

R Glossary & Cheat Sheet

This is a glossary and cheat sheet for users using R as a GIS. This is very much a work in progress, so if you have any comments or commands that you think should be included, please let me know!

Commands *All of the commands are followed by an example from today's workshop*

? can be used with any command to show the help file for that command, for example, ?help or ?head.

?? will search through the help files for any reference to the word you type, ??dataframe.

used to precede a comment, #this is a comment

<- assigns a value or output from a function to a variable

c(,) used to create a list, either numbers c(1,2,3) or strings (text) c("Thomas","Richard","Harriet")

colnames() shows the names and numbers of the columns in the specified data set, colnames(hp.data)

dev.off() used to stop PDF output, *see pdf()*

fix(dataframe) edits a data frame in a new window, make sure you close this window before continuing for()

begins a loop to make R repeat a command a set number of times, for (i in 1:length(mapvariables))

getwd() shows the current working directory, getwd()

head() used to show the first six rows of the data frame, head(hp.data)

install.packages() allows the user to install packages (also known as libraries) which is required the first time they are used on a computer, install.packages("rgdal")

legend() adds a legend to an existing plot, legend(x = 357000, y = 392000, legend = leglabs(breaks\$b), fill = breaks\$c, bty = "n", cex = 0.5)

library() loads the specified library, library(rgdal) (see also install.packages())

merge() joins two data frames together using a common attribute or ID, merge(sthel@data,hp.data,by.x="SP_ID",by.y="ID", all.x=TRUE)

ncol() lists the number of columns in a data frame, ncol(hp.data)

nrow() lists the number of rows in a data frame, nrow(hp.data)

pdf() used to output plot commands to a PDF file, always ends with dev.off(), pdf(file="image.pdf")

plot() creates a map from a Spatial data frame, plot(sthel)

read.csv() used to read CSV files (often converted from Excel) into R, hp.data <- read.csv("hpdata.csv")

readSpatialShape() reads in a shape file from the specified location, sthel <- readShapeSpatial("sthel")

setwd() sets the working directory (or working folder) that R uses, setwd("M:\R work")

spTransform() changes a data set from one projection to another, crime.pts <- spTransform(crime.pts, CRS(ukgrid))

title() adds a title to an existing plot, title('Burglary Rates per 10,000 Homes in St. Helens')

unzip() unzips the specified zip file into the current working folder, unzip("sthel.zip")

Glossary

data frame a format of storing spatial and non-spatial data in R.

environment the area where the variables are stored, called Workspace by R, and can be shown by the command ls().

join the process of linking two data frames (usually an attribute data frame and a spatial data frame by a common attribute or ID).

library a set of commands that can be loaded and used in R (also known as package).

package a set of commands that can be loaded and used in R (also known as library).

script a series of R commands that can be run on demand (filename usually ends with .R).

R the main program used to run R commands, see also RStudio.

Rstudio an interface that runs on top of R, allowing easier management of variables, scripts and plots.

shapefile A type vector of spatial data file, consisting of one of points, lines OR polygons; consists of multiple files (between 4 and 6 files, with extensions of .shp, .dbf, .shx, .prj).

workspace the area where the variables are stored, called Environment by RStudio and shown in the top right hand corner.

By Nick Bearman, 15/01/2015 See also <https://github.com/Robinlovelace/Creating-maps-in-R/blob/master/r-spatial-ref-card.pdf> for another cheat sheet.