***Practical 1***

**# my first program in R python programming**

> mytext<-"Good Morning"

> print (mytext)

**#create a vector**

> apple<-c('Red', 'green', 'yellow')

> print (apple)

> num<-c('1', '2', '3')

print (num)

**#get the class of the vector**

> print (class (apple))

**#create a list**

> list1<-list (c(' (2,6,8)', '1.2', '3', 'sin'))

> print (list1)

**#create a matrix**

>a<-matrix(c('1', '2', '3', '4', '5', '6', '7', '8', '9'), nrow=3, ncol-3, byrow=TRUE)

> print (a)

**#create an array**

>B<-array(c('yes', 'no'), dim=c(3,3))

> print (B)

**#create the data frame**

> BMI<-data.frame(

+ gender=c("Female", "Female", "Male", "Frame"),

+ height=c(152, 155, 165,170),

+ weight=c(35,40,80,41), age=c (20,21,18,17)

+ )

> print (BMI)

***Practical 2***

***#Create a matrix using R python and perform operation :.+,-,\*,/.***

***>***A<-matrix (data 1:4, nrow=2, ncol=2, byrow=TRUE)

>print(A)

>b<-matrix (data 1:4, nrow=2,ncol=2, byrow=TRUE)

>print (b)

> g<-A+b

> print (g)

> F<-A-b

> print (F)

> h<-A\*b

> print (h)

> print(t(A))

> print (det (A))

>print (A^2)

***Practical 3***

**#Using Python Execute the statistical functions mean, median, mode, quartiles, range, inter quartile range.**

**#Find the Mean of 12,7,3,4,2,18,2,54,-21, 8,-5**

>x<-(12,7,3,4,2,18,2,54,-21, 8,-5)

>result.mean<-mean(x)

>print (result.mean)

**#Find the Medium of 12,7,3,4,2,18,2,54,-21, 8,-5**

>x<-(12,7,3,4,2,18,2,54,- 21,8,-5

>result.median<-median (x)

> print (result.median)

**#Find the Mode of 2,1,2,3,1,2,3,4,1,5,5,3,2,2,3**

**#Create the function**

>getmode<-function (v){

>uniqv<-unique(v)

>uniqv[which.max(tabulate (match (v, uniqv)))]

>}

>v<-(2,1,2,3,1,2,3,4,1,5,5,3,2,2,3)

#Calculate the mode using the user function

>result<-getmode (v)

>print (result)

**#Find the Range**

>x<-c(45,43,46,48,51,46,50,47,46,45)

>p=max(x)-min(x)

>print(p)

**#Interquartile range**

>x<-(12,19,21,24,26,29,33,35,36)

>print(IQR(x))

***Practical 4***

**#Using R/Python import the data from excel/.CSV file and perform the functions :mean, median, mode, quartiles, range, interquartile**

> data()

> women

>k<- women $ weight

> mean (k)

> median(k)

> getmode<-function (v) {

+uniqv<-unique (v)

+ uniqv[which.max(tabulate (match (v, uniqv)))]

+ }

> getmode (k)

>p=max(k)-min (k)

>print (p)

>IQR (k)

***Practical 5***

**#Using R/Python import the data from excel/.CSV file and calculate standard deviation, variance.**

>data ()

> women

<

>k<- women $ weight

> sd (k)

> var (k)

***Practical 6***

**#Using R/Python import the data from excel/.csv and draw the skewness.**

> data=read.csv("Practical 6.csv")

> print (data)

> library (moments)

> skewness (data $ AGE)

>

***Practical 7***

**#Import the data from excel/CSV file and perform hypothesis testing**

**#Question:-**

**#program to find hypothesis:-**

> mu=10000

> sigma=120

> n=30

> xbar=9900

> z=(xbar-mu)/(sigma/sqrt(30))

>z

**#To find level of significance**

>alpha=0.05

> z.alpha=qnorm(1-alpha/2)

>c(-z.alpha,z.alpha)

>

***Practical 8***

**#Import the data from the Excel/.csv and perform chi-square test**

**#Load the library**

> library (MASS)

**#create a data frame from the main data set**

> car.data<- data.frame (Cars93$AirBags, Cars93$Type)

**#create a table with the needed variables**

> car.data<-table(Cars93$AirBags, Cars93$Type)

>print(car.data)

**#perform the chi-square test**

>print (chisq.test(car.data))

***Practical 9***

**#Perform the Linear Regression using R**

>h=c(151,174,138,186,128,136,179,163,152,131)

>w=c(63,81,56,91,47,57,76,72,62,48)

>relation=(c(w~h))

>relation

>a=data.frame(h=170)

>result=predict(relation.a)

>result

>plot(w,h,col="blue", main="height and weight regression",

+abline(m(h~w)),cex=1.3,pch=16,xlab="weight in kg",ylab="height in cm")

***Practrcal 10***

**#Compute the linear least square Regression**

**#let us consider five year & their mean interest rate**

> year=c(2000, 2001,2002,2003,2004)

> rate=c(9.34,8.50,7.62,6.93,6.60)

>plot (year, rate, main = "commercial Bank Interest Rate for 4 year car loan")