OUTPUT :

```
Enter a number1 : 2
Enter a number2 : 2
[1] 4
```

Exp:1 ADDITION

AIM: To prove the program for addition using R-tool.

PROGRAM:

```
num1 = as.integer(readline(prompt = "Enter the first number:"))
num2 = as.integer(readline(prompt = "Enter the second number:"))
num3 = num1 + num2
print(num3)
```

RESULT:

Thus the basic program addition are executed sucessfully.

OUTPUT:

```
Enter a number1 : 4
Enter a number2 : 2
[1] 2
```

Exp:2

SUBTRACTION

AIM: To prove the program for subtraction using R - tool.

PROGRAM:

```
num1 = as. integer ( readline ( prompt = " enter the
                                  first number :" ))
num2 = as. integer ( readline ( prompt = " enter the
                                  second number :" ))
num 3 = num1 - num2
print ( num 3)
```

RESULT:

Thus the basic program subtraction are executed successfully.

OUTPUT:

```
Enter num1: 3
Enter num2: 2
[1] 6
```

Exp:3

MULTIPLICATION

AIM: To prove the program for multiplication using R-tool.

PROGRAM:

```
num1 = as.integer(readline(prompt = "enter num1:"))
num2 = as.integer(readline(prompt = "enter num2:"))
num3 = num2 * num1
print(num3)
```

RESULT:

Thus the basic program multiplication is executed successfully.

OUTPUT:

```
Enter num1: 10
Enter num2: 2
[1] 5
```

Ex:4

DIVISION

AIM: To prove the program for division using R- tool.

PROGRAM:

```
num1 = as. integer ( readline (prompt = " Enter num1: "))
num2 = as. intiger ( readline (prompt = " Enter num2: "))
num3 = num1 / num2
print (num3)
```

RESULT:

Thus the basic program division was executed successfully.

OUTPUT:

Enter a num: 4

[1] "Number is even"

Ex:5

ODD OR EVEN

AIM: To write the program for odd or even using R- tool.

PROGRAM:

```
num = as.integer( readline ( prompt = " enter a num: "))
if ((num %% 2) == 0) {
   print (" number is even ")
} else {
   print (" number is odd ")
}
```

RESULT:

Thus the basic program odd or even executed successfully.

OUTPUT:

```
> mode (df $age)
[1] "numeric"
> mean (df $age)
[1] 27.3333
> median (df $age)
[1] 24
```

Exp.6

MEAN, MEDIAN, MODE

AIM: To write the program for mean, median, mode.

PROGRAM:

MEAN

```
names <- c ("siri", "mahi", "chiru")
age <- c (23, 24, 25)
marks <- c (88, 78, 25)
df <- data. frame (name, age, marks)
mean (df $age)
write. csv (df, "datafr. csv")
```

MEDIAN

```
names <- c ("siri", "mahi", "chiru")
age <- c (23, 24, 25)
marks <- c (88, 78, 25)
df <- data. frame (name, age, marks)
median (df $age)
write. csv (df, "datafr. csv")
```

MODE

```
names <- c ("siri", "mahi", "chiru")
age <- c (23, 24, 25)
marks <- c (88, 78, 25)
df <- data. frame (names, age, marks)
mode (df $age)
write. csv (df, "datafr. csv")
```

RESULT:

Thus the central tendency and measure of dispersion is executed successfully.

OUTPUT:

> summary (df $age)

Min	1st Qu	Median	Mean	3rd Qu	Max
23.00	23.50	24.00	27.33	29.50	35.00

Exp:7

SUMMARY

AIM: To write the program for summary using R- tool.

PROGRAM:

```
names <- c ("siri", "mahi", "chiru")
age <- c (23, 24, 25)
marks <- c (88, 78, 25)
df <- data.frame (name, age, marks)
summary (df $age)
write.csv (df, "datafr.csv")
```

RESULT:

Thus the central tendency and measure of dispersion is executed successfully.

OUTPUT:

Enter num1 : 5

Enter num 2 : 6

Enter num 3 : 4

[1] " Greatest is : 6 "

Exp: 8

GREATER AMONG THREE NUMBERS

AIM: To write the program for the greatest among three numbers.

PROGRAM:

```
x <- as.integer(readline(prompt = "Enter num1:"))
y <- as.integer(readline(prompt = "Enter num2:"))
z <- as.integer(readline(prompt = "Enter num3:"))
if (x>y && x>z)
   print(paste("Greatest is:", x))
} else if (y>z)
   print(paste("Greatest is:", y))
} else {
   print(paste("Greatest is", z))
}
```

RESULT:

Thus the greatest among the three numbers was executed success fully.

OUTPUT :

[1] b

Exp:9 IQR

AIM: To write the program for central tendency and data dispersion measures using R tool.

PROGRAM:

```
names <- c ("siri", "mahi", "chiru")
age <- c (23, 24, 25)
marks <- c (88, 78, 25)
df <- data.frame (names, age, marks)
IQR (df $age)
write.csv (df, "datafr.csv")
```

RESULT:

Thus the program for central tendency and data dispersion measures was executed successfully.

OUTPUT:

0 %	25%	50%	75%	100%
23.0	23.5	24.0	29.5	35.0

Exp:10

QUANTILE

AIM: To write the program for central tendency and data dispersion measures.

PROGRAM:

```
names <- c("siri", "mahi", "chiru")
age <- c(23, 24, 25)
marks <- c(88, 78, 25)
df <- data.frame(name, age, marks)
quantile(df$age)
write.csv(df, "datafr.csv")
```

RESULT:

Thus the program for central tendency and data dispersion measures was executed successfully.

OUTPUT:

[1] 2 3 35

EXP:11

MID RANGE

AIM: To write the program for central tendency and data dispersion measures.

PROGRAM:

```
names <- c ("sri", "mahi", "chiru")
age <- c (23, 24, 25)
marks <- c (88, 78, 25)
df <- data.frame (names, age, marks)
mid range (df $age)
write.csv (df, "datafr.csv")
```

RESULT:

Thus the program for central tendency and data dispersion measures was executed successfully.

OUTPUT:

[1] 11.76023

Exp:12

Z-SCORE NORMALIZATION

AIM: To write the program for z-score normalization using R-tool

PROGRAM:

```
diabetes1 <- read_excel ("C:/Users/Jayan/Downloads
                          /NIARA.xlsx")
A<-c (diabetes1 $Age)
Mean <- mean (A)
Std <- sd (A)
Zscore <- (A-Mean)/Std
Zscore
```

RESULT:

Thus the z-score normalization using R tool was executed success fully.

OUTPUT:

MEAN

[1] 33.24089

MINIMUM

[1] 21

MAXIMUM

[1] 81

MIN MAX

[1]	0.48333	0.1667	0.1833	0.000	0.200
[6]	0.15000	0.8333	0.1333	0.533	0.550
[11]	0.1500	0.2166	0.600	0.633	0.500
[16]	0.1833	0.1667	0.1667	0.200	0.183
[21]	0.1000	0.4833	0.333	0.133	0.500
[26]	0.333	0.366	0.0166	0.600	0.283
[31]	0.650	0.116	0.0166	0.116	0.400
[36]	0.200	0.233	0.4166	0.100	0.583
[41]	0.833	0.266	0.4500	0.550	0.316
[46]	0.066	0.133	0.0166	0.0166	0.0500

Exp:13

MIN, MAX, MEAN

AIM: To write the program for the minimum, maximum, meand and minmax using R-Tool.

PROGRAM:

MEAN:

```
diabetes1 <- read_excel ("C:/Users/Jayan/Downloads/NARA.xlsx")
A<- c (diabetes1 $ Age)
Mean <- mean (A)
```

MINIMUM:

```
diabetes1 <- read_excel ("C:/Users/Jayan/Downloads/NARA.xlsx")
A <- c (diabetes1 $ Age)
Minimum <- Min (diabetes1 $ Age)
```

MAXIMUM

```
diabetes1 <- read_excel ("c:/Users/Jayan/Downloads/NARA.xlsx")
A<- c (diabetes1 $ Age)
Maximum <- Max (diabetes1 $ Age)
```

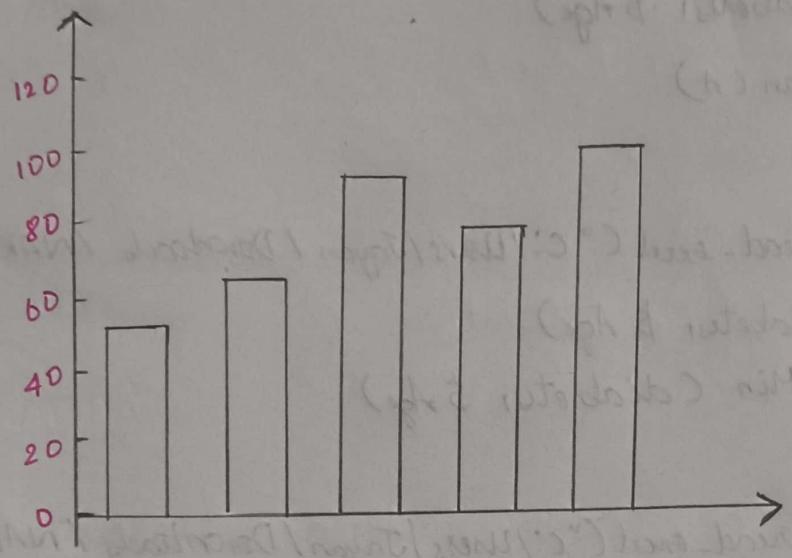
MINMAX

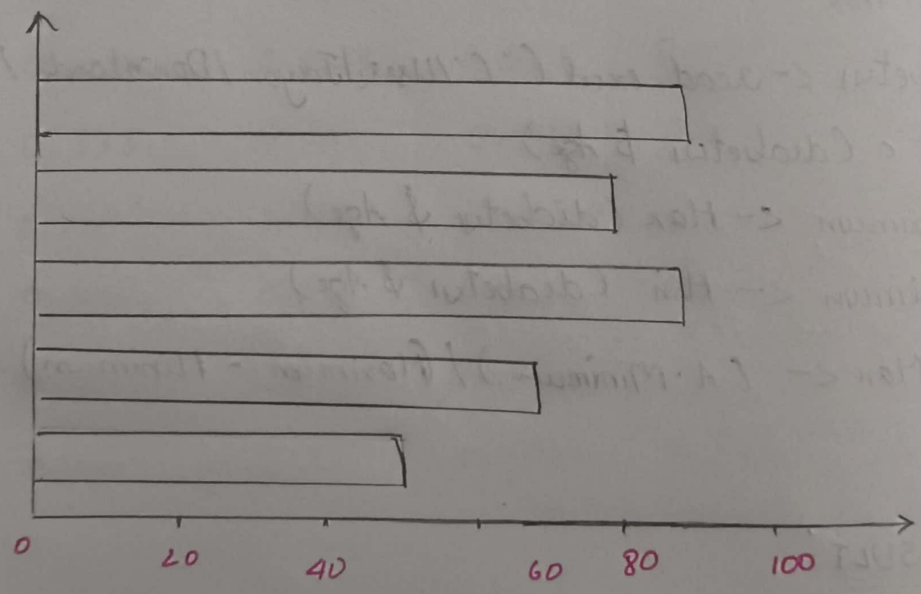
```
diabetes1 <- read_excel ("C:/Users/Jayan/Downloads/NARA.xlsx")
A<- c (diabetes1 $ Age)
Maximum <- Max (diabetes $ Age)
Minimum <- Min (diabetes1 $ Age)
MinMax <- (A - Minimum) / (Maximum - Minimum)
```

RESULT:

Thus the program for min, max, mean and minmax was executed successfully.

OUTPUT:





Exe:14

BAR PLOT AND HORIZONTAL PLOT

AIM: To draw the bar plot and horizontal bar using R-tool.

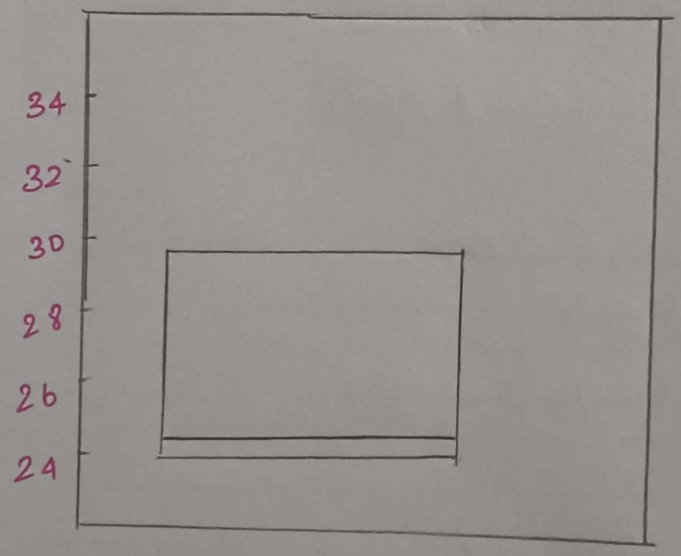
PROGRAM:

```
a <- c(55, 67, 89, 80, 90)
barplot (a)
a <- (55, 67, 89, 80, 90)
barplot (a)
barplot (a, horiz = TRUE)
```

RESULT:

Thus the bar and horizontal bar plot was executed successfully.

OUTPUT:



Exp.15

BOX PLOT

AIM: To draw the box plot using R-tool

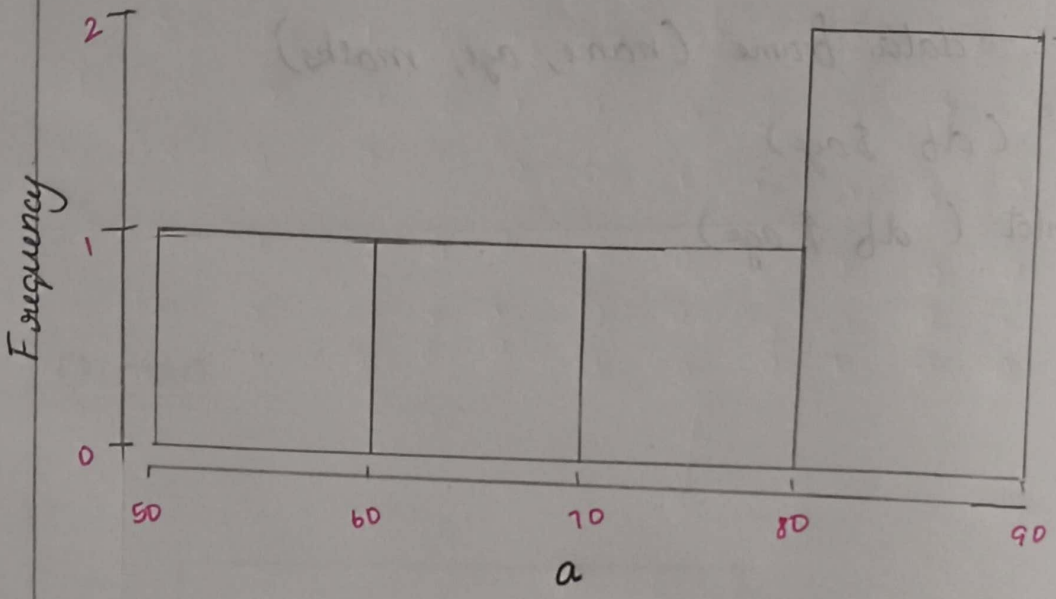
PROGRAM:

```
names <- c("Siri", "Chitu", "loki")
age <- c(23, 24, 25)
marks <- c(88, 78, 25)
df <- data.frame(name, age, marks)
hist(df$age)
boxplot(df$age)
```

RESULT:

Thus the box plot was executed successfully.

Output:



Exp:16

HISTOGRAM

AIM: To draw the histogram plot using R-tool.

PROGRAM:

```
a <- c (55, 67, 89, 80, 90)
hist (a)
```

RESULT:

Thus the histogram plot was executed successfully.

OUTPUT:

	0	14	15	16	18	22	23	25	29	32	36	37	38
21	28	0	0	0	1	0	0	0	0	0	0	1	0
22	29	0	0	1	0	0	1	1	0	0	0	1	0
23	10	0	1	0	0	0	0	1	0	0	0	1	0
24	15	0	0	0	0	0	0	0	0	0	1	0	0
25	18	1	0	0	0	0	0	0	1	0	0	0	0

Exp: 17

CORRELATION ANALYSIS

AIM: To write the program for correlation ardyis using R-tool.

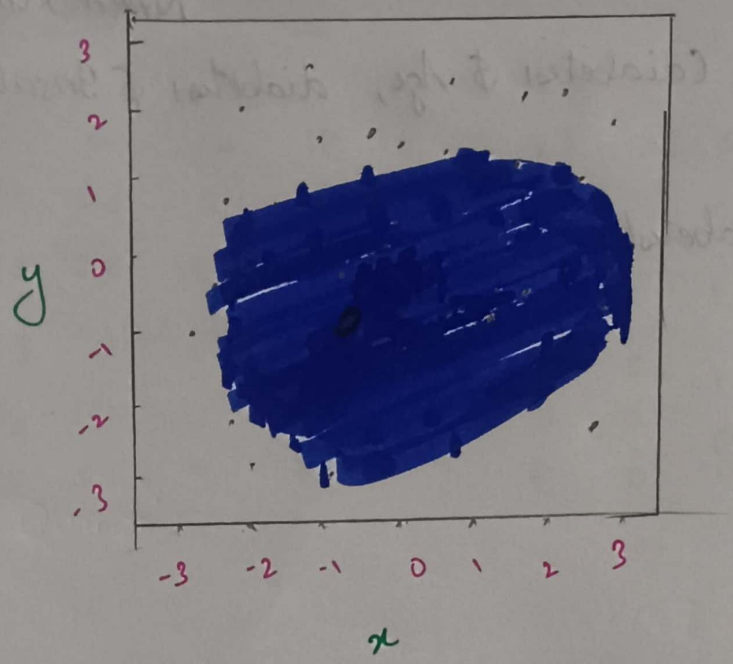
PROGRAM:

```
diabetes1 <- read_excel ("C:/Users/Jayan/Downloads/
                                        NARA.xlsx")
diabetes1 <- table (diabetes1 $ Age, diabetes1 $ Insulin)
diabetes1
chi.sq.test (diabetes1)
```

RESULT:

Thus the correlation analysis was executed successfully.

OUTPUT:



Exp.18

SCATTER PLOT

AIM: To draw the scatter plot using R- tool.

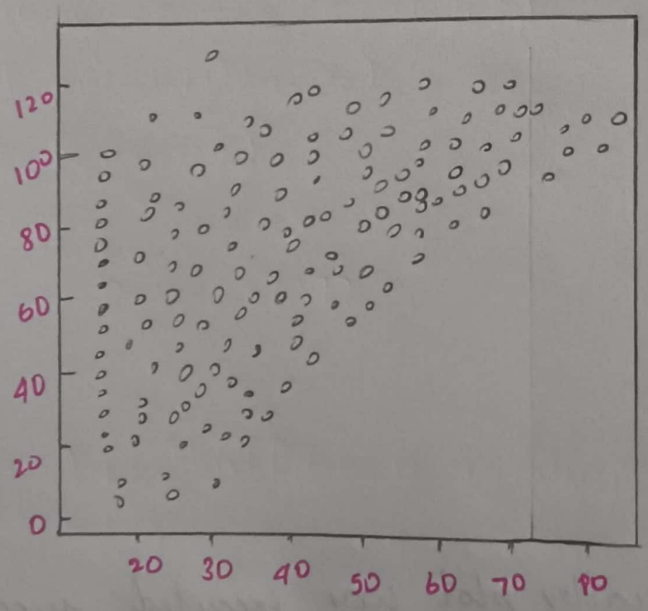
PROGRAM:

```
set. seed (9)
x <- rnorm (1000)
y <- rnorm (1000)
smooth Scatter (y-x)
smooth Scatter (x,y)
```

RESULT:

Thus the scatter plot was executed successfully.

OUTPUT:



Exp:19

LINEAR REGRESSION

AIM: To write the program for the linear regression using R- tool.

PROGRAM:

```
Relation <- lm (diabetes $ Blood Pressure ~ diabetes $ Age)
Png <- (file = " linear regression. png ")
Plot ( diabetes $ Age, diabetes $ Blood Pressure , col = "green",
    main = " Linear Regression Analysis ",
    abline = (lm (diabetes $ Blood Pressure ~ diabetes $Age)),
    xlab = " Blood Pressure ", ylab = " Age ")
```

RESULT:

Thus the linear regression program was executed successfully.

OUTPUT:

call:

lm(formula = Age ~ BloodPressure + Glucose, data = input)

Coeffecients:

(Intercept)	BloodPressure	Glucose
14.33987	0.12399	0.08547

⇒

```
A<- coef (model)[1]
Print (A)
```

```
(Intercept)
  14. 33987
```

⇒

```
xBloodPressure <- coef (model)[2]
y Glucose <- coef (model )[3]
print (xBlood Pressure)
print (y Glucose)
```

```
Glucose
  0.08547277
```

⇒

```
y = A + xBlood Pressure + y Glucose
print (y)
```

```
(Intercept)
  14.5[illegible]883
```

Exp: 10

MULTIPLE REGRESSION

AIM: To write the program for multiple regression.

PROGRAM:

```
Input <- diabetes[,c("Age","BloodPressure","Glucose")]
Model <- lm(Age ~ BloodPressure + Glucose, data = input)
Print (model)
```

RESULT:

Thus the multiple regression was executed success fully.