iWebPlots: Introducing a new R package for the creation of interactive web-based scatter plots

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Scatter plots constitute a most widely-used tool employed to investigate the correlations underlying a dataset. Nowadays, the demand for online data visualization in addition to the increasing need for availability of dynamic features and interactions, necessitate the construction of interactive web graphics.

The iWebPlots package simplifies the implementation of interactive web-based scatter plots, generated directly via the R statistical environment. The package’s functions take as input a matrix of coordinates with associated metadata and generate a bitmap image with an HTML wrapper. Interactivity is implemented using the fundamental HTML image map technology, so no additional software such as applets or plug-ins is required. Developers can easily modify and expand the generated HTML pages, or incorporate them into web applications; thus, great extensibility is ensured.

Additional features include dynamic tooltips and text annotations as well as asynchronous alternation between two- and three-dimensional scatter plots. Furthermore, each plot can be interlinked with a fully interactive data table, which displays more information about the data in the plot.

The iWebPlots package has been used to develop the web front-end of a multivariate analysis pipeline, featuring techniques such as Principal Component Analysis (PCA) and k-means clustering, among many others. This work was carried out as part of the SYMBIOSIS-EU project, funded by European Commission Framework 7.

References

SYMBIOSIS-EU (2011), http://www.symbiosis-eu.net/