

5. Problem Statement

1. Histogram for all variables in a dataset **mtcars**.

Write a program to create histograms for all columns

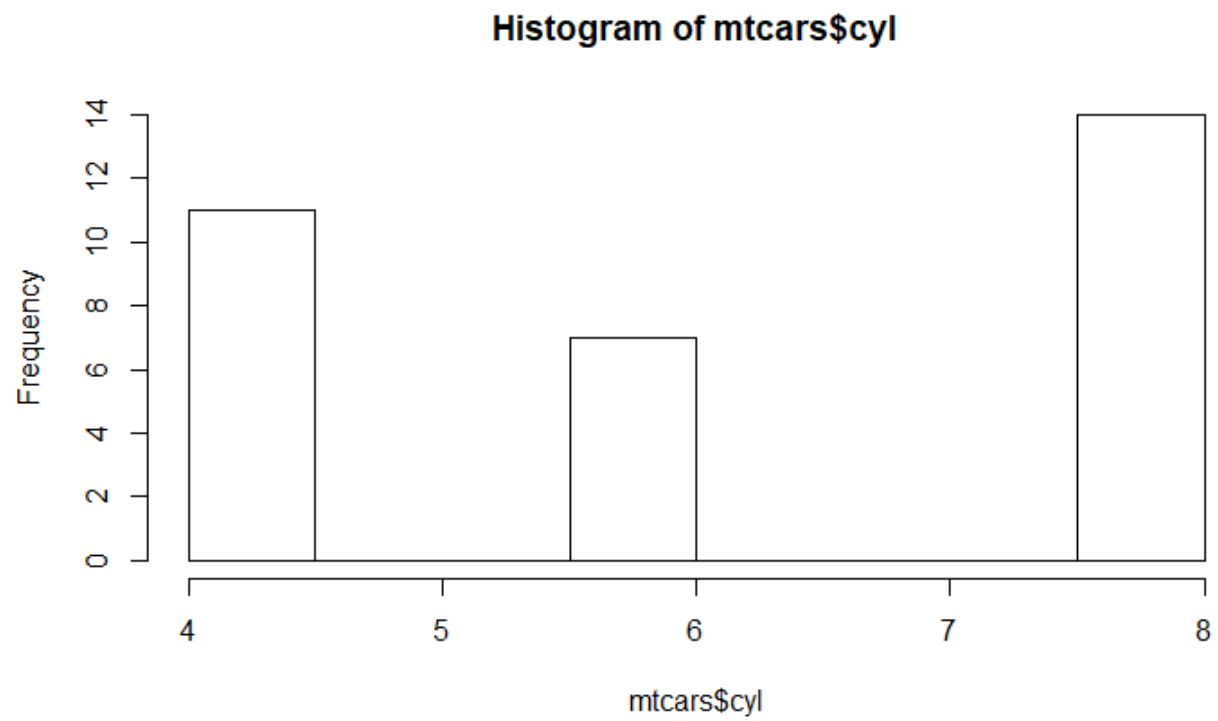
Answer

mtcars dataset has the 11 variables :

- cyl: Number of the cylinder in the car. Numeric variable
- am: Type of transmission. 0 for automatic and 1 for manual. Numeric variable
- mpg: Miles per gallon. Numeric variable
- dsp
- hp
- drat
- wt
- qsec
- vs
- am
- gear
- crab

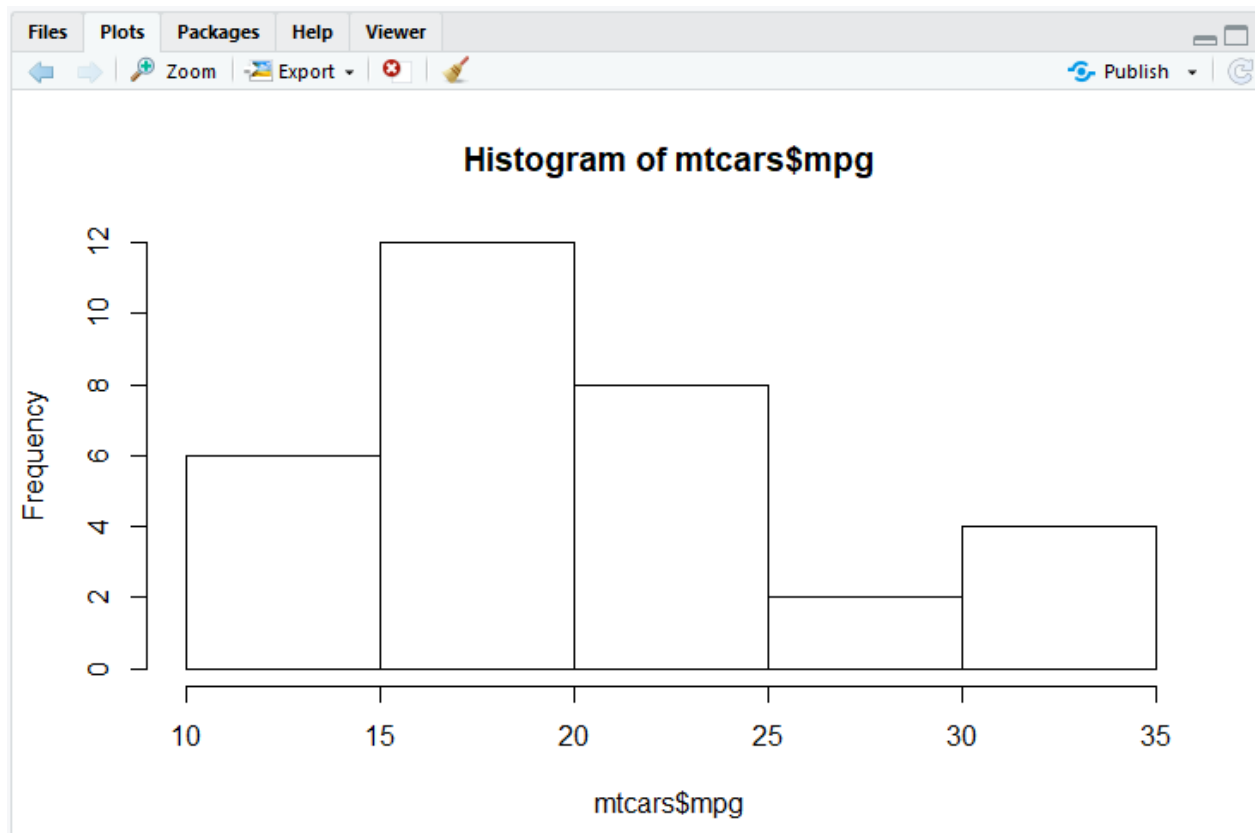
Histogram for 1 variable

```
hist(mtcars$cyl)
```



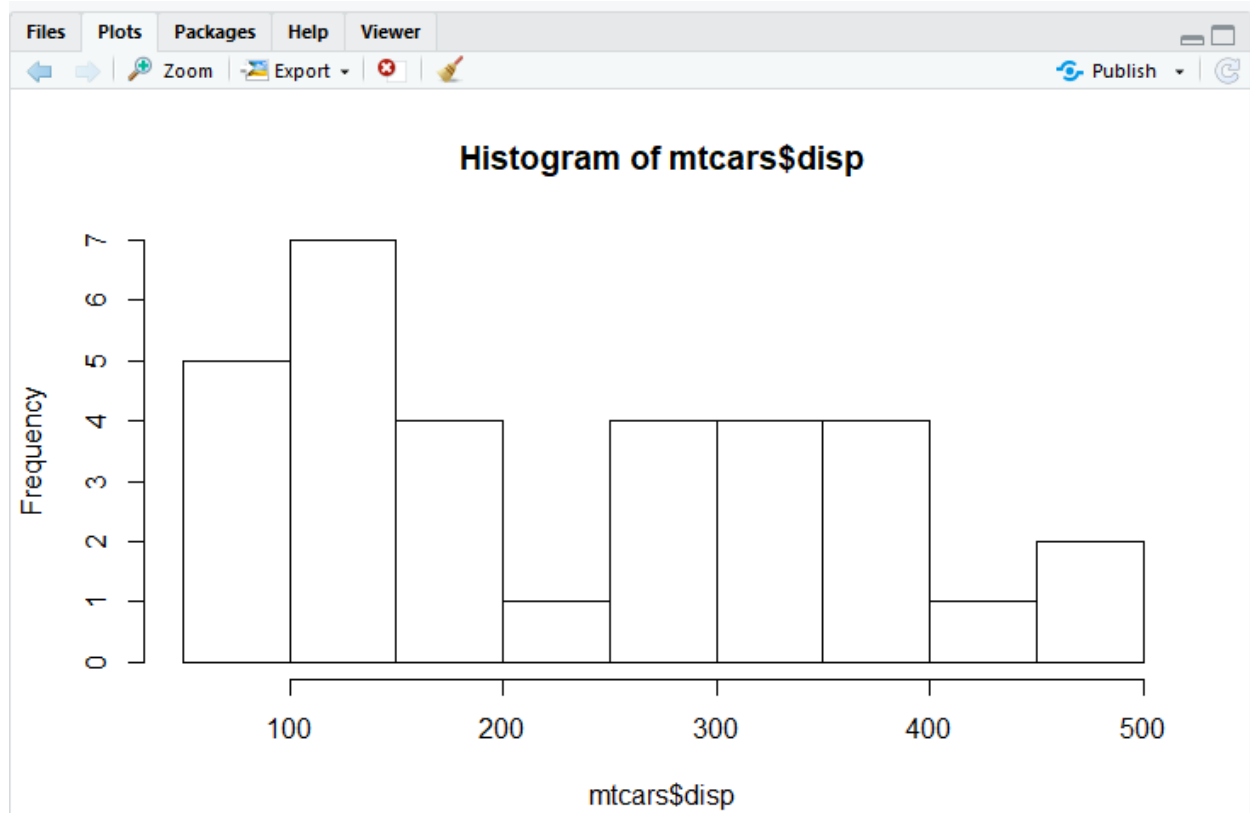
Histogram for 2 variable

```
hist(mtcars$mpg)
```



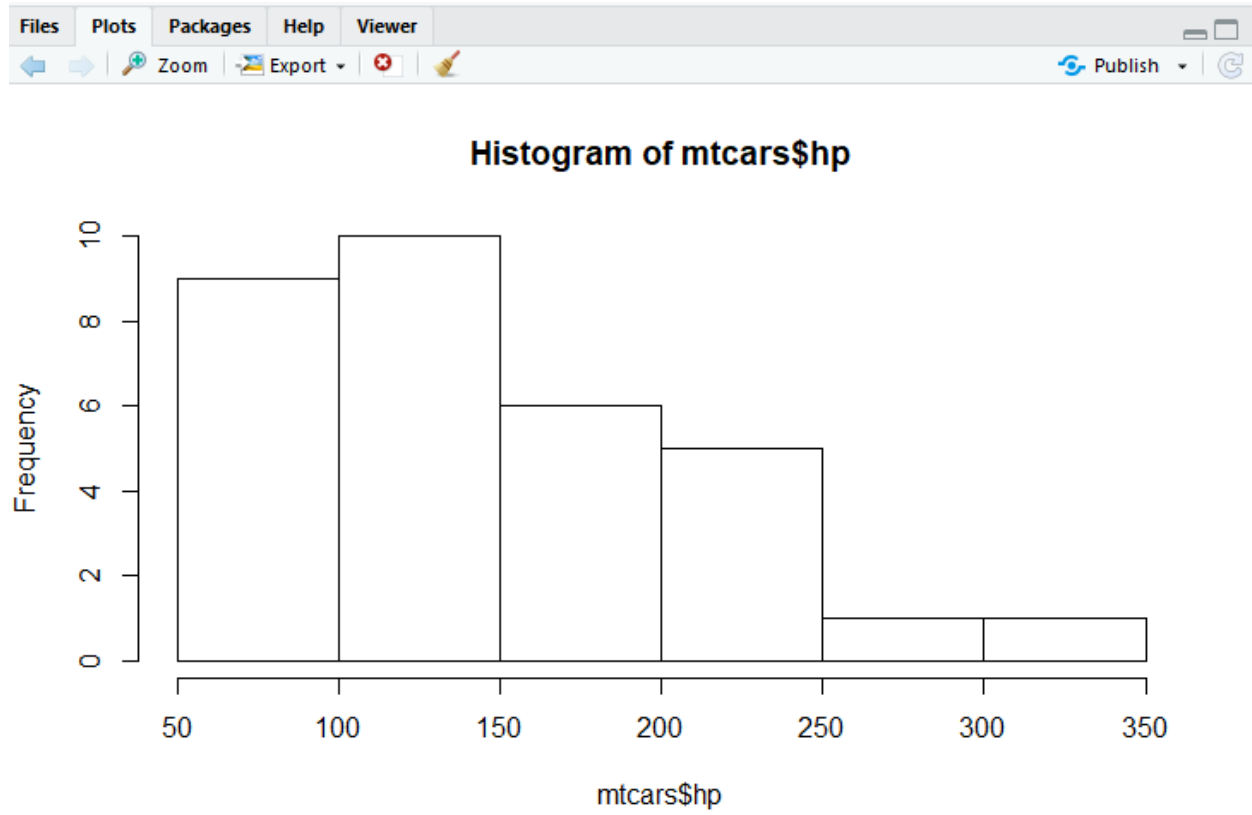
Histogram for 3rd variable

```
hist(mtcars$disp)
```



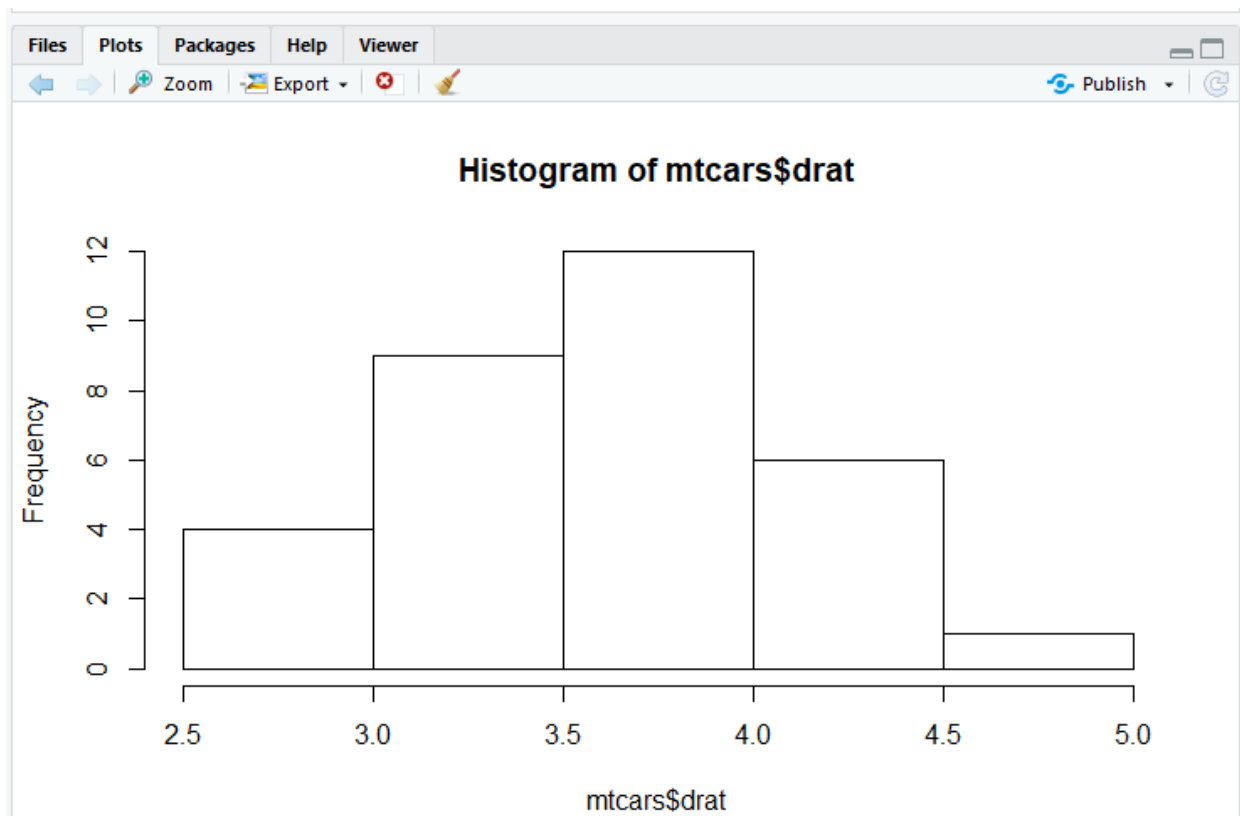
Histogram for 4th variable

```
hist(mtcars$hp)
```



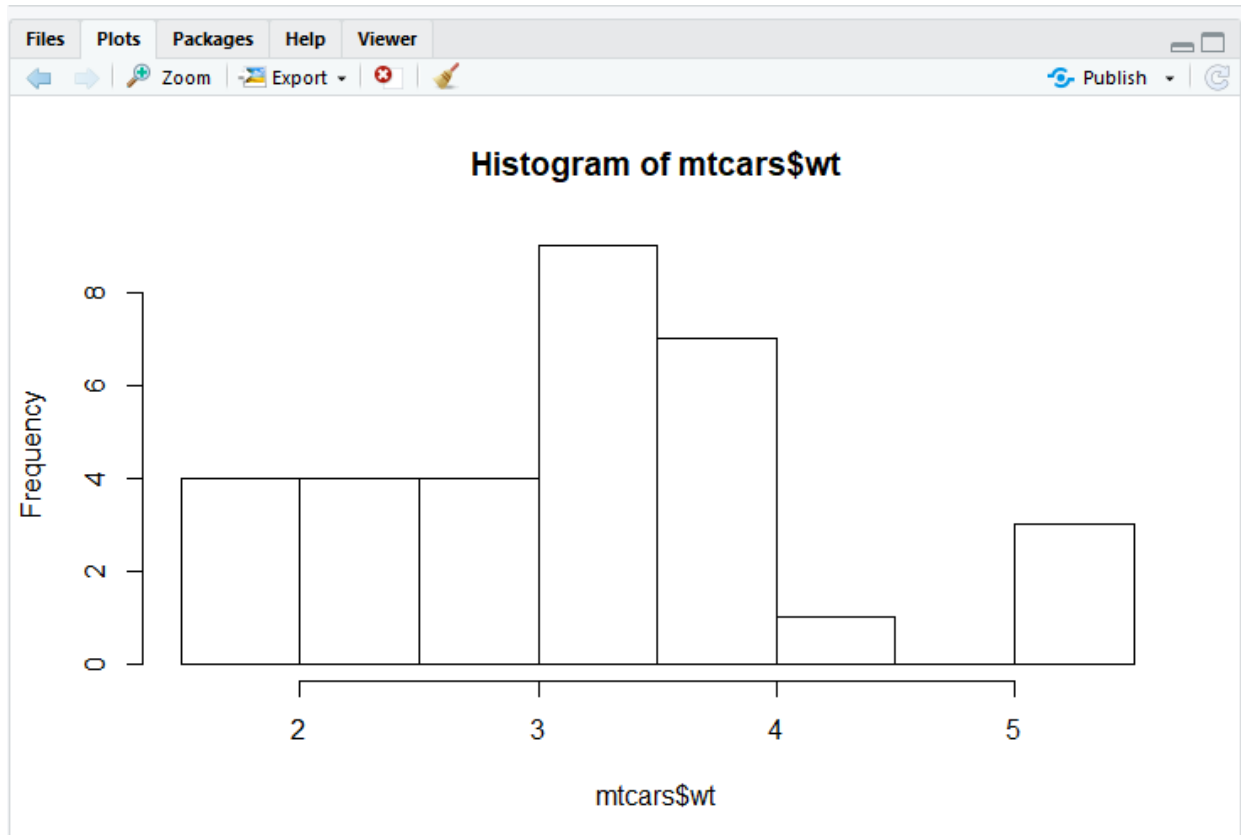
Histogram for 5th variable

```
hist(mtcars$drat)
```



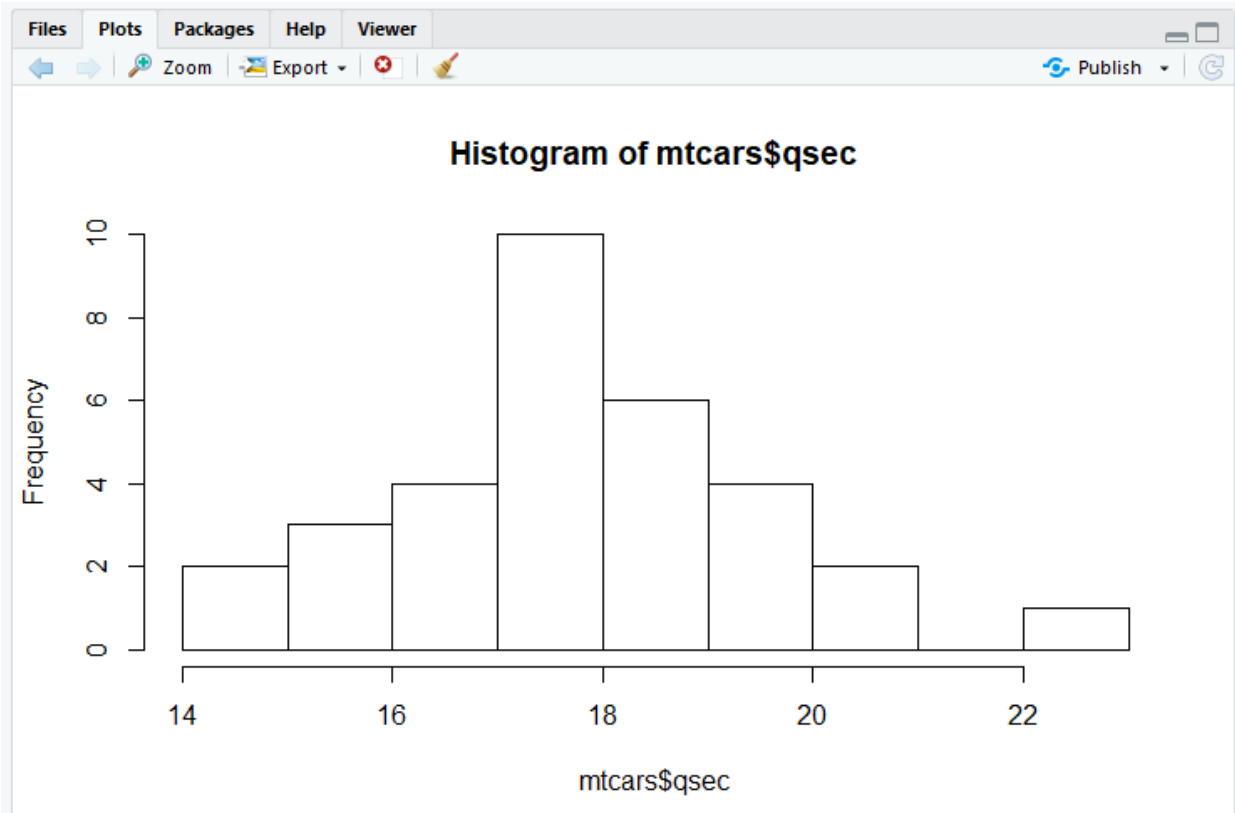
Histogram for 6th variable

```
hist(mtcars$wt)
```



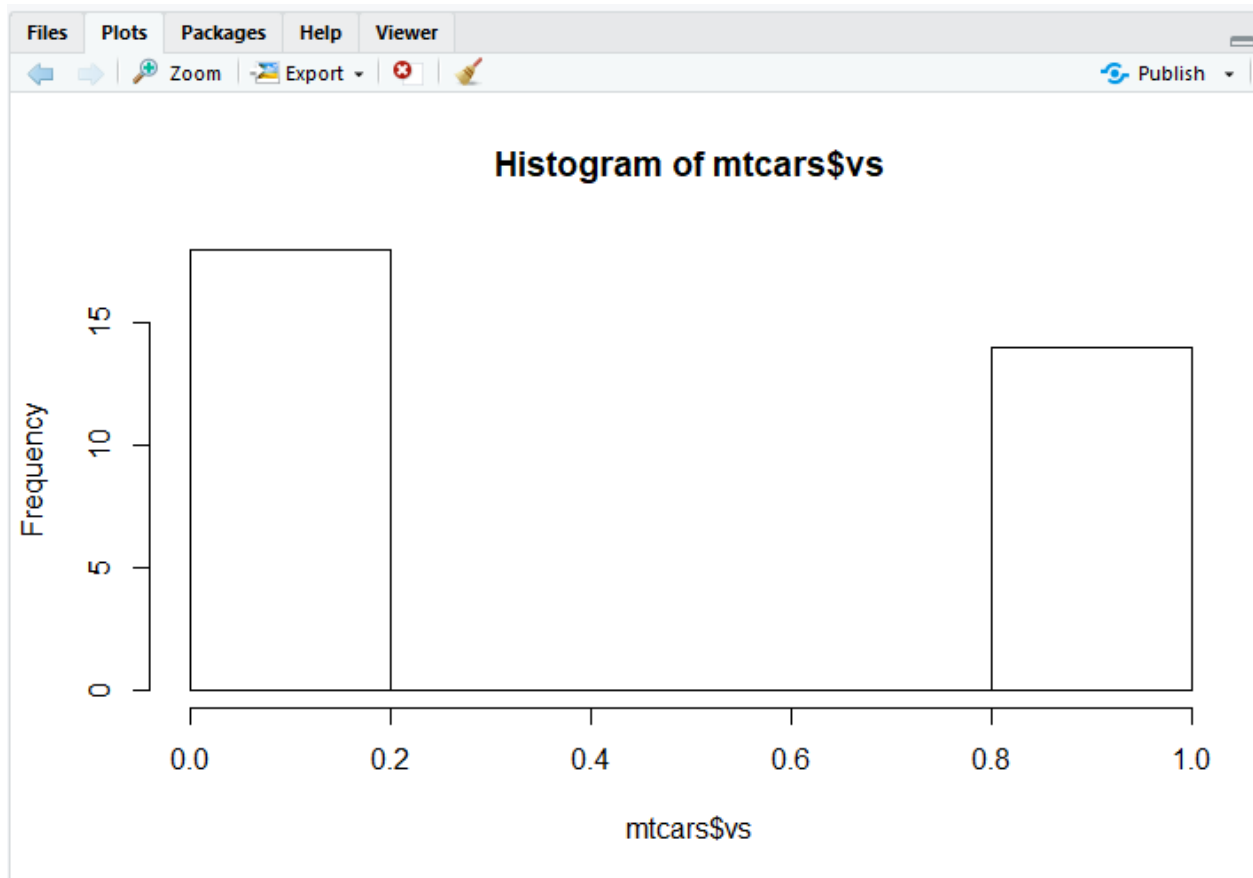
Histogram for 7th variable

```
hist(mtcars$qsec)
```



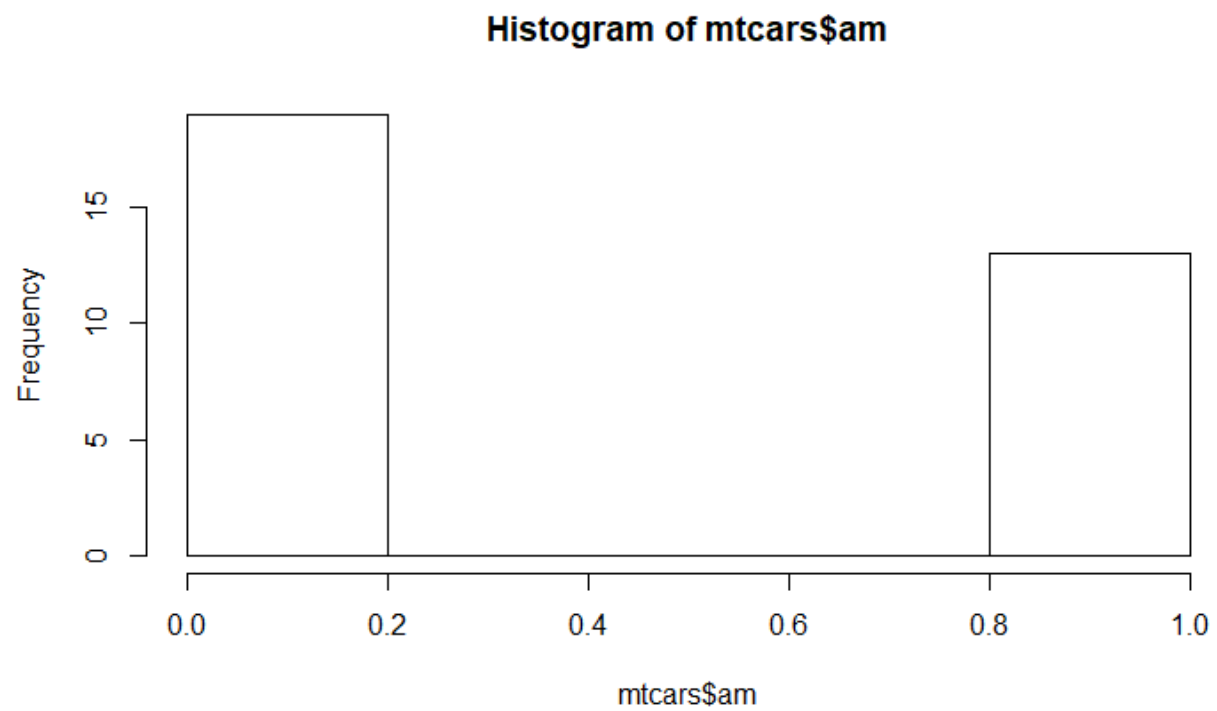
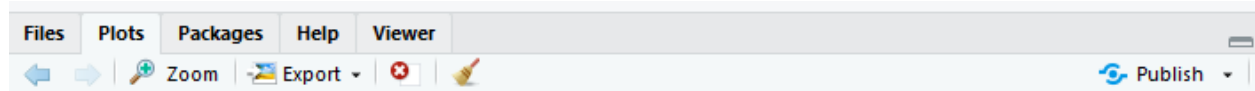
Histogram for 8th variable

```
hist(mtcars$qsec)
```

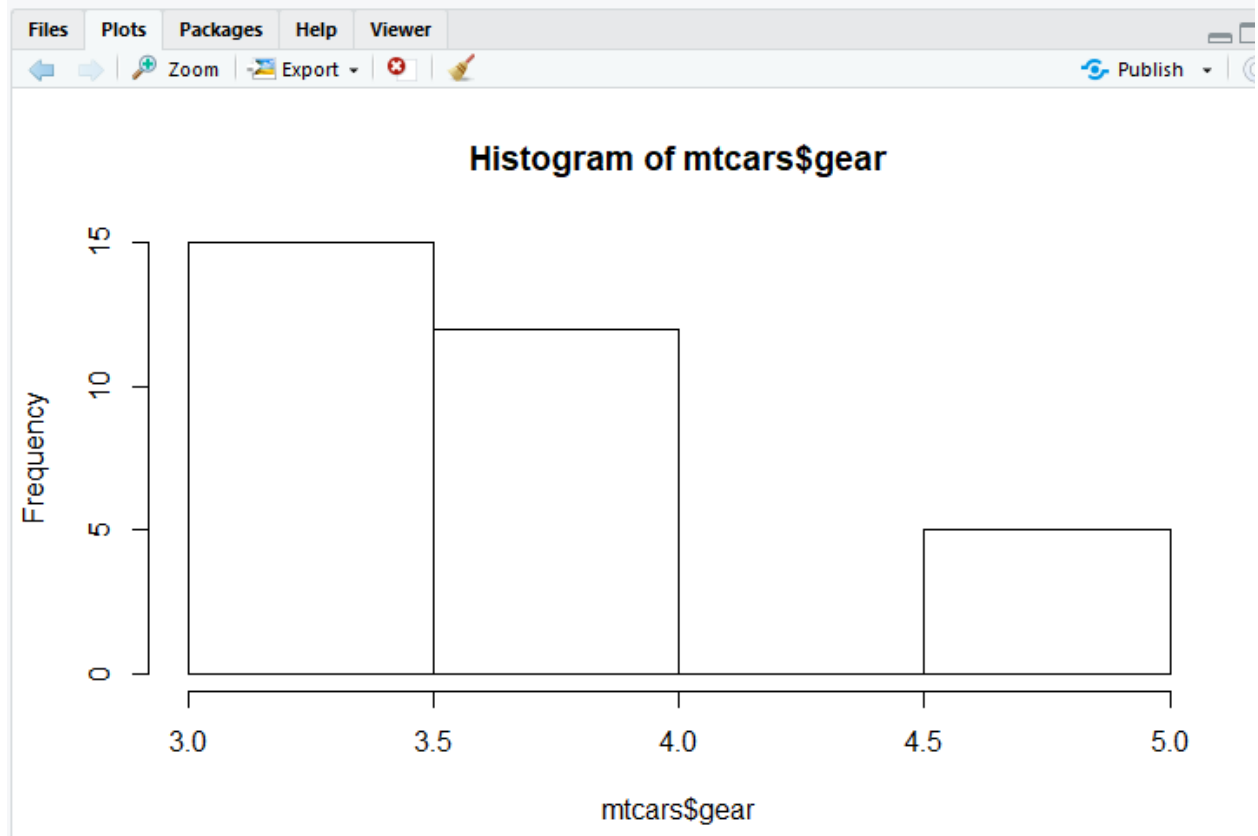
Histogram for 9th variable

```
hist(mtcars$am)
```



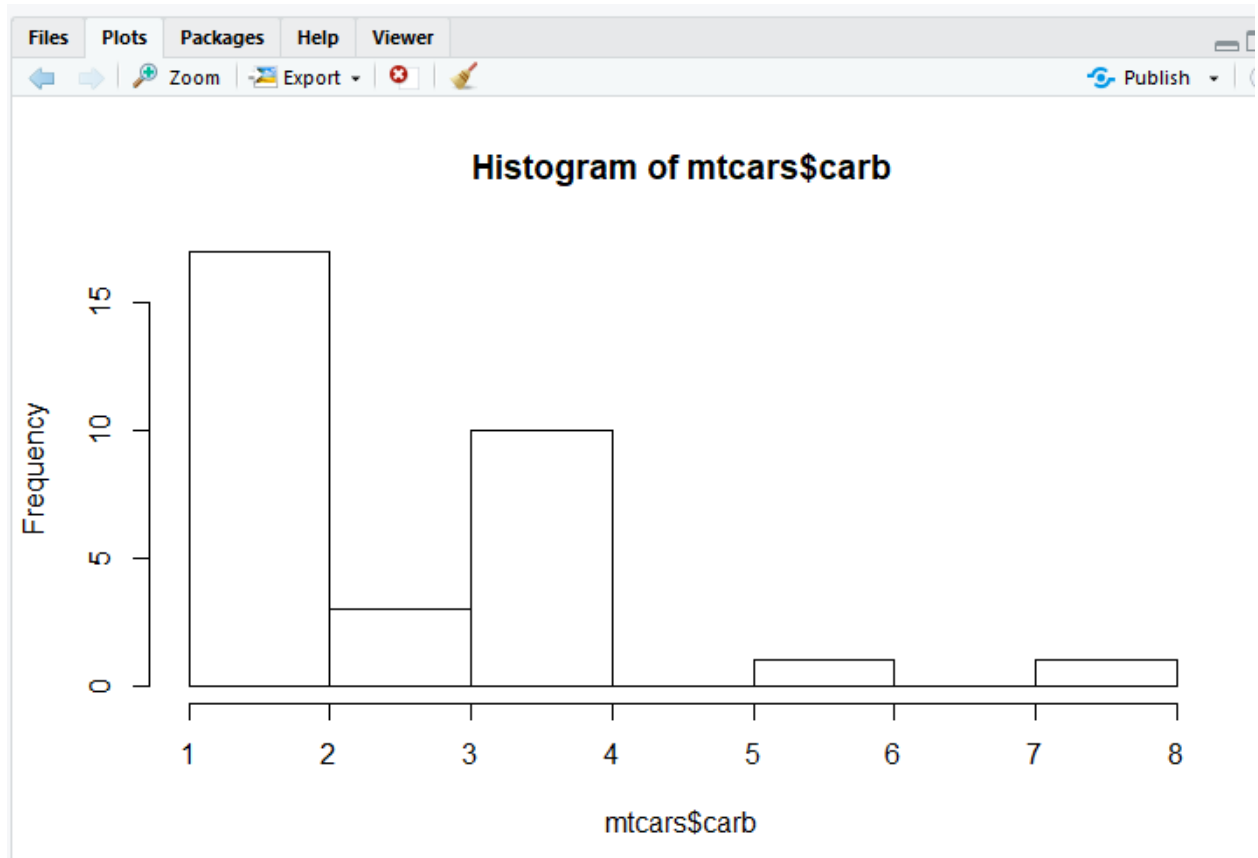
Histogram for 10th variable

```
hist(mtcars$gear)
```



Histogram for 11th variable

```
hist(mtcars$carb)
```



2. Check the probability distribution of all variables in **mtcars**.

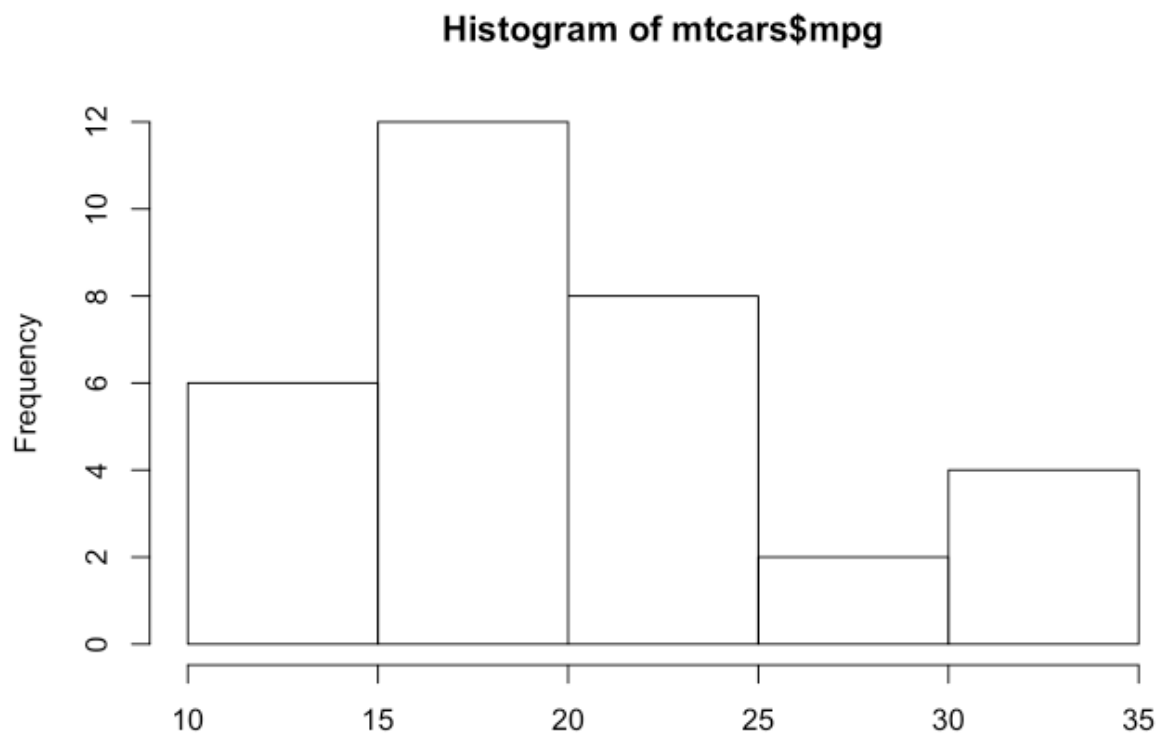
Probability distribution of 1 variabls

Answer is

Histogram

Probability distribution of 1 variable

```
hist(mtcars$mpg)
```

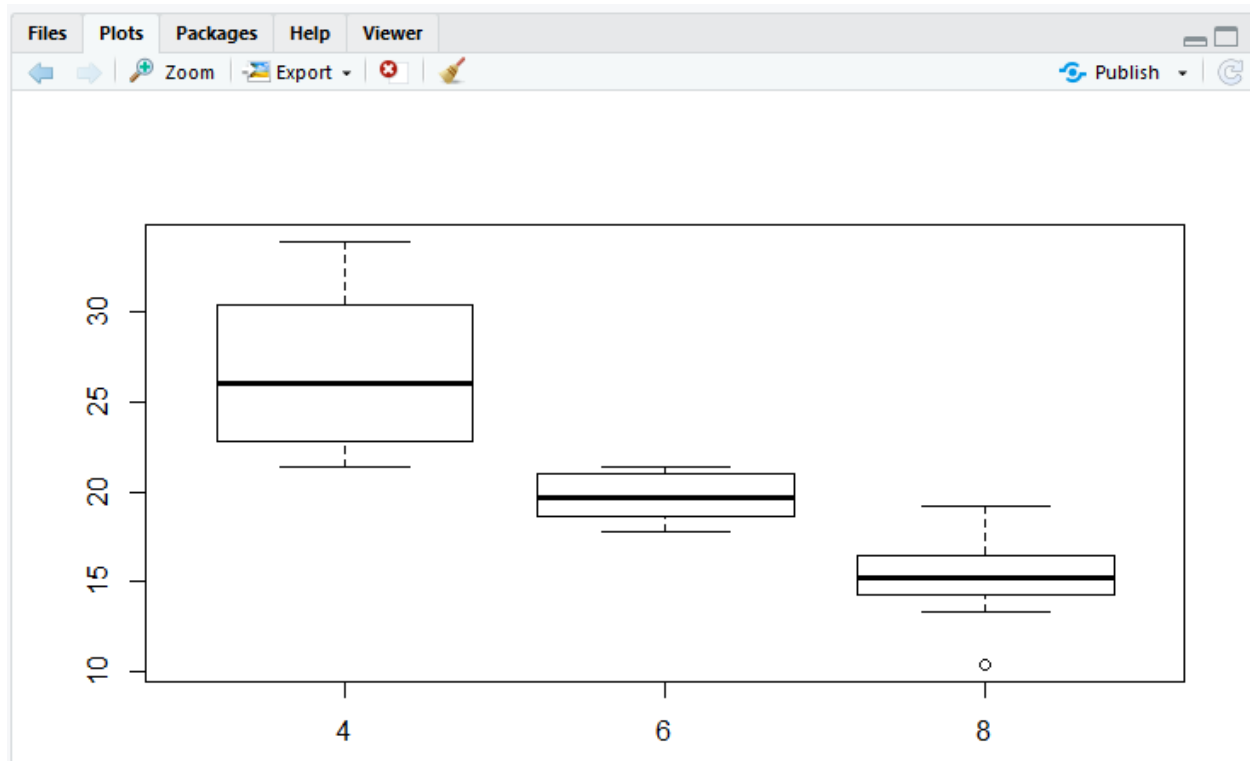


3. Write a program to create boxplot for all variables.

Answer

Box plot

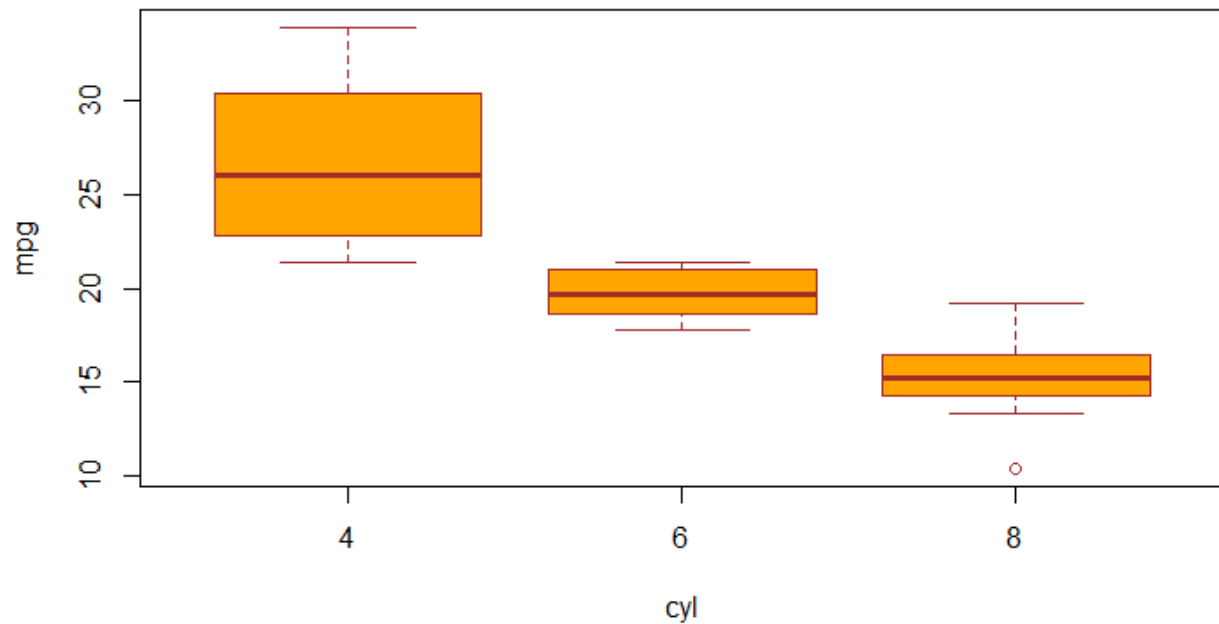
```
boxplot(mpg ~ cyl, mtcars)
```



Different boxplots for each type of cyl with mpg

```
boxplot(mpg~cyl,  
        data=mtcars,  
        main="Different boxplots for each cyl",  
        xlab="cyl",  
        ylab="mpg",  
        col="orange",  
        border="brown")
```

Different boxplots for each cyl



Different boxplots for each type of cyl with hp

```
boxplot(hp~cyl,  
        data=mtcars,  
        main="Different boxplots for each cyl",  
        xlab="cyl",  
        ylab="hp",  
        col="orange",  
        border="brown")
```

Different boxplots for each cyl

