# Package 'mgraph'

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**Type** Package

**Title** Graphing map attributes and non-map variables in R

**Version** 1.03

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**Depends** rgdal (>= 0.5.2)

**Suggests** gstat,MASS

**Description** Each function in the package performs three main functions
i) it reads spatial data and produces basic graphs including
pie chart, bar chart, box plots, histogram, scatter plots, and
lines ii)it reads non-spatial data such as ``csv'', ``txt'', ``dat''
data and produces basic graphs and iii) it plots map(s) of the
input attribute(s) of spatial data by setting ``type'' parameter to ``map''

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**License** GPL (>= 2.0)

**NeedsCompilation** no

**Repository** CRAN

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## R topics documented:

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barmap *Bar graph of map and non-map data*

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## Description

The barmap function plots an attribute of a map data. It also returns tabular data:frequencies

## Usage

```
barmap(source,layer='',attribute,type='',label="",col='',factor='')
## Default S3 method:
barmap(source,layer='',attribute,type='',label="",col='',factor='')
## S3 method for class 'barmap'
print(x,...)
## S3 method for class 'barmap'
summary(object,...)
## S3 method for class 'barmap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map. Please quote the full folder path with forward slash "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the file name as layer. In case of using R object as a source set layer to "nofile" |
| type | The type of bar chart you want to plot. It can take "simple", "group","stack"; Set the "type" to "map" if you want a map to be drawn for the attribute |
| attribute | The attribute name of the layer or the map you want use. In case you of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |

| | |
|---|---|
| factor | In case you choose "group"or "stack" as type, you must specify the factor variable or attributes here.This will be used to group the attribute |
| label | The labeling title of the chart. |
| col | The colour of the chart |
| x | an object of class "barmap", i.e., a fitted model. |
| object | an object of class "barmap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
source<- system.file("external", package = "mgraph")
layer="farms"
attribute="Variety"
graph=barmap(source,layer,type="simple",attribute=attribute,col='black',label="")
summary(graph)
print(graph)
plot(graph)

## End(Not run)
```

boxmap *Box plot of map and non-map data*

## Description

The boxmap function plots an attribute of a map and non-map data.

## Usage

```
boxmap(source,layer='',attribute,type='',label="",col='',factor='')
## Default S3 method:
boxmap(source,layer='',attribute,type='',label="",col='',factor='')
## S3 method for class 'boxmap'
print(x,...)
## S3 method for class 'boxmap'
summary(object,...)
## S3 method for class 'boxmap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map. Please quote the full folder path with forward slash "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the full file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the full file name as layer. In case of using R object as a source set "layer" parameter to "nofile" |
| type | The type of box chart you want to plot. It can take "simple", "notch" Set the "type" to "map" if you want a map to be drawn for the attribute |
| attribute | The attribute name of the layer or the map you want use. In case you of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |
| factor | In case you several box plots for the attribute, you must specify the factor variable or attribute. See example below |
| label | The labeling title of the chart. |
| col | The colour of the chart |
| x | an object of class "boxmap", i.e., a fitted model. |
| object | an object of class "boxmap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
source<- system.file("external", package = "mgraph")
layer="farms"
graph=boxmap(source,layer,attribute='Age',col='black',label="",factor="Sex")
summary(graph)
print(graph)
plot(graph)
#Example two with R object
data(meuse.all, package="gstat")
#simple box plot
boxmap(meuse.all,layer="nofile",attribute="zinc", col="light blue")
#factorised box plot
boxmap(meuse.all,layer="nofile",attribute="zinc", col="light blue",factor="lime")

## End(Not run)
```

---

dotmap *Dotchart analysis of a map and non map data*

---

## Description

The dotmap function plots an attribute of a map and non-map data.

## Usage

```
dotmap(source,layer='',attribute,type='',label="",col='',symbol='')
## Default S3 method:
dotmap(source,layer='',attribute,type='',label="",col='',symbol='')
## S3 method for class 'dotmap'
print(x,...)
## S3 method for class 'dotmap'
summary(object,...)
## S3 method for class 'dotmap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map. Please quote the full folder path with forward slash "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the full file name as layer. In case of using R object as a source set "layer" parameter to "nofile" |
| type | The type of dot chart you want to plot. Set the "type" to "map" if you want a map to be drawn for the attribute |
| attribute | The attribute name of the layer or the map you want use. In case of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |
| label | The labeling title of the chart. The title or topic of the graph |
| col | The colour of the chart |
| symbol | You can set it to any symbol from your key board. For example you may use "H" to represent hospitals or set it to "P" to represent plants |
| x | an object of class "dotmap", i.e., a fitted model. |
| object | an object of class "dotmap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

### Author(s)

George Owusu

### References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

### Examples

```
## Not run:
source<- system.file("external", package = "mgraph")
layer="farms"
graph=dotmap(source, layer,attribute='Age',col='black',label="")
summary(graph)
print(graph)
plot(graph)

#example 2: using R object
data(meuse.all, package="gstat")
dotmap(meuse.all,layer="nofile",attribute="zinc", col="light blue")

## End(Not run)
```

---

## histmap *Histogram analysis of map and non map data*

---

### Description

The histmap function plots an attribute of a map and non-map data.

### Usage

```
histmap(source,layer='',attribute,type='',label="",col='',trans='')
## Default S3 method:
histmap(source,layer='',attribute,type='',label="",col='',trans='')
## S3 method for class 'histmap'
print(x,...)
## S3 method for class 'histmap'
summary(object,...)
## S3 method for class 'histmap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map. Please quote the full folder path with forward slash "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the full file name as layer. In case of using R object as a source set "layer" parameter to "nofile" |
| type | The type of histogram chart you want to plot. It can take "norm", "density". Set the "type" to "map" if you want a map to be drawn for the attribute |
| attribute | The attribute name of the layer or the map you want use. In case of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |
| label | The labeling title of the chart. The title or topic of the graph |
| col | The colour of the chart |
| trans | It is for transformation of the attribute or variable. The original data can be transformed to log by setting trans to "log"; it can be set to square root by setting it to "sqrt"; it can also be scaled be setteing it to "scale". Leave it blank if you do not like data transformation. |
| x | an object of class "histmap", i.e., a fitted model. |
| object | an object of class "histmap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
source<- system.file("external", package = "mgraph")
layer="farms"
graph=histmap(source, layer,attribute='Age',col='blue',label="")
summary(graph)
print(graph)
plot(graph)

#example 2: using R object
data(meuse.all, package="gstat")
histmap(meuse.all,layer="nofile",attribute="zinc", col="light blue")
#Histogram with normal distribtion
histmap(meuse.all,layer="nofile",attribute="zinc", col="light blue",type="normal")

## End(Not run)
```

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inbar *Internal barmap function*

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## Description

It is for internal use only

## Author(s)

George Owusu

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inbox *Internal boxmap function*

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## Description

It is for internal use only

## Author(s)

George Owusu

## indot *Internal dotmap function*

### Description

It is for internal use only

### Author(s)

George Owusu

## inhist *Internal histmap function*

### Description

It is for internal use only

### Author(s)

George Owusu

## inline *Internal linemap function*

### Description

It is for internal use only

### Author(s)

George Owusu

## inmap *Internal map function*

### Description

It is for internal use only

### Author(s)

George Owusu

## inpie *Internal piemap function*

### Description

It is for internal use only

### Author(s)

George Owusu

## inscatter *Internal scattermap function*

### Description

It is for internal use only

### Author(s)

George Owusu

## linemap *Line chart of map and non map data*

### Description

The line chart function plots an attribute of a map data. It also returns tabular data or frequencies

### Usage

```
linemap(source,layer='',attributes,type='',label="",col='')
## Default S3 method:
linemap(source,layer='',attributes,type='',label="",col='')
## S3 method for class 'linemap'
print(x,...)
## S3 method for class 'linemap'
summary(object,...)
## S3 method for class 'linemap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map or data. Please quote the full folder path with forward slashes "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the full file name as layer. In case of using R object as a source set "layer" parameter to "nofile" |
| type | The type of line chart you want to use. It can take "p","l","o","b","c","s","S", or "h". Set it to "map" if you want a map to be drawn for the attribute |
| attributes | The attributes or variables of the map name of the layer or the map you want use. This function takes only two attributes separated by comma: see example below. In case of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variable or column names |
| label | The labeling title of the chart. |
| col | The colour of the chart |
| x | An object of class "linemap", i.e., a fitted model. |
| object | an object of class "linemap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | he labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
#example one: using non spatial data
source<- system.file("external", package = "mgraph")
layer="farms"
attributes="Age,FArea"
graph=linemap(source,layer,attributes,type="l",col='black',label="")
summary(graph)
print(graph)
plot(graph)

#example two: using R object
data(meuse.all, package="gstat")
linemap(meuse.all,layer="nofile",attributes="zinc,copper",type="l")

## End(Not run)
```

---

map *Plotting a map data*

---

## Description

The map function plots an attribute of a map. It can plot lines, polygons and points.

## Usage

```
map(source,layer='',attribute,type='',label="",col='',symbol='')
## Default S3 method:
map(source,layer='',attribute,type='',label="",col='',symbol='')
## S3 method for class 'map'
print(x,...)
## S3 method for class 'map'
summary(object,...)
## S3 method for class 'map'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map. Please quote the full folder path with forward slash "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the full file name as layer. In case of using R object as a source set "layer" parameter to "nofile" |
| type | The type of ogram chart you want to plot. Set the "type" to "points" if you want a map to be drawn for the point attribute |

| | |
|---|---|
| attribute | The attribute name of the layer or the map you want use. In case of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |
| label | The labeling title of the chart. The title or topic of the graph |
| col | The colour of the chart |
| symbol | Incase of plotting a point data, you can set it to any symbol from your key board. For example you may use "H" to represent hospitals or set it to "P" to represent plants |
| x | an object of class "map", i.e., a fitted model. |
| object | an object of class "map", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
source<- system.file("external", package = "mgraph")
layer="farms"
graph=map(source,layer=layer,attribute='PlantPop',type="points",label="Plant population",col="green")
summary(graph)
print(graph)
plot(graph)


## End(Not run)
```

piemap *Pie chart of spatial and non spatial data*

## Description

The piemap function plots an attribute of a map and non-map data. It also returns tabular data: frequencies

## Usage

```
piemap(source,layer='',attribute,type='',label="",col='')
## Default S3 method:
piemap(source,layer='',attribute,type='',label="",col='')
## S3 method for class 'piemap'
print(x,...)
## S3 method for class 'piemap'
summary(object,...)
## S3 method for class 'piemap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or the map. Please quote the full folder path with forward slash "/". |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the file name as layer. In case of using R object set layer to "nofile" |
| type | The type of pie chart you want to use. It can take "simple" or "annotated" parameter. Simple pie chart does not have annotation. Set the "type" to "map" if you want a map to be drawn for the attribute |
| attribute | The attribute name of the layer or the map you want use. In case of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |
| label | The labeling title of the chart. |
| col | The colour of the chart |
| x | an object of class "piemap", i.e., a fitted model. |
| object | an object of class "piemap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |

| | |
|---|---|
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
#example one non spatial data
source<- system.file("external", package = "mgraph")
layer="farms"
attribute="Variety"
graph=piemap(source, layer,type="annotated",attribute=attribute,col='black',label="")
summary(graph)
print(graph)
plot(graph)

#Example two with R object
data(meuse.all, package="gstat")
piemap(source=meuse.all,layer="nofile",attribute="landuse")
piemap(source=meuse.all,layer="nofile",attribute="lime")

## End(Not run)
```

---

# scattermap *Scatter plot of map and no-map data*

---

## Description

The scattermap function plots an attribute of a map and non-map data. It also returns tabular data

## Usage

```
scattermap(source,layer='',attributes,type='',label="",col='')
## Default S3 method:
scattermap(source,layer='',attributes,type='',label="",col='')
## S3 method for class 'scattermap'
print(x,...)
## S3 method for class 'scattermap'
summary(object,...)
## S3 method for class 'scattermap'
plot(x,...)
```

## Arguments

| | |
|---|---|
| source | Folder path of the layer or map. Please quote the full folder path with forward slash "/". You can use R object as a source but you must set the layer parameter to "nofile"; see below |
| layer | The layer map in the folder that you want to work with. It is the file name of map. This is case sensitive, please. In case you want to use non spatial data such as ".csv", ".txt", "dat" or ".tab" insert the full file name as layer. In case of using R object as a source set the "layer" parameter to "nofile" |
| type | The type of scatter chart you want to use. Set the "type" to "map" if you want a map to be drawn for the attribute |
| attributes | The attributes or variables of the map name of the layer or the map you want use. In case of using non spatial data such as ".csv", ".txt", "dat" or ".tab" attributes are variables or column names |
| label | The labeling title of the chart. |
| col | The colour of the chart |
| x | an object of class "scattermap", i.e., a fitted model. |
| object | an object of class "scattermap", i.e., a fitted model. |
| ... | any other R parameters can be added |

## Value

Objects of the class that basically list its elements

| | |
|---|---|
| data | Original data for the model |
| table | Frequency of the original data |
| source | Folder path of the layer or map |
| layer | The layer map in the source folder |
| attribute | The attribute name of the layer or the map that was used. |
| label | The labeling title of the chart. |

## Author(s)

George Owusu

## References

Bivand, R. S., Pebesma, E. J., Gomez-Rubio, V. (2008) Applied Spatial Data Analysis with R. Springer Kabacoff, I. R. (2011) R in Action. Data Analysis and Graphics with R. Manning Publications Co

## Examples

```
## Not run:
source<- system.file("external", package = "mgraph")
layer="farms"
attributes='Age,FArea'
graph=scattermap(source,layer,attributes,type="l",col='black',label="")
summary(graph)
print(graph)

#example two: using R object
data(meuse.all, package="gstat")
scattermap(meuse.all,layer="nofile",attributes="zinc,copper")
plot(graph)

## End(Not run)
```

# Index