Package 'aakmisc'

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Type Package

Title Miscellany for the King Lab

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Maintainer Aaron A. King <kingaa@umich.edu>

Description Miscellaneous tools, collected in one place.

URL http://github.com/kingaa/aakmisc

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BugReports http://github.com/kingaa/aakmisc/issues

Depends R(>= 3.0.0), plyr, reshape2, ggplot2(>= 1.0.1.9003), grid, magrittr

Imports methods, curl, DBI, RPostgreSQL

License GPL(>=3)

LazyLoad true

LazyData true

Collate aaa.R db.R tunnel.R random.R plotMatrix.R scinot.R lazy_load.R

R topics documented:

dbtools *Interface with databases*

Description

Interface with project databases.

Usage

```
getMLEs(host = getOption("aakmisc.dbhost","localhost"),
        dbname = getOption("aakmisc.dbname",NULL),
        port = getOption("aakmisc.port",5432),
        user = getOption("aakmisc.user",NULL),
        ...)
recMLEs(mle, host = getOption("aakmisc.dbhost","localhost"),
        dbname = getOption("aakmisc.dbname",NULL),
        port = getOption("aakmisc.port",5432),
        user = getOption("aakmisc.user",NULL),
        ...)
listScripts(host = getOption("aakmisc.dbhost","localhost"),
            dbname = getOption("aakmisc.dbname",NULL),
            port = getOption("aakmisc.port",5432),
            user = getOption("aakmisc.user",NULL),
            ...)
recScript(files, host = getOption("aakmisc.dbhost","localhost"),
          dbname = getOption("aakmisc.dbname",NULL),
          port = getOption("aakmisc.port",5432),
          user = getOption("aakmisc.user",NULL),
          ...)
dropScript(script, host = getOption("aakmisc.dbhost","localhost"),
           dbname = getOption("aakmisc.dbname",NULL),
           port = getOption("aakmisc.port",5432),
           user = getOption("aakmisc.user",NULL),
           ...)
catScript(script, file = "", host = getOption("aakmisc.dbhost","localhost"),
          dbname = getOption("aakmisc.dbname",NULL),
          port = getOption("aakmisc.port",5432),
          user = getOption("aakmisc.user",NULL),
          ...)
getQuery(statement,
         host = getOption("aakmisc.dbhost","localhost"),
         dbname = getOption("aakmisc.dbname",NULL),
         port = getOption("aakmisc.port",5432),
         user = getOption("aakmisc.user",NULL),
         ...)
writeDBTable(name, value, overwrite = FALSE, append = FALSE,
             row.names = FALSE,
```

```
              host = getOption("aakmisc.dbhost","localhost"),
              dbname = getOption("aakmisc.dbname",NULL),
              port = getOption("aakmisc.port",5432),
              user = getOption("aakmisc.user",NULL),
              ...)
startTunnel(port = NULL,
            remotehost = getOption("aakmisc.remotehost",NULL),
            user = getOption("aakmisc.user",NULL),
            sleep = 5)
stopTunnel(..., pid = getOption("aakmisc.tunnelpid",NULL))
```

Arguments

host	Hostname on which to connect to the PostgreSQL server.
dbname	Name of PostgreSQL database.
port	Port on which to connect to PostgreSQL database. If NULL, a random port number will be used.
user	Username to use in conneting to PostgreSQL database. If NULL, Sys.getenv("USER") will be used.
mle	A data-frame of MLEs to be recorded.
files	Files containing R scripts to be recorded.
script	Name of script.
file	File to which the script will be written. See cat.
statement	SQL statement passed to dbGetQuery.
name, value	Name and contents of table to create.
overwrite, append, row.names	See dbWriteTable.
remotehost	Hostname of PostgreSQL server. An ssh tunnel to this host will be created.
pid	ID of ssh tunnel process. Set automatically by startTunnel.
sleep	Time in seconds to sleep after initiating the ssh tunnel.
...	Additional arguments will be passed to dbConnect.

Author(s)

Aaron A. King <kingaa at umich dot edu>

Examples

```
  ## Not run:
startTunnel()
listScripts()
stopTunnel()

## End(Not run)
```

Lazy loading of knitr caches

Functions for lazy-loading knitr caches.

Description

These functions are helpful for loading cached chunks into an interactive R session.

Use `lazyload_cache_dir` to load a whole directory of cached objects.

Use `lazyload_cache_labels` to load and explicit set of cached chunks.

Usage

```
lazyload_cache_dir(path = "./cache", envir = parent.frame(), ask = FALSE,
                   verbose = getOption("verbose",FALSE), full.names = TRUE, ...)
lazyload_cache_labels(labels, path = "./cache/", envir = parent.frame(),
                    verbose = getOption("verbose",FALSE), filter,
                    full.names = TRUE, ...)
```

Arguments

`path`	the path to the cache directory
`labels`	character vector; chunk labels to load
`envir`	the environment to load the objects into
`ask`	if `TRUE`, interactively ask whether to load each database discovered in `path`
`verbose`	if `TRUE`, display the names of chunk labels being loaded
`full.names`	use the full name, i.e., include the path, for the chunk label? This argument is passed to `list.files`.
`filter`	optional function; passed to `lazyLoad`. When called on a character vector of object names, this function should return a logical vector: objects for which this is `TRUE` will be loaded.
`...`	additional arguments passed to `list.files`

Value

Both functions return `NULL`, invisibly.

Author(s)

Peter DeWitt (https://github.com/dewittpe).

plotMatrix *A scatterplot matrix with densities on the diagonal.*

Description

A special scatterplot matrix.

Usage

```
## S3 method for class 'data.frame'
plotMatrix(data, marg.exp = 0.02, labels = names(data),
     alpha = 1, pch = 16, size = unit(2,"mm"), ...)
## S3 method for class 'list'
plotMatrix(data, marg.exp = 0.02, labels = names(data),
     alpha = 1, pch = 16, size = unit(2,"mm"), ...)
## S3 method for class 'aakplot'
print(x, newpage = is.null(vp), vp = NULL, ...)
```

Arguments

data	Data to plot.
marg.exp	Fraction by which to expand the plot at the margins.
labels	Names of variables plotted.
alpha, pch, size	Refer to the plotted points in the scatterplots.
...	optional arguments, passed to hist.
x	plotMatrix object to display.
newpage	logical; if TRUE, grid.newpage() will be called before the graphics are drawn.
vp	viewport to use. See viewport.

Author(s)

Aaron A. King <kingaa at umich dot edu>

Examples

```
  ## Not run:
x <- data.frame(a=rexp(n=1000,rate=1/3),b=rnorm(1000))
mutate(x,c=a+b^2,d=a-b^3) -> x

print(plotMatrix(x,alpha=0.2))

g <- plotMatrix(
                x[-2],
                labels=c(
                  expression(alpha),
```

```
                  expression(beta),
                  expression(phi)
                  ),
                alpha=0.3
                )
print(g)

print(plotMatrix(as.list(x),alpha=0.2,breaks='scott'))

## End(Not run)
```

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random *Functions for generating and working with truly random integers.*

Description

Functions for generating and working with truly random seeds.

Usage

```
random.org(n = 10, rnd = "new")
urandom(n = 10)
rngControl(expr, seed = NULL)
rngSeeds(n, seed = NULL)
```

Arguments

n	Number of integers required.
rnd	random.org parameter
expr	Expression to be evaluated with RNG control.
seed	RNG seed.

Author(s)

Aaron A. King <kingaa at umich dot edu>

References

http://www.random.org

Examples

```
## Not run:
random.org(n=5)
seed <- urandom(n=1)
seeds <- rngSeeds(5,seed=seed)
set.seed(seed)
runif(5)
```

```
  rngControl(runif(5),seed=seed[1])
  rngControl(runif(5),seed=seed[1])
  runif(5)
  set.seed(seed)
  runif(5)
  runif(5)

## End(Not run)
```

---

scinot *Scientific notation.*

Description

Format using scientific notation.

Usage

```
scinot(x, digits = 2, format = c("expression","latex","math"),
       simplify = FALSE)
```

Arguments

x	Number to format.
digits	Number of significant digits in mantissa.
format	Format specification. type="expression" results in an R expression. type="latex" results in a latex expression. type="math" is like "latex" but wraps the text in "$".
simplify	logical. If simplify=TRUE, then 1×10^n is simplified to 10^n.

Author(s)

Aaron A. King <kingaa at umich dot edu>

Examples

```
x <- c(0.0309595,8577676.441)
scinot(x[2],4)
scinot(x[1],2,"latex")
sapply(x,scinot,digits=3,format='math')
```

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