Package ‘iplots’

October 13, 2022

Version 1.1-8

Title iPlots - Interactive Graphics for R

Author Simon Urbanek <simon.urbanek@r-project.org>, Tobias Wichtrey <tobias@tarphos.de>

Maintainer Simon Urbanek <simon.urbanek@r-project.org>

Depends R (>= 1.5.0), methods, rJava (>= 0.5-0)

Suggests maps, MASS

Imports grDevices, png

License GPL-2

Description Interactive plots for R.

URL http://www.iPlots.org/

BugReports https://github.com/s-u/iplots/issues

NeedsCompilation no

Repository CRAN

Date/Publication 2022-05-01 14:58:01 UTC

R topics documented:

iabline ................................................................. 2
iabbar ................................................................. 3
iabox ................................................................. 4
ievent.wait ......................................................... 5
ihammock ........................................................... 6
ihist ................................................................. 7
ilines ................................................................. 8
imap ................................................................. 9
imosaic ............................................................. 10
iobj.list ........................................................... 11
iobj.opt ............................................................. 12
ipcp ................................................................. 13
iplot ................................................................. 14
iplot.data .......................................................... 15
iabline

Add a straight line to the current iPlot.

Description

This function adds one straight line through the current iPlot.

Usage

iabline(a = NULL, b = NULL, reg = NULL, coef = NULL, ..., plot = iplot.cur())

Arguments

a, b  the intercept and slope
coef  a vector of length two giving the intercept and slope
reg   an object with a coef component
...  object options for iobj.opt
plot  plot to which this line is to be added

Details

Typical usages are

iabline(a, b, ...)
iabline(coef=, ...)
iabline(reg=, ...)

Value

Resulting iObject.

See Also

ilines, iobj.opt
**ibar**

Interative Bar Chart

**Description**

This function creates a new interactive bar chart from the given data.

**Usage**

```
ibar(var, ...)
```

**Arguments**

- `var` Factor, vector of strings or variable to use.
- `...` All additional parameters are passed to `iplot.opt`.

**Details**

Creates an interactive barchart or spline plot.

Additional parameters (also accessible via `iplot.opt`):

- `drawTicks` Whether ticks should be drawn.
- `isSpine` Whether a spineplot should be created instead of a normal barchart.
- `borderColorSel` Here this color defaults to black. See `iplot.opt` for details.

**Value**

Resulting plot object.

**See Also**

`iplot, ihist, iplot.list, iplot.opt`

**Examples**

```
data(iris)
attach(iris)
ibar(Species)
```
**inbox**

**Interactive Box Plot**

**Description**

This function creates a new interactive box plot from the given data.

**Usage**

```r
inbox(x, y=NULL, ...)
```

**Arguments**

- **x**: Vector of numbers or data frame containing the variables
- **y**: A factor to specify groups for y-by-x boxplot
- **...**: All additional parameters are passed to `iplot.opt`. Many of the parameters used in `plot` are supported.

**Details**

Creates either a regular boxplot (if `y` is not specified) or 'x-by-y boxplot (if `y` is specified). In the latter case both `x` and `y` must be of the same length.

Additional parameters:

- **alternatingLabels**: Whether labels should be placed alternately at the top and at the bottom.

**Value**

Resulting plot object.

**See Also**

`ihist`, `ibar`, `iplot.list`, `iplot.opt`

**Examples**

```r
data(iris)
attach(iris)
inbox(Petal.Length)
inbox(Sepal.Length, Species)
```
**Description**

This function provides a way of building interactive event loops in R. Currently SJava interface has no stable callbacks, therefore this is the only way of defining new interactions in iPlots.

`ievent.wait` waits until some iPlots event (iEvent) occurs. The most commonly used events include selection change and the "break" event. It is possible to generate user-definable events (such as events sent by custom buttons or menu entries) with low-level API (via SJava).

Note that in the current implementation the Windows GUI "freezes" until the function returns.

**Usage**

`ievent.wait()`

**Value**

NULL is the break event occurred or a ievent object if some other event occurred.

**Examples**

```r
data(iris)
attach(iris)
iplot(Sepal.Length, Petal.Length)
d<-iplot.data()
iabline(lm(d$y ~ d$x), col = "red")
ilines(lowess(d$x,d$y), col = "#0000c0")
ilines(c(0,0),c(0,0), col = "marked", visible = FALSE)
cat("Select 'Break' from the menu of any plot to return back to R.\n")
while (!is.null(ievent.wait())) {
  if (iset.sel.changed()) {
    s <- iset.selected()
    if (length(s) > 1)
      iobj.opt(x=lowess(d$x[s],d$y[s]),visible = TRUE)
    else iobj.opt(visible = FALSE)
  }
}
for(i in 1:3) iobj.rm()
iplot.off()
```
ihammock

Interactive Hammock Plot

Description

This function creates a new interactive hammock plot. Please note that a hammock plot was not necessarily designed to support highlighting, so it may be of limited use. It was created as a proof of the iBase concept which makes it very easy to implement new interactive plots.

Usage

ihammock(...)

Arguments

... All unnamed parameters are treated as variables to display. All additional parameters are passed to iplot.opt.

Details

The plot can be used in either in the form ihammock(df) to plot a list or data frame of variables or ihammock(x, y, z) to plot factors x, y and z.

Value

Resulting plot object.

See Also

ihist, ibar, iplot, iplot.opt

Examples

library(MASS)
data(Cars93)attach(Cars93)ihammock(AirBags, Cylinders, Origin)
**ihist**

*Interactive Histogram*

**Description**

This function creates a new interactive histogram from the given data.

**Usage**

```r
ihist(var, ...)
```

**Arguments**

- `var` Vector of numbers or variable to use.
- `...` All additional parameters are passed to `iplot.opt`.

**Details**

Creates an interactive histogram.

Additional parameters (also available via `iplot.opt`):

- `anchor` Anchor point for the histogram.
- `binw` Bin width.
- `autoScaleXAxis` Whether the x axis should be automatically rescaled.
- `autoScaleYAxis` Whether the y axis should be automatically rescaled.

**Value**

Resulting plot object.

**See Also**

- `iplot`, `iplot.bar`, `iplot.list`, `iplot.opt`

**Examples**

```r
data(iris)
ihist(iris$Sepal.Width)
```
Add connected lines or polygon to the current iPlot.

Description

A generic function taking coordinates of points in data space and creating corresponding connected lines or polygon in the current iPlot.

Usage

```
ilines(x, y, col=NULL, fill=NULL, visible=NULL, plot = iplot.cur())
```

Arguments

- `x, y` Coordinate vectors of points to join. `xy.coords` is used to obtain the coordinates for plotting.
- `col` Drawing color of the lines. Currently only "#rrggbb" notation and named colors are supported. NULL means that color of the object is not explicitly specified.
- `fill` Color of the polygon area or NA if no filling should be performed.
- `visible` If set to FALSE the lines/polygon won’t be visible initially.
- `plot` Parent plot for the lines

Details

The point vectors `x` and `y` can contain NA values, in which case each sequence of points separated by NAs will be treated as a separate polygon. NAs must be present in both coordinates at the same index, otherwise the behavior is undefined.

Value

Resulting iObject.

See Also

`ihist`, `ibar`, `iplot.list`, `iobj.opt`

Examples

```
data(iris)
attach(iris)
iplot(Sepal.Width,Petal.Width)
l<-lowess(Sepal.Width,Petal.Width)
ilines(l)
```
**imap**  
*Interactive Map*

**Description**

This function creates a new interactive map from the given data.

**Usage**

`imap(x, y=NULL, ...)`

**Arguments**

- `x` either an object of the class "map" as created by the `map` function or a vector of the x-coordinates of the map polygons
- `y` y-coordinates of the map polygons
- `...` All additional parameters are passed to `iplot.opt`.

**Details**

Creates an interactive map plot.

The input can be either an object of the class "map" passed directly to the x parameter or two vectors of matching coordinates passed to x and y. The format for polygons in the same as used by the `map` function.

Each polygon should correspond to a case and it will be linked correspondingly. See `ivar.new.map` for details on map variables.

Note: this function is currently experimental and it may change in the future.

**Value**

Resulting plot object.

**See Also**

`iplot`, `ivar.new.map`

**Examples**

```r
library(maps)
m <- map('state', plot=FALSE)
imap(m)
```
imosaic

Interactive Mosaic Plot

Description

This function creates a new interactive mosaic plot from the given data.

Usage

imosaic(...)  

Arguments

...   All unnamed parameters are treated as variables to display. Additional parameters are passed to iplot.opt. The parameter "type" selects the variation of the mosaic plot. Valid values are "observed", "expected", "fluctuation", "same.bin.size" and "multiple.barchart". Partial matching is used, so first letter is sufficient.

Details

The plot can be used either in the form imosaic(df) to plot a list or data frame of variables contained in df or imosaic(x, y, z) to plot variables x, y and z.

Additional parameters:

rotateYLabelsBy  The default value of this variable is changed here. For a description see iplot.opt.

Value

Resulting plot object.

See Also

ihist, ibar, iplot.list, iplot.opt

Examples

library(MASS)
data(Cars93)
attach(Cars93)
imosaic(AirBags,Cylinders,Origin)
imosaic(AirBags,Cylinders,Origin,type="mul")

iplot.location(300,100,TRUE)
Interactive objects (iObjects) management functions.

Description

These functions are used to manage iObjects of an iPlot. Exactly one of the iObjects is the current one (for each iPlot). Every newly created iObject automatically becomes current. Please note that both iPlots and iObjects can be also used directly - each function creating an iObject or iPlot returns the newly created object which can be used in calls to functions requiring plot parameter (for iPlots) or iobj.opt, iobj.rm and similar (iObjects). The object list management functions below are provided for convenience only - the direct use of objects is encouraged instead.
iobj.list returns all iObjects of the current iPlot.
iobj.cur returns the current iObject.
iobj.next and iobj.prev return the ID of the next resp. previous object in the list relative to the object specified by the argument.
iobj.set makes the object with the specified ID current.
iobj.get returns the object specified by its ID.
iobj.rm removes the object
== and != operators can be used to compare two iObjects

Usage

iobj.list(plot = iplot.cur())
iobj.cur(plot = iplot.cur())
iobj.next(which=iobj.cur(), plot = iplot.cur())
iobj.prev(which=iobj.cur(), plot = iplot.cur())
iobj.set(which=iobj.next())
iobj.get(pos, plot=iplot.cur())
iobj.rm(which=iobj.cur(), plot = iplot.cur())
## S3 method for class 'iobj'
a == b
## S3 method for class 'iobj'
a != b

Arguments

which An object or an integer specifying the object number.
pos ID of an object
plot plot to operate on (either as integer ID or plot object itself).
a object to compare
b object to compare

See Also

ilines, iabline
iobj.opt Modify parameters of an iObject

Description

This function modifies parameters of an iObject.

Usage

iobj.opt(o=iobj.cur(),...)

Arguments

- o: object whose options are to be set
- ...: options to be set

Value

If no parameters (except for the object) are specified, a list of the current parameters is returned (if supported by the object).

The following common parameters are used by most iObjects:

- `visible`: visibility flag. The default is `TRUE`.
- `layer`: layer in which the object is placed. Currently the following layers are supported: 0 - background, 1 - data points, 2 - selection, 3 - drag boxes. The value -1 has a special meaning by denoting the topmost layer (which is the default)
- `col`: drawing color of the object
- `fill`: filling color of the object (where applicable). If set to `NA` then no filling is performed.
- `coord`: coordinates system to use. 0=graphical coordinates, 1=data space coordinates (default), 2=relative coordinates.
- `update`: if set to `FALSE` then no plot refresh is done after updating the options. When modifying multiple objects it is common practice to set `update` to `FALSE` for all but the last updated object. The default is `TRUE`.

See Also

iobj.list
Description

This function creates a new interactive parallel coordinates plot from the given data.

Usage

ipcp(...)  

Arguments

...  

All unnamed parameters are treated as variables to display. All additional parameters are passed to iplot.opt.

Details

Creates an interactive parallel coordinates plot.

The plot can be used either in the form ipcp(df) to plot a list or data frame of variables contained in df or ipcp(x, y, z) to plot variables x, y and z.

Additional parameters:

alterningLabels Whether lables should be placed alternately at the top and at the bottom.
COL_AXES Color of the (optional) axes.

Value

Resulting plot object.

See Also

ihist, ibar, iplot.list, iplot.opt

Examples

data(iris)
ipcp(iris)
**iplot**

*Interactive Scatterplot*

**Description**

This function creates a new interactive scatterplot from the given data.

**Usage**

```r
iplot(x, y=NULL, xlab=NULL, ylab=NULL, ...)  
```

**Arguments**

- `x` Data for the x axis. It can be either a vector of values or a variable of an iset. If y is not given, this must be a list of one of these.
- `y` Data for the y axis. It can be either a vector of values or a variable of an iset.
- `xlab` Name for x variable.
- `ylab` Name for y variable.
- `...` All additional parameters are passed to `iplot.opt`. Many of the parameters used in `plot` are supported.

**Details**

Creates an interactive scatterplot.

Additional parameters:

- `changePtDiamBy` Number of pixels the point diameter should be changed when in-/decreasing it via keyboard or menu.
- `customFieldBg` Whether to use a custom background color.
- `COL_CUSTOMBG` The custom background color.
- `drawAxes` Whether axes should be drawn.
- `equiscale` Whether the same scale should be applied to both axes.
- `minimalDiam` Minimal point diameter.
- `ptDiam` Point diameter.
- `spaceprop` Gives the amount of space around the data points. 1.0 means no space, 1.5 means half as much space around the data as is used for the data itself. This resets zoom.

Default values:

```r
changePtDiamBy=2, customFieldBg=FALSE, COL_CUSTOMBG="white",  
drawAxes=TRUE, equiscale=FALSE, minimalDiam=1, ptDiam=3,  
spaceprop=1.1
```
iplot.data

Value

Resulting plot object.

See Also

ihist, ibar, iplot.list, iplot.opt

Examples

data(iris)
attach(iris)
iplot(Sepal.Width, Petal.Width)
iplot(Sepal.Width/Sepal.Length, Species)

---

iplot.data

Retireve data from a plot.

Description

This function retrieves the associated data from the current plot.

Usage

iplot.data(id=NULL)

Arguments

id

number of the variable to retrieve. If omitted a list of all associated varaibles (and their contents) is returned.

Value

A vector representing a variable or a list of variable contents. The first two vectors in the list are traditionally named x and y. The number of variables depends on the plot used, e.g. scatter plot has two, histogram or bar chart return one.

See Also

iplot, ihist, ibar

Examples

data(iris)
attach(iris)
iplot(Sepal.Width, Petal.Width)
iplot(Sepal.Width/Sepal.Length, Species)
**iplot.list** Interactive plots management functions.

**Description**

These functions are used to manage currently open iPlots. Exactly one of the open iPlots is the current plot. Every newly created iPlot automatically becomes the current plot. Any plot specific functions, such as `ilines` operate on the current plot.

Please note that the functions below are provided for convenience only. It is also possible to use plot objects directly without using the plot list. Each function creating a new iPlot directly returns the plot object which can then be used to any subsequent calls to `ilines`, `iplot.opt` etc.

- **iplot.list** returns all currently registered iPlots (even if they are hidden).
- **iplot.cur** returns the ID of the current plot.
- **iplot.next** and **iplot.prev** return the ID of the next resp. previous plot in the list relative to the plot specified by the argument.
- **iplot.set** makes the plot with the specified ID current.
- **iplot.off** closes the plot.

**Usage**

```r
iplot.list()
iplot.cur()
iplot.next(which=iplot.cur())
iplot.prev(which=iplot.cur())
iplot.set(which=iplot.next())
iplot.off(plot=iplot.cur())
```

**Arguments**

- **which** An integer specifying a plot number.
- **plot** Plot object or plot number of a plot to close.

**See Also**

`ilines`, `iplot`, `ihist`, `ibar`

**Examples**

```r
data(iris)
attach(iris)
iplot(Sepal.Width,Petal.Width)
ibar(Species)
iplot.list()
```
iplot.manip

iPlot manipulation functions

Description

The following functions are used to manipulate iplots. They are NOT part of the official API and may disappear without warning. Most of them are legacy functions introduced before iplot.opt was available.

- `iplot.backend`: retrieves or sets the iPlots back-end.
- `iplot.resetZoom`: reset zoom
- `iplot.rotate`: set plot rotation
- `iplot.setExtendedQuery`: set text for extended query
- `iplot.zoomIn`: zoom into specified area
- `iplot.zoomOut`: zoom out (the coordinates are ignored as the zoom is hierarchical)
- `iplot.location`: get or set the location of the iplot
- `iplot.size`: get or set the size of an iplot plot

Usage

```r
iplot.backend(type = NULL)
iplot.resetZoom()
iplot.rotate(i)
iplot.setExtendedQuery(str, plotID=.iplot.curid)
iplot.zoomIn(x1, y1, x2, y2)
iplot.zoomOut(x, y)
iplot.location(x, y, relative=FALSE, plot=iplot.cur())
iplot.size(width, height, plot=iplot.cur())
```

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

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

Arguments

- `i`: rotation orientation
- `plotID`: plot ID (number)
- `str`: string to show on extended query or FALSE or NULL to disable extended query
- `type`: back-end type - one of "awt", "swing" or "opengl" (or any unambiguous first part hereof) to set the type or NULL to retrieve the current back-end type
- `x1`: basis coordinate for the x axis
- `y1`: basis coordinate for the y axis
- `x2`: edge coordinate for the x axis
iplot.opt

Modify parameters of an interactive plot

Description
This function modifies parameters of an iPlot.

Usage
iplot.opt(..., plot=iplot.cur())

Arguments
... Parameters to modify
plot Plot whose parameters are to be modified
Details

The following parameters are common to all plots. See help pages of individual plots for plot-specific parameters.

xlim Range of the X axis (vector of two numbers).
ylim Range of the Y axis (vector of two numbers).
col Colors of the points. See iplot.set.brush for details.
autoAdjustMargins Whether iPlots should try to determine appropriate margin sizes. Set this to FALSE if you want to set the margins manually.
defaultMargins Vector of default values for left, right, top and bottom margins.
mLeft Size of left margin.
mRight Size of right margin.
mTop Size of top margin.
mBottom Size of bottom margin.
fillColor Fill color.
borderColor Border color.
fillColorSel Fill color when selected.
borderColorSel Border color when selected.
fillColorDrag Fill color of dragged bars.
COL_INVALID Color of invalid elements.
COL_OUTLINE Default line color.
COL_SELBG Background color of selection rectangle. Defaults to selection color with alpha value 0.298.
COL_ZOOMBG Background color of selection rectangle.
horizontalMedDist Mean horizontal label distance.
horizontalMinDist Minimal horizontal label distance.
verticalMedDist Mean vertical label distance.
verticalMinDist Minimal vertical label distance.
extQueryString Extended query string.
rotateYLabels Whether labels for the y axis should be rotated by the angle given by rotateYLabelsBy.
rotateYLabelsBy The labels for the y axis are rotated by this amount of degrees if rotateYLabels is set to true.
title Frame title.

Value

If no parameters (except for the plot) are specified, a list of the current parameters is returned.

See Also

iplot.list
Examples

```r
data(iris)
attach(iris)
iplot(Sepal.Width,Petal.Width)
iplot.opt(xlim=c(1.5,5),col=Species)
```

---

**iraster**

*Add a bitmap (raster) image to the current iPlot.*

Description

`iraster` adds a raster image as an iObj to the given iPlot. Position in the plot is specified by bottom-left and top-right points of the image.

Usage

```r
iraster(x1, y1, x2, y2, img, ..., plot = iplot.cur())
```

Arguments

- `x1, y1, x2, y2` coordinates of the bottom-left (`x1, y1`) and top-right (`x2, y2`) corner. Alternatively, `x1` can be a vector of length 4 specifying the four values, or `x1` and `x2` can be vectors of length 2 specifying one point each.
- `img` image to draw. It can be either a raster, file name, binary connection or a raw vector containing an image in a common image format such as PNG or JPEG. If it is a raster, then the raster is first encoded into PNG format and passed as raw vector.
- `...` additional arguments that will be passed to `iobj.opt` if present.
- `plot` parent plot for the image

Details

The current implementation uses Java’s ImageIO API to read the image, so the supported formats will depend on your Java implementation. Raster objects (i.e., of class "raster", "nativeRaster"), matrices and arrays) are simply passed to `png::writePNG(img)` so for anything other than computationally constructed objects it is more efficient to use the encoded image.

Value

Resulting iObject.

See Also

`iobj.opt`
Examples

    ## very silly example ...
    iplot(0:20/20, 0:20/20)
    ## get a sample image (R logo) from the png package
    fn <- system.file("img", "Rlogo.png", package="png")
    ## put this image behind all points
    iraster(0, 0, 1, 1, fn, layer=-2)
    ## you can use a raster but it's less efficient
    ## this one goes to the top layer where iObjs reside normally
    iraster(0, 0, 0.5, 0.5, png::readPNG(fn))

iset  

iSet and iVar - managing data in iPlots

Description

iPlots maintain a separate copy of all data that are displayed in the iPlots. This allows iPlots to
operate even after the underlying data has been deleted in R. It also allows iPlots to use hot linking
in all aspects, including update of plots on data changes.

This data management consists mainly of two classes: iset and iVar. The iset object encapsulates
an iSets which can be thought of as a kind of special data frame that allows linking of all variables
contained therein. Each variable (or column in data.frame-speech) is represented by an iVar object
encapsulating an iVar.

An instance of a iVar class can be use to create new iplots or update data in the existing iplots.
Convenience operators on both iVar and iset objects include those such as length, subsetting and
subassignment and therefrom from user’s point of view it is possible to use them transparently a data
frames (iSet) or vectors (iVar). In addition, iSet supports methods such as names or dim.

iset returns the object corresponding to a given iSet.

isets returns objects for all iSets

Usage

iset(which=iset.cur())
isets()
## S3 method for class 'iset'
x[[i]]
## S3 method for class 'iset'
x$name
## S3 replacement method for class 'iset'
x$name <- value
## S3 replacement method for class 'iset'
x[[i]] <- value
## S3 method for class 'iset'
x[i = 1:(dim(x)[1]), j = 1:length(x)]
## S3 replacement method for class 'iset'
x[i = 1:(dim(x)[1]), j = 1:length(x)] <- value
## S3 replacement method for class 'iset'
names(x) <- value

## S3 method for class 'iset'
names(x)

## S3 method for class 'iset'
length(x)

## S3 method for class 'iset'
dim(x)

**Arguments**

- **x** iset object
- **i** row (case) index
- **j** column (variable) index
- **value** replacement value
- **which** An integer specifying an iSet ID or a string specifying a name of the iSet.
- **name** name of the variable

**See Also**

- `ivar`, `iset.cur`

**Examples**

```r
data(iris)
s <- iset.new("iris", iris)
rm(iris)
s[]
names(s)
dim(s)
length(s)
s[[1]]
s$Species
s[1:5,c("Sepal.Length","Petal.Length")]
rm(s)
# even if we get rid of the reference object,
# we can get it back
s <- iset()
s
# see ?ivar for more examples
```

---

**iset.col**

*Set color of cases in an iSet.*

**Description**

This function sets the colors of cases of an iSet. Every iPlot is free to use the corresponding representation individually. Color of a case is a iSet-global property, that is all iPlots associated with an iSet will reflect the change.
**iset.list**

Usage

iset.col(col)

Arguments

col Vector of integers specifying colors or a factor. The values are re-cycled if necessary. 0 has a special meaning denoting "no color", i.e. the plot is free to use the default color. This is also the default state of a newly created iSet.

See Also

iset.new

Examples

data(iris)
attach(iris)
iplot(Sepal.Width,Petal.Width)
ibar(Species)
iset.col(Species)

---

iset.list  
iSet management functions.

Description

These functions are used to manage iSets. An iSets groups all iPlots which use the same data as a basis. All iPlots belonging to an iSet are linked, that is selecting cases in one iPlot cause the same cases to be highlighted in all other iPlots based on the same iSet. The linking is done on case-level, therefore the variables should have the same number of cases.

You can get the iset object by calling the *iset* function. An iset object can be used in a way similar to data frames, so subsetting and other operations work as expected. Subassignment is always done "live", so changing parts of the data will cause plots to be updated accordingly.

There is always exactly one current iSet. An initial iSet called "default" is created when the iplots library is loaded. All new iPlots are created using the current iSet. The set of functions described here allow the manipulation of iSets.

Note that changing the iSet also has an effect on *iplot.list* and *iobj.list* since iPlots are linked to their iSets.

iset.new creates a new iSet and makes it current
iset.list returns all iSets
iset.cur returns the ID of the current iSet
iset.next and iset.prev return the ID of the next resp. previous iSet in the list relative to the iSet specified by the argument.
iset.set makes the iSet with the specified ID current.
iset.rm removes the given iSet and all associated plots. Note that this may cause the current set ID may change (even if some other iSet is removed).

print.iset prints an iSet object.

Usage

iset.new(name=NULL, payload=NULL)
iset.list()
iset.cur()
iset.next(which=iset.cur())
iset.prev(which=iset.cur())
iset.set(which=iset.next())
iset.rm(which=iset.cur())
## S3 method for class 'iset'
print(x, ...)

Arguments

name Name of the new iSet. If no name is specified, an automatic name of the form "data.X" is created where "X" is an integer. The name can be used instead on an ID in many cases.
payload Initial contents of the iSet in the form of a list/data.frame or NULL if an empty iSet is desired.
which An integer specifying an iSet ID or a string specifying a name of the iSet.
x An iSet object to print
...
    further parameters to be passed to print

Methods

    show signature(object = "iset"): is mapped to print.iset

See Also

iset, iplot.list, iobj.list

iset.selected Selection / linked highlighting

Description

These functions modify the selection or return the currently selected (highlighted) cases.

iset.selected returns a vector of IDs of all currently selected cases (in the current iSet)
iset.select changes the selection of the current iSet. All plots are updated immediately to reflect the new selection.
iset.sel.changed returns TRUE if the selection has changed since last call to this function.
iset.selectAll selects everything
iset.selectNone clears all selections (yes, not a good name)
Usage

iset.selected()
iset.select(what, mode="replace", mark=TRUE, batch=FALSE)
iset.sel.changed(iset=iset.cur())
iset.selectAll(batch=FALSE)
iset.selectNone(batch=FALSE)

Arguments

what specification of the new selection. This can be either a vector of case IDs or a logical vector.
mode mode to be used when combining the previous selection and teh surrent one. Supported modes are "replace", "union" and "intersect".
mark mark to be used.
iset iSet to query
batch when set to TRUE dependents (e.g. plots) are not notified. This is useful for performing many complex updates at once without the need to re-draw all plots. Use with care as the system usually relies on event propagation.

Value

List of IDs of selected cases (iset.selected), boolean value (iset.sel.changed).

See Also

iset.list

Examples

data(iris)
attach(iris)
iplot(Sepal.Length,Petal.Length)
iset.select(Species=="virginica")

---

*itext* Add text to the current *iPlot.*

Description

text adds the strings given in the vector labels at the coordinates given by x and y to the current iPlot. y may be missing since xy.coords(x,y) is used for construction of the coordinates.

Usage

itext(x, y=NULL, labels=seq(along=x), ax=NULL, ay=NULL, ..., plot = iplot.cur())
Arguments

- **x, y**: Coordinate vectors of the text. `xy.coords` is used to obtain the coordinates.
- **labels**: one or more character strings or expressions specifying the text to be written.
- **ax, ay**: anchor coordinates of the text. They specify where is the point specified by x and y relative to the text. 0 means left resp. top and 1 means right/bottom. Therefore vertically and horizontally centered text can be obtained by using ax=0.5 and ay=0.5.
- **...**: any additional options are passed to `iobj.opt`
- **plot**: parent plot

Value

Resulting iObject.

See Also

`ilines, iobj.opt`

---

**ivar**  
*Data (ivar) manipulation functions*

Description

The following functions are used to manipulate variables for iplots:

- `ivar.data` returns the data associated with an iVar variable
- `ivar.new` creates a new iVar variable in the current iSet using the supplied data
- `ivar.new.map` same as `ivar.new` but for map (polygon) data
- `ivar.update` replaces the content of a variable
- `iVar` variables (deprecated - use `iset.new` instead)
- `[, iVar` allows data subsetting of iVar contents
- `[<-, iVar` allows partial replacement of iVar contents
- `length.iVar` returns the length of a variable
- `iset.updateVars` notifies all plots that variables have been changed. This function should not be normally used, because notification happens automatically, unless batch updates are performed.
**Usage**

```r
ivar.data(var)
ivar.new(name = deparse(substitute(cont)), cont)
ivar.new.map(name, x, y)
ivar.update(var, cont, batch = FALSE)
## S3 method for class 'ivar'
length(x)
## S3 method for class 'ivar'
x[i, ...]
## S3 replacement method for class 'ivar'
x[...] <- value
## S3 method for class 'ivar'
print(x, ...)

iset.updateVars()
```

**Arguments**

- **var**: an existing iVar variable
- **cont**: desired contents - usually a numeric vector or a factor
- **name**: variable name in an iSet
- **batch**: if set to TRUE then plots are not automatically notified about the change. This allows an update of multiple variables in batches without constant re-painting of the plots.
- **x**: object to subset or x-coordinate of the map data
- **y**: y-coordinate of the map data
- **i**: index - if missing all data are returned
- **...**: indices
- **value**: replacement value

**Details**

All data that will are displayed in an iPlot are organized in iSets. Each iSet contains variables, called iVars, that represent the displayed data. Typically an iSet corresponds to a data frame and an iVar corresponds to a column in a data frame. All variables in one iSet must have the same length and indexing order. This allows iPlots to perform proper linking of all plots.

Before some data can be displayed in an iPlot, they are put into an iVar using the **ivar.new** function. Each variable has a name that is unique within an iSet. This process is automatic if you pass arbitary vectors to the iPlots plotting functions. However, it is possible (and desirable) to register variables beforehand using **iset.new**. It is much faster to use iVars in the plots instead of the raw data.

Once an iVar is created, it is merely a reference to the data in the iSet. The regular subsetting operators [ or iVar.data function can be used to retrieve the data back to R.

In addition, it is possible to update the contents of an iVar using the **ivar.update** function. Once the variable is updated, all plots that use the variable will be updated, too, and reflect the change, unless batch was set to TRUE. The notification is performed using the **iset.updateVars** function.
Methods

show signature(object = "ivar"): is mapped to print.ivar

See Also

iset.new, ibar, iplot.list, iplot.opt

Examples

data(iris)
s <- iset.new("iris", iris)
rm(iris) # we don't need iris anymore
s[1:5,]
s$Species
s$Species[]
s[1:5,c("Sepal.Width","Sepal.Length")]
s$Test <- factor(c("yes","no")[runif(dim(s)[1])+1.5])
s[1:5,]
iplot(s$Sepal.Length, s$Petal.Length)
ibar(s$Species)
iplot.location(400,,TRUE)
iset.select(s$Test[]="yes")
ibar(s$Test)
iplot.location(400,250,TRUE)
# use iset.rm() to remove everything
Index

!=.iobj(iobj.list), 11
* hplot
  iabline, 2
  ibar, 3
  ibox, 4
  ievent.wait, 5
  ihammock, 6
  ihist, 7
  ilines, 8
  imap, 9
  imosaic, 10
  ipcp, 13
  iplot, 14
  iplot.manip, 17
  iplot.opt, 18
  iraster, 20
  ivar, 26
* iplot
  iobj.list, 11
  iobj.opt, 12
  iplot.data, 15
  iplot.list, 16
  iset, 21
  iset.col, 22
  iset.list, 23
  iset.selected, 24
  itext, 25
==.iobj(iobj.list), 11
[.iset(iset), 21
[.ivar(iivar), 26
[<- .iset(iset), 21
[<-.iset(iivar), 26
[[.iset(iset), 21
[[<- .iset(iset), 21
$.iset(iset), 21
$<- .iset(iset), 21

dim.iset(iset), 21
iabline, 2, 11
iabline. 2, 11
ibar, 3, 4, 6–8, 10, 13, 15, 16, 28
ibox, 4
ievent.wait, 5, 5
ihammock, 6
ihist, 3, 4, 6, 7, 8, 10, 13, 15, 16
ilines, 2, 8, 11, 16, 26
imap, 9
imosaic, 10
iobj.cur, 11
iobj.cur(iobj.list), 11
iobj.get, 11
iobj.get(iobj.list), 11
iobj.list, 11, 12, 23, 24
iobj.next, 11
iobj.next(iobj.list), 11
iobj.opt, 2, 8, 12, 20, 26
iobj.prev, 11
iobj.prev(iobj.list), 11
iobj.rm, 11
iobj.rm(iobj.list), 11
iobj.set, 11
iobj.set(iobj.list), 11
ipcp, 13
iplot, 3, 6, 7, 9, 14, 15, 16
iplot.backend(iplot.manip), 17
iplot.cur, 16
iplot.cur(iplot.list), 16
iplot.data, 15
iplot.list, 3, 4, 7, 8, 10, 13, 15, 16, 16, 19, 23, 24, 28
iplot.location(iplot.manip), 17
iplot.manip, 17
iplot.next, 16
iplot.next(iplot.list), 16
iplot.off, 16
iplot.off(iplot.list), 16
iplot.opt, 3, 4, 6, 7, 9, 10, 13–15, 18, 28
iplot.prev, 16
iplot.prev(iplot.list), 16

29
iplot.resetZoom (iplot.manip), 17
iplot.rotate (iplot.manip), 17
iplot.set, 16
iplot.set (iplot.list), 16
iplot.setExtendedQuery (iplot.manip), 17
iplot.size (iplot.manip), 17
iplot.zoomIn (iplot.manip), 17
iplot.zoomOut (iplot.manip), 17
iraster, 20
iset (iset), 21
iset-class (iset), 21
iset.brush (iset.col), 22
iset.col, 22
iset.cur, 22, 23
iset.cur (iset.list), 23
iset.list, 23, 23, 25
iset.new, 23, 26–28
iset.new (iset.list), 23
iset.next, 23
iset.next (iset.list), 23
iset.prev, 23
iset.prev (iset.list), 23
iset.rm, 24
iset.rm (iset.list), 23
iset.sel.changed, 24
iset.sel.changed (iset.selected), 24
iset.select, 24
iset.select (iset.selected), 24
iset.selectAll (iset.selected), 24
iset.selected, 24, 24
iset.selectNone (iset.selected), 24
iset.set, 23
iset.set (iset.list), 23
iset.updateVars (ivar), 26
iset (iset), 21
itext, 25
ivar (iset), 21
ivar, 22, 26
ivar-class (iset), 21
ivar.new.map, 9
length.iset (iset), 21
length.ivar (ivar), 26
names.iset (iset), 21
names<-.iset (iset), 21
plot, 4, 14
print.iobj (iplot.manip), 17
print.iplot (iplot.manip), 17
print.iset (iset.list), 23
print.ivar (ivar), 26
show,iset-method (iset.list), 23
show,ivar-method (ivar), 26
text, 25
xy.coords, 8, 26