Base R Cheat Sheet

Getting Help

essing the help files

?mean

Get help of a particular function.

help.search('weighted mean')

Search the help files for a word or phrase.

help(package = 'dplyr')

Find help for a package.

More about an object

str(iris)

Get a summary of an object's structure.

class(iris)

Find the class an object belongs to.

Using Libraries

install.packages('dplyr')

Download and install a package from CRAN.

library(dplyr)

Load the package into the session, making all its functions available to use.

dplyr::select

Use a particular function from a package.

data(iris)

Load a built-in dataset into the environment.

Working Directory

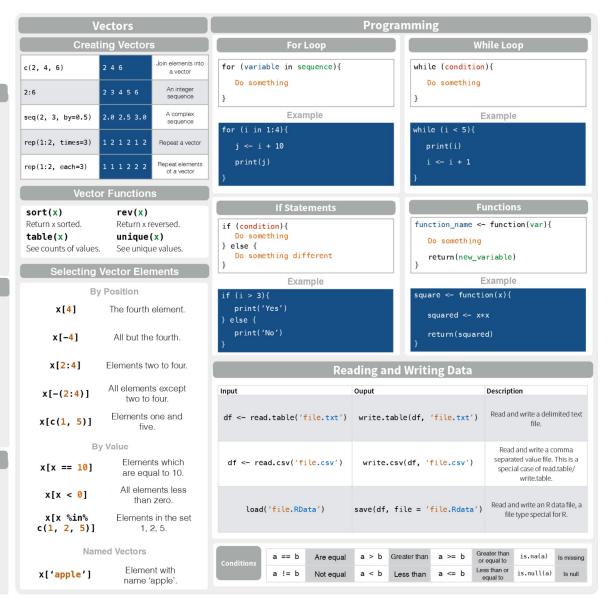
getwd()

Find the current working directory (where inputs are found and outputs are sent).

setwd('C://file/path')

Change the current working directory.

Use projects in RStudio to set the working directory to the folder you are working in.



Converting between common data types in R. Can always go from a higher value in the table to a lower value.

as.logical	TRUE, FALSE, TRUE	Boolean values (TRUE or FALSE).
as.numeric	1, 0, 1	Integers or floating point numbers.
as.character	'1', '0', '1'	Character strings. Generally preferred to factors.
as.factor	'1', '0', '1', levels: '1', '0'	Character strings with preset levels. Needed for some statistical models.

Maths Functions

log(x)	Natural log.	sum(x)	Sum.
exp(x)	Exponential.	mean(x)	Mean.
$\max(x)$	Largest element.	median(x)	Median.
min(x)	Smallest element.	quantile(x)	Percentage quantiles.
round(x, n)	Round to n decimal places.	rank(x)	Rank of element
signif(x, n)	Round to n significant figures.	var(x)	The variance.
cor(x, y)	Correlation.	sd(x)	The standard deviation.

Variable Assignment

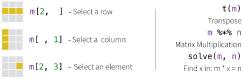
> a <- 'apple'
> a
[1] 'apple'

The Environment

ls()	List all variables in the environment.
rm(x)	Remove x from the environment.
<pre>rm(list = ls())</pre>	Remove all variables from the environment.

You can use the environment panel in RStudio to browse variables in your environment.

 $m \leftarrow matrix(x, nrow = 3, ncol = 3)$ Create a matrix from x.



Lists

 $l \leftarrow list(x = 1:5, y = c('a', 'b'))$ A list is collection of elements which can be of different types.

[[2]]	l[1]	l\$

New list with New list with Second element Element named only the first only element of I. element. named y.

Also see the dplyr library.

Data Frames

 $df \leftarrow data.frame(x = 1:3, y = c('a', 'b', 'c'))$ A special case of a list where all elements are the same length.

List subsetting			
×	у		
1	a	df\$x	df[[2]]
2	b	Understand	ling a data frame
3	С	View(df)	See the full data frame.
Matrix subsetting		head(df) See the first 6 rows.	
df[, 2]		nrow(df) Number of rows.	cbind - Bind columns.
df[2,]		ncol(df) Number of columns.	rbind - Bind rows.
df[2, 2]		dim(df) Number of columns and rows.	**

Strings

Also see the **stringr** library.

paste(x, y, sep = ' ') Join multiple vectors together. paste(x, collapse = ' ') Join elements of a vector together. grep(pattern, x) Find regular expression matches in x. gsub(pattern, replace, x) Replace matches in x with a string.

toupper(x) Convert to uppercase. tolower(x) Convert to lowercase.

nchar(x)Number of characters in a string.

Factors

factor(x) Turn a vector into a factor. Can set the levels of the factor and the order

cut(x, breaks = 4)Turn a numeric vector into a factor but 'cutting' into sections.

Statistics

 $lm(x \sim y, data=df)$ Linear model.

 $glm(x \sim y, data=df)$ Generalised linear model.

summary Get more detailed information out a model.

t.test(x, y)
Preform a t-test for difference between means.

prop.test Test for a difference between proportions.

pairwise.t.test Preform a t-test for paired data.

aov Analysis of variance.

Distributions

	Random Variates	Density Function	Cumulative Distribution	Quantile
Normal	rnorm	dnorm	pnorm	qnorm
Poison	rpois	dpois	ppois	qpois
Binomial	rbinom	dbinom	pbinom	qbinom
Uniform	runif	dunif	punif	qunif



Also see the **ggplot2** library.



plot(x, y) Values of x against v.



Histogram of Х.

Dates

See the **lubridate** library.

Learn more at web page or vignette • package version • Updated: 3/15