

Util Functions		Arrays and Matrix (cont)		Loops	
getwd()	gets the working directory	3D = array(1:24, dim = c(4,3,2))	3 dimensional array	for (variable in sequence){ Do something }	for loop
setwd("C:/file/path")	sets the working directory	mat = matrix(1:12, nrow=4, ncol=3)	matrix	while (condition){ Do something }	while loop
data = read.csv(file.choose())	opens file explorer to get data	cbind(mat1,mat2)	column bind	if (condition){ Do something } else { Do something different }	ifelse statement
ls()	lists the variables	rbind(mat1,mat2)	row bind		
str(var)	structure of the variable	Vector		Hypothesis	
rm(var)	removes the variable	num = c(1,2,3,4,5,6)	numeric vector	t.test(data)	1 sample t test
help.start()	opens help	chr = c("aaa","bbb")	character vector	t.test(data1,data2)	2 sample t test
install.packages("package name")	installs the package	log = c(TRUE,TRUE,FALSE)	logical vector	t.test(pre,post,paired=TRUE)	paired sample t test
library("package name")	makes the contents available to use	mean(vec)	mean	wilcox.test(data)	Wilcox test
detach("package name")	detaches the package	sd(vec)	standard deviation	cor.test(data1,data2)	correlation test
		var(vec)	variance	chisq.test(data)	Chi square test
		range(vec)	range	shapiro.test(data)	Shapiro test
		which.min(vec)/which.max(vec)	position of the min/max value	aov()	ANOVA
		rep(1:5,times=3)	replicate elements of vector		
Strings		DataFrame		Visualization	
toString(x)	helper function to produce a single character string	df = data.frame(subjectID=1:5,gender=c("M","F","M","M","F"),score=c(8,3,6,5,5))	dataframe	qplot(data, line=T-RUE,...)	produces quantile-quantile plot
toupper()/tolower()	converts text to upper/lower case	view(df)	opens editor	ggplot(data = NULL, mapping = aes(), ...)	initializes a ggplot object
substring(chr,n,n)	retrieve or replaces the substring of the character	head(df)/tail(df)	displays top/bottom n rows	geom_bar()	bar graph
paste(..., sep = " ", collapse = NULL)	Concatenate vectors after converting to character	summary(df)	returns descriptive statistics of data	coord_flip()	flip x and y coordinates
Arrays and Matrix		Descriptive Statistics		facet_grid()	lay out panels in a grid
1D = array(1:24)	1 dimensional array	rowMeans(data[])	row mean	geom_density	density plot
2D = array(1:24, dim = c(6,4))	2 dimensional array	rowSums(data[])	row sum	geom_hist	histogram
		colMeans(data[])	column mean	geom_point	scatter plots
		colSums(data[])	column sum		



Probability

<code>rbinom(n, size, prob)</code>	Binomial distribution
<code>rpois(n,size)</code>	Poisson distribution
<code>runif(n, min = 0, max = 1)</code>	Uniform distribution
<code>rnorm(n,mean,sd)</code>	Normal distribution
<code>rexp(n)</code>	Exponential distribution

Statistics

<code>summary(lm(y ~ x1 + x2 + x3, data=mydata))</code>	multiple regression
<code>summary(glm(y ~ x1 + x2 + x3, family="", data=mydata))</code>	classification
<code>cluster = kmeans(data)</code>	kmeans cluster analysis



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