R – Beginners Reference Card

From OSOS: An EEB Workshop
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Text and numbers in blue can/should be modified

Help

help.start()	starts an html version of the help menu
help(help.start)	documentation on function help.start, replace help.start with any function for which you need help
?help.start	same as above

Orientation

ls()	show objects in the current environment
dir()	show files in the current directory
getwd()	get working directory
setwd("path")	set working directory to path

Assign, remove, and load

x <- 1	assign x to 1
save(x, file="x")	save r object to a file named x in the current working directory
rm(x)	removes the assignment to x
load("x")	loads x from file named x
data(precip)	loads preloaded dataset precip
library(MASS)	loads installed package MASS

I/O

read.table("file")	open a table from file
read.csv("file")	open a csv from file
write.table(x, file=" file")	saves a variable to a file

Data creation

c(1,2,3)	concatenates 1, 2, and 3 into variable
1:3	generates a sequence from 1 to 3
rep(1:3,2)	repeats 1 to 3 twice

Extracting Data

x <- c(1,2,3)	assign data to x for following extractions
x[1]	1st element
x[-1]	all but the 1st element
x[1:2]	elements 1 and 2
x[c(1,3)]	specific elements 1 and 3
x[x > 1]	elements GREATER THAN 1
x [x == 1]	elements EQUALS to 1
x [x > 1 & x < 3]	elements greater than 1 AND less than 3
x [x < 1 | x > 2]	elements less than 1 OR greater than 2

Converting Data

as.array(x)	converts x to class array
as.data.frame(x)	converts x to class data.frame
as.logical(x)	converts x to class logical
as.numeric(x)	converts x to class numeric
as.character(x)	converts x to class character
as.complex(x)	converts x to class complex

Variable Information

is.array(x)	checks class x, returns logical
is.data.frame(x)	checks class x, returns logical
is.logical(x)	checks class x, returns logical
is.numeric(x)	checks class x, returns logical
is.character(x)	checks class x, returns logical
is.complex(x)	checks class x, returns logical
is.na(x)	checks elements for na, returns logical
is.null(x)	checks elements for null, returns logical
length(x)	returns the length of x
dim(x)	returns the dimensions of x
dimnames(x)	returns the dimension names of x
nrow(x)	returns the number of rows of x
class(x)	get or set class x
unclass(x)	remove class x

Data Manipulation

which.max(x)	returns the index of the max element in x

(continued)

which.min(x)	returns the index of the min element in x
rev(x)	reverses the order of x
sort(x)	sorts x
which(x == 2)	returns the indices where x equals 2
na.omit(x)	suppresses the elements with missing data
unique(x)	suppresses the duplicated elements
sample(x,2)	samples x twice

Basic Math

max(x)	returns the max value of x
min(x)	returns the min value of x
range(x)	returns the range of x
sum(x)	returns the sum of all elements of x
diff(x)	returns the lagged and iterated differences of x
prod(x)	returns the product of all elements of x
mean(x)	returns the mean of x
median(x)	returns the median of x
var(x)	returns the variance of x
sd(x)	returns the standard deviation of x
cor(x,y)	returns the correlation of x and y
round(x,2)	returns each element of x with 2 digits after the decimal
log(x)	returns the natural logarithm of each element of x

Matrices

x <-as.matrix(x)	converts x to class matrix
t(x)	transpose x
diag(x)	returns the diagnol of x
%*%	matrix multiplication
rowSums(x)	sum of each row of x
colSums(x)	sum of each column of x
rowMeans(x)	mean of each row of x
colMeans(x)	mean of each column of x

Plotting

plot(x,y)	bivariate plot of x and y
hist(x)	histogram of x
pie(x)	pie chart of x
boxplot(x)	boxplot of x

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