            |
| N whitespace  | F loglp            |
| N close       | F log2             |
| F inspect     | F logb             |
| N open        | F max              |
| T posit       | F min              |
| F NaN         | F modf             |
| F NaR         | F new              |
| F __add       | F pow              |
| F __band      | F rotate           |
| F __bor       | F round            |
| F __bxor      | F rounded          |
| F __div       | F shift            |
| F __eq        | F sin              |
| F __le        | F sqrt             |
| F __lt        | F tan              |
| F __mul       | F tobyte           |
| S __name      | F tochar           |
| F __pow       | F tonumber         |
| F __shl       | F toposit          |
| F __shr       | F toString         |
| F __sub       | F report           |
| F __toString  | F scanargument     |
| F __unm       | F scanargumentasis |
| F abs         | F scanarray        |
| F acos        | F scanboolean      |
| F asin        | F scanbox          |

|                         |                     |
|-------------------------|---------------------|
| F scanbracketed         | F detokened         |
| F scanbracketedasis     | F dimen             |
| F scancardinal          | F dimension         |
| F scanclose             | F dimensionargument |
| F scancode              | F float             |
| F scanconditional       | F glue              |
| F scanscname            | F gluespec          |
| F scanscnameunchecked   | F gluevalues        |
| F scandelimited         | F hash              |
| F scandetokened         | F hbox              |
| F scandimen             | F integer           |
| F scandimension         | F integerargument   |
| F scandimensionargument | F ischar            |
| F scanfloat             | F key               |
| F scanglue              | F keyword           |
| F scangluespec          | F keywordcs         |
| F scangluevalues        | F letters           |
| F scanhash              | F list              |
| F scanhbox              | F lua               |
| F scaninteger           | F luacardinal       |
| F scanintegerargument   | F luainteger        |
| F scankeyword           | F luanumber         |
| F scankeywordcs         | F lxmlid            |
| F scanletters           | F next              |
| F scanlist              | F nextchar          |
| F scanlua               | F nextexpanded      |
| T scanners              | F number            |
| F argument              | F optional          |
| F argumentasis          | F peek              |
| F array                 | F peekchar          |
| F boolean               | F peekexpanded      |
| F box                   | F posit             |
| F bracketed             | F real              |
| F bracketedasis         | F scanclose         |
| F cardinal              | F scanopen          |
| F char                  | F skip              |
| F cmdchr                | F skipexpanded      |
| F cmdchrexplanded       | F string            |
| F code                  | F table             |
| F conditional           | F token             |
| F count                 | F tokencode         |
| F csname                | F tokenlist         |
| F csnameunchecked       | F tokens            |
| F delimited             | F tokenstring       |

|                   |                    |
|-------------------|--------------------|
| F toks            | S toglue           |
| F value           | S tonumber         |
| F vbox            | S tostring         |
| F verbatim        | F create           |
| F vtop            | F defined          |
| F whd             | F flags            |
| F word            | F getinteger       |
| F scannumber      | T getters          |
| F scanopen        | F box              |
| F scanoptional    | F count            |
| F scanposit       | F ctoken           |
| F scanstring      | F dimen            |
| F scantable       | F glue             |
| F scantokenlist   | F macro            |
| F scantokenstring | F meaning          |
| F scantoks        | F skip             |
| F scanvbox        | F token            |
| F scanverbatim    | F gobble           |
| F scanvtop        | F isactivestring   |
| F scanword        | F isdefined        |
| F toboolean       | F istoken          |
| F todimen         | F new              |
| T tokens          | F pickup           |
| T accessors       | F popmacro         |
| F active          | T presets          |
| F cmd             | F pushmacro        |
| F cmdchrsc        | F setinteger       |
| F cmdname         | T setters          |
| F command         | F box              |
| F csname          | F char             |
| F expandable      | F count            |
| F frozen          | F dimen            |
| F index           | F glue             |
| F name            | F lua              |
| F protected       | F macro            |
| F range           | F skip             |
| F astable         | T shortcuts        |
| D cache           | N close            |
| D commands        | F inspect          |
| F compile         | N open             |
| F constant        | F report           |
| T converters      | F scanargument     |
| S toboolean       | F scanargumentasis |
| S todimen         | F scanarray        |

|                         |                   |            |
|-------------------------|-------------------|------------|
| F scanboolean           | F scanletters     |            |
| F scanbox               | F scanlist        |            |
| F scanbracketed         | F scanlua         |            |
| F scanbracketedasis     | F scannumber      |            |
| F scancardinal          | F scanopen        |            |
| F scanclose             | F scanoptional    |            |
| F scancode              | F scanposit       |            |
| F scanconditional       | F scanstring      |            |
| F scancsname            | F scantable       |            |
| F scancsnameunchecked   | F scantokenlist   |            |
| F scandelimited         | F scantokenstring |            |
| F scandetokened         | F scantoks        |            |
| F scandimen             | F scanvbox        |            |
| F scandimension         | F scanverbatim    |            |
| F scandimensionargument | F scanvtop        |            |
| F scanfloat             | F scanword        |            |
| F scanglue              | F toboolean       |            |
| F scangluespec          | F todimen         |            |
| F scangluevalues        | F tonumber        |            |
| F scanhash              | F tostring        |            |
| F scanhbox              | D values          |            |
| F scaninteger           | F tonumber        |            |
| F scanintegerargument   | F tostring        |            |
| F scankeyword           | <b>values</b>     | data table |
| F scankeywordcs         |                   |            |

## tracers (context)

**printerror**    function  
**printwarning**    function

**showlines**    function

## trackers (context)

|                       |            |                 |          |
|-----------------------|------------|-----------------|----------|
| <b>data</b>           | data table | <b>register</b> | function |
| <b>default</b>        | function   | <b>report</b>   | function |
| <b>disable</b>        | function   | <b>reset</b>    | function |
| <b>done</b>           | table      | <b>savehash</b> | function |
| <b>dumphashtofile</b> | function   | <b>show</b>     | function |
| <b>enable</b>         | function   | <b>value</b>    | function |
| <b>list</b>           | function   | <b>values</b>   | function |
| <b>name</b>           | string     |                 |          |

# typesetters (context)

|                       |       |                   |           |
|-----------------------|-------|-------------------|-----------|
| <b>alignments</b>     | table |                   | T actions |
| F handler             |       |                   | F handler |
| F set                 |       |                   | F set     |
| <b>breakpoints</b>    | table | <b>directions</b> | table     |
| F define              |       | F getfences       |           |
| F handler             |       | F getglobal       |           |
| D mapping             |       | F getmethod       |           |
| T methods             |       | F handler         |           |
| T numbers             |       | T handlers        |           |
| F set                 |       | F installhandler  |           |
| F setreplacement      |       | F set             |           |
| <b>cases</b>          | table | F setcolor        |           |
| T actions             |       | F tomode          |           |
| F handler             |       | <b>firstlines</b> | table     |
| F register            |       | T actions         |           |
| F set                 |       | F default         |           |
| <b>characteralign</b> | table | F line            |           |
| F handler             |       | F word            |           |
| F resetcharacteralign |       | F handler         |           |
| F setcharacteralign   |       | F set             |           |
| <b>characters</b>     | table | <b>fontkerns</b>  | table     |
| F handler             |       | F handler         |           |
| T methods             |       | <b>initials</b>   | table     |
| F replacensp          |       | T actions         |           |
| F replacenspaces      |       | F default         |           |
| <b>checkers</b>       | table | F handler         |           |
| F handler             |       | F set             |           |
| F reset               |       | <b>injectors</b>  | table     |
| F set                 |       | F check           |           |
| <b>cleaners</b>       | table | T list            |           |
| F handler             |       | F mark            |           |
| F set                 |       | F reset           |           |
| <b>compare</b>        | table | F set             |           |
| F handler             |       | F show            |           |
| F reset               |       | <b>italics</b>    | table     |
| F set                 |       | F enablemath      |           |
| F setpair             |       | F enabletext      |           |
| F setup               |       | F handler         |           |
| <b>corrections</b>    | table | <b>kerns</b>      | table     |
| F handler             |       | D factors         |           |
| <b>digits</b>         | table | F handler         |           |



|                            |          |
|----------------------------|----------|
| F keepligature             |          |
| D mapping                  |          |
| F set                      |          |
| <b>localboxes</b>          | table    |
| F handler                  |          |
| <b>manipulators</b>        | table    |
| F apply                    |          |
| F applyspecification       |          |
| T methods                  |          |
| F Word                     |          |
| F Words                    |          |
| F abbreviatedjournal       |          |
| F expandedjournal          |          |
| F lowercase                |          |
| F stripperperiod           |          |
| F uppercase                |          |
| T patterns                 |          |
| U list                     |          |
| U pair                     |          |
| F splitspecification       |          |
| <b>margins</b>             | table    |
| F finalhandler             |          |
| F globalhandler            |          |
| F localhandler             |          |
| F save                     |          |
| <b>marksuspects</b>        | function |
| <b>paragraphs</b>          | table    |
| F addanchortoline          |          |
| F addtoline                |          |
| F calculatedelta           |          |
| F checkline                |          |
| F moveinline               |          |
| <b>periodkerns</b>         | table    |
| D factors                  |          |
| F handler                  |          |
| D mapping                  |          |
| F set                      |          |
| <b>processors</b>          | table    |
| F apply                    |          |
| F register                 |          |
| F reset                    |          |
| F split                    |          |
| F startapply               |          |
| F stopapply                |          |
| F stripped                 |          |
| F tostring                 |          |
| <b>rubies</b>              | table    |
| F attach                   |          |
| F check                    |          |
| <b>showinvisibles</b>      | function |
| <b>showsuspects</b>        | function |
| <b>spacings</b>            | table    |
| F define                   |          |
| F handler                  |          |
| D mapping                  |          |
| T numbers                  |          |
| T frenchpunctuation        |          |
| T characters               |          |
| S name                     |          |
| N number                   |          |
| F reset                    |          |
| F set                      |          |
| F setup                    |          |
| <b>stacking</b>            | table    |
| F getindex                 |          |
| F getselection             |          |
| F handler                  |          |
| <b>swapping</b>            | table    |
| F handler                  |          |
| <b>synchronize</b>         | table    |
| F handler                  |          |
| <b>tighten</b>             | table    |
| F handler                  |          |
| <b>wrappers</b>            | table    |
| <b>xtables</b>             | table    |
| F cleanup                  |          |
| F construct                |          |
| F create                   |          |
| F finish_row               |          |
| F flush                    |          |
| F initialize_construct     |          |
| F initialize_reflow_height |          |
| F initialize_reflow_width  |          |
| F next_row                 |          |
| F reflow_height            |          |
| F reflow_width             |          |
| F set_construct            |          |

F set\_reflow\_height

F set\_reflow\_width

## updaters (context)

**apply**      function  
**register**   function

## url (context)

|                  |          |
|------------------|----------|
| <b>addscheme</b> | function |
| <b>barepath</b>  | function |
| <b>construct</b> | function |
| <b>decode</b>    | function |
| <b>encode</b>    | function |
| <b>escape</b>    | function |
| <b>filename</b>  | function |

|                    |          |
|--------------------|----------|
| <b>hashed</b>      | function |
| <b>hasscheme</b>   | function |
| <b>query</b>       | function |
| <b>split</b>       | function |
| <b>toquery</b>     | function |
| <b>unescape</b>    | function |
| <b>unescapeget</b> | function |

## utf8 (basic lua)

**char**           function  
**charpattern** string  
**codepoint**     function

**codes**          function  
**len**           function  
**offset**         function

# utilities (context)

## **debugger**            table

F disable  
F enable  
F savestats  
F showstats  
F showtraceback

## **files**                table

F close  
F getposition  
F getsize  
F look  
F open  
F read2dot14  
F readbyte  
F readbytes  
F readbytetable  
F readcardinal  
F readcardinal1  
F readcardinal1le  
F readcardinal2  
F readcardinal2le  
F readcardinal3  
F readcardinal3le  
F readcardinal4  
F readcardinal4le  
F readcardinaltable  
F readchar  
F readcline  
F readcstring  
F readfixed2  
F readfixed4  
F readinteger  
F readinteger1  
F readinteger1le  
F readinteger2  
F readinteger2le  
F readinteger3  
F readinteger3le  
F readinteger4  
F readinteger4le  
F readintegertable

F readsignedbyte  
F readstring  
F readtag  
F setposition  
F size  
F skip  
F skiplong  
F skipposition  
F skipshort  
F writebyte  
F writecardinal1  
F writecardinal1le  
F writecardinal2  
F writecardinal2le  
F writecardinal3  
F writecardinal3le  
F writecardinal4  
F writecardinal4le  
F writeinteger1  
F writeinteger1le  
F writeinteger2  
F writeinteger2le  
F writeinteger3  
F writeinteger3le  
F writeinteger4  
F writeinteger4le  
F writestring

## **formatters**           table

F formatcolumns  
F list  
F stripzeros

## **ghostscript**           table

F convert  
F statistics

## **graphicmagick**        table

F convert  
F statistics

## **graphicsmagick**      table

F convert  
F statistics

## **json**                  table

|                         |              |   |
|-------------------------|--------------|---|
| F load                  |              | T hashes                                    |
| F tojson                |              | T settings_to_list                          |
| F tolua                 |              | T settings_to_set                           |
| F tostring              |              | T min,max,fit,broad,auto                    |
| <b>lua</b>              | <b>table</b> | B auto                                      |
| B alwaysstripcode       |              | B broad                                     |
| F checkmemory           |              | B fit                                       |
| F compile               |              | B max                                       |
| F loadedluacode         |              | B min                                       |
| F loadstring            |              | T text,hidden,paper,page,leftpage,rightpage |
| F loadstripped          |              | B hidden                                    |
| N nofstrippedbytes      |              | B leftpage                                  |
| N nofstrippedchunks     |              | B page                                      |
| F registerfinalizer     |              | B paper                                     |
| B stripcode             |              | B rightpage                                 |
| T strippedchunks        |              | B text                                      |
| F strippedloadstring    |              | F iterator                                  |
| T suffixes              |              | F keq_to_hash                               |
| S lmt                   |              | F listitem                                  |
| S lua                   |              | F make_settings_to_hash_pattern             |
| S luc                   |              | F mergehashes                               |
| S lui                   |              | F options_to_array                          |
| S luj                   |              | F options_to_hash                           |
| S luv                   |              | T patterns                                  |
| S tma                   |              | U settings_to_array                         |
| S tmc                   |              | U settings_to_hash_a                        |
| S tua                   |              | U settings_to_hash_b                        |
| S tuc                   |              | U settings_to_hash_c                        |
| <b>packers</b>          | <b>table</b> | U settings_to_hash_d                        |
| F hashed                |              | U unittotex                                 |
| F new                   |              | F process_stripped_settings                 |
| F pack                  |              | F rfc4180splitter                           |
| F simplehashed          |              | F runtime                                   |
| F strip                 |              | F settings_to_array                         |
| F unpack                |              | F settings_to_array_obey_fences             |
| N version               |              | F settings_to_array_with_repeat             |
| <b>parsers</b>          | <b>table</b> | F settings_to_hash                          |
| F add_settings_to_array |              | F settings_to_hash_colon_too                |
| F arguments_to_table    |              | F settings_to_hash_strict                   |
| F array_to_string       |              | F settings_to_hash_tolerant                 |
| F csvsplitter           |              | F settings_to_numbers                       |
| F getparameters         |              | F settings_to_set                           |
| F groupsplitat          |              | F simple_hash_to_string                     |
| F hash_to_string        |              | F splitmethod                               |

|                              |              |                   |              |
|------------------------------|--------------|-------------------|--------------|
| F splitthousands             |              | F new             |              |
| F stepper                    |              | F register        |              |
| F stripped_settings_to_array |              | F report          |              |
| F totime                     |              | F reset           |              |
| F unittotex                  |              | F show            |              |
| F unittoxml                  |              | <b>signals</b>    | <b>table</b> |
| <b>randomizer</b>            | <b>table</b> | S configuration   |              |
| F get                        |              | F initialize      |              |
| F getnumber                  |              | F loadstate       |              |
| F getrepeatable              |              | F report          |              |
| F getrepeatableseed          |              | F savestate       |              |
| F getseed                    |              | F serialclose     |              |
| F newrepeatable              |              | F serialfast      |              |
| F popseed                    |              | F serialopen      |              |
| F pushseed                   |              | F serialsend      |              |
| F repeatable                 |              | F serialwrite     |              |
| F reuseseed                  |              | N version         |              |
| F setseed                    |              | <b>stacker</b>    | <b>table</b> |
| F setseedi                   |              | F new             |              |
| <b>randomizers</b>           | <b>table</b> | <b>storage</b>    | <b>table</b> |
| F poisson                    |              | F allocate        |              |
| <b>sequencers</b>            | <b>table</b> | F checked         |              |
| F appendaction               |              | F mark            |              |
| F appendgroup                |              | F marked          |              |
| F compile                    |              | F setinitializer  |              |
| F disableaction              |              | F sparse          |              |
| F disablegroup               |              | <b>streams</b>    | <b>table</b> |
| F enableaction               |              | F close           |              |
| F enablegroup                |              | F getposition     |              |
| D functions                  |              | F getsizes        |              |
| F localize                   |              | F getstring       |              |
| F new                        |              | F look            |              |
| F nodeprocessor              |              | F open            |              |
| F prependaction              |              | F openstring      |              |
| F prependgroup               |              | F read2dot14      |              |
| F removeaction               |              | F readbyte        |              |
| F replaceaction              |              | F readbytes       |              |
| F setkind                    |              | F readbytetable   |              |
| F tostring                   |              | F readcardinal    |              |
| <b>setters</b>               | <b>table</b> | F readcardinal1   |              |
| F disable                    |              | F readcardinal11e |              |
| F enable                     |              | F readcardinal2   |              |
| F initialize                 |              | F readcardinal21e |              |
| F list                       |              | F readcardinal3   |              |



|                             |                            |
|-----------------------------|----------------------------|
| F readcardinal3le           | T striplinepatterns        |
| F readcardinal4             | U collapse                 |
| F readcardinal4le           | U collapse all             |
| F readcardinaltable         | U prune                    |
| F readchar                  | U prune and collapse       |
| F readcline                 | U prune and no empty       |
| F readcstring               | U prune and to space       |
| F readfixed2                | U retain                   |
| F readfixed4                | U retain and collapse      |
| F readinteger               | U retain and no empty      |
| F readinteger1              | F striplines               |
| F readinteger1le            | F striplong                |
| F readinteger2              | F tabtospace               |
| F readinteger2le            | T tracers                  |
| F readinteger3              | <b>tables</b> <b>table</b> |
| F readinteger3le            | F accesstable              |
| F readinteger4              | F definedtable             |
| F readinteger4le            | F definetable              |
| F readintegertable          | F encapsulate              |
| F readsignedbyte            | F insertaftervalue         |
| F readstring                | F insertbeforevalue        |
| F setposition               | F migratetable             |
| F size                      | F removevalue              |
| F skip                      | F replacevalue             |
| F skipbytes                 | <b>tar</b> <b>table</b>    |
| F skiplong                  | T archives                 |
| F skipshort                 | F closearchive             |
| F tocardinal1               | T files                    |
| F tocardinal1le             | F fetch                    |
| F tocardinal2               | F hash                     |
| F tocardinal2le             | F list                     |
| F tocardinal3               | F pack                     |
| F tocardinal3le             | F unpack                   |
| F tocardinal4               | F openarchive              |
| F tocardinal4le             | T registeredfiles          |
| <b>strings</b> <b>table</b> | T streams                  |
| F collapse                  | F fetch                    |
| F collapsecrlf              | F hash                     |
| T formatters                | F list                     |
| F add                       | F pack                     |
| F new                       | F unpack                   |
| F newcollector              | T strings                  |
| F newrepeater               | F fetch                    |
| F nice                      | F hash                     |

F list  
F pack  
F unpack  
**templates**      table  
F load  
F replace  
F replacer  
F resolve  
**zipfiles**      table

F close  
F found  
F hash  
F list  
F open  
F unzip  
F unzipdir  
F zipdir

# vector (context)

|                       |          |                    |          |
|-----------------------|----------|--------------------|----------|
| <b>add</b>            | function | <b>identity</b>    | function |
| <b>append</b>         | function | <b>inner</b>       | function |
| <b>average</b>        | function | <b>insert</b>      | function |
| <b>ceiling</b>        | function | <b>inverse</b>     | function |
| <b>checkoverlap</b>   | function | <b>ismesh</b>      | function |
| <b>collectoverlap</b> | function | <b>issingular</b>  | function |
| <b>concat</b>         | function | <b>isvector</b>    | function |
| <b>contour</b>        | table    | <b>iszero</b>      | function |
| F average             |          | <b>mesh</b>        | table    |
| F checkoverlap        |          | F get              |          |
| F collectoverlap      |          | F getdimensions    |          |
| F getarea             |          | F ismesh           |          |
| F getmesh             |          | F new              |          |
| F overlapping         |          | F set              |          |
| F show                |          | F tostring         |          |
| F sort                |          | F totable          |          |
| F triangulate         |          | F type             |          |
| <b>copy</b>           | function | <b>meshname</b>    | function |
| <b>crossproduct</b>   | function | <b>mul</b>         | function |
| <b>delete</b>         | function | <b>negate</b>      | function |
| <b>determinant</b>    | function | <b>new</b>         | function |
| <b>div</b>            | function | <b>normalize</b>   | function |
| <b>equal</b>          | function | <b>onecolumn</b>   | function |
| <b>exchange</b>       | function | <b>onerow</b>      | function |
| <b>floor</b>          | function | <b>product</b>     | function |
| <b>get</b>            | function | <b>remove</b>      | function |
| <b>getdimensions</b>  | function | <b>replace</b>     | function |
| <b>getepsilon</b>     | function | <b>round</b>       | function |
| <b>getmesh</b>        | function | <b>rowechelon</b>  | function |
| <b>getrc</b>          | function | <b>set</b>         | function |
| <b>getrow</b>         | function | <b>setnext</b>     | function |
| <b>getstacking</b>    | function | <b>setrc</b>       | function |
| <b>gettype</b>        | function | <b>setstacking</b> | function |
| <b>helpers</b>        | table    | <b>slice</b>       | function |
| F points              |          | <b>sort</b>        | function |
| F transform           |          | <b>sub</b>         | function |
| F xrotation           |          | <b>swap</b>        | function |
| F xyzscale            |          | <b>tostring</b>    | function |
| F yrotation           |          | <b>totable</b>     | function |
| F zrotation           |          | <b>transpose</b>   | function |
| <b>homogenize</b>     | function | <b>triangulate</b> | function |

**truncate**

function

**type**

function

## visualizers (context)

|                              |            |                        |            |
|------------------------------|------------|------------------------|------------|
| <b>escapepatterns</b>        | data table | <b>signal</b>          | string     |
| <b>getspecification</b>      | function   | <b>signalpattern</b>   | userdata   |
| <b>getvisualizer</b>         | function   | <b>specifications</b>  | data table |
| <b>load</b>                  | function   | <b>visualize</b>       | function   |
| <b>makenested</b>            | function   | <b>visualizebuffer</b> | function   |
| <b>makepattern</b>           | function   | <b>visualizefile</b>   | function   |
| <b>newgrammar</b>            | function   | <b>visualizestring</b> | function   |
| <b>newhandler</b>            | function   | <b>write</b>           | function   |
| <b>parsedxml</b>             | function   | <b>writeargument</b>   | function   |
| <b>pattern</b>               | function   | <b>writedefault</b>    | function   |
| <b>register</b>              | function   | <b>writeemptyline</b>  | function   |
| <b>registerescapecommand</b> | function   | <b>writenewline</b>    | function   |
| <b>registerescapepline</b>   | function   | <b>writespace</b>      | function   |
| <b>registerescapepattern</b> | function   |                        |            |

## xcomplex (extra lua)

|                   |          |                   |          |
|-------------------|----------|-------------------|----------|
| <b>I</b>          | function | <b>erf</b>        | function |
| <b>__add</b>      | function | <b>erfc</b>       | function |
| <b>__div</b>      | function | <b>erfcx</b>      | function |
| <b>__eq</b>       | function | <b>erfi</b>       | function |
| <b>__mul</b>      | function | <b>exp</b>        | function |
| <b>__name</b>     | string   | <b>i</b>          | function |
| <b>__pow</b>      | function | <b>imag</b>       | function |
| <b>__sub</b>      | function | <b>log</b>        | function |
| <b>__tostring</b> | function | <b>new</b>        | function |
| <b>__unm</b>      | function | <b>pow</b>        | function |
| <b>abs</b>        | function | <b>proj</b>       | function |
| <b>acos</b>       | function | <b>real</b>       | function |
| <b>acosh</b>      | function | <b>sin</b>        | function |
| <b>arg</b>        | function | <b>sinh</b>       | function |
| <b>asin</b>       | function | <b>sqrt</b>       | function |
| <b>asinh</b>      | function | <b>tan</b>        | function |
| <b>atan</b>       | function | <b>tanh</b>       | function |
| <b>atanh</b>      | function | <b>topair</b>     | function |
| <b>conj</b>       | function | <b>tostring</b>   | function |
| <b>cos</b>        | function | <b>totable</b>    | function |
| <b>cosh</b>       | function | <b>voigt</b>      | function |
| <b>dawson</b>     | function | <b>voigt_hwhm</b> | function |

## xdecimal (extra lua)

|                   |          |                     |          |
|-------------------|----------|---------------------|----------|
| <b>__add</b>      | function | <b>bxor</b>         | function |
| <b>__band</b>     | function | <b>conj</b>         | function |
| <b>__bor</b>      | function | <b>copy</b>         | function |
| <b>__bxor</b>     | function | <b>exp</b>          | function |
| <b>__div</b>      | function | <b>getprecision</b> | function |
| <b>__eq</b>       | function | <b>ln</b>           | function |
| <b>__idiv</b>     | function | <b>log</b>          | function |
| <b>__le</b>       | function | <b>max</b>          | function |
| <b>__lt</b>       | function | <b>min</b>          | function |
| <b>__mod</b>      | function | <b>minus</b>        | function |
| <b>__mul</b>      | function | <b>new</b>          | function |
| <b>__name</b>     | string   | <b>plus</b>         | function |
| <b>__pow</b>      | function | <b>pow</b>          | function |
| <b>__shl</b>      | function | <b>rotate</b>       | function |
| <b>__shr</b>      | function | <b>setprecision</b> | function |
| <b>__sub</b>      | function | <b>shift</b>        | function |
| <b>__tostring</b> | function | <b>sqrt</b>         | function |
| <b>__unm</b>      | function | <b>toengstring</b>  | function |
| <b>abs</b>        | function | <b>tonumber</b>     | function |
| <b>band</b>       | function | <b>tostring</b>     | function |
| <b>bor</b>        | function | <b>trim</b>         | function |

## xmath (extra lua)

|                 |          |                  |          |
|-----------------|----------|------------------|----------|
| <b>acos</b>     | function | <b>isnormal</b>  | function |
| <b>acosh</b>    | function | <b>j0</b>        | function |
| <b>asin</b>     | function | <b>j1</b>        | function |
| <b>asinh</b>    | function | <b>jn</b>        | function |
| <b>atan</b>     | function | <b>ldexp</b>     | function |
| <b>atan2</b>    | function | <b>lgamma</b>    | function |
| <b>atanh</b>    | function | <b>log</b>       | function |
| <b>cbrt</b>     | function | <b>log10</b>     | function |
| <b>ceil</b>     | function | <b>log1p</b>     | function |
| <b>copysign</b> | function | <b>log2</b>      | function |
| <b>cos</b>      | function | <b>logb</b>      | function |
| <b>cosh</b>     | function | <b>modf</b>      | function |
| <b>deg</b>      | function | <b>nan</b>       | number   |
| <b>erf</b>      | function | <b>nearbyint</b> | function |
| <b>erfc</b>     | function | <b>nextafter</b> | function |
| <b>exp</b>      | function | <b>pi</b>        | number   |
| <b>exp2</b>     | function | <b>pow</b>       | function |
| <b>expm1</b>    | function | <b>rad</b>       | function |
| <b>fabs</b>     | function | <b>remainder</b> | function |
| <b>fdim</b>     | function | <b>remquo</b>    | function |
| <b>floor</b>    | function | <b>round</b>     | function |
| <b>fma</b>      | function | <b>scalbn</b>    | function |
| <b>fmax</b>     | function | <b>sin</b>       | function |
| <b>fmin</b>     | function | <b>sinh</b>      | function |
| <b>fmod</b>     | function | <b>sqrt</b>      | function |
| <b>frexp</b>    | function | <b>tan</b>       | function |
| <b>gamma</b>    | function | <b>tanh</b>      | function |
| <b>hypot</b>    | function | <b>tgamma</b>    | function |
| <b>inf</b>      | number   | <b>trunc</b>     | function |
| <b>isfinite</b> | function | <b>y0</b>        | function |
| <b>isinf</b>    | function | <b>y1</b>        | function |
| <b>isnan</b>    | function | <b>yn</b>        | function |



# xml (context)

|                           |          |                        |            |
|---------------------------|----------|------------------------|------------|
| <b>addentitiesdoctype</b> | function | F family               |            |
| <b>addspecialcode</b>     | function | F fontspecification    |            |
| <b>after</b>              | function | F mappedstylevalue     |            |
| <b>all</b>                | function | F padding              |            |
| <b>applylpath</b>         | function | F size                 |            |
| <b>applyselector</b>      | function | F style                |            |
| <b>assign</b>             | function | F stylevalue           |            |
| <b>attribute</b>          | function | F todimension          |            |
| <b>badinclusions</b>      | function | F variant              |            |
| <b>before</b>             | function | F weight               |            |
| <b>body</b>               | function | <b>defaulthandlers</b> | table      |
| <b>builtinentities</b>    | table    | D file                 |            |
| B amp                     |          | D parsedxml            |            |
| B apos                    |          | D string               |            |
| B gt                      |          | D tex                  |            |
| B lt                      |          | D texline              |            |
| B quot                    |          | D texspace             |            |
| <b>CDATA</b>              | function | D verbose              |            |
| <b>CDATATOTEXT</b>        | function | <b>defaultprotocol</b> | string     |
| <b>checkbom</b>           | function | <b>delete</b>          | function   |
| <b>checkedempty</b>       | function | <b>delete_element</b>  | function   |
| <b>checkerror</b>         | function | <b>despecialized</b>   | function   |
| <b>checknamespace</b>     | function | <b>each</b>            | function   |
| <b>checkns</b>            | function | <b>each_element</b>    | function   |
| <b>cleansed</b>           | function | <b>elements</b>        | function   |
| <b>collect</b>            | function | <b>elementtocdata</b>  | function   |
| <b>collect_elements</b>   | function | <b>empty</b>           | function   |
| <b>collect_tags</b>       | function | <b>entities</b>        | data table |
| <b>collect_texts</b>      | function | <b>erase</b>           | function   |
| <b>collected</b>          | function | <b>errorhandler</b>    | function   |
| <b>collecttexts</b>       | function | <b>escaped</b>         | function   |
| <b>compactelement</b>     | function | <b>expand</b>          | function   |
| <b>content</b>            | function | <b>expressions</b>     | table      |
| <b>convert</b>            | function | F attribute            |            |
| <b>copy</b>               | function | F boolean              |            |
| <b>count</b>              | function | F child                |            |
| <b>cprint</b>             | function | F contains             |            |
| <b>CSS</b>                | table    | F count                |            |
| F applyselector           |          | F error                |            |
| F colorspecification      |          | F find                 |            |
| F dimension               |          | F hasclass             |            |

|                   |          |                            |          |
|-------------------|----------|----------------------------|----------|
| F idstring        |          | F tags                     |          |
| F lower           |          | F text                     |          |
| F name            |          | F upper                    |          |
| F number          |          | F upperall                 |          |
| F oneof           |          | F url                      |          |
| F print           |          | F xml                      |          |
| F quit            |          | T xml                      |          |
| F tag             |          | F all                      |          |
| F text            |          | F att                      |          |
| F undefined       |          | F attribute                |          |
| F upper           |          | F attributes               |          |
| <b>fillin</b>     | function | F cdata                    |          |
| <b>filter</b>     | function | F chainattribute           |          |
| <b>finalizers</b> | table    | F count                    |          |
| F paragraphs      |          | F default                  |          |
| T tex             |          | F elements                 |          |
| F all             |          | F empty                    |          |
| F attribute       |          | F first                    |          |
| F chainattribute  |          | F function                 |          |
| F chainpath       |          | F index                    |          |
| F collapsed       |          | F last                     |          |
| F command         |          | F lowerall                 |          |
| F concat          |          | F match                    |          |
| F concatrange     |          | F name                     |          |
| F context         |          | F position                 |          |
| F count           |          | F reverse                  |          |
| F ctxtext         |          | F table                    |          |
| F default         |          | F tag                      |          |
| F depth           |          | F tags                     |          |
| F first           |          | F text                     |          |
| F function        |          | F texts                    |          |
| F index           |          | F tomacro                  |          |
| F last            |          | F upperall                 |          |
| F lettered        |          | F url                      |          |
| F lower           |          | <b>first</b>               | function |
| F lowerall        |          | <b>found</b>               | function |
| F match           |          | <b>functions</b>           | table    |
| F name            |          | F classes                  |          |
| F param           |          | F hasclass                 |          |
| F parameter       |          | <b>getbuffer</b>           | function |
| F position        |          | <b>gethandlers</b>         | function |
| F reverse         |          | <b>gethandlersfunction</b> | function |
| F stripped        |          | <b>helpers</b>             | table    |
| F tag             |          | F recursetext              |          |

|                              |          |                            |            |
|------------------------------|----------|----------------------------|------------|
| <b>include</b>               | function | F tex                      |            |
| <b>inclusion</b>             | function | <b>placeholders</b>        | table      |
| <b>inclusions</b>            | function | F unknown_any_entity       |            |
| <b>index</b>                 | function | F unknown_dec_entity       |            |
| <b>inheritattributes</b>     | function | F unknown_hex_entity       |            |
| <b>inheritedconvert</b>      | function | <b>popmatch</b>            | function   |
| <b>inject</b>                | function | <b>position</b>            | function   |
| <b>inject_element</b>        | function | <b>privatecodes</b>        | data table |
| <b>inject_element_after</b>  | function | <b>privatetoken</b>        | function   |
| <b>inject_element_before</b> | function | <b>process</b>             | function   |
| <b>injectafter</b>           | function | <b>process_attributes</b>  | function   |
| <b>injectbefore</b>          | function | <b>process_elements</b>    | function   |
| <b>insert</b>                | function | <b>processattributes</b>   | function   |
| <b>insert_element</b>        | function | <b>profiled</b>            | table      |
| <b>insert_element_after</b>  | function | <b>pure</b>                | function   |
| <b>insert_element_before</b> | function | <b>pushmatch</b>           | function   |
| <b>insertafter</b>           | function | <b>raw</b>                 | function   |
| <b>insertbefore</b>          | function | <b>registerentity</b>      | function   |
| <b>insertcdata</b>           | function | <b>registerns</b>          | function   |
| <b>insertcomment</b>         | function | <b>reindex</b>             | function   |
| <b>inspect</b>               | function | <b>remap_name</b>          | function   |
| <b>is_valid</b>              | function | <b>remap_namespace</b>     | function   |
| <b>kind</b>                  | function | <b>remap_tag</b>           | function   |
| <b>last</b>                  | function | <b>remapname</b>           | function   |
| <b>lastmatch</b>             | function | <b>remapnamespace</b>      | function   |
| <b>load</b>                  | function | <b>remaptag</b>            | function   |
| <b>lpath</b>                 | function | <b>rename</b>              | function   |
| <b>lpathcached</b>           | function | <b>renamespace</b>         | function   |
| <b>lpathcalls</b>            | function | <b>reparsedentitylpeg</b>  | userdata   |
| <b>lshow</b>                 | function | <b>replace</b>             | function   |
| <b>makestandalone</b>        | function | <b>replace_element</b>     | function   |
| <b>match</b>                 | function | <b>resetinjectors</b>      | function   |
| <b>mml</b>                   | table    | <b>resolvns</b>            | function   |
| F stripped                   |          | <b>root</b>                | function   |
| F verbose                    |          | <b>save</b>                | function   |
| <b>name</b>                  | function | <b>selection</b>           | function   |
| <b>newhandlers</b>           | function | <b>separate</b>            | function   |
| <b>nodesettostring</b>       | function | <b>serialize</b>           | function   |
| <b>originalload</b>          | function | <b>serializetotext</b>     | function   |
| <b>package</b>               | function | <b>setcdata</b>            | function   |
| <b>parent</b>                | function | <b>setcomment</b>          | function   |
| <b>parsedentitylpeg</b>      | userdata | <b>sethandlersfunction</b> | function   |
| <b>pihandlers</b>            | table    | <b>setinjectors</b>        | function   |
| F injector                   |          | <b>setproperty</b>         | function   |

|                           |            |                            |          |
|---------------------------|------------|----------------------------|----------|
| <b>settings</b>           | function   | <b>tostring</b>            | function |
| <b>specialcodes</b>       | data table | <b>totable</b>             | function |
| <b>specialhandler</b>     | table      | <b>toxml</b>               | function |
| <b>sprint</b>             | function   | <b>tprint</b>              | function |
| <b>string</b>             | function   | <b>traverse</b>            | function |
| <b>strip</b>              | function   | <b>unescaped</b>           | function |
| <b>strip_whitespace</b>   | function   | <b>unescapedentitylpeg</b> | userdata |
| <b>stripelement</b>       | function   | <b>unprivatized</b>        | function |
| <b>stripleadingspaces</b> | function   | <b>unspecialized</b>       | function |
| <b>table</b>              | function   | <b>wipe</b>                | function |
| <b>text</b>               | function   | <b>withelement</b>         | function |
| <b>textonly</b>           | function   | <b>withelements</b>        | function |
| <b>texttocdata</b>        | function   | <b>wrap</b>                | function |
| <b>tocdata</b>            | function   | <b>xmlns</b>               | table    |
| <b>toelement</b>          | function   |                            |          |

## xzip (extra lua)

**adler32**            function

**compress**        function

**compresssize**    function

**crc32**            function

**decompress**      function

**decompresssize** function

# zip (context)

|                     |          |                        |          |
|---------------------|----------|------------------------|----------|
| <b>archives</b>     | table    | <b>openarchive</b>     | function |
| <b>closearchive</b> | function | <b>registeredfiles</b> | table    |

## zlib (context)

|                     |          |
|---------------------|----------|
| <b>adler32</b>      | function |
| <b>compress</b>     | function |
| <b>compresssize</b> | function |

|                       |          |
|-----------------------|----------|
| <b>crc32</b>          | function |
| <b>decompress</b>     | function |
| <b>decompresssize</b> | function |