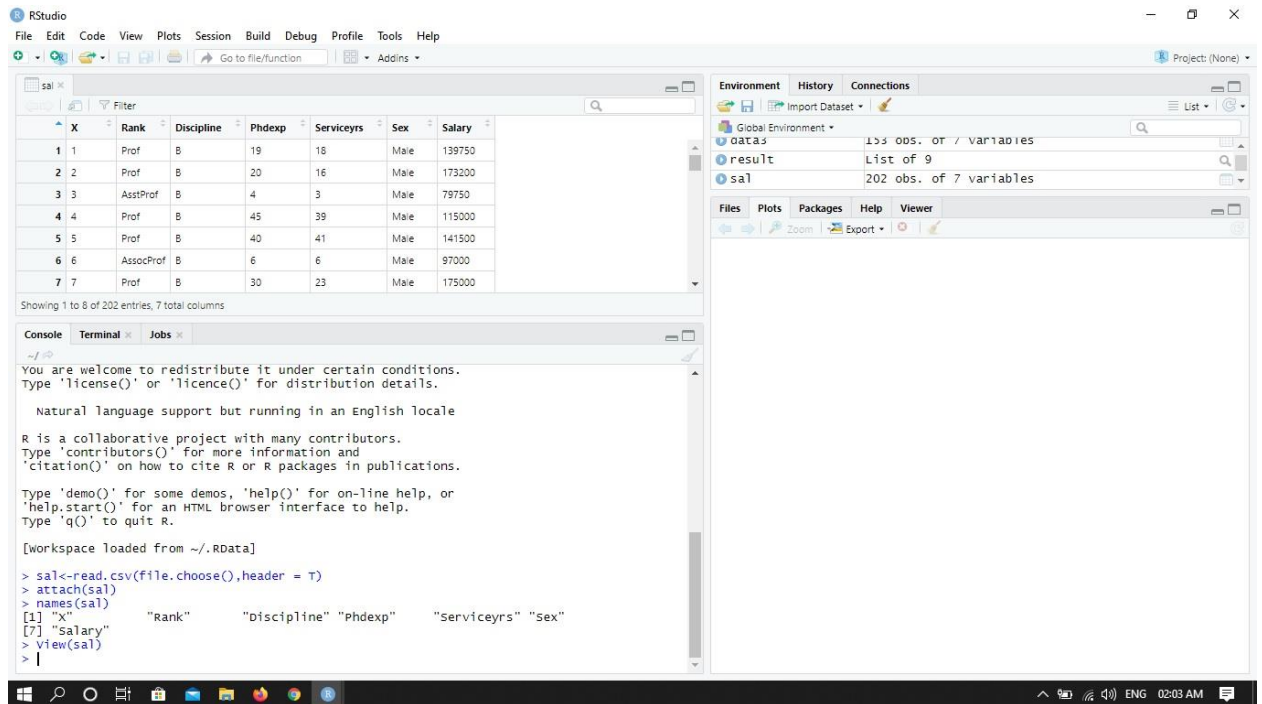


### ❖ Dataset View:

[illegible][illegible]

## ❖ Import Dataset:



The screenshot shows the RStudio interface with the 'sal' dataset loaded. The Environment pane on the right shows the dataset 'sal' with 202 observations and 7 variables. The Console on the left shows the following commands and output:

```
> sal<-read.csv(file.choose(),header = T)
> attach(sal)
> names(sal)
[1] "X"          "Rank"       "Discipline" "Phdexp"     "Serviceyrs" "Sex"        "Salary"
> view(sal)
```

The data table shows the first 7 rows of the dataset:

	X	Rank	Discipline	Phdexp	Serviceyrs	Sex	Salary
1	1	Prof	B	19	18	Male	139750
2	2	Prof	B	20	16	Male	173200
3	3	AsstProf	B	4	3	Male	79750
4	4	Prof	B	45	39	Male	115000
5	5	Prof	B	40	41	Male	141500
6	6	AssocProf	B	6	6	Male	97000
7	7	Prof	B	30	23	Male	175000

## ❖ Mean, Median:

```
>
>
>
> mean(Phdexp)
[1] 19.38119
> median(Phdexp)
[1] 18
>
```

## ❖ Summary:

```
>
> summary(sal)
      X      Rank      Discipline      Phdexp      Serviceyrs
Min.   : 1.00   AssocProf: 41   A: 49   Min.   : 1.00   Min.   : 0.00
1st Qu.: 51.25   AsstProf : 43   B:153 1st Qu.:10.00 1st Qu.: 5.00
Median :101.50   Prof      :118             Median :18.00 Median :14.00
Mean   :101.50                      Mean   :19.38 Mean   :15.38
3rd Qu.:151.75                      3rd Qu.:28.00 3rd Qu.:23.00
Max.   :202.00                      Max.   :56.00 Max.   :57.00

      Sex      salary
Female: 23   Min.   : 62884
Male   :179 1st Qu.: 90237
          Median :105380
          Mean   :111456
          3rd Qu.:128787
          Max.   :231545

> |
```

## ❖ Str:

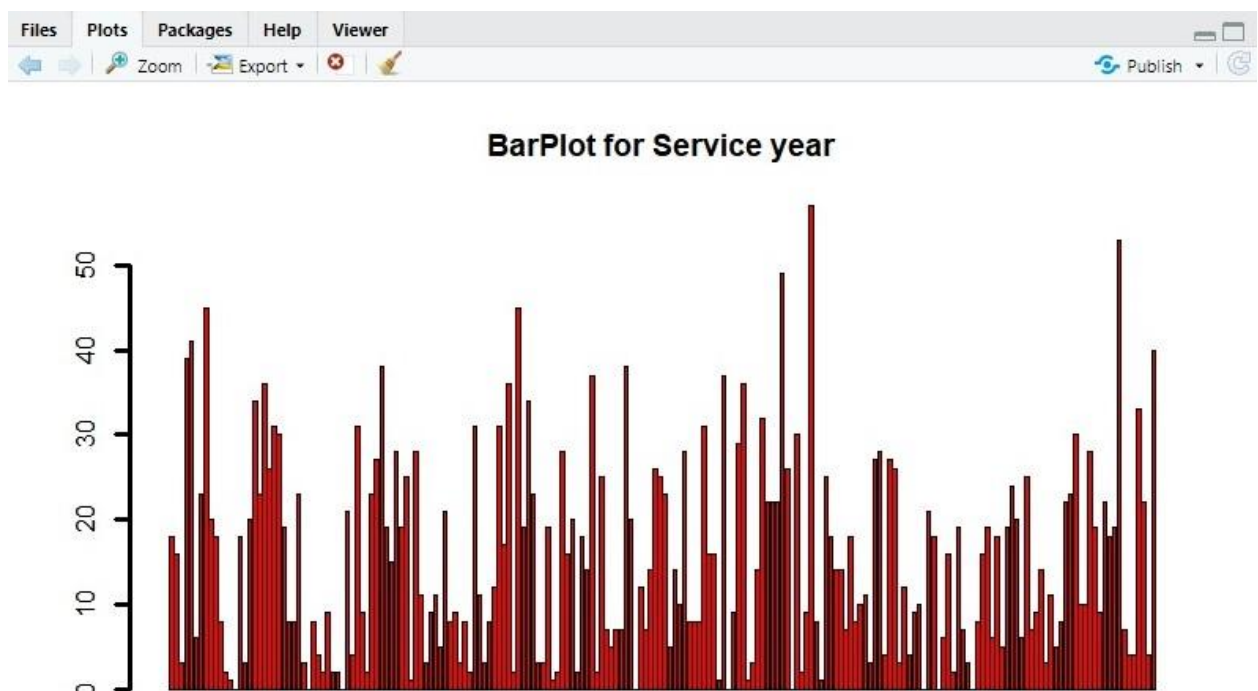
```
>
> str(sal)
'data.frame': 202 obs. of 7 variables:
 $ X      : int  1 2 3 4 5 6 7 8 9 10 ...
 $ Rank    : Factor w/ 3 levels "AssocProf","AsstProf",...: 3 3 2 3 3 1 3 3 3 3 ...
 $ Discipline: Factor w/ 2 levels "A","B": 2 2 2 2 2 2 2 2 2 2 ...
 $ Phdexp   : int  19 20 4 45 40 6 30 45 21 18 ...
 $ Serviceyrs: int  18 16 3 39 41 6 23 45 20 18 ...
 $ Sex      : Factor w/ 2 levels "Female","Male": 2 2 2 2 2 2 2 2 2 1 ...
 $ salary   : int  139750 173200 79750 115000 141500 97000 175000 147765 119250 129000
 ...
>
```

## ❖ Bar plot:

### Code:

```
>  
>  
> barplot(Serviceyrs, main="BarPlot for Service Year")  
> barplot(Serviceyrs, main="BarPlot for Service year", col=2, lwd=3)  
> |
```

### Output:

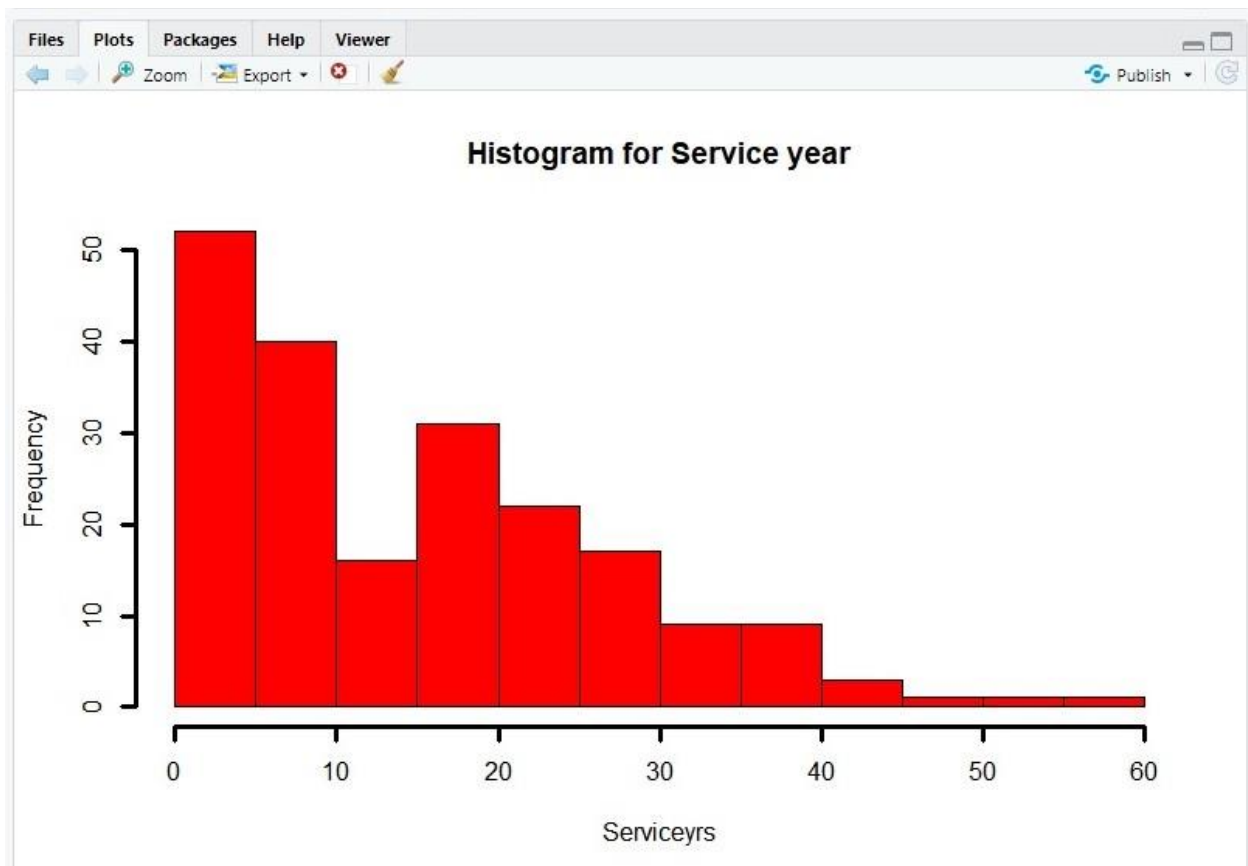


## ❖ Histogram:

### Code:

```
>  
>  
> hist(serviceyrs, main="Histogram for service year" )  
> hist(serviceyrs, main="Histogram for service year", col=2, lwd=3)  
> |
```

### Output:

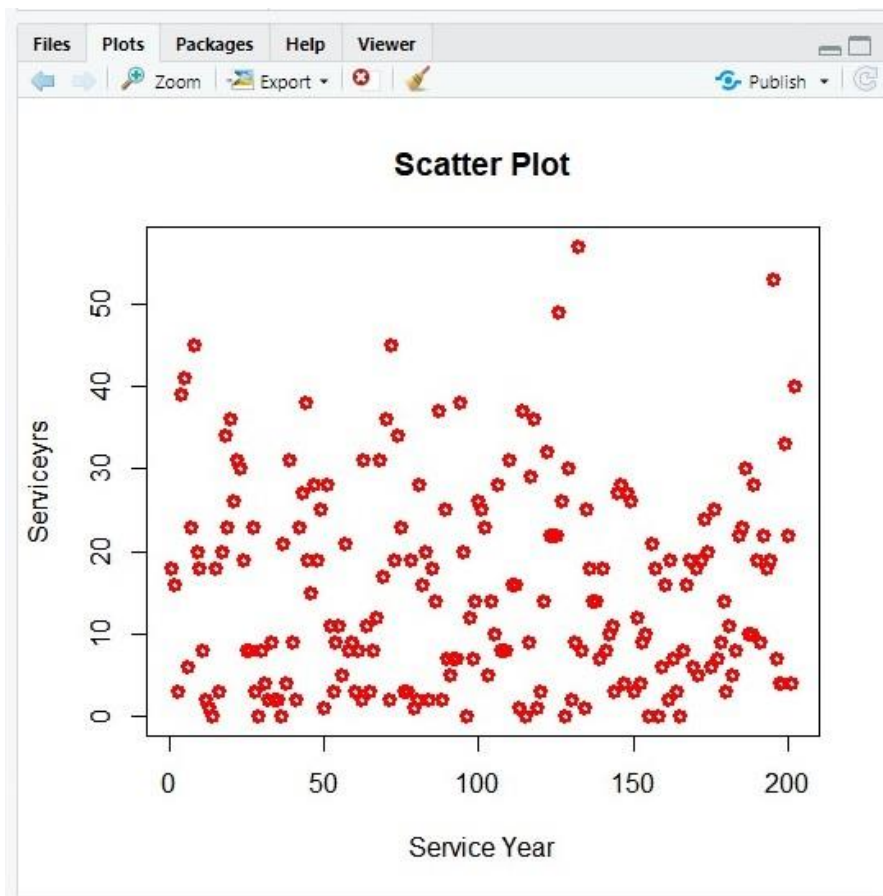


## ❖ Scatter Plot:

### Code:

```
>  
>  
>  
> plot(serviceyrs, main="Scatter Plot", xlab="Service Year")  
> plot(serviceyrs, main="Scatter Plot", xlab="Service Year",col=2, lwd=3)  
>
```

### Output:



## ❖ Decision Tree:

### Code:

```
>
>
> library(rpart)
> library(rpart.plot)
> nh<- rpart(Serviceyrs~Discipline+Rank,sal)
> a4<-data.frame(Discipline=c("A"),Rank=c("AsstProf"))
> res3=predict(nh,a4)
> print(res3)
      1
2.162791
> rpart.plot(nh)
>
>
>
>
>
>
>
> nh<- rpart(rank~discipline+serviceyrs,data3)
> a4<-data.frame(discipline=c("A"),serviceyrs=c(41))
> res3=predict(nh,a4)
> rpart.plot(nh)
>
```

### Output:

