Experiment Lab-2

Computation of tables and graphs-summary statistics

Aim: *To represent the various types of data using tabulation and graphical representation*

Computation of tables and graphs-summary statistics for employee data

Creating vector:-

>empid=c(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15) # creating a vector empid

>empid

[1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

> age=c(30,37,45,32,50,60,35,32,34,43,32,30,43,50,60)

creating a vector age

>age

[1] 30 37 45 32 50 60 35 32 34 43 32 30 43 50 60

> Gender=c(0,1,0,1,1,1,0,0,1,0,0,1,1,0,0)

>Gender

[1] 0 1 0 1 1 1 0 0 1 0 0 1 1 0 0

> status=c(1,1,2,2,1,1,1,2,2,1,2,1,2,1,2)

>status

[1] 1 1 2 2 1 1 1 2 2 1 2 1 2 1 2

Creating a data frame (Combining vectors):

>empinfo=data.frame(empid,age,Gender,status)

>empinfo

	empid	age	Gender	status
1	1	30	0	1
2	2	37	1	1
3	3	45	0	2
4	4	32	1	2
5	5	50	1	1
6	6	60	1	1
7	7	35	0	1
8	8	32	0	2
9	9	34	1	2
10	10	43	0	1
11	11	32	0	2
12	12	30	1	1
13	13	43	1	2
14	14	50	0	1
15	15	60	0	2

empinfo$Gender=factor(empinfo$Gender,labels=c("male","female"))

>empinfo$status=factor(empinfo$status,labels=c("staff","faculty"))

>empinfo

```
   empid age Gender  status
1      1  30   male   staff
2      2  37 female   staff
3      3  45   male faculty
4      4  32 female faculty
5      5  50 female   staff
6      6  60 female   staff
7      7  35   male   staff
8      8  32   male faculty
9      9  34 female faculty
10    10  43   male   staff
11    11  32   male faculty
12    12  30 female   staff
13    13  43 female faculty
14    14  50   male   staff
15    15  60   male faculty
```

#The following command shows male data only

```
> Genderm=subset(empinfo,empinfo$Gender=='male')
> Genderm
   empid age Gender  status
1      1  30   male   staff
3      3  45   male faculty
7      7  35   male   staff
8      8  32   male faculty
10    10  43   male   staff
11    11  32   male faculty
14    14  50   male   staff
15    15  60   male faculty
```

#The following command shows female data only

```
> Genderf=subset(empinfo,empinfo$Gender=='female')
> Genderf
   empid age Gender  status
2      2  37 female   staff
4      4  32 female faculty
5      5  50 female   staff
6      6  60 female   staff
9      9  34 female faculty
12    12  30 female   staff
13    13  43 female faculty
```

? Similarly create staff data set and faculty dataset

- Summary statistics for empinfo data

```
> summary(empinfo)
     empid           age          Gender      status
 Min.   : 1.0   Min.   :30.00   male  :8   staff  :8
 1st Qu.: 4.5   1st Qu.:32.00   female:7   faculty:7
 Median : 8.0   Median :37.00
 Mean   : 8.0   Mean   :40.87
 3rd Qu.:11.5   3rd Qu.:47.50
 Max.   :15.0   Max.   :60.00
```

- Summary statistics for male and female employees data

```
> summary(Genderm)
     empid            age          Gender      status
 Min.   : 1.000   Min.   :30.00   male  :8   staff  :4
 1st Qu.: 6.000   1st Qu.:32.00   female:0   faculty:4
 Median : 9.000   Median :39.00
 Mean   : 8.625   Mean   :40.88
 3rd Qu.:11.750   3rd Qu.:46.25
 Max.   :15.000   Max.   :60.00
> summary(Genderf)
     empid            age          Gender      status
 Min.   : 2.000   Min.   :30.00   male  :0   staff  :4
 1st Qu.: 4.500   1st Qu.:33.00   female:7   faculty:3
 Median : 6.000   Median :37.00
 Mean   : 7.286   Mean   :40.86
 3rd Qu.:10.500   3rd Qu.:46.50
 Max.   :13.000   Max.   :60.00
```

- Summary statistics for age

>summary(empinfo$age)

Min. 1st Qu.Median Mean 3rd Qu. Max.

30.00 32.00 37.00 40.87 47.50 60.00

- Creating one-way table

1. For Gender

```
> table1=table(empinfo$Gender)
> table1

  male female
     8      7
```

2. For status

```
> table2=table(empinfo$status)
> table2

  staff faculty
      8       7
```

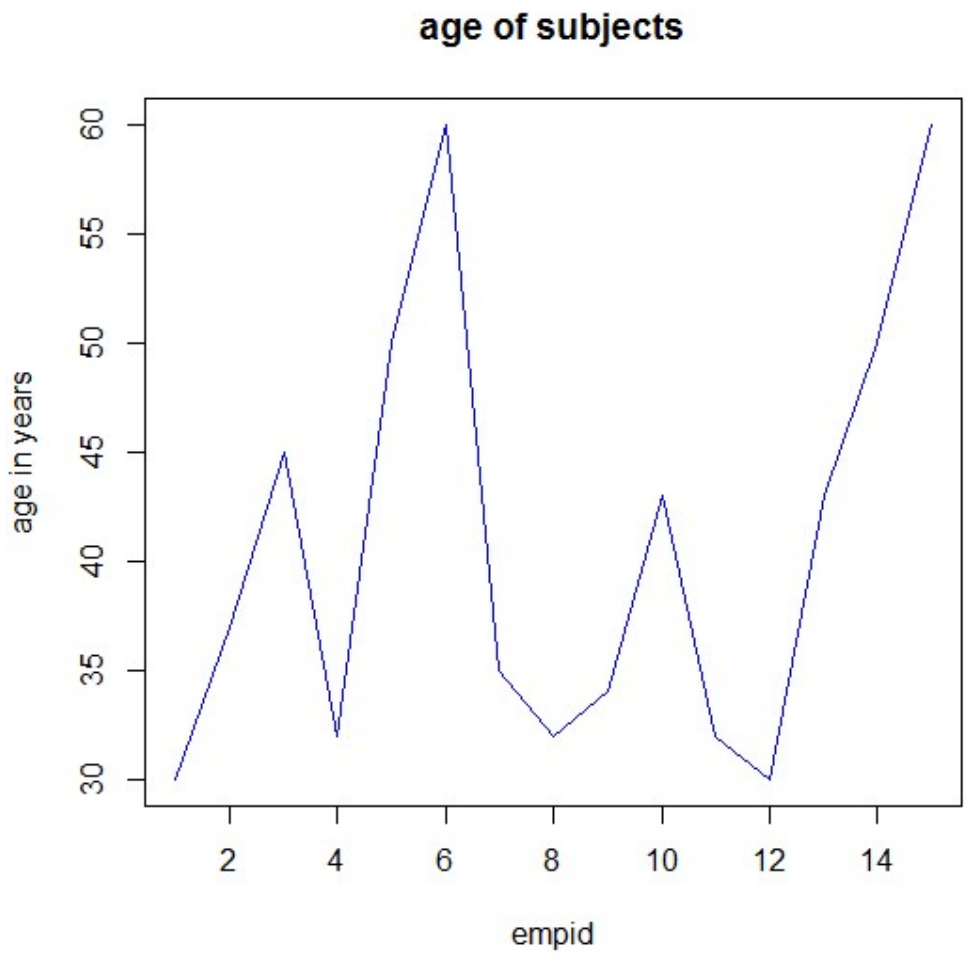
- Creating two-way table

```
> table3=table(empinfo$Gender,empinfo$status)
> table3

        staff faculty
  male      4       4
  female    4       3
```

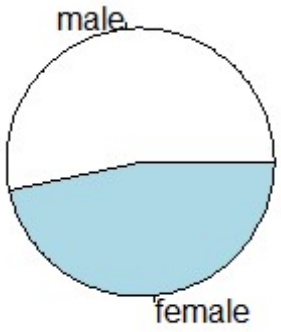
Gaphical reperesentation in R

>plot(empinfo$age,type="l",main="age of subjects",xlab="empid",ylab="age in years",col="blue")

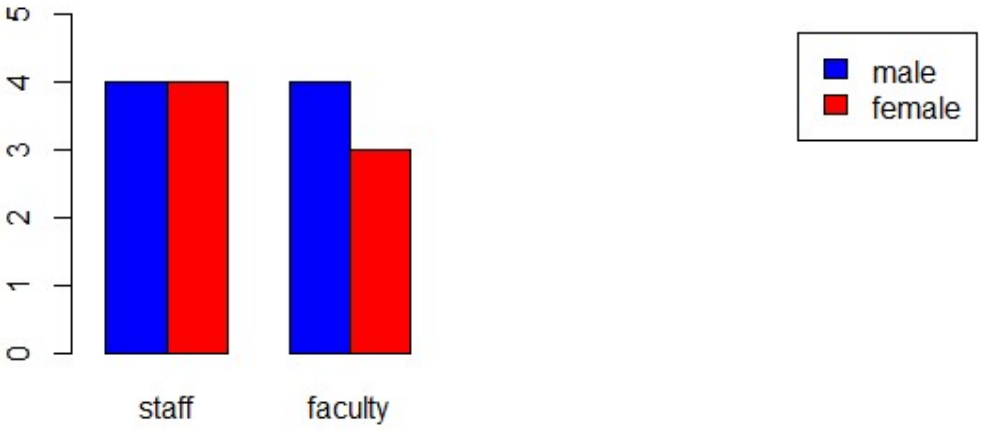


Pie Chart:-

```
> table4<-table(empinfo$Gender)
>pie(table4)
```




```
>table5=table(empinfo$Gender,empinfo$status)
>barplot(table5,beside=T,xlim=c(1,15),ylim=c(0,5),c
ol=c("blue","red"),legend=rownames(table5))
```



BOXPLOT:-

- boxplot(empinfo$age~empinfo$status,col=c("red","blue"))