Package 'zoom'

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Type Package

Title Allow to zoom/navigate in any plot.

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Description zm(), called with any active plot allow to enter an interactive session to zoom/navigate any plot. If it sounds awesome it's because it is. The development version, as well as binary releases can be found at

https //github.com/cbarbu/R-package-zoom

License LGPL

Suggests testthat

Collate 'zoom-package.R''zoom.R''utils.R'

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zoom-package *Zoom/navigate any plot directly in R.*

Description

The single zm() function allows to launch an interactive viewing session with any plot. You can zoom in and out and move the scope (just as in Google maps). Additionally, if a device contains several plots it will simultanuously navigate all the plots.

Details

Finally, it allows to print on the fly the current state and continue the navigation

It fully works under Windows standard GUI and Linux.

On Mac it fully works if launching R from the Xquartz terminal. It will default to the "session" mode if launched from Rgui. R launched from the system terminal may have a bug with X11 fonts that prevents even the simplest plots to be displayed, it will not get any better with this package.

Rstudio: should work fine on windows after replot of the graph in a native windows window. On Mac and linux it should fallback to the less interactive session, allowing to zoom in the Rstudio plotting region itself.

See help(zm) for more details on how to use the package.

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The only function end users should ever use is zm(). It orchestrate the access to other functions like:

- navigation.zoom(): launch a mouse interaction
- session.zoom(): launch a console menu interaction

Themselves orchestrating lower level functions:

- in.zoom(): zoom in
- out.zoom(): zoom out
- set.zoom(): zoom to a magnification factor
- sq.zoom(): zoom on a user defined square
- zoomplot.zoom(): the heart function reploting everything as directed by higher level functions.

Note

This package is maintained as part of the wider spatcontrol project on github: https://github.com/cbarbu/spatcontrol

Bug reports/suggestions/patches can be directly submitted in this web interface.

Known issues:

- print to pdf: in navigation mode, print of a pdf generates a weird pdf. Exiting and printing using print.zoom() or simply dev.print() works fine.

Author(s)

Corentin M. Barbu

Maintainer: Corentin M. Barbu <corentin.barbu@gmail.com>

Examples

```
## Not run:
plot(rnorm(1000),rnorm(1000))
zm()

## End(Not run)
```

`in.zoom` *Direct access to zoom functionalities.*

Description

Direct selection of a zoom method of the "session" type. Possibly of use in scripts?

allow interactive in/out zoom in "session" mode

Usage

```
in.zoom(...)

inout.zoom(...)

out.zoom(...)

set.zoom(...)

sq.zoom(...)
```

Arguments

...	Extra arguments to zoomplot.zoom.

Value

NULL

Note

Each function starts a different interactive sequence

- inout.zoom(): left click within bounds zooms in, outside bounds zoom out
- in.zoom(): each left click zooms in
- out.zoom(): each left click zooms out
- set.zoom(): ask for a magnification factor
- sq.zoom(): allow to click on the two corners of the desired region to zoom on

Author(s)

Corentin M. Barbu

See Also

zm(), session.zoom().

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session.zoom *Opening of an interactive zoom/navigate session.*

Description

To launch an interactive session you should use zm() but if you are sure of your device you can launch directly one of these functions.

Usage

```
session.zoom(...)

navigation.zoom(...)
```

Arguments

...	Everything that can be accepted by sq.zoom.

Details

session.zoom launch an interactive console menu to navigate a plot.

navigation.zoom allows to interactively navigate a plot with the mouse.

Value

Returns the final plot, as saved by recordPlot().

Author(s)

Corentin M. Barbu

See Also

zm().

Examples

```
## Not run:
plot(rnorm(100),rnorm(100))
session.zoom()

## End(Not run)
```

`zm` *Launch interaction on a plot*

Description

Allow to zoom/navigate in any open plot. The controls should be intuitive:

- zoom in: scroll up, or right click if no scrolling weel.
- zoom out: scroll down, or double click if no scrolling weel.
- move: left click and move

Usage

```
zm(type = "navigation", rp = NULL)
```

Arguments

`type`	the type of interaction with the plot. Possible types are: • session for console menu • navigation for mouse interaction Or any short names for these. By default will try to launch a "navigation" session.
`rp`	plot to navigate, saved using `rp<-recordPlot()`. By default (NULL) will use the current device.

Details

By default, zm() try to open a mouse interactive session. If the current device is not interactive, will try to replot the current plot in a `X11(type="Xlib")` device. If it fails it will open a console menu based interactive session.

Zoom handle multiple plots on a device together. You need to navigate the last one plotted and all the other plots will be navigated according to the last one: that can be pretty amazing too if you want to explore multiple layers at the same time.

Value

The recording of the final plot. Can be reploted using replayPlot(). The most useful may be to get the xlim and ylim of the final plot. That can be simply got using: `par("usr")` after `zm()` ends.

Note

This function relies on pretty low level functions in R that change quite often with new versions. New version of R can break this package but I got used to it and fix it quickly.

In case you close the device before striking q, just hit Ctrl-C on the command line.

Author(s)

Corentin M. Barbu

Examples

```
## Not run:
# basic example
plot(rnorm(1000),rnorm(1000)) # could be any plot
zm() # navigate the plot

# use the same xlim/ylim as ended up in the zoom session
xylim<-par("usr") # xmin,xmax,ymin,ymax of the final version of the plot
dev.off()
plot(rnorm(1000),rnorm(1000),xlim=xylim[1:2],ylim=xylim[3:4])

# navigate two layers of data at the same time
par(mfrow=c(1,2))
plot(1,type="n",xlim=c(-3,3),ylim=c(-3,3),main="First Track")
polygon(c(-1,1,1,-1)*2,c(-1,-1,1,1)*2,col="blue")
lines(rnorm(100),rnorm(100))
plot(1,type="n",xlim=c(-3,3),ylim=c(-3,3),main="Second Track")
polygon(c(-1,1,1,-1)*2,c(-1,-1,1,1)*2,col="green")
lines(rnorm(100),rnorm(100))
zm() # it flickers quite a bit as it needs to replot everything every time...

# one might want to use the older interface
# if attached to cairo under linux or MacOS
# it is also sometimes helpful to just define a square you want to zoom on
zm(type="s")

## End(Not run)
```

`zoomplot.zoom` *Central low level function of the zoom package.*

Description

This function allow to replot the current or a saved plot with specific boundaries, magnification factor and possibly arround a user defined x/y.

Usage

```
zoomplot.zoom(xlim = NULL, ylim = NULL, fact = NULL,
  rp = NULL, x = NULL, y = NULL, ...)
```

Arguments

xlim	A vector with min and max x
ylim	A vector with min and max y
fact	A scalar giving the magnification factor (>1 brings you closer)
rp	A previously recorded plot with recordPlot(). With all the corresponding warnings in ?recordPlot.
x	x of a fix point when rescaling, by default the center.
y	y of a fix point when rescaling, by default the center.
...	Additional parameters not implemented, just in case.

Details

This function is not necessarily easy to use by hand. It is designed to work well when called from higher level functions. End user should always use zm().

Value

Not guaranted for now.

Note

This function is the heart of the zoom package and the one that can be affected by R version changes.

Author(s)

Corentin M. Barbu

See Also

zm, in.zoom

Examples

```
plot(rnorm(1000),rnorm(1000))
zoomplot.zoom(fact=2,x=0,y=0)
```

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