

# Intro to DatABEL

Yurii S. Aulchenko

June 4, 2010

## Contents

```
> library(DatABEL)
```

```
DatABEL v 0.1-4 (June 2, 2010) 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
row_1 -5.3864533  2.645619
row_2 -4.5390519 -5.587964
row_3  6.5945936  8.820054
row_4 -6.8029552  3.032417
row_5  3.8155556 -5.020862
row_6  6.9187445 -7.659107
row_7 -0.6195087 -5.116907
```

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

```
[1] "./tmp785239"
```

```
checkOpenForWriting("./tmp785239")
```

```
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.
coersion from 'matrix' to 'databel' of type DOUBLE ; object connected to file ./tmp785239

> test_fv

uninames$unique.names = TRUE
uninames$unique.rownames = TRUE
uninames$unique.colnames = TRUE
backingfilename = ./tmp785239
cachesizeMb = 64
number of columns (variables) = 2
number of rows (observations) = 7
usedRowIndex: 1 2 3 4 5 ...
usedColIndex: 1 2
Upper-left 2 columns and 5 rows:
You appear to work on 32-bit system. Large files are not supported.
      col_1    col_2
row_1 -5.386453 2.645619
row_2 -4.539052 -5.587964
row_3  6.594594  8.820054
row_4 -6.802955  3.032417
row_5  3.815556 -5.020862

> as(test_fv, "matrix")
      col_1    col_2
row_1 -5.3864533 2.645619
row_2 -4.5390519 -5.587964
row_3  6.5945936  8.820054
row_4 -6.8029552  3.032417
row_5  3.8155556 -5.020862
row_6  6.9187445 -7.659107
row_7 -0.6195087 -5.116907

> abs(testmatr - as(test_fv, "matrix")) < 1e-06
      col_1 col_2
row_1 TRUE  TRUE
row_2 TRUE  TRUE
row_3 TRUE  TRUE
row_4 TRUE  TRUE
row_5 TRUE  TRUE
row_6 TRUE  TRUE
row_7 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

Number of lines in source file is 8
Number of words in source file is 2
skiprows = 1
cnrow = 1
skipcols = 1
rncol = 1
Rmatrix = 1
numWords = 2
Creating file with numRows = 7
Creating file with numColumns = 2
checkOpenForWriting(test_matrix_dimnames_fvtmp)
You appear to work on 32-bit system. Large files are not supported.
Transposing test_matrix_dimnames_fvtmp => test_matrix_dimnames.
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) = 2
number of rows (observations) = 7
usedRowIndex: 1 2 3 4 5 ...
usedColIndex: 1 2
Upper-left 2 columns and 5 rows:
You appear to work on 32-bit system. Large files are not supported.
      col_1      col_2
row_1 -5.386453  2.645619
row_2 -4.539052 -5.587964
row_3  6.594594  8.820054
row_4 -6.802955  3.032417
row_5  3.815556 -5.020862

```

```

> 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) = 2
number of rows (observations) = 7
usedRowIndex: 1 2 3 4 5 ...
usedColIndex: 1 2
Upper-left 2 columns and 5 rows:
You appear to work on 32-bit system. Large files are not supported.
      col_1      col_2
row_1 -5.386453  2.645619
row_2 -4.539052 -5.587964
row_3  6.594594  8.820054
row_4 -6.802955  3.032417
row_5  3.815556 -5.020862

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

      col_1      col_2
row_1 -5.3864533  2.645619
row_2 -4.5390519 -5.587964
row_3  6.5945936  8.820054
row_4 -6.8029552  3.032417
row_5  3.8155556 -5.020862
row_6  6.9187445 -7.659107
row_7 -0.6195087 -5.116907

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

      col_1 col_2
row_1 TRUE  TRUE
row_2 TRUE  TRUE
row_3 TRUE  TRUE
row_4 TRUE  TRUE
row_5 TRUE  TRUE
row_6 TRUE  TRUE
row_7 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

Number of lines in source file is 8
Number of words in source file is 2
skiprows = 1
cnrow = 1
skipcols = 1
rncol = 1
Rmatrix = 1
numWords = 2
Creating file with numRows = 7
Creating file with numColumns = 2
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) = 7
number of rows (observations) = 2
usedRowIndex: 1 2
usedColIndex: 1 2 3 4 5 6 7
Upper-left 7 columns and 2 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 -5.386453 -4.539052 6.594594 -6.802955 3.815556 6.918745 -0.6195087
col_2 2.645619 -5.587964 8.820054 3.032417 -5.020862 -7.659107 -5.1169073

> 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 -5.386453 -4.539052 6.594594 -6.802955 3.815556 6.918745 -0.6195087
col_2 2.645619 -5.587964 8.820054 3.032417 -5.020862 -7.659107 -5.1169073

```

```

> x

uninames$unique.names = TRUE
uninames$unique.rownames = TRUE
uninames$unique.colnames = TRUE
backingfilename = test_matrix_dimnames_T
cachesizeMb = 64
number of columns (variables) = 7
number of rows (observations) = 2
usedRowIndex: 1 2
usedColIndex: 1 2 3 4 5 6 7
Upper-left 7 columns and 2 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 -5.386453 -4.539052 6.594594 -6.802955 3.815556 6.918745 -0.6195087
col_2  2.645619 -5.587964 8.820054 3.032417 -5.020862 -7.659107 -5.1169073

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

      row_1    row_2    row_3    row_4    row_5    row_6    row_7
col_1 -5.386453 -4.539052 6.594594 -6.802955 3.815556 6.918745 -0.6195087
col_2  2.645619 -5.587964 8.820054 3.032417 -5.020862 -7.659107 -5.1169073

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

      row_1 row_2 row_3 row_4 row_5 row_6 row_7
col_1 TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE
col_2 TRUE  TRUE  TRUE  TRUE  TRUE  TRUE  TRUE

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

```