Cheatography

R Programming Cheat Sheet

by Ann Santhosh via cheatography.com/67113/cs/16795/

Utility Functions

getwd()	Find the working dir.
setwd("C:/file/path")	Set the working dir.
ls()	List variables
rm(object)	Delete object
str(object)	Displays internal structure of R object
help.start()	Launch help console
install.packages("package_name")	Install package
library(package_name)	Load package
detach(package:package_name)	Remove package
scan()	Read data values

Lists

list(x=1:5, y=c('a', 'b'))	Create list
is.list() Check if the arg is a list	**as.list()** Force the arg to list

lapply(list_name, function)
Apply function over a list and return as list

sapply(list_name, function)
Return as suitable data structure(vector)

Strings

c("String1","String2")	Create a string vector
toString(x)	Convert to string
noqutoe(string)	Print string w/o quote
sprintf()	Print text & var values
cat()	Concatenate & print
toupper(string)	Convert to uppercase
tolower(string)	Convert to lowercase
substr(string,n,m)	Extract substrings in a string from n to m
strsplit(string," ")	Split elements of string
paste(c("a","b"),"c") Concatenate vectors	**paste0(c("a","b"),"c")** Concat w/o separator

Probability Distributions

rbinom(n, size, prob)	Binomial
rpois(n, lambda)	Poisson
runif(n, min=0, max=1)	Uniform
rnorm(n, mean=0, sd=1)	Normal
rexp(n, rate=1)	Exponential

Vectors

c(2, 4, 6)	Numeric vector
c("one","two","thr")	Character vector
c(TRUE,FALSE)	Logical vector
rep(1:2,times=3)	Repeat a vector
rep(1:2,each=3)	Repeat the elements
which.min() Index of the min	**which.max()** Index of the max

Data Frames

data.frame(x=1:2, y=c('a', 'b'))	Create data frame
View(df_name)	See full dataframe
head(df_name)	See first 6 rows
tail(df_name)	See last 6 rows
df_name[cond,]	Row filter
df_name[c("column")]	Column filter

df_name[cond1,][,cond2]
Row and Column filter

Functions

```
function_name <- function(var){
Do something
return(new_variable)}
```

args(function_name) - Arguments of func
body(function_name) - Body of func

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Flow Control

If Statement -

```
if (condition){
Do something
} else {
Do something different}
```

Ifelse Statement -

```
ifelse(condition, Do something, Do something different)
```

Switch Statement -

```
switch("beta","alpha=1,beta=2,gamma=3,4)
```

Loops

For Loop -

```
for (var in sequence){Do something}
```

While Loop -

```
while (condition){ Do something}
```

Visualizations

barplot()	plot()	qqnorm()
pie()	plot(density())	qplot()
mosaicplot()	pairs()	boxplot()
hist()	matplot()	ggplot()

Arrays

array(1:24, dim=c(4,3,2), dimnames=.....)

Create array with 4 rows, 3 cols and 2 groups

Matrices

m1 <- matrix(1:12, now=4, ncol=3, dimnames=....)

Create a matrix with 4 rows and 3 columns

t(m)	Transpose of matrix
rbind(m1,m2) Combine by row	**cbind(m1,m2)** Combine by column

The following applies to arrays also:

dimnames(m)	**dim(m)**	**colnames(m)**
rownames(m)	**nrow(m)**	**ncol(m)**

Descriptive Statistics

summary(object)	Summary of object
class(object)	Find class of an R object
length(object)	Get length of an object
quantile(x)	Find quantiles
rowMeans(x)/ colMeans(x)	**rowSums(x)/ colSums(x)**
table(x)	Build a contingency table
describe(object)	Description of object
subset(x,cond)	Create subsets

Hypothesis Testing

t.test(data, mu=3)

One sample two-sided t-test

t.test(data, mu=3, alternative='greater')

One sample one-sided t-test

t.test(data1, data2, mu=0.5)

Two sample two-sided t-test

t.test(data1, data2, mu=0.5, alternative='less')

Two sample one-sided t-test

t.test(post_data, pre_data, paired=TRUE)

Paired test

wilcox.test(data, mu=8, alt='less')

Wilcoxen test

cor.test(data1, data2) Correlation test	**chisq.test(data)** Chi-square test
ks.test(data1, data2) If both are frm same distn	**shapiro.test(data)** Normality test
aov(data1~ data2) ANOVA	**lm(data1~ data2)** Regression

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