

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

```

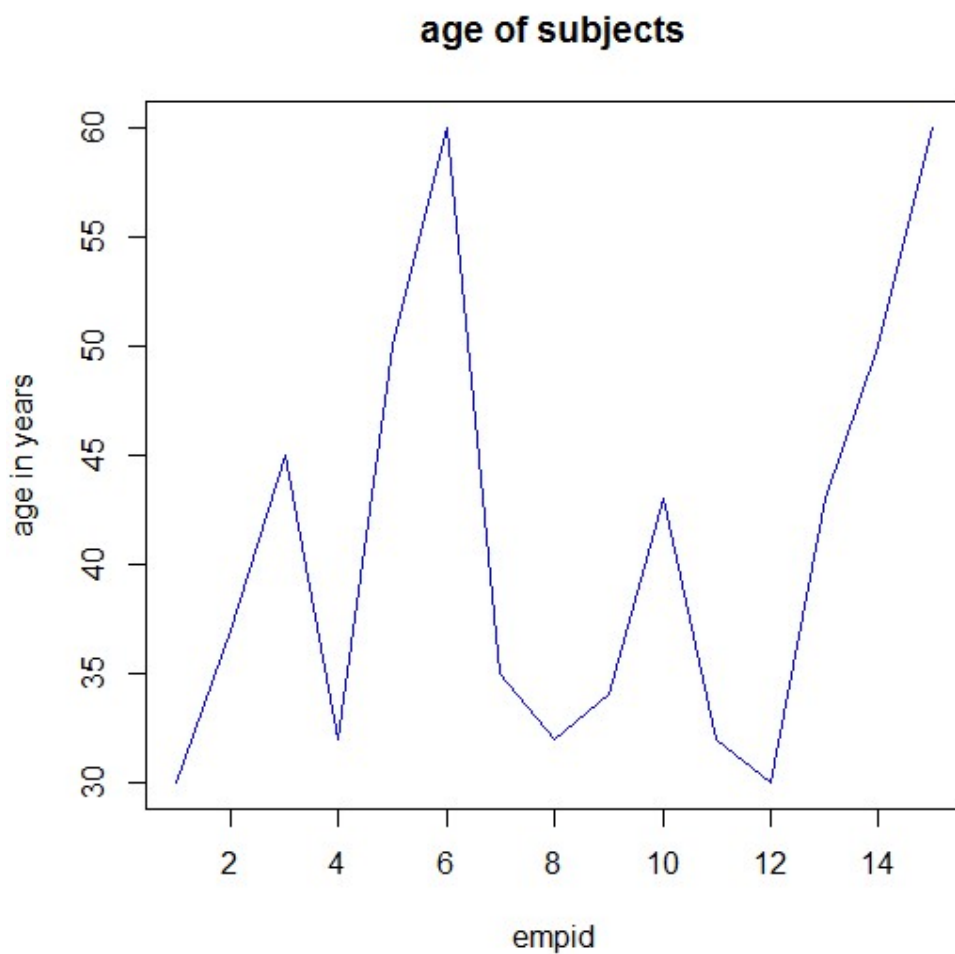
➤ Creating two-way table

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

	staff	faculty
male	4	4
female	4	3

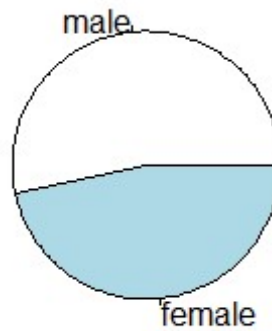
Gaphical reperesentation in R

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

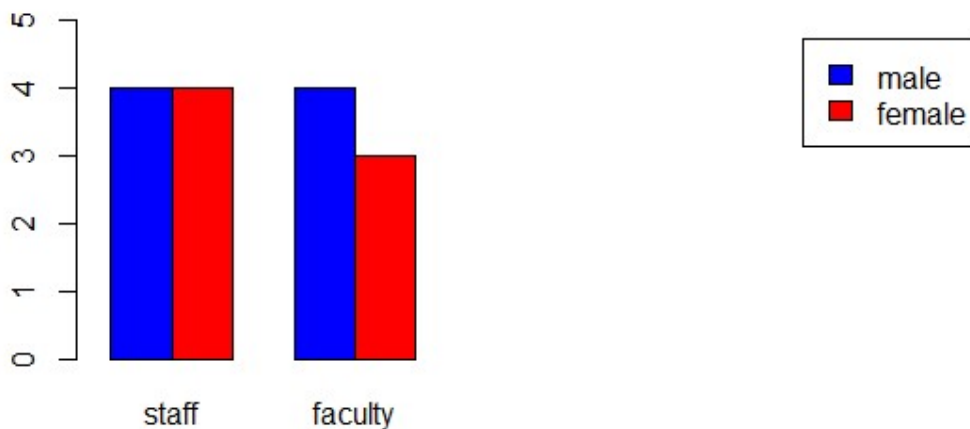


Pie Chart:-

```
> 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"))`

