

sprof reference

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Title Profiling, timing and optimisation utilities

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Description Support utilities for profiling and dynamic code analysis.

License GPL-2 | GPL-3

Suggests wordcloud, timeit, RColorBrewer

URL <http://sintro.r-forge.r-project.org>

ByteCompile FALSE

KeepSource TRUE

BuildVignettes FALSE

R topics documented:

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| | |
|---------------|--------------------------------------|
| sprof-package | <i>sprof: Analysis of R profiles</i> |
|---------------|--------------------------------------|

Description

Profiling, timing and optimisation utilities

Details

Package: sprof
Type: Package
Version: 0.1-0
License: GPL-2 | GPL-3

[readRprof\(\)](#) reads a profile file from [Rprof\(\)](#) or other profilers and returns a composite structure of class sprof. The basic components of sprof are (conceptually) four data frames

- info general information and summaries
- nodes node specific information
- stacks node specific information. Stacks are random snapshots from the program execution, possibly including side information such as traces of the memory management.
- profiles collected records of a profile, encoded as references to stacks

The data structure is subject to change. For more details, see the documentation of [readRprof\(\)](#).
To create a profile on the fly, use [sampleRprof](#).
To import profile information written by [Rprof](#) or other profilers, use [readRprof](#).

For sprof, the usual access functions are supported.

Note

Version 0.0-6 is a clean-up version. Recommendations/requests for the interface definition are requested at this point.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
## Not run:
data(sprof01lm)
str(sprof01lm)
plot(sprof01lm)

## End(Not run)
```

adjacency

sprof to adjacency matrix

Description

convert node information from a sprof structure to adjacency matrix.

Usage

```
adjacency(sprof, keep.names = TRUE, rmzero=TRUE, no.name="<nn>")
```

Arguments

| | |
|------------|---|
| sprof | a sprof structure. |
| keep.names | boolean. Copy node names as row- and column names. |
| rmzero | boolean. Remove nodes with no edges. |
| no.name | If not null: replacement for empty strings as name. |

Value

a correspondence matrix

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

See the vignette of package sprof.

Examples

```
data(sprof01lm)
adjacency(sprof01lm)
```

| | |
|---------------|--------------------------------------|
| asfactormodel | <i>Convert to factor, like model</i> |
|---------------|--------------------------------------|

Description

Convert factor-like entries in a data structure to factor, with factor as in factormodel.

Usage

```
asfactormodel(x, factormodel)
```

Arguments

| | |
|-------------|---|
| x | A data structure. Currently only integer vectors or lists of vectors are supported. |
| factormodel | A data structure to serve as model for the factor specification. Currently, a factor or a vector of type character. |

Value

a data structure of same type as x, with numeric vectors converted to factors.

Note

This functionality could ge to R base function [factor](#).

Should be exxtended to cover a wide range of data structures, and identify substructures for conversion.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)

xf <- asfactormodel(sprof01lm$stacks$nodes, sprof01lm$nodes$name)

# To get a charcter listing, use
sapply(xf, function (x) {as.character(x)} )
```

Description

Creates a sorted bar plot with vertical or horizontal bars.

Usage

```
barplot_s(height,
horiz = FALSE,
sort_by,
decreasing = TRUE,
lowtrim, hightrim, trimlegend = TRUE,
col, coli, colfun,
main, ...)
```

Arguments

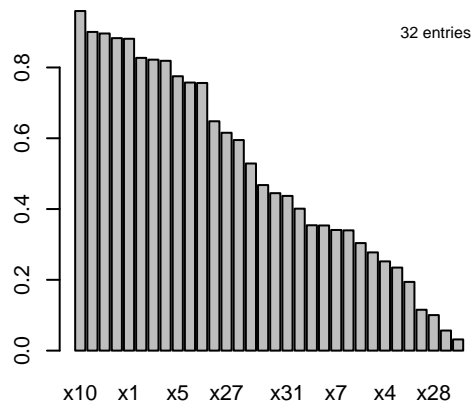
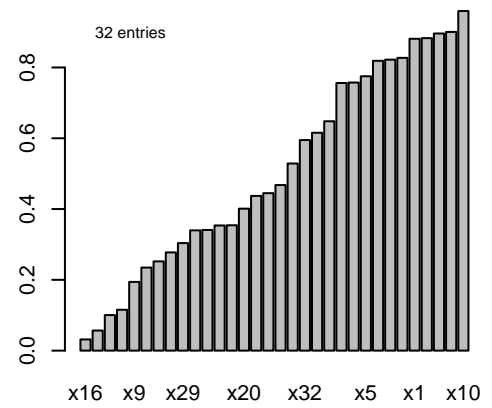
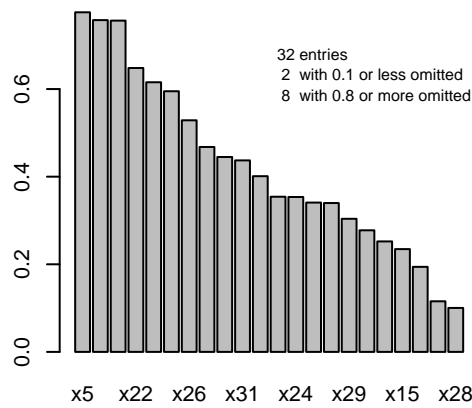
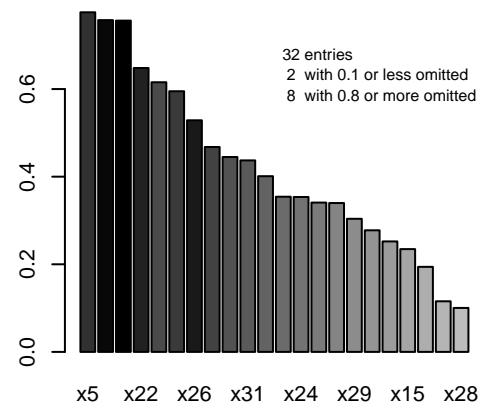
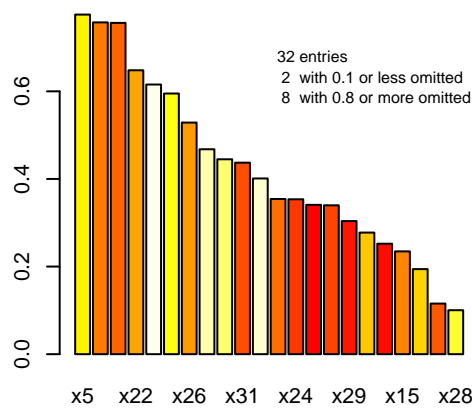
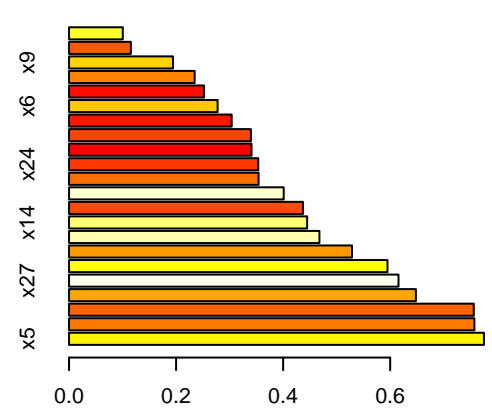
| | |
|------------|--|
| height | either a vector or matrix of values describing the bars which make up the plot. See barplot . |
| horiz | boolean. Arrange bars horizontally. |
| sort_by | a variable to sort by. Defaults to height. |
| decreasing | boolean. Sorting direction. |
| lowtrim | A optional lower trim value. Observations with sort_by values up to lowtrim are discarded. |
| hightrim | A optional upper trim value. Observations with sort_by values from lowtrim are discarded. |
| trimlegend | Boolean. Show a legend about trimmed values. |
| col | a vector of colors for the bars or bar components. By default, grey is used if height is a vector, and a gamma-corrected grey palette if height is a matrix. |
| coli | An index into the col table, based on original sorting. If no index is given, the colour will be allocated after sorting. |
| colfun | A function or function name to generate a col palette. "grey" or "gray" is rescaled to 1..n. |
| main | overall title for the plot |
| ... | Passed to barplot |

Details

If no names are supplied, they are generated in the form x...

You man want to adjust the scale of the bar labels by using an additional argument such as `cex.names = 0.5`.

More to come. Plots are among others from this collection:

x, by height**x, by height****x, by height****x, by height****x, by height****x, by height**

Value

Invisible: A data frame with components

| | |
|------|--------------------------------|
| x | height |
| perm | the permutation applied |
| coli | the colour index applied |
| col | optional: the colours selected |

Note

Part of this could go to the R base function [barplot](#).

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

See Also

[barplot](#)

Examples

```
x <- runif(100)

barplot_s(x)

x <- rnorm(100)

barplot_s(x, colfun=heat.colors, lowtrim=-1)

rm(x)
```

edgedf

Expand adjacency information to an edge table

Description

Expand adjacency information from an adjacency matrix or a sprof data structure to an edge table

Usage

```
edgedf(data, counts = TRUE, na.rm = TRUE, no.name="<nn>")
```

Arguments

| | |
|---------|---|
| data | an adjacency matrix or a sprof data structure. |
| counts | include a column of counts |
| na.rm | remove lines with a count NA. |
| no.name | If not null: replacement for empty strings as name. |

Details

The adjacency matrix is flattened. Lines with a count zero are eliminated.

Value

A data frame.

| | |
|-------|---------------------------------|
| from | Name of from node. |
| to | Name of to node. |
| count | optional. Frequencies of edges. |

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
edgedf(sprof01lm)
```

| | |
|----------------|-------------------------------|
| list.as.matrix | <i>Convert list to matrix</i> |
|----------------|-------------------------------|

Description

Convert list to matrix. List entries go to matrix columns, filled for equal length.

Usage

```
list.as.matrix(x, byrow=FALSE, filler = NA)
```

Arguments

| | |
|--------|---|
| x | a list of numeric vectors. |
| byrow | boolean. Arrange list entries as rows. Default is to use columns. |
| filler | a value to be used as a filler |

Value

A matrix with the values from x, filled to matrix shape.

To do

Arguments should be as as.matrix.

A corresponding list.as.data.frame should be added for mixed types.

Name synchronisation/preservations should be added.

Note

This could go to as.matrix().

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

See Also

[as.matrix.](#)

Examples

```
x <- list(x1=c(1,2,3),x2=3, x3=4:8)
list.as.matrix(x)
list.as.matrix(x,filler=0)
```

nodepackage

Find a package that may contain a node

Description

[getAnywhere\(\)](#) is used to look up x, and the package or namespace information is used to give a source package.

Usage

```
nodepackage(x)
```

Arguments

x a character string or name, or a vector.

Details

There is no indication whether the information is from a namespace or from a package information.

No indication is given if multiple hits are encountered.

The information is based on the run time environment of this function. This may be different from the environment the object is taken from.

See the help information for [getAnywhere\(\)](#) for more warnings.

Value

a character string or a vector of strings with the package names.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

See Also

[getAnywhere\(\)](#)

Examples

```
nodepackage("getAnywhere")
```

| | |
|------------|--|
| nodescloud | <i>Nodescloud of nodes from profile data</i> |
|------------|--|

Description

Show the nodes from a profile, with class encoded as colour and frequency encoded as size.

Usage

```
nodescloud(sprof, src, min.freq = 3,  
icol, col, ...)
```

Arguments

| | |
|----------|---|
| sprof | A data structure as returned by readRprof . |
| src | A source identification. By default derived from sprof. |
| min.freq | Minimum frequency of a node to be included. |
| icol | An index vector to colour palette, encoding node class. Defaults to sprof\$nodes\$icol. |
| col | A colour palette. |
| ... | Passed to wordcloud, if available. |

Details

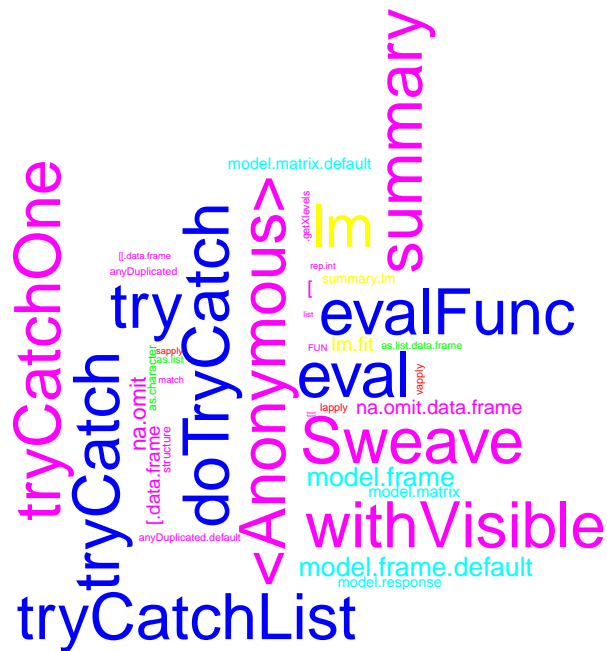
total\$time is used to control the size for wordcloud entries.

If icol is not specified as parameter or as node entry, the self\$time is used to define a colour.

terrain.colors is used to define a default colour palette if no col is specified.

Note: the figure may be outdated. Please run the examples.

Plots are for example:



Value

Used for the side effect of showing the plots.

Note

See the vignette of package sprof.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
## Not run:
data(sprof01lm)
```

```
nodescloud(sprof01lm)
## End(Not run)
```

| | |
|--------------|--------------------------|
| nodesprofile | <i>Run length matrix</i> |
|--------------|--------------------------|

Description

Extracts run length information from a sprof data structure with profiling information.

Usage

```
nodesprofile(sprof)
```

Arguments

sprof a sprof data structure with profiling information.

Details

Run length counts by node, level and run length.

Value

counts[node, level, run length] .

Note

This expands a sparse matrix to full. Avoid to use it.

Author(s)

Günther Sawitzki <gsawitzki@users.r-project.org>

Examples

```
data(sprof01lm)
str(nodesprofile(sprof01lm) )
```

| | |
|----------------|---|
| nodesrunlength | <i>Marginal information for run length from profile</i> |
|----------------|---|

Description

Run length count, by node and run length, from profile.

Usage

```
nodesrunlength(sprof, clean=TRUE)
```

Arguments

| | |
|-------|--|
| sprof | a sprof data structure with profiling information. |
| clean | boolean. |

Details

If clean=TRUE, zero results are removed and the nodes are sorted by average time.

If clean=TRUE, zero results and sorting are preserved. Trailing nodes with zero count may have been lost in the process, and are added.

Value

A matrix count[node, run length] with a column giving the number of runs by run length and three additional columns

| | |
|------------|-------------------------------------|
| nr_runs | sum of counts over all run lengths. |
| total_time | sum of count*run length |
| avg_time | total_time / count |

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
nodesrunlength(sprof01lm)
```

plot.sprof

plot for profiles

Description

plot a plot for the output of class `scode`.

Usage

```
## S3 method for class 'sprof'
plot(x, ...)
```

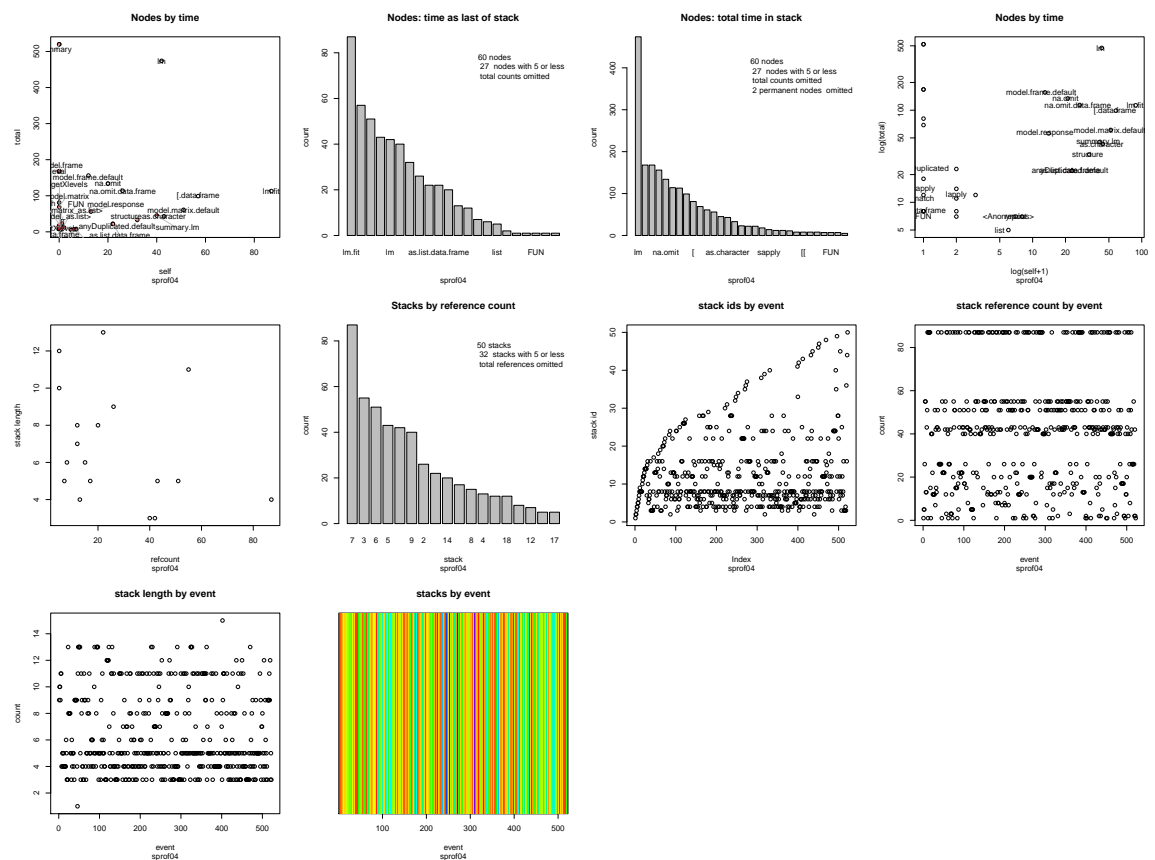
Arguments

`x` A data structure as returned by [readRprof](#).

`...` further arguments passed to or from other methods.

Details

These displays may be outdated. Please run the examples. Plots are from this collection:



Value

subject to change

Note

See the vignette for in-context explanations.

Displays of the graph structure are given in the vignette.

The plot.sprof method for sprof objects concatenates three plot functions. Using the plot functions one by one allows better control and will be preferred. [shownodes](#) may be a sufficient summary.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

<http://sintro.r-forge.r-project.org/>

See Also

[shownodes](#)

[summaryRprof](#)

[plot_nodes](#) [plot_stacks](#) [plot_profiles](#)

Examples

```
data(sprof01lm)
```

```
oldpar <- par(mfrow=c(3,4))
plot.sprof(sprof01lm)
par(oldpar)
```

plot_nodes

Plot profiling information on node level.

Description

Various plots of a profile.

Usage

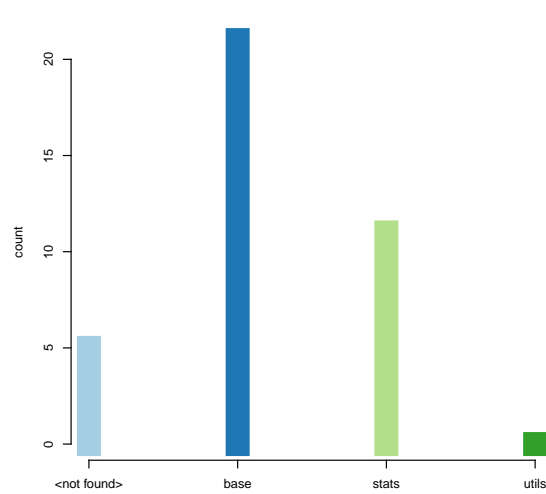
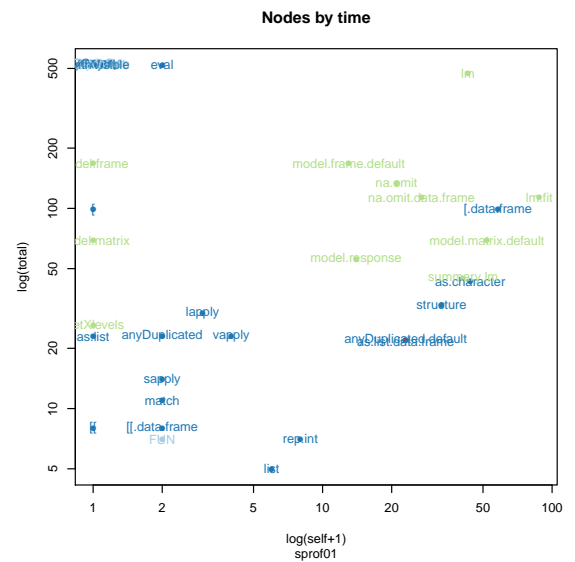
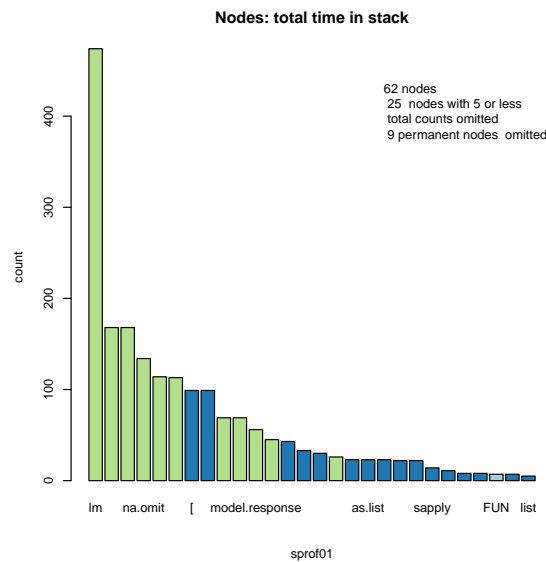
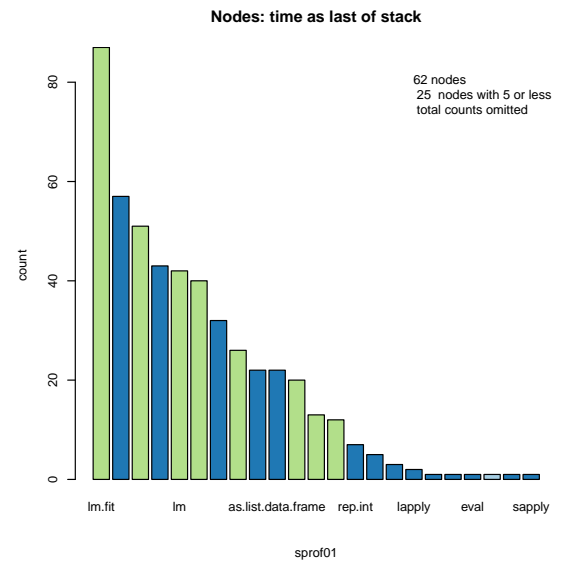
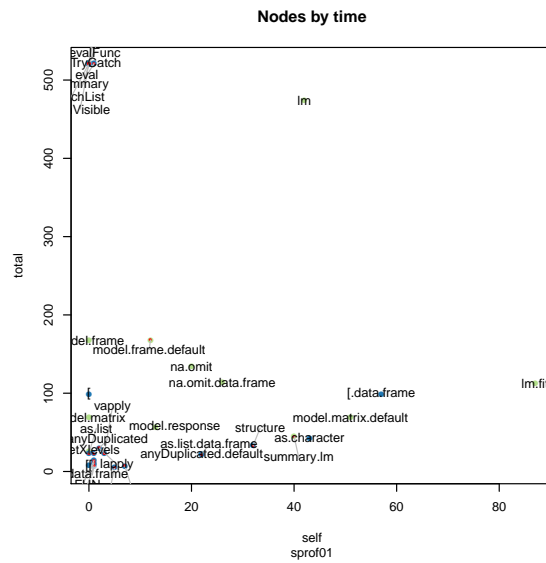
```
plot_nodes(x, which = c(1L, 2L, 3L, 4L), col = NULL,
  ask = prod(par("mfcol")) < length(which) && dev.interactive(),
  src = NULL, mincount = 5, horiz=FALSE, ...)
```

Arguments

| | |
|----------|--|
| x | preferably a sprof object. Other data structures may be extended |
| which | Selector of plots to show. |
| col | Colour table |
| ask | boolean. Ask for a new page? |
| src | String to be used as source identifier. |
| mincount | minimum total frequency count for node to be shown in barcharts. |
| horiz | draw horizontal bar plots. |
| ... | passed. |

Details

These displays may be outdated. Please run the examples. Plots are from this collection:



Value

To come.

Note

See the vignette of package sprof.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

See the vignette of package sprof.

See Also

[plot.sprof](#)

Examples

```
data(sprof01lm)
oldpar <- par(mfrow=c(2,2))
plot_nodes(sprof01lm)
par(oldpar)
```

plot_profiles

Plot profiling information on profile level.

Description

Various plots of a profile.

Usage

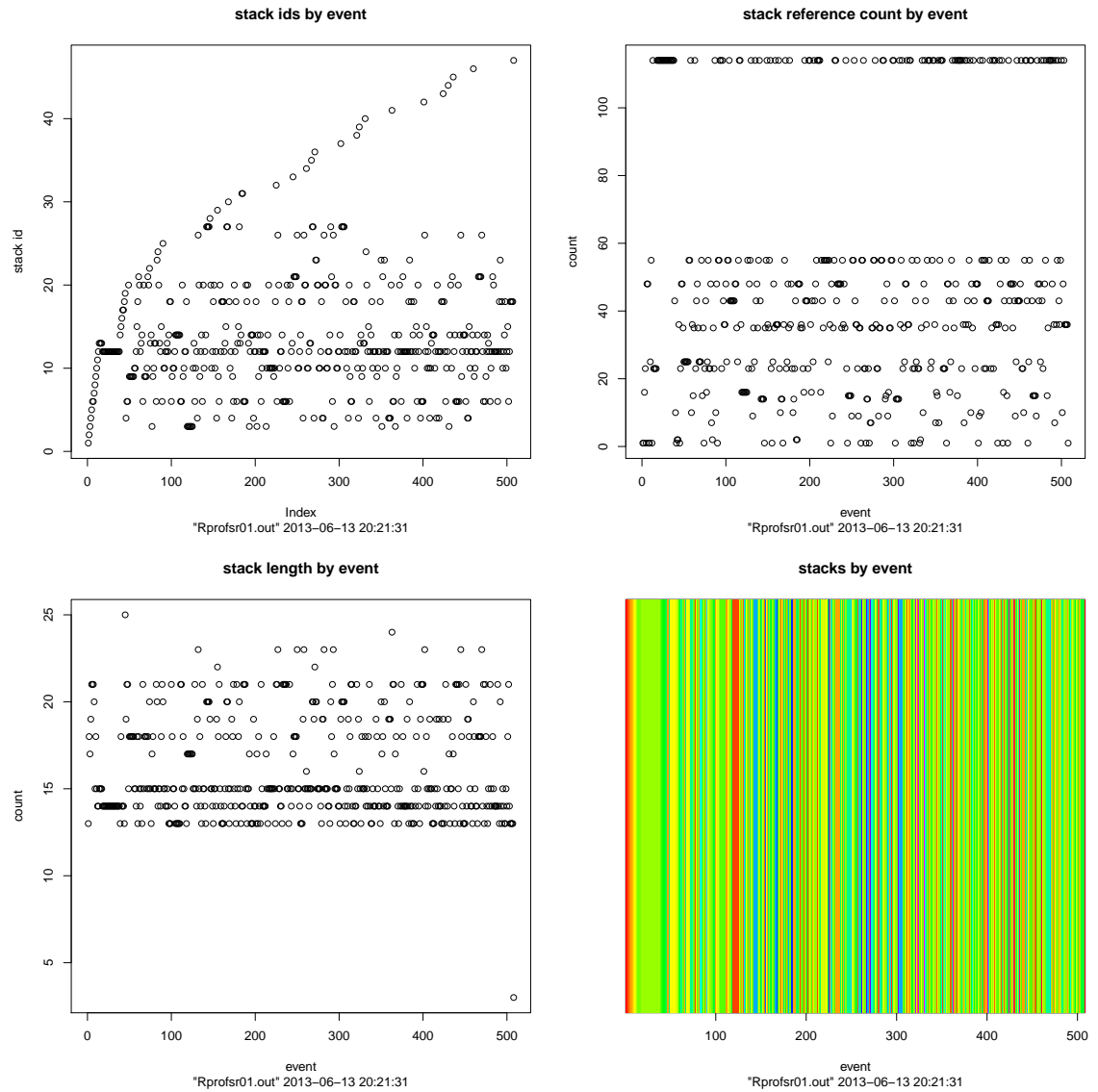
```
plot_profiles(x, which = c(1L, 2L, 3L, 4L), col,
ask = prod(par("mfcol")) < length(which) && dev.interactive(),
src = NULL, ...)
```

Arguments

| | |
|-------|--|
| x | preferably a sprof object. Other data structures may be extended |
| which | Selector of plots to show. |
| col | Colour table |
| ask | boolean. Ask for a new page? |
| src | String to be used as source identifier. |
| ... | passed. |

Details

Plots are from this collection:



Note

See the vignette of package sprof.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

See the vignette of package sprof.

See Also

[plot.sprof.](#)

Examples

```
data(sprof01lm)
oldpar <- par(mfrow=c(2,2))
plot_profiles(sprof01lm)
par(oldpar)
```

| | |
|-------------|---|
| plot_stacks | <i>Plot profiling information on stack level.</i> |
|-------------|---|

Description

Various plots of a profile.

Usage

```
plot_stacks(x, which = c(1L, 2L),
ask = prod(par("mfcol")) < length(which) && dev.interactive(),
src = NULL, mincount = 5, horiz = FALSE, ...)
```

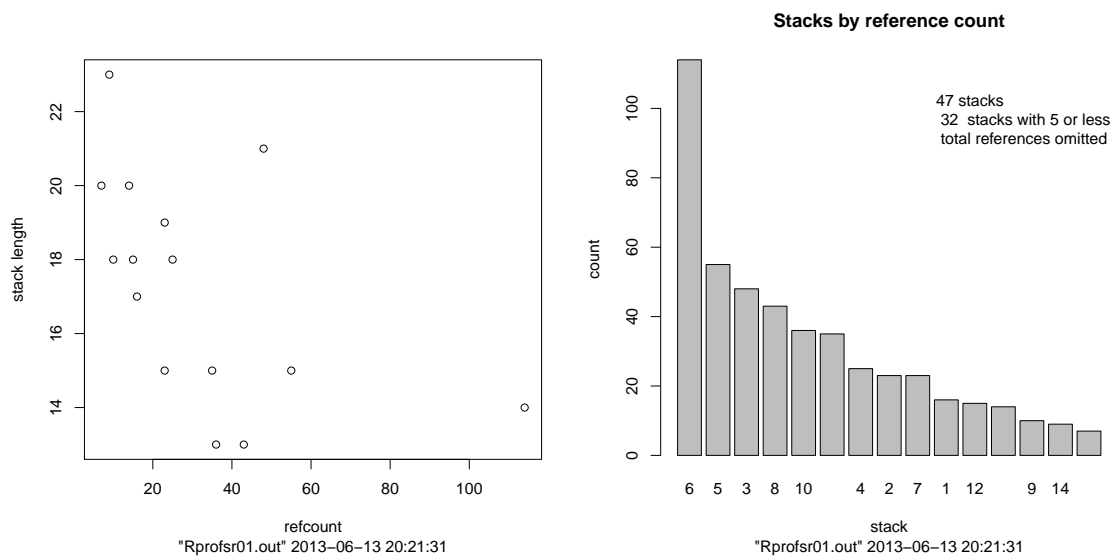
Arguments

| | |
|----------|---|
| x | preferably a sprof object. Other data structures may be extended |
| which | Selector of plots to show. |
| ask | boolean. Ask for a new page? |
| src | String to be used as source identifier. |
| mincount | minimum total frequency count for stack to be shown in barcharts. |
| horiz | draw horizontal bar plots. |
| ... | passed. |

Details

Note: these figures may be outdated. Please run the examples.

Plots are from this collection:



Value

To come.

Note

See the vignette of package sprof.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

See the vignette of package sprof.

See Also

[plot.sprof.](#)

Examples

```
data(sprof01lm)
oldpar <- par(mfrow=c(2,2))
plot_stacks(sprof01lm)
par(oldpar)
```

print.sprof

print for profiles

Description

Print a print for the output of class scode.

Usage

```
## S3 method for class 'sprof'  
print(x, ...)
```

Arguments

| | |
|-----|---|
| x | A data structure as returned by readRprof . |
| ... | further arguments passed to or from other methods. |

Value

None.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

<http://sintro.r-forge.r-project.org/>

See Also

[summaryRprof](#) [plot.sprof](#)

Examples

```
data(sprof01lm)  
print(sprof01lm)
```

| | |
|----------------|----------------------------------|
| print_profiles | <i>Print profile information</i> |
|----------------|----------------------------------|

Description

Print profile information.

Usage

```
print_profiles(x)
```

Arguments

x a sprof data structure.

Value

none

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
print_profiles(sprof01lm)
```

| | |
|-----------------|--|
| profiles_matrix | <i>Extract a node incidence matrix from profile information.</i> |
|-----------------|--|

Description

Extract a node incidence matrix from profile information.

Usage

```
profiles_matrix(x)
```

Arguments

x an sprof data structure.

Value

an incidence matrix, NA filled.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
smat <- profiles_matrix(sprof01lm)
image(smat)
```

readRprof

*Read [Rprof](#) Output files and Stack Logs***Description**

Read a log of stack entries, such as the output of the [Rprof](#) function, and generate a more accessible representation.

Usage

```
readRprof(filename = "Rprof.out", chunksize = 5000,
interval = 0.02,
head = c("auto", "none", "Rprofmem"),
id = NULL)
```

Arguments

| | |
|-----------|---|
| filename | Name of a file produced by <code>Rprof()</code> . |
| chunksize | Number of lines to read at a time. |
| interval | Real number: time interval between samples, in s. Defaults to 0.02s for consistency with <code>Rprof</code> , but shorter times should be used. |
| head | <code>c("auto", "none", "Rprofmem")</code> to interpret control information as provided by <code>Rprof</code> or <code>Rprofmem</code> . See details. |
| id | An optional identification string. Defaults to filename and date. |

Details

This function reads a log file of stacks, one stack snapshot per line, stack entries separated by space.

As profiling output file could be very large, it is read in blocks of `chunksize` lines. Increasing `chunksize` will make the function run faster if sufficient memory is available.

(This data structure is subject to change.)

The input format is controlled by the `head` argument. Format `"auto"` tries to detect control lines as interspersed by `Rprof`. These lines are not included in the output.

`"none"` ignores all control information and includes these lines as strange stacks.

`"Rprofmem"` isolates headers as provided by `Rprofmem`. `"Rprofmem"` new page entries are encoded as malloc requests with length 0.

Value

This data structure is subject to change.

Temporarily: A list with components

| | |
|----------|--|
| info | Summary information. |
| nodes | A vector of node names. This may include stray entries from interspersed lines. |
| stacks | Stacks, represented as reference list to nodes, and stack frequencies. |
| profiles | Recorded data, as reference to stacks, and possibly additional data per reference. |

nodes is (conceptually) a data frame with entries

| | |
|------------|--|
| name | node name |
| self.time | nr of events with node as terminal leaf |
| self.time | proportion of self.time with node as terminal leaf |
| total.time | nr of events with node in stack |
| self.time | proportion of total time with node as terminal leaf |
| nr.runs | number of runs, over all run lengths and levels |
| nr.runs | average of run length, over all run lengths and levels |
| icol | current colour index |

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>, based on the code of [summaryRprof](#)

References

<http://sintro.r-forge.r-project.org/>

See Also

[summaryRprof](#)

[summaryRprof](#)

[flatProfile](#) in library(proftools).

[parse_rprof](#) in library(profr).

The chapter on “Tidying and profiling R code” in “Writing R Extensions” (see the ‘doc/manual’ subdirectory of the R source tree).

[Rprof](#) is a sampling profiler.

[tracemem](#) traces copying of an object via the C function duplicate.

[Rprofmem](#) is a non-sampling memory-use profiler.

<http://developer.r-project.org/memory-profiling.html>

Examples

```
## Not run:
## Rprof() is not available on all platforms
profintrval <- 0.001
simruns <- 100

n <- 10000
x <- runif(n)
```

```

y0 <- 2 + 3 * x

sinknull <- textConnection(NULL, "w"); sink(sinknull)
Rprof(tmp <- tempfile(), interval = profinterval)
for (i in 1:simruns) {y <- y0 + rnorm(n); xxx<- summary(lm(y~x))}
Rprof()

Rprof_out <- readRprof(tmp)

unlink(tmp)
sink(); close(sinknull)

str(Rprof_out)

## End(Not run)

```

| | |
|---------|------------------------------|
| rkindex | <i>Index, based on rank.</i> |
|---------|------------------------------|

Description

Convert x to an index in $1 \dots \text{maxindex}$

Usage

```
rkindex(x, maxindex = length(x), pwr = 1, ties.method = "random", id)
```

Arguments

| | |
|--------------------------|---|
| <code>x</code> | A vector of data to covert. |
| <code>maxindex</code> | Maximum for result |
| <code>pwr</code> | See details. |
| <code>ties.method</code> | passed to <code>rank</code> . |
| <code>id</code> | A string to be passed as <code>id</code> argument. If missing, an <code>id</code> will be generated from the arguments. |

Details

x is transformed to a rank scale, using `ties.method`. It is then rescaled to $[0,1]$, and (optionally) a power transformation is applied. In visualisation terms, this is a gamma correction. The result is rescaled to $1 \dots \text{maxindex}$.

Value

A vector of rescaled values.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
x <- runif(7)
x
str(rkindex(x, maxindex=5))
str(rkindex(x, maxindex=5, pwr=0.5))
```

| | |
|-------------|----------------------------------|
| roots_sprof | <i>Root nodes list for sprof</i> |
|-------------|----------------------------------|

Description

Return a list of root nodes of all stacks.

Usage

```
roots_sprof(sprof, stacks)
```

Arguments

| | |
|--------|---|
| sprof | a sprof data structure, if available |
| stacks | an optional list of stacks as references to nodes |

Value

A vector of unique entries as root of stacks. If sprof is provided, nmaes are imported from the node name table of sprof

To do

stacks should support any reasonable representation of the stacks, and preserve format.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
roots_sprof(sprof01lm)
trimmed <- trimstacks(sprof01lm, trimnode= "summary")
roots_sprof(sprof01lm, stacks=trimmed)
```

| | |
|------|---------------------------------------|
| rrle | <i>Recursive run length encoding.</i> |
|------|---------------------------------------|

Description

Encode a matrix as run-length, top down. Encoding respects previous runs, e.g line 2 encodes runs in each run of line 1.

Usage

```
rrle(x, collapseNA =FALSE)
```

Arguments

| | |
|------------|-------------------------------|
| x | a matrix. |
| collapseNA | boolean. Collapse runs of NA. |

Details

By default, different NA data are not considered equal. collapseNA collapses runs of NA in the result. For recursion however they are treated as singular data, not as runs. This may need discussion.

Value

list of run length encoded lines

Note

This could go to rle in package base.

The date structure used for rle would be better represented as a data.frame.

Run length and other compressions might be implemented in data.frames by default.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

See Also

[rrleb](#)

Examples

```
x <- matrix(c(
  1,1,1,2,2,
  3,3,4,4,4,
  5,5,6,6,7,
  8,9,9,0,0
),nrow=4, ncol =5, byrow=TRUE)
xrrle <- rrle(x)
xrrle

t(sapply(xrrle, inverse.rle))
```

rrleb*Recursive run length encoding bottom up.*

Description

Encode a matrix as run-length, bottom up. Encoding respects previous runs, e.g line n-1 encodes runs in each run of line n.

May be removed.

Usage

```
rrleb(x)
```

Arguments

x a matrix.

Value

list of run length encoded lines

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

See Also

[rle](#),

Examples

```
x <- matrix(c(
  3,3,4,4,4,
  5,5,6,6,7,
  8,9,9,0,0,
  1,1,1,2,2
),nrow=4, ncol =5, byrow=TRUE)
xrrleb <- rrleb(x)
xrrleb

t(sapply(xrrleb, inverse.rle))
```

| | |
|-------------|-----------------------------|
| sampleRprof | <i>Get a sample profile</i> |
|-------------|-----------------------------|

Description

Get a sample profile and return it as a sprof data structure.

Usage

```
sampleRprof(expr, runs = NULL, gcFirst = TRUE, interval = 0.001, ...)
```

Arguments

| | |
|----------|---|
| expr | an expression to be profiled. |
| runs | nr of runs to profile. |
| gcFirst | boolean. Bracket the total simulation with calls to GC(). If TRUE, the garbage collection information will be reported as components gcin, codegcout. |
| interval | Real: time interval between samples, in s. |
| ... | additional parameters, passed to Rprof |

Value

A list of type sprof

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

<http://sintro.r-forge.r-project.org/>

Examples

```
## Not run:
res_lm <- sampleRprof(for (i in 1:1000) yy<- lm(runif(1000)~rnorm(1000)), runs=100)

## End(Not run)
```

`shownodes`*Show node information from a profile*

Description

Plot node information from a profile in various plots.

Usage

```
shownodes(sprof, col)
```

Arguments

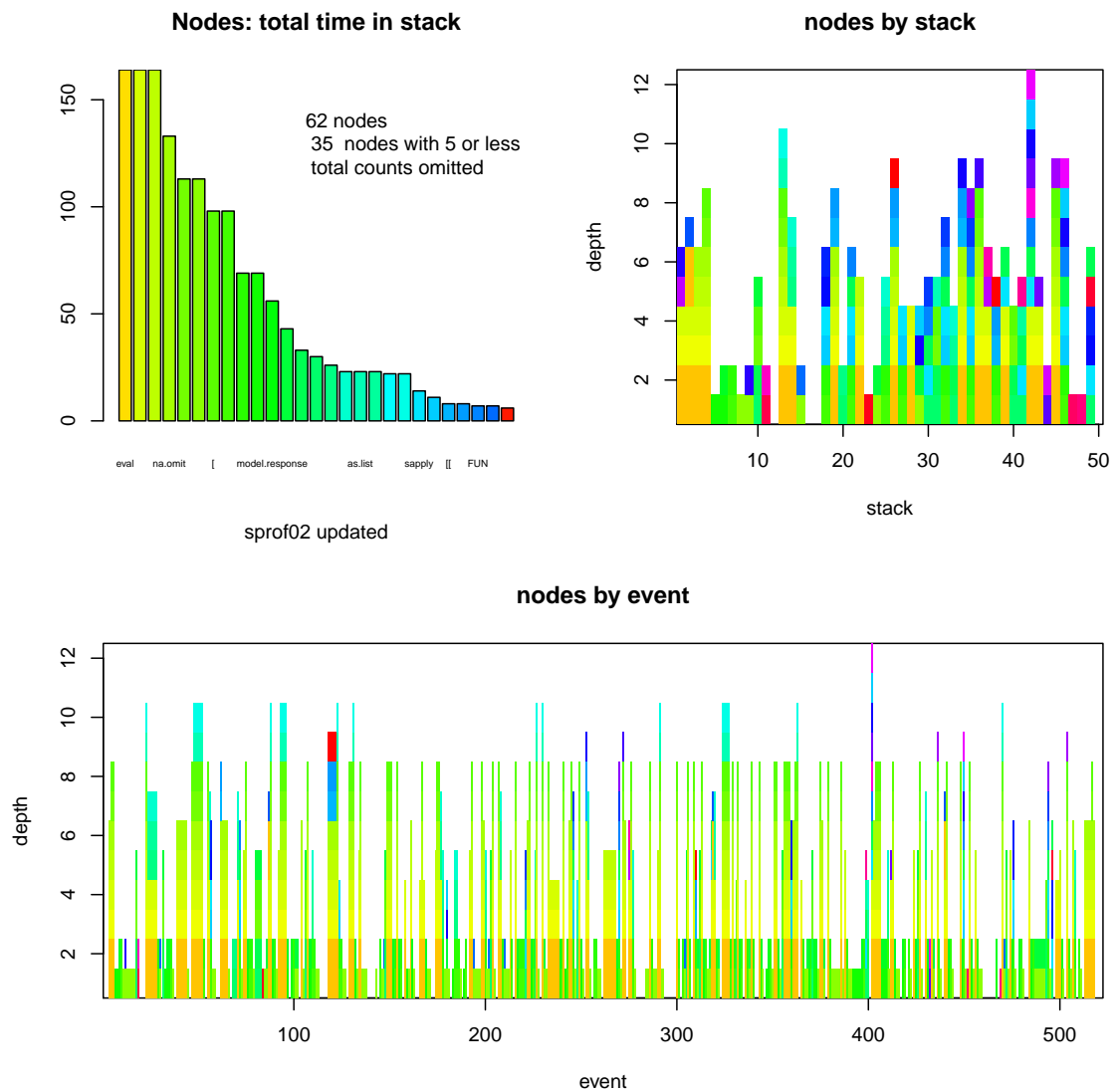
`sprof` A data structure as returned by [readRprof](#).

`col` A colour palette for the plots.

Details

Note: these figures may be outdated. Please run the examples.

Plots are from this collection:



Value

Used for the side effect of showing the plots.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
## Not run:
data(spprof01lm)
shownodes(spprof01lm)
```

```
## End(Not run)
```

| | |
|-----------|--------------------------|
| sprof01lm | <i>sprof sample data</i> |
|-----------|--------------------------|

Description

An example data set for the functions in package sprof.

Usage

```
data(sprof01lm)
```

Format

The format is: A List of 4 \$ info : 'data.frame': 1 obs. of 8 variables: \$ nodes : 'data.frame': 62 obs. of 5 variables: \$ stacks : 'data.frame': 50 obs. of 7 variables: \$ profiles: List of 4

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

See the vignette of package sprof.

Examples

```
data(sprof01lm)
str(sprof01lm)
plot(sprof01lm)
```

| | |
|----------------|-----------------------------------|
| stacksasfactor | <i>Represent stacks as factor</i> |
|----------------|-----------------------------------|

Description

Represent stacks as factor, using the node information of the profile record

Usage

```
stacksasfactor(sprof, sel, events)
```

Arguments

| | |
|--------|------------------------------------|
| sprof | a sprof data structure. |
| sel | Indices of stacks to convert. |
| events | Events, stacks of which to convert |

Details

sel and events are exclusive.

If none is selected, all stacks are given.

Value

A vector, or a list of vectors, representing the selected stacks as factors.

Note

event based selection should report event numbers.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
stacksasfactor(sprof01lm, 1:3)

stacksasfactor(sprof01lm, events=10)
```

| | |
|-------------|-----------------------------------|
| stackstoadj | <i>Stacks to adjacency matrix</i> |
|-------------|-----------------------------------|

Description

convert stack information to adjacency matrix

Usage

```
stackstoadj(xstacks, xfreq, maxnode)
```

Arguments

| | |
|---------|--|
| xstacks | list of stack ids |
| xfreq | vector of frequencies or weights |
| maxnode | maximum of nodes (maybe higher then in stacks) |

Value

the adjacency matrix

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
#
```

| | |
|----------|------------------------------|
| str_prof | <i>str for sprof objects</i> |
|----------|------------------------------|

Description

str for sprof objects

Usage

```
str_prof(x)
```

Arguments

x an sprof object

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
str_prof(sprof01lm)
```

| | |
|---------------|-----------------------------|
| summary.sprof | <i>Summary for profiles</i> |
|---------------|-----------------------------|

Description

Print a summary for the output of class scode.

Usage

```
## S3 method for class 'sprof'
summary(object, ...)
```

Arguments

object A data structure as returned by [readRprof](#).
 ... further arguments passed to or from other methods.

Value

None.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

<http://sintro.r-forge.r-project.org/>

See Also

[summaryRprof](#)

Examples

```
## Not run:
## Rprof() is not available on all platforms
profininterval <- 0.001
simruns <- 100

n <- 10000
x <- runif(n)
y0 <- 2 + 3 * x

sinknull <- textConnection(NULL, "w"); sink(sinknull)
Rprof(tmp <- tempfile(), interval = profinterval)
for (i in 1:simruns) {y <- y0 + rnorm(n); xxx<- summary(lm(y~x))}
Rprof()

Rprof_out <- readProf(tmp)

unlink(tmp)
sink(); close(sinknull)

summary(Rprof_out)

## End(Not run)
```

| | |
|-------------------|----------------------------|
| summary_terminals | <i>Tabulate leaf nodes</i> |
|-------------------|----------------------------|

Description

Tabulate leaf nodes

Usage

```
summary_terminals(x)
```

Arguments

x an sprof data structure.

Value

A table of frequencies, bystack.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
summary_terminals(sprof01lm)
```

| | |
|------------|---------------------------|
| trimstacks | <i>Trim sprof stacks.</i> |
|------------|---------------------------|

Description

Trim sprof stack information by top level or by node.

Usage

```
trimstacks(sprof, level, trimnode)
```

Arguments

| | |
|----------|---|
| sprof | a sprof data structure, if available, or a stacks\$nodes information. |
| level | Level to cut off. |
| trimnode | A node considered end of scaffold. Entries up to and including this node are trimmed. Nodes can be marked as index, or as node name.) |

Details

The level information is evaluated first, and then the node information is evaluated.

Value

A data structure corresponding to stacks\$nodes, with the trimmed parts cut off. This may contain NULL entries.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

Examples

```
data(sprof01lm)
trimmed <- trimstacks(sprof01lm, trimnode="summary")
sprof01lm$stacks$nodes <- trimmed #now the refereces are update, and graphs will work
sprof02lm <- updateRprof(sprof01lm) #now the info is updated, and summeries will be consistent.
```

| | |
|-------------|---|
| updateRprof | <i>Update statistics and tables in a sprof obejct</i> |
|-------------|---|

Description

Synchronize information from profiles and stack tables, and update statistics.

Usage

```
updateRprof(sprof, id)
```

Arguments

| | |
|-------|---|
| sprof | A data structure as returned by readRprof . |
| id | optional. A replacement for the info\$id string . |

Value

An updated sprof data structure.

Note

See the vignette of package sprof.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

| | |
|------------|---------------------------|
| writeRprof | <i>Write profile data</i> |
|------------|---------------------------|

Description

Write a profile data file from a sprof data structure.

Usage

```
writeRprof(sprof, filename = "Rprof.Out")
```

Arguments

| | |
|----------|--|
| sprof | a data structure from package sprof |
| filename | The file to be used for exporting the profiling results. |

Details

writeRprof only writes the stack entries for the profile.

This can be used to export information after preprocessing with sprof to some package designed for Rprof output.

Value

An invisible list with the profile entries, headers removed.

Note

See the vignette for in-context explanations.

Displays of the graph structure are given in the vignette.

Author(s)

Günther Sawitzki <gsawitzki@users.r-forge.r-project.org>

References

<http://sintro.r-forge.r-project.org/>

Examples

```
## Not run:  
data(sprof01lm)  
writeRprof(sprof01lm)
```

```
## End(Not run)
```

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