Package ‘TreeAndLeaf’

March 28, 2024

Type Package

Title Displaying binary trees with focus on dendrogram leaves

Version 1.14.0

Description The TreeAndLeaf package combines unrooted and force-directed graph algorithms in order to layout binary trees, aiming to represent multiple layers of information onto dendrogram leaves.

Author Leonardo W. Kume, Luis E. A. Rizzardi, Milena A. Cardoso, Mauro A. A. Castro

Maintainer Milena A. Cardoso <milenandreuzo@gmail.com>

Depends R(>= 4.0)

Imports RedeR(>= 1.40.4), igraph, ape

Suggests knitr, rmarkdown, BiocStyle, RUnit, BiocGenerics, stringr, geneplast, ggtree, ggplot2, dplyr, dendextend, RColorBrewer

License Artistic-2.0

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VignetteBuilder knitr

biocViews Infrastructure, GraphAndNetwork, Software, Network, Visualization, DataRepresentation

NeedsCompilation no

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Description

The TreeAndLeaf package combines unrooted and force-directed graph algorithms in order to layout binary trees, aiming to represent multiple layers of information onto dendrogram leaves.

Details

Package: TreeAndLeaf
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Suggests: knitr, rmarkdown, BiocStyle, RUnit, BiocGenerics, stringr, RColorBrewer
License: Artistic-2.0
biocViews: NetworkEnrichment, GraphAndNetwork

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formatTree: A theme function for tree-and-leaf igraph objects.
treeAndLeaf: Layout a TreeAndLeaf diagram.

Further information is available from the vignettes `vignette("TreeAndLeaf").`

Author(s)

Leonardo W. Kume, Luis E. A. Rizzardi, Milena A. Cardoso, Mauro A. A. Castro
formatTree

References


formatTree

*A theme function for tree-and-leaf igraph objects.*

Description

This function sets attributes of a tree-and-leaf igraph object for plotting in the RedeR app interface.

Usage

`formatTree(tal, theme = 1)`

Arguments

- `tal`: An igraph object generated by the `TreeAndLeaf` function.
- `theme`: An integer ranging from 1 to 5 with desired theme.
  Options:
  1- A clean black and blue theme, for additional customizations.
  2- Green palette theme.
  3- Blue palette theme.
  4- Purple palette theme.
  5- Red palette theme.
  For detailed customization, see attributes in the `addGraph` method.

Value

An igraph object with attributes for RedeR application.

See Also

`addGraph`

`treeAndLeaf`

Examples

```r
library(RedeR)
hc <- hclust(dist(USArrests), "ave")
tal <- treeAndLeaf(hc)
tal <- formatTree(tal, theme = 5)
```
phylo_species

Description
Species metadata used in a phylo object.

Usage
data(phylo_species)

Format
An object of class "data.frame"

References

phylo_tree

Description
A phylo object for the species tree available from the STRING-db v11.

Usage
data(phylo_tree)

Format
An object of class "phylo"

References
spdata  

**Data**  

Data from the NCBI Genome Database for eukaryotes with complete genome sequence. The list of organisms were obtained from the KEGG Organisms Database, and taxonomy IDs were obtained from the NCBI Taxonomy Database.

**Usage**  

```
data(spdata)
```

**Format**  

An object of class "data.frame"

**References**  


**Examples**  

```
data(spdata)
```

---

treeAndLeaf  

**Layout a TreeAndLeaf diagram.**

**Description**  

This function transforms hclust and phylo objects into tree-and-leaf igraph objects.

**Usage**  

```
treeAndLeaf(obj)
```

**Arguments**  

- **obj**  
  An object of class 'hclust' or 'phylo'.

**Value**  

A tree-and-leaf igraph object.
See Also

formatTree
hclust
as.phylo
addGraph
relax

Examples

library(ReDeR)
rdp <- RedPort()
hc <- hclust(dist(USArrests), "ave")
tal <- treeAndLeaf(hc)

## Not run:
calld(rdp)
addGraph(obj=rdp, tal)

## End(Not run)
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