

Intro to DatABEL

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May 7, 2010

Contents

```
> library(DatABEL)
```

```
DatABEL v 0.1-0 loaded
```

```
> make_random_matrix <- function(range_dim1 = c(2, 10), range_dim2 = c(2,
+   10), range_data = c(-10, 10), type = "double") {
+   dim1 <- round(runif(1, range_dim1[1], range_dim1[2]))
+   dim2 <- round(runif(1, range_dim2[1], range_dim2[2]))
+   data <- runif(dim1 * dim2, range_data[1], range_data[2])
+   data <- as(data, type)
+   data <- matrix(data, nrow = dim1, ncol = dim2)
+   namesCol <- paste("col", c(1:dim2), sep = "_")
+   namesRow <- paste("row", c(1:dim1), sep = "_")
+   dimnames(data) <- list(namesRow, namesCol)
+   return(data)
+ }
> testmatr <- make_random_matrix()
> testmatr
```

| | col_1 | col_2 | col_3 |
|-------|------------|-----------|-----------|
| row_1 | 3.7758254 | 8.186535 | -8.418812 |
| row_2 | -6.9323852 | -3.387708 | 4.542165 |
| row_3 | 5.0096973 | 6.347288 | 5.145805 |
| row_4 | -4.9562642 | 2.843187 | 8.192311 |
| row_5 | -3.2741190 | 5.405100 | 4.400907 |
| row_6 | -5.3883797 | 3.500479 | 9.057833 |
| row_7 | 5.7503191 | -7.129239 | -5.765273 |
| row_8 | -0.1645427 | -2.548535 | 7.837272 |
| row_9 | 5.6232104 | 4.553587 | -3.369585 |

```
> test_fv <- as(testmatr, "databel")
```

```
[1] "./tmp323292"
checkOpenForWriting("./tmp323292")
```

You appear to work on 32-bit system. Large files are not supported.
 You appear to work on 32-bit system. Large files are not supported.
 You appear to work on 32-bit system. Large files are not supported.
 You appear to work on 32-bit system. Large files are not supported.
 coercion from 'matrix' to 'data.frame' of type 'double' ; object connected to file ./tmp323292

```
> test_fv
```

```
uninames$unique.names = TRUE
uninames$unique.rownames = TRUE
uninames$unique.colnames = TRUE
backingfilename = ./tmp323292
cachesizeMb = 64
number of columns (variables) = 3
number of rows (observations) = 9
usedRowIndex: 1 2 3 4 5 ...
usedColIndex: 1 2 3
Upper-left 3 columns and 5 rows:
You appear to work on 32-bit system. Large files are not supported.
```

| | col_1 | col_2 | col_3 |
|-------|-----------|-----------|-----------|
| row_1 | 3.775825 | 8.186535 | -8.418812 |
| row_2 | -6.932385 | -3.387708 | 4.542165 |
| row_3 | 5.009697 | 6.347288 | 5.145805 |
| row_4 | -4.956264 | 2.843187 | 8.192311 |
| row_5 | -3.274119 | 5.405100 | 4.400907 |

```
> as(test_fv, "matrix")
```

| | col_1 | col_2 | col_3 |
|-------|------------|-----------|-----------|
| row_1 | 3.7758254 | 8.186535 | -8.418812 |
| row_2 | -6.9323852 | -3.387708 | 4.542165 |
| row_3 | 5.0096973 | 6.347288 | 5.145805 |
| row_4 | -4.9562642 | 2.843187 | 8.192311 |
| row_5 | -3.2741190 | 5.405100 | 4.400907 |
| row_6 | -5.3883797 | 3.500479 | 9.057833 |
| row_7 | 5.7503191 | -7.129239 | -5.765273 |
| row_8 | -0.1645427 | -2.548535 | 7.837272 |
| row_9 | 5.6232104 | 4.553587 | -3.369585 |

```
> abs(testmatr - as(test_fv, "matrix")) < 1e-06
```

| | col_1 | col_2 | col_3 |
|-------|-------|-------|-------|
| row_1 | TRUE | TRUE | TRUE |
| row_2 | TRUE | TRUE | TRUE |
| row_3 | TRUE | TRUE | TRUE |
| row_4 | TRUE | TRUE | TRUE |
| row_5 | TRUE | TRUE | TRUE |

```

row_6 TRUE TRUE TRUE
row_7 TRUE TRUE TRUE
row_8 TRUE TRUE TRUE
row_9 TRUE TRUE TRUE

```

```

> write.table(testmatr, file = "test_matrix_dimnames.dat", row.names = TRUE,
+   col.names = TRUE, quote = FALSE)
> text2filevector(infile = "test_matrix_dimnames.dat", outfile = "test_matrix_dimnames",
+   R_matrix = TRUE)

```

Options in effect:

```

--infile      = test_matrix_dimnames.dat
--outfile     = test_matrix_dimnames
--skiprows    = 1
--skipcols    = 1
--cnrow       = ON, using line 1 of 'test_matrix_dimnames.dat'
--rncol       = ON, using column 1 of 'test_matrix_dimnames.dat'
--transpose   = OFF
--Rmatrix     = ON

```

Creating file with numRows = 9

Creating file with numColumns = 3

checkOpenForWriting(test_matrix_dimnames_fvtmp)

You appear to work on 32-bit system. Large files are not supported.

checkOpenForWriting(test_matrix_dimnames_fvtmp)

You appear to work on 32-bit system. Large files are not supported.

checkOpenForWriting(test_matrix_dimnames)

You appear to work on 32-bit system. Large files are not supported.

text2fvf finished.

You appear to work on 32-bit system. Large files are not supported.

uninames\$unique.names = TRUE

uninames\$unique.rownames = TRUE

uninames\$unique.colnames = TRUE

backingfilename = test_matrix_dimnames

cacheSizeMb = 64

number of columns (variables) = 3

number of rows (observations) = 9

usedRowIndex: 1 2 3 4 5 ...

usedColIndex: 1 2 3

Upper-left 3 columns and 5 rows:

You appear to work on 32-bit system. Large files are not supported.

```

      col_1      col_2      col_3
row_1 3.775825 8.186535 -8.418812
row_2 -6.932385 -3.387708 4.542165
row_3 5.009697 6.347288 5.145805
row_4 -4.956264 2.843187 8.192311
row_5 -3.274119 5.405100 4.400907

```

```
> x <- databel("test_matrix_dimnames")
```

You appear to work on 32-bit system. Large files are not supported.

```
> x
```

```
uninames$unique.names = TRUE
uninames$unique.rownames = TRUE
uninames$unique.colnames = TRUE
backingfilename = test_matrix_dimnames
cachesizeMb = 64
number of columns (variables) = 3
number of rows (observations) = 9
usedRowIndex: 1 2 3 4 5 ...
usedColIndex: 1 2 3
```

Upper-left 3 columns and 5 rows:

You appear to work on 32-bit system. Large files are not supported.

| | col_1 | col_2 | col_3 |
|-------|-----------|-----------|-----------|
| row_1 | 3.775825 | 8.186535 | -8.418812 |
| row_2 | -6.932385 | -3.387708 | 4.542165 |
| row_3 | 5.009697 | 6.347288 | 5.145805 |
| row_4 | -4.956264 | 2.843187 | 8.192311 |
| row_5 | -3.274119 | 5.405100 | 4.400907 |

```
> tmp <- as(x, "matrix")
```

```
> tmp
```

| | col_1 | col_2 | col_3 |
|-------|------------|-----------|-----------|
| row_1 | 3.7758254 | 8.186535 | -8.418812 |
| row_2 | -6.9323852 | -3.387708 | 4.542165 |
| row_3 | 5.0096973 | 6.347288 | 5.145805 |
| row_4 | -4.9562642 | 2.843187 | 8.192311 |
| row_5 | -3.2741190 | 5.405100 | 4.400907 |
| row_6 | -5.3883797 | 3.500479 | 9.057833 |
| row_7 | 5.7503191 | -7.129239 | -5.765273 |
| row_8 | -0.1645427 | -2.548535 | 7.837272 |
| row_9 | 5.6232104 | 4.553587 | -3.369585 |

```
> abs(testmatr - tmp) < 1e-06
```

| | col_1 | col_2 | col_3 |
|-------|-------|-------|-------|
| row_1 | TRUE | TRUE | TRUE |
| row_2 | TRUE | TRUE | TRUE |
| row_3 | TRUE | TRUE | TRUE |
| row_4 | TRUE | TRUE | TRUE |
| row_5 | TRUE | TRUE | TRUE |
| row_6 | TRUE | TRUE | TRUE |

```

row_7 TRUE TRUE TRUE
row_8 TRUE TRUE TRUE
row_9 TRUE TRUE TRUE

```

```

> text2filevector(infile = "test_matrix_dimnames.dat", outfile = "test_matrix_dimnames_T",
+   R_matrix = TRUE, transpose = TRUE)

```

Options in effect:

```

--infile      = test_matrix_dimnames.dat
--outfile     = test_matrix_dimnames_T
--skiprows    = 1
--skipcols    = 1
--cnrow       = ON, using line 1 of 'test_matrix_dimnames.dat'
--rncol       = ON, using column 1 of 'test_matrix_dimnames.dat'
--transpose   = ON
--Rmatrix     = ON

```

Creating file with numRows = 9

Creating file with numColumns = 3

checkOpenForWriting(test_matrix_dimnames_T)

You appear to work on 32-bit system. Large files are not supported.

text2fvf finished.

You appear to work on 32-bit system. Large files are not supported.

uninames\$unique.names = TRUE

uninames\$unique.rownames = TRUE

uninames\$unique.colnames = TRUE

backingfilename = test_matrix_dimnames_T

cacheSizeMb = 64

number of columns (variables) = 9

number of rows (observations) = 3

usedRowIndex: 1 2 3

usedColIndex: 1 2 3 4 5 6 7 8 9

Upper-left 9 columns and 3 rows:

You appear to work on 32-bit system. Large files are not supported.

| | row_1 | row_2 | row_3 | row_4 | row_5 | row_6 | row_7 |
|-------|------------|-----------|----------|-----------|-----------|-----------|-----------|
| col_1 | 3.775825 | -6.932385 | 5.009697 | -4.956264 | -3.274119 | -5.388380 | 5.750319 |
| col_2 | 8.186535 | -3.387708 | 6.347288 | 2.843187 | 5.405100 | 3.500479 | -7.129239 |
| col_3 | -8.418812 | 4.542165 | 5.145805 | 8.192311 | 4.400907 | 9.057833 | -5.765273 |
| | row_8 | row_9 | | | | | |
| col_1 | -0.1645427 | 5.623210 | | | | | |
| col_2 | -2.5485347 | 4.553587 | | | | | |
| col_3 | 7.8372721 | -3.369585 | | | | | |

```

> x <- databel("test_matrix_dimnames_T")

```

You appear to work on 32-bit system. Large files are not supported.

```

> t(testmatr)

```

```

      row_1    row_2    row_3    row_4    row_5    row_6    row_7
col_1  3.775825 -6.932385 5.009697 -4.956264 -3.274119 -5.388380  5.750319
col_2  8.186535 -3.387708 6.347288  2.843187  5.405100  3.500479 -7.129239
col_3 -8.418812  4.542165 5.145805  8.192311  4.400907  9.057833 -5.765273
      row_8    row_9
col_1 -0.1645427  5.623210
col_2 -2.5485347  4.553587
col_3  7.8372721 -3.369585

```

```
> x
```

```

uninames$unique.names = TRUE
uninames$unique.rownames = TRUE
uninames$unique.colnames = TRUE
backingfilename = test_matrix_dimnames_T
cachesizeMb = 64

```

```

number of columns (variables) = 9
number of rows (observations) = 3
usedRowIndex: 1 2 3
usedColIndex: 1 2 3 4 5 6 7 8 9

```

```
Upper-left 9 columns and 3 rows:
```

```
You appear to work on 32-bit system. Large files are not supported.
```

```

      row_1    row_2    row_3    row_4    row_5    row_6    row_7
col_1  3.775825 -6.932385 5.009697 -4.956264 -3.274119 -5.388380  5.750319
col_2  8.186535 -3.387708 6.347288  2.843187  5.405100  3.500479 -7.129239
col_3 -8.418812  4.542165 5.145805  8.192311  4.400907  9.057833 -5.765273
      row_8    row_9
col_1 -0.1645427  5.623210
col_2 -2.5485347  4.553587
col_3  7.8372721 -3.369585

```

```
> tmp <- as(x, "matrix")
```

```
> tmp
```

```

      row_1    row_2    row_3    row_4    row_5    row_6    row_7
col_1  3.775825 -6.932385 5.009697 -4.956264 -3.274119 -5.388380  5.750319
col_2  8.186535 -3.387708 6.347288  2.843187  5.405100  3.500479 -7.129239
col_3 -8.418812  4.542165 5.145805  8.192311  4.400907  9.057833 -5.765273
      row_8    row_9
col_1 -0.1645427  5.623210
col_2 -2.5485347  4.553587
col_3  7.8372721 -3.369585

```

```
> abs(t(testmatr) - tmp) < 1e-06
```

```

      row_1 row_2 row_3 row_4 row_5 row_6 row_7 row_8 row_9
col_1 TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE
col_2 TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE
col_3 TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE

```

```
> unlink("*.fv?")  
> unlink("test_matrix_*")
```