

Util functions	
getwd()	Get working directory
setwd()	Set a path in working directory
ls()	list the memory content
rm()	remove variable from memory
install.p- ackages()	Installs the required package
library()	Makes the package available for usage
str()	shows the structure of the variable
detach()	removes the package
history()	displays the executed commands in the session
help.s- tart()	opens the index page of R

Data Frame	
data_frame = data.frame- (subjectID=1:5,gender=c- ("M","F","M","M","F"),sco- re=c(8,3,6,5,5))	Data frame with elements of equal length
view(data_frame)	opens the editor
rbind(data_frame1,data_f- rame2)	combines two data frames vertically/row wise
cbind(data_frame1,data_f- rame2)	combines two data frames horizontally/column wise
head(data_frame)/tail(da- ta_frame)	returns the first / last part of the data frame
summary(data_frame)	returns the descriptive statistics

Strings	
toString(x)	produces a single character string
tolower()	converts text to lower case
toupper()	converts text to upper case
substr()	extract or replace a substring in a character vector
paste (... , sep = " ", collapse = NULL)	concatenate vectors after character conversion

Arrays & Matrices	
one_d_array<-array- (1:15)	one dimens- ional array
two_d_array<-array(1:- 15,dim=c(3,4))	two dimens- ional array
3_d_array<-array(1:15,di- m=c(3,4,2))	three dimens- ional array
mat1=matrix(1:15,nrow- =5,ncol=3)	creates a 5x3 matrix
cbind(mat1,mat2)/rbin- d(mat1,mat2)	column bind/row bind
solve(mat1)%*%mat1	Inverse of a matrix
det(matrix(c(1,0,0,1),2)	determinant of a matrix

Vectors	
scores<-c(3,4,6,7,- 5,8,6)	numerical vector
names<-c("Nan- cy","Selvarani")	character Vector
x<-c(TRUE,TRUE,- FALSE)	logical vector
mean(scores)	mean of the score vector
sd(scores)	standard deviation of score vector

Vectors (cont)	
var(scores)	variance of the vector
range(scores)	range of the vector
which.min(vecto- r)/which.max(ve- ctor)	returns the position of the min/max value
rep(1:4,times=2)	replicates the elements of the vector twice

Lists	
list<-list(c("Nancy", "- selvarani","Aravi- nd"),c(25,23,26))	creates list with elements of diff data types
names(list)<-c("Nam- es","Age")	names the elements in the list

Descriptive Statistics	
summary(m- ydata)	description of mydata
rowMeans(myd- ata[])	returns the row mean value
colSums(myda- ta[])	returns the column sum

Hypothesis Testing	
t.test(data1)	one sample t test
t.test(da- ta1,data2)	two sample t test
t.test(pre,post,pai- red=TRUE)	paired t test
prop.test	test for diff between 2 proportions
cor.test(data1,- data2)	correlation
wilcox.test(data1)	Wilcox test
chisq.test(data1)	chi square test
shapiro.test(data1)	test for normality
aov()	ANOVA

Visualization

<code>ggplot(data = NULL, mapping = aes(), ...)</code>	initializes the plot object
<code>qplot(data, line=TRUE,...)</code>	quantile-quantile plot
<code>geom_density()</code>	density plot
<code>geom_hist()</code>	histogram
<code>geom_point()</code>	Scatter plots
<code>geom_bar()</code>	Bar graph
<code>facet_grid()</code>	panel layout in a grid
<code>barplot(list)</code>	bar plot

Probability

<code>mnorm(n,mean,sd)</code>	normal distribution
<code>runif()</code>	uniform distribution
<code>rpois(n,size)</code>	poisson distribution
<code>rbinom(n,size,prob)</code>	Binomial distribution
<code>rexp(n)</code>	Exponential distribution

Statistics

<code>lm(y~x,data=mydata)</code>	linear regression
<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>predict(object,mydata)</code>	Regression model
<code>cl\$cluster</code>	Clustering
<code>cluster=kmeans(mydata)</code>	K means cluster analysis



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