**Week 1**

**Aim: Practice all basic operations in R**

Input Code 1:

2+2

c(1:5)

A<-c(1:10)

x=5

x^3

sum(A)

mean(A)

median(A)

mode(A)

sd(A)

A^3

seq(1,10,2)

seq(0,10,2)

seq(1,10,3)

seq(1,10,by=2)

c(1:20,0,-4)

A[-c(4,5)]

A[c(4,5)]<-c(10,15)

z=as.character(4,58)

z

y=as.character(5,58)

paste(x,y)

fname="raulf"

lname="thans"

paste(fname,lname)

gender=c("F","M","M","M")

age=c(25,25,25,45)

weight=c(55,60,45,78)

df=data.frame(gender,age,weight)

df

df$age

df$weight

df$gender

name=c("San","Ban","Can","Dan","Ean","Fan","Gan","Han","Ian","Jan")

maths=c(81,52,15,87,96,54,23,14,74,45)

eng=c(75,16,41,74,89,36,54,14,56,23)

phy=c(98,74,85,86,15,42,65,46,36,47)

chy=c(92,45,12,47,15,54,82,86,31,51)

cse=c(100,47,83,29,15,84,75,62,47,25)

report=data.frame(name,maths,eng,phy,chy,cse)

report

Output 1:

> 2+2

[1] 4

> c(1:5)

[1] 1 2 3 4 5

> A<-c(1:10)

> x=5

> x^3

[1] 125

> sum(A)

[1] 55

> mean(A)

[1] 5.5

> median(A)

[1] 5.5

> mode(A)

[1] "numeric"

> sd(A)

[1] 3.02765

> A^3

[1] 1 8 27 64 125 216 343 512 729 1000

> seq(1,10,2)

[1] 1 3 5 7 9

> seq(0,10,2)

[1] 0 2 4 6 8 10

> seq(1,10,3)

[1] 1 4 7 10

> seq(1,10,by=2)

[1] 1 3 5 7 9

> c(1:20,0,-4)

[1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 0 -4

> A[-c(4,5)]

[1] 1 2 3 6 7 8 9 10

> A[c(4,5)]<-c(10,15)

> z=as.character(4,58)

> z

[1] "4"

> y=as.character(5,58)

> paste(x,y)

[1] "5 5"

> fname="raulf"

> lname="thans"

> paste(fname,lname)

[1] "raulf thans"

> gender=c("F","M","M","M")

> age=c(25,25,25,45)

> weight=c(55,60,45,78)

> df=data.frame(gender,age,weight)

> df

gender age weight

1 F 25 55

2 M 25 60

3 M 25 45

4 M 45 78

> df$age

[1] 25 25 25 45

> df$weight

[1] 55 60 45 78

> df$gender

[1] F M M M

Levels: F M

> name=c("San","Ban","Can","Dan","Ean","Fan","Gan","Han","Ian","Jan")

> maths=c(81,52,15,87,96,54,23,14,74,45)

> eng=c(75,16,41,74,89,36,54,14,56,23)

> phy=c(98,74,85,86,15,42,65,46,36,47)

> chy=c(92,45,12,47,15,54,82,86,31,51)

> cse=c(100,47,83,29,15,84,75,62,47,25)

> report=data.frame(name,maths,eng,phy,chy,cse)

> report

name maths eng phy chy cse

1 San 81 75 98 92 100

2 Ban 52 16 74 45 47

3 Can 15 41 85 12 83

4 Dan 87 74 86 47 29

5 Ean 96 89 15 15 15

6 Fan 54 36 42 54 84

7 Gan 23 54 65 82 75

8 Han 14 14 46 86 62

9 Ian 74 56 36 31 47

10 Jan 45 23 47 51 25

Input Code 2: (read the file and performing necessary opertaion)

Employee\_Data<-read.csv("C:\\Users\\dell\\Desktop\\Sanchay.csv")

summary(Employee\_Data)

Employee\_Data$Sex=factor(Employee\_Data$Sex,label=c("Male","Female"))

Employee\_Data$Status=factor(Employee\_Data$Status,label=c("staff","faculty"))

summary(Employee\_Data)

sexm=subset(Employee\_Data,Employee\_Data$Sex=="Male")

sexf=subset(Employee\_Data,Employee\_Data$Sex=="Female")

Employee\_Data

sexm

sexf

Statuss=subset(Employee\_Data,Employee\_Data$Status=="staff")

Statusf=subset(Employee\_Data,Employee\_Data$Status=="faculty")

Statuss

Statusf

summary(Statuss)

summary(Statusf)

sextable=table(Employee\_Data$Sex)

Employeedistribution=table(Employee\_Data$Sex,Employee\_Data$Status)

Employeedistribution

Output:

> Employee\_Data<-read.csv("C:\\Users\\dell\\Desktop\\Sanchay.csv")

> summary(Employee\_Data)

empid age Sex Status

Min. : 1.0 Min. :25.0 Min. :0.0000 Min. :1.0

1st Qu.: 4.5 1st Qu.:28.5 1st Qu.:0.0000 1st Qu.:1.0

Median : 8.0 Median :32.0 Median :0.0000 Median :2.0

Mean : 8.0 Mean :34.6 Mean :0.4667 Mean :1.6

3rd Qu.:11.5 3rd Qu.:40.0 3rd Qu.:1.0000 3rd Qu.:2.0

Max. :15.0 Max. :54.0 Max. :1.0000 Max. :2.0

> Employee\_Data$Sex=factor(Employee\_Data$Sex,label=c("Male","Female"))

> Employee\_Data$Status=factor(Employee\_Data$Status,label=c("staff","faculty"))

> summary(Employee\_Data)

empid age Sex Status

Min. : 1.0 Min. :25.0 Male :8 staff :6

1st Qu.: 4.5 1st Qu.:28.5 Female:7 faculty:9

Median : 8.0 Median :32.0

Mean : 8.0 Mean :34.6

3rd Qu.:11.5 3rd Qu.:40.0

Max. :15.0 Max. :54.0

> sexm=subset(Employee\_Data,Employee\_Data$Sex=="Male")

> sexf=subset(Employee\_Data,Employee\_Data$Sex=="Female")

> Employee\_Data

empid age Sex Status

1 1 25 Male faculty

2 2 29 Male staff

3 3 45 Male faculty

4 4 54 Female faculty

5 5 35 Female faculty

6 6 34 Male staff

7 7 35 Female staff

8 8 25 Male staff

9 9 29 Female faculty

10 10 45 Female faculty

11 11 46 Female faculty

12 12 26 Female staff

13 13 28 Male faculty

14 14 31 Male faculty

15 15 32 Male staff

> sexm

empid age Sex Status

1 1 25 Male faculty

2 2 29 Male staff

3 3 45 Male faculty

6 6 34 Male staff

8 8 25 Male staff

13 13 28 Male faculty

14 14 31 Male faculty

15 15 32 Male staff

> sexf

empid age Sex Status

4 4 54 Female faculty

5 5 35 Female faculty

7 7 35 Female staff

9 9 29 Female faculty

10 10 45 Female faculty

11 11 46 Female faculty

12 12 26 Female staff

> Statuss=subset(Employee\_Data,Employee\_Data$Status=="staff")

> Statusf=subset(Employee\_Data,Employee\_Data$Status=="faculty")

> Statuss

empid age Sex Status

2 2 29 Male staff

6 6 34 Male staff

7 7 35 Female staff

8 8 25 Male staff

12 12 26 Female staff

15 15 32 Male staff

> Statusf

empid age Sex Status

1 1 25 Male faculty

3 3 45 Male faculty

4 4 54 Female faculty

5 5 35 Female faculty

9 9 29 Female faculty

10 10 45 Female faculty

11 11 46 Female faculty

13 13 28 Male faculty

14 14 31 Male faculty

> summary(Statuss)

empid age Sex Status

Min. : 2.000 Min. :25.00 Male :4 staff :6

1st Qu.: 6.250 1st Qu.:26.75 Female:2 faculty:0

Median : 7.500 Median :30.50

Mean : 8.333 Mean :30.17

3rd Qu.:11.000 3rd Qu.:33.50

Max. :15.000 Max. :35.00

> summary(Statusf)

empid age Sex Status

Min. : 1.000 Min. :25.00 Male :4 staff :0

1st Qu.: 4.000 1st Qu.:29.00 Female:5 faculty:9

Median : 9.000 Median :35.00

Mean : 7.778 Mean :37.56

3rd Qu.:11.000 3rd Qu.:45.00

Max. :14.000 Max. :54.00

> sextable=table(Employee\_Data$Sex)

> Employeedistribution=table(Employee\_Data$Sex,Employee\_Data$Status)

> Employeedistribution

staff faculty

Male 4 4

Female 2 5

**Result:**

The basic commands of a R-Lab have been successfully implemented.