Histograms in R language

- A histogram contains a rectangular area to display the statistical information which is proportional to the frequency of a variable and its width in successive numerical intervals. A graphical representation that manages a group of data points into different specified ranges. It has a special feature that shows no gaps between the bars and is similar to a vertical bar graph.

R – Histograms

We can create **histograms in R Programming Language using the hist() function.**
Syntax: *hist(v, main, xlab, xlim, ylim, breaks, col, border)*
Parameters:

- ***v:*** *This parameter contains numerical values used in histogram.*
- ***main:*** *This parameter main is the title of the chart.*
- ***col:*** *This parameter is used to set color of the bars.*
- ***xlab:*** *This parameter is the label for horizontal axis.*
- ***border:*** *This parameter is used to set border color of each bar.*
- ***xlim:*** *This parameter is used for plotting values of x-axis.*
- ***ylim:*** *This parameter is used for plotting values of y-axis.*
- ***breaks:*** *This parameter is used as width of each bar.*

Creating a simple Histogram in R

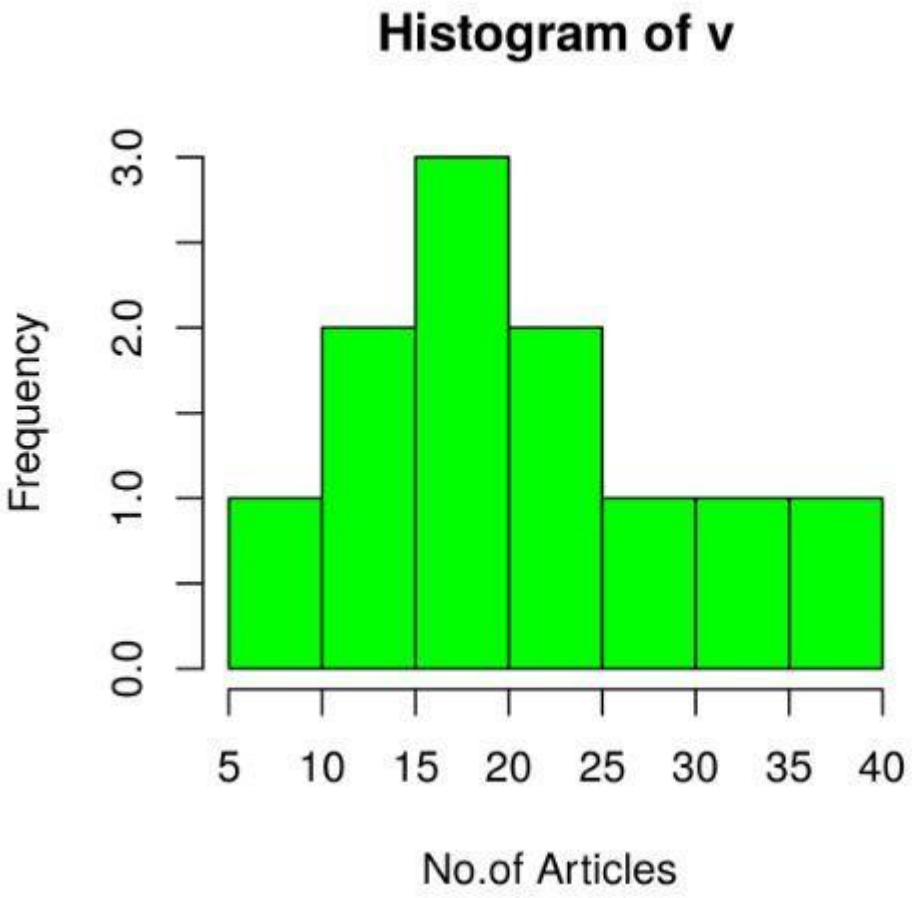
Creating a simple histogram chart by using the above parameter. This vector **v** is plot using **hist()**.
Example:

- R

```
# Create data for the graph.

v <- c(19, 23, 11, 5, 16, 21, 32,

       14, 19, 27, 39)



# Create the histogram.
```

```
hist(v, xlab = "No.of Articles ",

     col = "green", border = "black")
```

Output:



Histograms in R language

Range of X and Y values

To describe the range of values we need to do the following steps:

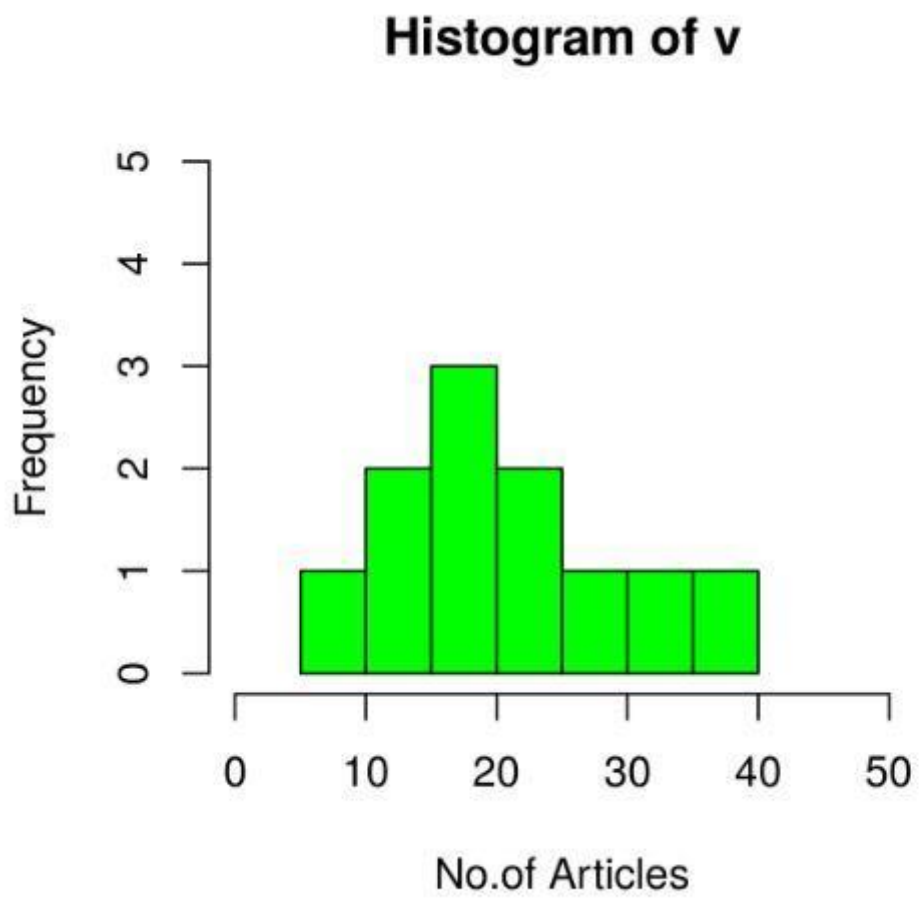
1. We can use the xlim and ylim parameters in X-axis and Y-axis.
2. Take all parameters which are required to make a histogram chart.

Example

- R

```
# Create data for the graph.

v <- c(19, 23, 11, 5, 16, 21, 32, 14, 19, 27, 39)




# Create the histogram.

hist(v, xlab = "No.of Articles", col = "green",

    border = "black", xlim = c(0, 50),

    ylim = c(0, 5), breaks = 5)
```

Output:



Histograms in R language

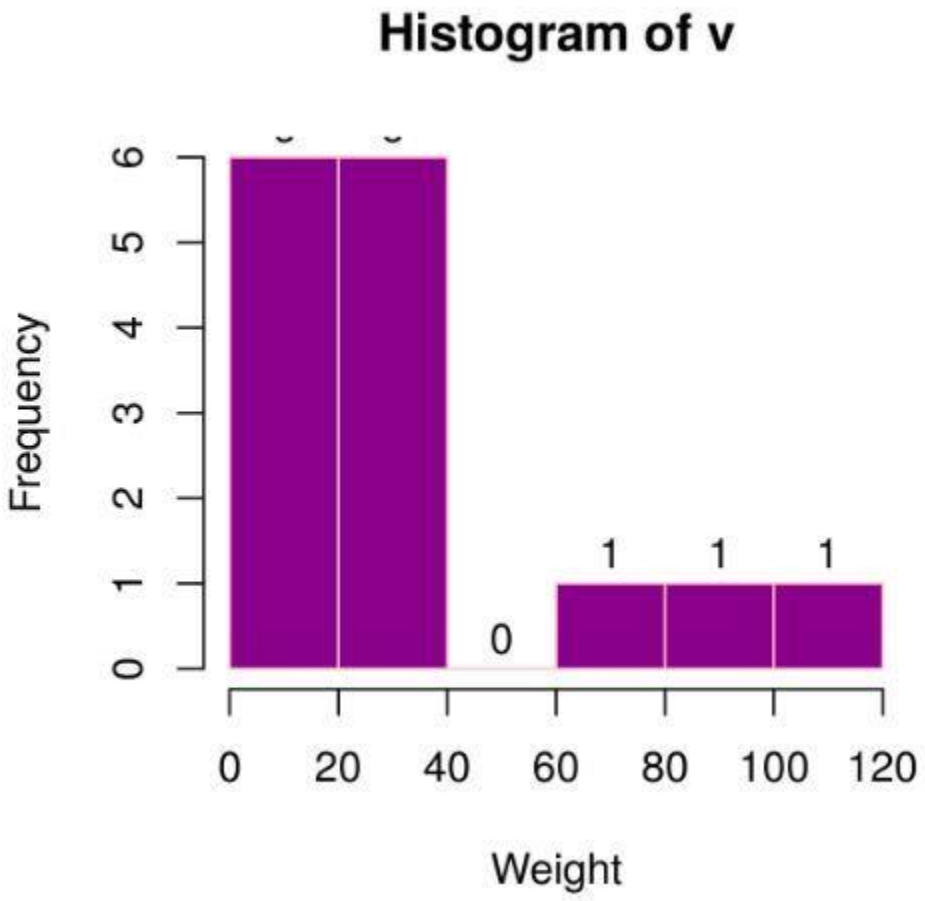
Using histogram return values for labels using text()

To create a histogram return value chart.

- R

```
# Creating data for the graph.

v <- c(19, 23, 11, 5, 16, 21, 32, 14, 19,

       27, 39, 120, 40, 70, 90)



# Creating the histogram.

m<-hist(v, xlab = "Weight", ylab ="Frequency",

        col = "darkmagenta", border = "pink",

        breaks = 5)



# Setting labels

text(m$mids, m$counts, labels = m$counts,

     adj = c(0.5, -0.5))
```

Output:



Histograms in R language

Histogram using non-uniform width

Creating different width histogram charts, by using the above parameters, we created a histogram using non-uniform width.

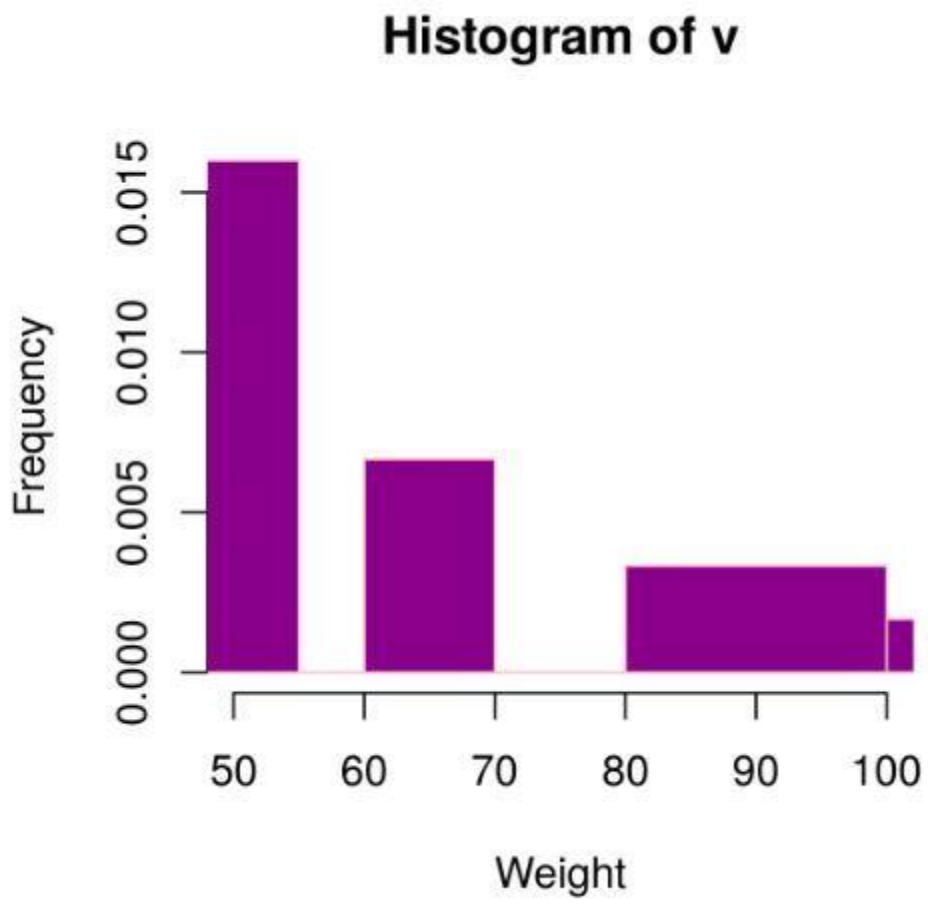
Example

- R

```
# Creating data for the graph.

v <- c(19, 23, 11, 5, 16, 21, 32, 14,

       19, 27, 39, 120, 40, 70, 90)
```

```
# Creating the histogram.

hist(v, xlab = "Weight", ylab ="Frequency",

     xlim = c(50, 100),

    col = "darkmagenta", border = "pink",

    breaks = c(5, 55, 60, 70, 75,

                80, 100, 140))
```

Output:



Histograms in R language