
Base graphics

- High level plotting commands
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Introduction to graphics

Excellent graphics can be created using R:

- ❑ wide variety of graphics
- ❑ lots of facilities to customize plots

We here describe “base” graphics:

Other functions to create more specific graphics are available in contributed packages (fields, grid,...).

Plotting commands

Three basic groups:

- **High-level plotting functions:**

create a new plot on the graphics device (with axes, labels, titles, ...)

- **Low-level plotting functions:**

add more information to an existing plot (extra points, lines and labels)

- **Interactive graphics functions:**

allow you interactively add information to, or extract information from, an existing plot, using a pointing device such as a mouse.

High level plotting commands

- They generate a complete plot of the data passed as arguments
 - A graphic windows appear
 - If you evaluate again HL plotting command, a new graphic will overwrite the previous one.
 - To generate a graphic in a new window, use the command:
 - `windows()` in Windows
 - `X11()` in Linux
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The function `plot()`

If `x,y` are vectors with the same length

- `plot(x,y)`

will produce a **scatter plot of `x` against `y`**:

- `plot(x)`

will produce a plot of the values in the vector `x` against their index in the vector.

Argument to the high level plotting commands

The following arguments can be passed to the high level graphic functions:

- `plot(x,y, axis=F,.....)`

`axes=FALSE`

Suppresses generation of axes. -> add your own custom axes with the `axis()` function. The default, `axes=TRUE`, means include axes.

`log="x"`

`log="y"`

`log="xy"`

Causes the x, y or both axes to be logarithmic

`xlab=string, ylab=string`

Axis labels for the x and y axes.

`main=string`

figure title, placed at the top of the plot in a large font.

`sub=string`

Sub-title, placed just below the x-axis in a smaller font.

`type=`

Its value controls the type of plot produced, as follows:

"p" Plot individual points (the default)

"l" Plot lines

"b" Plot points connected by lines (both)

"o" Plot points overlaid by lines

"h" Plot vertical lines from points to the zero axis

"n" No plotting at all. However axes are still drawn (by default) and the coordinate system is set up according to the data. Ideal for creating plots with subsequent low-level graphics functions.

References

☐ <http://cran.r-project.org/>

- The R Development Core Team, 2009: **R, A Language and Environment for Statistical Computing - Reference Index.**
- W. N. Venables, D. M. Smith and the R Development Core Team, 2009: **An introduction to R.**
- The R Development Core Team, 2009: **R Data Import/Export**

☐ R help
