

Util Functions	
<code>data = read.csv(file.choose())</code>	Opens file explorer to get data
<code>setwd("Path")</code>	Sets the working directory
<code>getwd()</code>	Gets the working directory
<code>str(variable_name)</code>	Structure of the variable
<code>ls()</code>	Lists the variables
<code>rm(variable_name)</code>	Removes the variable
<code>help.start()</code>	Opens help
<code>library("Package Name")</code>	Makes it available for the use
<code>install.packages("Package Name")</code>	Installs package
<code>detach("Package Name")</code>	detaches the package
<code>history()</code>	Shows the history

DataFrame	
<code>d=data.frame(Roll No=1:3, gender=c("F","M","F"), Grade=c(8,4,7))</code>	Input Dataframe - length should be equal
<code>view(d)</code>	Opens Editor

DataFrame (cont)	
<code>summary(d)</code>	Provides the descriptive statistics
<code>head(d)/tail(d)</code>	Displays the top or bottom rows

Strings	
<code>toString(x)</code>	To produce a single character string
<code>toupper(x)/tolower(x)</code>	Changes from upper to lower case and vice versa
<code>strsplit(word, character, fixed=TRUE)</code>	Splits the word based on the character given
<code>substring(word, -startpoint, endpoint)</code>	Retrieves or replaces the substring of the character

Arrays	
<code>1D = array(1:24)</code>	1 dimensional array
<code>2D = array(1:24, dim = c(6,4))</code>	2 dimensional array
<code>3D = array(1:24, dim = c(4,3,2))</code>	3 dimensional array
<code>dim(2D)</code>	nrow(2D)
<code>ncol(2D)</code>	length(2D)

Vectors	
<code>num = c(1,2,3,4,5,6)</code>	numeric vector
<code>chr = c("aaa","bbb")</code>	character vector
<code>log = c(TRUE,TRUE,-FALSE)</code>	logical vector
<code>mean(vector)</code>	mean
<code>sd(vector)</code>	standard deviation
<code>var(vector)</code>	variance
<code>range(vector)</code>	range
<code>which.min(vec)/which.max(vec)</code>	Finding the minimum and maximum values in the vector
<code>rep(1:5,times=3)</code>	

Matrix	
<code>mat = matrix(1:12, nrow=4, ncol=3)</code>	matrix
<code>cbind(mat1,mat2)</code>	column bind
<code>rbind(mat1,mat2)</code>	row bind
<code>det(matrix(c(1,0,0,1),2))</code>	Determinant
<code>solve(A)</code>	Inverse
<code>A%*%B</code>	Matrix Multiplication



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Lists	
<code>x<-list(c(1,2,3),c("A","B","C"))</code>	Collection of Elements
<code>x[[1]]</code>	First row

Descriptive Statistics	
<code>colMeans(data[])</code>	column mean
<code>colSums(data[])</code>	column sum
<code>rowMeans(data[])</code>	row mean
<code>rowSums(data[])</code>	row sum

Hypothesis	
<code>t.test(data)</code>	1 sample t test
<code>t.test(data1,data2)</code>	2 sample t test
<code>t.test(pre,post,paired=TRUE)</code>	paired sample t test
<code>cor.test(data1,data2)</code>	Correlation
<code>chisq.test(data)</code>	Chi square
<code>aov()</code>	ANOVA
<code>wilcox.test(data)</code>	Wilcox test
<code>shapiro.test(data)</code>	Shapiro test
<code>prop.test</code>	Testing proportions

Visualization	
<code>qplot(data, line=TRUE,...)</code>	produces quantile-quantile plot
<code>qqnorm(column)</code>	produces quantile-quantile plot
<code>barplot(table)</code>	Relationship between a numerical and a categorical variable
<code>boxplot(x,data=)</code>	Distribution
<code>ggplot(data = NULL, mapping = aes(), ...)</code>	initializes a ggplot object
<code>geom_bar()</code>	bar graph
<code>coord_flip()</code>	flip x and y coordinates
<code>facet_grid()</code>	lay out panels in a grid
<code>geom_density</code>	density plot
<code>geom_hist</code>	histogram
<code>geom_point</code>	scatter plots
<code>hist(column)</code>	normality test
<code>pie(table(table-name))</code>	piecharts

Loops	
<code>for (variable in sequence){ Do something }</code>	for loop
<code>while (condition){ Do something }</code>	while loop
<code>if (condition){ Do something } else { Do something different }</code>	ifelse statement

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

Data Table	
<code>library(data.table)</code>	
<code>class(x)</code>	
<code>head(x)</code>	

Statistics	
<code>fit <- lm(y ~ x1 + x2 + x3, data=mydata) summary(fit)</code>	Regression
<code>glm.fit(y ~ x1 + x2 + x3, family="", data=mydata)</code>	Classification
<code>kmeans(data)</code>	Clustering



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