Package 'BioMVCClass'

November 11, 2026

Title Model-View-Controller (MVC) Classes That Use Biobase

Version 1.80.0

Author Elizabeth Whalen

Description Creates classes used in model-view-controller (MVC) design

Depends R (>= 2.1.0), methods, MVCClass, Biobase, graph, Rgraphviz

Maintainer Elizabeth Whalen <ewhalen@hsph.harvard.edu>

License LGPL

biocViews Visualization, Infrastructure, GraphAndNetwork

git_url https://git.bioconductor.org/packages/BioMVCClass

git_branch RELEASE_3_23

git_last_commit 4cf2695

git_last_commit_date 2026-04-28

Repository Bioconductor 3.23

Date/Publication 2026-11-11

Contents

exprModel-class 2
graphModel-class 3
graphView-class 4
GSE-class 5
gseModel-class 6
heatmapView-class 7

Index **8**

`exprModel-class` *Class "exprModel": A class to represent an ExpressionSet model*

Description

exprModel is a class to represent an ExpresssionSet model. This class inherits from the virtual class, gModel. An object of exprModel is responsible for storing and updating the data.

Objects from the Class

Objects can be created by calls of the form `new("exprModel", ...)`. The initialize method for this class will be created in other packages that use this package (for example, the initialize method will be created in the iSNetwork package).

Slots

`modelData`: the model data, which is an ExpressionSet

`linkData`: a list of functions that link this model to its parent and child models (if it has any)

`virtualData`: the data that is needed by the views of this object

`modelName`: the name of this model

`modelVar`: a list of variables that refer to the modelData (for instance this may be t-test values that were calculated from the modelData)

Extends

Class `"gModel"`, directly.

Methods

No methods defined with class "exprModel" in the signature. The methods for this class will be created in other packages that use this package like iSNetwork.

Author(s)

Elizabeth Whalen

See Also

`graphModel-class`

`graphModel-class` *Class "graphModel": A class to represent a graph model*

Description

graphModel is a class to represent a graph model. This class inherits from the virtual class, gModel. An object of graphModel is responsible for storing and updating the data.

Objects from the Class

Objects can be created by calls of the form `new("graphModel", ...)`. The initialize method for this class will be created in other packages that use this package (for example, the initialize method will be created in the iSNetwork package).

Slots

`modelData`: the model data, which is a graph object

`linkData`: a list of functions that link this model to its parent and child models (if it has any)

`virtualData`: data that is needed by views of this model

`modelName`: the name of this model

`modelVar`: a list of variables that refer to the modelData (for instance this may be t-test values that were calculated from the modelData)

Extends

Class `"gModel"`, directly.

Methods

No methods defined with class "graphModel" in the signature. The methods for this class will be created in other packages that use this package like iSNetwork.

Author(s)

Elizabeth Whalen

See Also

`exprModel-class`

`graphView-class` *Class "graphView": A class to represent a graph view*

Description

graphView is a class to represent a view that is a graph. graphView inherits from the class, plotView, which inherits from the virtual class, genView.

Objects from the Class

Objects can be created by calls of the form `new("graphView", ...)`. The initialize method for this class will be created in other packages that use this package (for example, the initialize method will be created in the iSNetwork package).

Slots

`plotDevice`: the plot device number

`plotPar`: the parameter list for the plot, see par()

`drArea`: an object of class `"GtkDrawingArea"`

`dataName`: a character string describing what data are shown in the view

`win`: an object of class `"GtkWindow"` that holds the view

`winNum`: a number that tells what number view this is (for example, the first view created will have winNum=1)

`grLayout`: the Ragraph object, which represents the layout for the graph plot

Extends

Class `"plotView"`, directly. Class `"genView"`, by class `"plotView"`.

Methods

No methods defined with class "graphView" in the signature.

Author(s)

Elizabeth Whalen

GSE-class *Class "GSE": A class to represent gene set enrichment data*

Description

GSE is a class to represent gene set enrichment data and will be used in the modelData slot in the gseModel object. This class will store all of the information that pertains to performing gene set enrichment.

Objects from the Class

Objects can be created by calls of the form `new("GSE", ...)`.

Slots

`incidMat`: the incidence matrix that shows the relationship between the genes and the gene sets

`gTestStat`: the test statistic for the genes relationship with the phenotype

`gsTestStat`: the test statistic for the gene set

`expData`: the experimental data (here it will be of class ExpressionSet)

`descr`: a description of the gene set being studied

Methods

incidMat<- Sets the `incidMat` slot

incidMat Returns the `incidMat` slot

gTestStat<- Sets the `gTestStat` slot

gTestStat Returns the `gTestStat` slot

gsTestStat<- Sets the `gsTestStat` slot

gsTestStat Returns the `gsTestStat` slot

expData<- Sets the `expData` slot

expData Returns the `expData` slot

descr<- Sets the `descr` slot

descr Returns the `descr` slot

Author(s)

Elizabeth Whalen

See Also

`gseModel-class`

`gseModel-class` *Class "gseModel": A class to represent a GSE model*

Description

gseModel is a class to represent a gene set enrichment (GSE) model. This class inherits from the virtual class, gModel.

Objects from the Class

Objects can be created by calls of the form `new("gseModel", ...)`. The initialize method for this class will be created in other packages that use this package (for example, the initialize method will be created in the iSNetwork package).

Slots

`modelData`: the model data, which is an object of GSE

`linkData`: a list of functions that link this model to its parent and child models (if it has any)

`virtualData`: the data that is needed by the views of this object

`modelName`: the name of this model

`modelVar`: a list of variables that refer to the modelData (for instance this may be t-test values that were calculated from the modelData)

Extends

Class `"gModel"`, directly.

Methods

No methods defined with class "gseModel" in the signature. The methods for this class will be created in other packages that use this package like iSNetwork.

Author(s)

Elizabeth Whalen

See Also

`GSE-class`, `graphModel-class`, `exprModel-class`

heatmapView-class *Class "heatmapView": A class to represent a heatmap view*

Description

heatmapView is a class to represent a view that is a heatmap. heatmapView inherits from the class, plotView, which inherits from the virtual class, genView.

Objects from the Class

Objects can be created by calls of the form `new("heatmapView", ...)`. The initialize method for this class will be created in other packages that use this package (for example, the initialize method will be created in the iSNetwork package).

Slots

`ordering`: a list of of information returned from the heatmap function

`plotDevice`: the plot device number

`plotPar`: the parameter list for the plot, see par()

`drArea`: an object of class `"GtkDrawingArea"`

`dataName`: a character string describing what data are shown in the view

`win`: an object of class `"GtkWindow"` that holds the view

`winNum`: a number that tells what number view this is (for example, the first view created will have winNum=1)

`rNames`: the names of the rows to be included in the heatmap (this allows the original data to be subset in the view)

Extends

Class `"plotView"`, directly. Class `"genView"`, by class `"plotView"`.

Methods

ordering<- Sets the `ordering` slot

ordering Returns the `ordering` slot

rNames<- Sets the `rNames` slot

rNames Returns the `rNames` slot

Author(s)

Elizabeth Whalen

Index

∗ **classes**
exprModel-class, 2
graphModel-class, 3
graphView-class, 4
GSE-class, 5
gseModel-class, 6
heatmapView-class, 7

descr *(*GSE-class*)*, 5
descr,GSE-method *(*GSE-class*)*, 5
descr<- *(*GSE-class*)*, 5
descr<-,GSE-method *(*GSE-class*)*, 5

expData *(*GSE-class*)*, 5
expData,GSE-method *(*GSE-class*)*, 5
expData<- *(*GSE-class*)*, 5
expData<-,GSE-method *(*GSE-class*)*, 5
exprModel *(*exprModel-class*)*, 2
exprModel-class, 2

graphModel *(*graphModel-class*)*, 3
graphModel-class, 3
graphView *(*graphView-class*)*, 4
graphView-class, 4
grLayout *(*graphView-class*)*, 4
grLayout,graphView-method *(*graphView-class*)*, 4
grLayout<- *(*graphView-class*)*, 4
grLayout<-,graphView-method *(*graphView-class*)*, 4
GSE *(*GSE-class*)*, 5
GSE-class, 5
gseModel *(*gseModel-class*)*, 6
gseModel-class, 6
gsTestStat *(*GSE-class*)*, 5
gsTestStat,GSE-method *(*GSE-class*)*, 5
gsTestStat<- *(*GSE-class*)*, 5
gsTestStat<-,GSE-method *(*GSE-class*)*, 5
gTestStat *(*GSE-class*)*, 5
gTestStat,GSE-method *(*GSE-class*)*, 5
gTestStat<- *(*GSE-class*)*, 5
gTestStat<-,GSE-method *(*GSE-class*)*, 5

heatmapView *(*heatmapView-class*)*, 7
heatmapView-class, 7

incidMat *(*GSE-class*)*, 5
incidMat,GSE-method *(*GSE-class*)*, 5
incidMat<- *(*GSE-class*)*, 5
incidMat<-,GSE-method *(*GSE-class*)*, 5

ordering *(*heatmapView-class*)*, 7
ordering,heatmapView-method *(*heatmapView-class*)*, 7
ordering<- *(*heatmapView-class*)*, 7
ordering<-,heatmapView-method *(*heatmapView-class*)*, 7

rNames *(*heatmapView-class*)*, 7
rNames,heatmapView-method *(*heatmapView-class*)*, 7
rNames<- *(*heatmapView-class*)*, 7
rNames<-,heatmapView-method *(*heatmapView-class*)*, 7