

R (Practical) Commands Summary

HGSS Workshop 2013

R control (source)

- Quit R; Load a library; Get help about a function.
`q(); library(theLibraryYouWant); help(plot); ?plot`
- Comment code.
`## This is a comment, it won't be interpreted by R`

Data import/export

- Write/read a vector in a file.
`write(vec,"file.txt",sep="\n")`
`scan(file="file.txt",what="a"); scan(vec,file="file.txt",what=1)`
- Write/read a table in a file.
`write.table(t,file="file.txt",quote=FALSE,sep="\t",row.names=FALSE)`
`read.table("file.txt",as.is=TRUE,header=TRUE)`
- Save/load R objects.
`save(study.res1, study.res2,file="file.RData")`
`load("file.RData")`

Data creation

- Concatenate into a vector.
`c(1,10,44); c("toto","tata","titi"); c(TRUE, TRUE, FALSE)`
- Vector from 1 to 10; with ten ones; from 1 to 10 every 0.5.
`1:10; rep(1,10); seq(1,10,0.5)`
- Create matrix, e.g with numbers from 1 to 12 with 3 rows and 4 columns
`matrix(1:12,3,4)`
- Bind matrices on their row/columns.
`rbind(matrix1, matrix2); cbind(matrix1, matrix2)`
- Create list.
`list(elt1=1:10, anotherElt=matrix(1:12,3,4))`
- Create a data.frame.
`data.frame(oneToTen=1:10,elevenToTwenty=11:20)`

Data characterization

- Display information about the object structure
`str(mat); str(veryComplexList)`
- Length of a vector; dimension of a matrix or individually the number of rows and columns.
`length(vec); dim(mat); nrow(mat); ncol(mat)`
- Get or set the names of the vector's values; or matrix rows/columns.
`names(vec); rownames(mat); colnames(mat)`
`names(vec) = c("one","two","three")`

Data exploration

- Print the beginning/end of an object.
`head(vec); head(mat); tail(vec); tail(mat)`
- Access element from vector, matrix or list.
`vec[1]; vec[2:4]; mat[1,1]; mat[2:4,6:7]; list[[1]]`
- Display summary statistics of a vector or matrix.
`summary(vec); summary(mat)`
- Print the sum, mean, minimum, maximum value of a vector or matrix.
`sum(vec); mean(mat); minimum(vec); maximum(mat)`
- Same with the median, variance, standard deviation.
`median(vec); var(vec); sd(vec)`
- Count the how many times values are repeated in a vector.
`table(vec)`
- Correlation between two vector of the same length.
`cor(vec1,vec2)`

Data manipulation `sort, rev, apply, lapply, (sample), subset`

- TODO

Boolean `==, !=, <|>, %in%, any, which, sum`

- TODO

Condition and loops `if, for, while`

- TODO

Strings `strsplit, gsub, paste, grep(l)`

- TODO

Simple plotting `plot, hist, line, pdf, png, dev.off()`

- TODO

Statistical tests and regression `t.test, wilcox.test, chisq.test, lm`

- TODO

Appendix Valid names in R, tabulation and line character code

- TODO