

Section 8: Miscellaneous topics

Review of important functions covered in this section:

Functions

map	Draws geographical maps (maps package)
map.text	Draws geographical maps with labels (maps package)
identify	Identify chosen points in a plot
smooth.map	Smooths aggregated data (maps package)
ibar	Interactive bar chart (iplots package)
ihist	Interactive histogram (iplots package)
iplot	Interactive plot (iplots package)
iabline	Interactive plot line (iplots package)
itext	Interactive text in a plot (iplots package)
iplot.data	Interactive plot data (iplots package)
ipcp	Interactive parallel coordinates plot (iplots package)
require(Rcmdr)	Loads R commander
hclust	Hierarchical clustering (cluster package)
rect.hclust	Draw rectangles around hierarchical clusters (cluster package)
agnes	Agglomerative nesting hierarchical clustering (cluster package)
pltree	Draws clustering trees (cluster package)
as.dendogram	Converts to dendogram (cluster package)
plot	Plots dendogram objects (cluster package)
pvclust	Calculates p-values for hierarchical clustering (pvclust package)
seplot	Shows diagnostic plots for s.e. of p-value (pvclust package)

Exercise

We will use `mtcars` and some other map data in this section.

- Using `maptools` package, draw a colorful world map.
- Using `maps` package, draw the map of China.
- From the world map, how would you identify which country you are pointing at?
- How would you draw map of New York county?
- Compute a distance matrix using `mtcars` data.
- Perform Hierarchical clustering on this distance matrix.
- Plot the dendogram.
- Apply rectangles around groups created based on data.
- Compute agglomerative hierarchical clustering of the `mtcars` dataset.
- Draw a dendogram of the above clustering.
- Draw the same dendogram horizontally.

- l. Calculate p-values for hierarchical clustering via multiscale bootstrap and plot it.
- m. Add rectangles around groups highly supported by the mtcars data.
- n. Draw diagnostic plot for SE of p-value obtained above.