

# Package ‘BioMVCClass’

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

**Version** 1.75.0

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

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

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

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### Description

`exprModel` is a class to represent an ExpressionSet 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](#)

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| graphModel-class | <i>Class "graphModel": A class to represent a graph model</i> |
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### 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](#)

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graphView-class

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

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### 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

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

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### 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](#)

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| gseModel-class | <i>Class "gseModel": A class to represent a GSE model</i> |
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### 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](#)

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

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