1. **Histogram**
   Histogram is same as bar chart but only difference between them is histogram represents frequency of grouped data rather than data itself.
   Syntax: hist(x, col, border, main, xlab, ylab)
   where:

- *x is data vector*
- *col specifies the color of the bars to be filled*
- *border specifies the color of border of bars*
- *main specifies the title name of histogram*
- *xlab specifies the x-axis label*
- *ylab specifies the y-axis label*

Exercise: The following table shows the projected population (in millions) of a countryfor the year 2005. The projections are broken down by age groups where grouping follow natural areas of interest such as preschool (below 5 years), education group (divided into 3 intervals, 5-13, 14-17 and 18-24), adult group (covering 25-64 years with 4 intervals of equal widths) and finally senior citizens' group (65 and above). Construct a histogram for the data.

Table: Projected population

Age Group	Projected Population
Below 5	**18**
5-14	**35**
14-18	**16**
18-25	**25**
25-35	**34**
35-45	**41**
45-55	**36**
55-65	**22**
65 and above	**32**

```
#We assume arbitrarily large upper bound, say 100, for the last class, which is open end class.

midx<- seq(12.5, 112.5, 25);

frequency<- c(5, 8, 13, 11, 3);

y <-rep(midx, frequency)

brk<- seq(0, 125, 25)

# output to be present as PNG file

png(file = "hist.png")

hist(y, breaks = brk, xlab = "Sales", main = "", col = "gray70"); midx<-c(2.5, 9.5, 16, 25, 30, 40, 50, 60, 82.5);
```

```
frequency<-c(18, 35, 16, 25, 34, 41, 36, 22, 32);

brk<-c(0.5, 14, 18, 25, 35, 45, 55, 65, 100);

y <-rep(midx, frequency);

hist(y, breaks=brk, xlab="Age Group", ylab="Agewise Projected
     Population", col="gray70");

# saving the file

dev.off()
```

Output: