|  |  |  |
| --- | --- | --- |
| Assignment Operator: | Example | result |
| <- | x<-10 | > x<-10  > 3->y  > z=2  > x+y  [1] 13  > x-y  [1] 7  > x\*y  [1] 30  > x/y  [1] 3.333333  > x%%y  [1] 1  > x^y  [1] 1000 |
| -> | 3->y |
| = | z=2 |
| Arithmetic Operator: |  |
| + | x+y |
| - | x-y |
| \* | x\*y |
| / | x/y |
| %% | x%%y |
| ^ | x^y |

|  |  |  |
| --- | --- | --- |
| Function: | |  |
| c() | vector | > c(1,2,3,4,5,'x','y','z')  [1] "1" "2" "3" "4" "5" "x" "y" "z" |
| assign() | Assignment | > assign("a",c(9,8,7))  > a  [1] 9 8 7 |
| length() | length | > length(a)  [1] 3 |
| structure() or str() | structure | > str(a)  num [1:3] 9 8 7  > b=c('hello','my','world')  > str(b)  chr [1:3] "hello" "my" "world" |
| dim() | Dimension |  |
| class() | Type of the data | > class(a)  [1] "numeric"  > class(b)  [1] "character" |
| names() |  |  |
| list() |  |  |
| sort() |  | > k=c(8,4,6,3,9,0)  > sort(k)  [1] 0 3 4 6 8 9 |
| seq() | sequence | seq(1:9)  [1] 1 2 3 4 5 6 7 8 9  > seq(1,10,by=2)  [1] 1 3 5 7 9 |

Math Function:

|  |  |
| --- | --- |
| sqrt() | > sqrt(100)  [1] 10 |
| sin() | > sin(0)  [1] 0  > sin(90)  [1] 0.8939967 |
| cos() | > cos(0)  [1] 1  > cos(90)  [1] -0.4480736 |
| tan() | > tan(45)  [1] 1.619775 |

Search Function

|  |  |
| --- | --- |
| which() |  |
| match() |  |
| grep() |  |
| grepl() |  |

testm <-Array(1:16, dim=c(2,8,2))

test2 <-seq(1,12, by=2)

dim(test2) <-c(2,3)

dim(test2) <-c(3,2)

usen [] to see the certain

test[1,,]

test[1,2,3]

testm <-matrix(test, ncol=3,nrow=2)

rbind(x,y)

cbind(x,y)

read the vector from matrix: mtest[n]

testm[5]

nrow() – return # of row

ncol() - # of cols

length=- # of elements

colnames(mtest) <- c(“colA”,”colB”,”colC”)

rownames(mtest)<-c(“row1”,”row2”)

dim(mtest) – change the

dimnames(mtest) <- lsit( c(“a1”,”a2”), c(“b1”,”b2”,”b3”), c(“X”,”y”)

as.array()

str(x)

str(array9x,3))

str(matrix(x, ncol=1))

str(matrix(x,nrow=1))

Vector:

Integer

Numeric

Character

mixed type

Example:

x <-c(1,2,3)

c(4.1,5.7,6.8) -> x

z =c(“a”,”b”,”c”)

Test Data:

Age :

Gender: M,F

Income:

Read Data

Set the working directory

Setwd(“~/Rwork”)

Mydata <-read.table(“test.txt “, sep=”\t”, header=TRUE)

head(mydata)

Mydata <-read.table(“test.txt “, sep=”\t”, row.names=1, ,header=TRUE,)

str(mydate)

Mydata <-read.delim“test.txt “, sep=”\t”, row.names=1, ,header=TRUE,)

Mydata <-read.csv(“test.txt “, row.names=1, stringAsFactors=FALSE,header=TRUE)

Mydata <-read.XLS(“test.txt “, row.names=1, sheet=1,now.names=1,stringAsFactors=FALSE,header=TRUE)

myBook <-loadWorkbook(“ex.xlsx”)

mydata <-readWorksheet(myBook,sheet=1,rownames=1)

head(mydate)

str(mydata)

to load SPSS files into R as data frames:

library(“foreign”)

mydata <- read.spss(“mySpss.spss”, to.data.frame=TRUE)

to load json files

library(“rjson”)

mydata\_list<-fromJSON(FILE=”myfile.json”)

mydata <-as.data.frame(mydata\_list)

save(x,y, file=”exampleData.Rdata”)

load(“exampleData.Rdata”)

saveRDS – load 1 obj at a timesaveRDS(x,”x.rds”)

saveRDS(y,”y.rds”)

x2 <-readRDS(“x.rds”)

write.table(mydata, file=”savedata.txt”, quote=FALSE, sep=”\t”, row.names=TRUE, col.names=TRUE, append=FALSE)

write.table(mydata, file=”savedata.txt”, quote=FALSE, sep=”\t”, row.names=NA, col.names=TRUE, append=FALSE)

Write.csv(mydata, file=”saveCSV.csv”)

To save df1 df2 as sep sheets in excel workbook

df1=c…)

Library(WriteXLS)

dfs.tosave <-(“df2”,”df2”)

sheets.tosave <-c(“df1\_result”, “df2\_results”)

WriteXLS(dfs.tosave, ExcelFileName=”testWrok.xls”, SheetNames=sheet.tosave)