PDS Assignment

Question 2

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Data visualization:

The graphic depiction of data and information is the focus of the interdisciplinary topic of data and information visualization. It is an especially effective method of communication.

Some of the Graphic representations are:

- Histogram
- Pie chart
- Box plot
- Bar Graph
- Scatter Plot

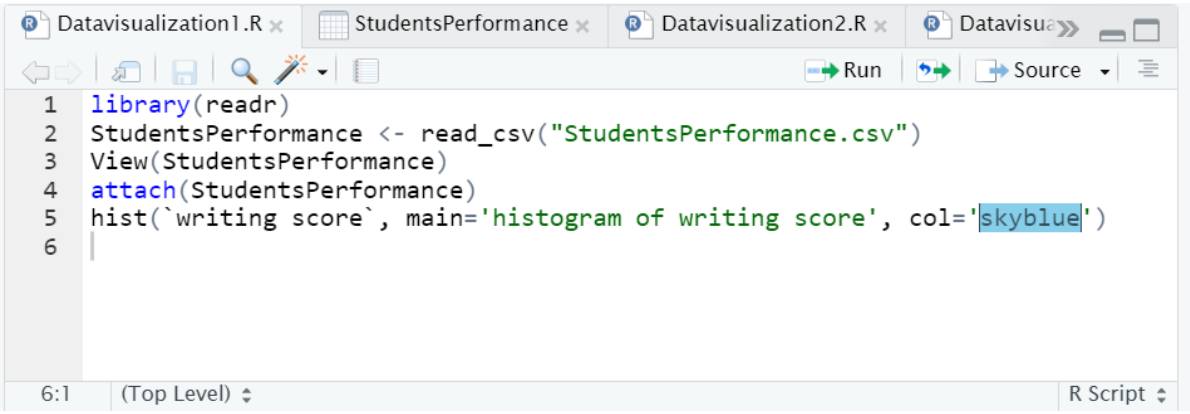
Now for the given “Student performance” dataset we have performed data visualization and plotted the following graphs.

Plot 1: Histogram

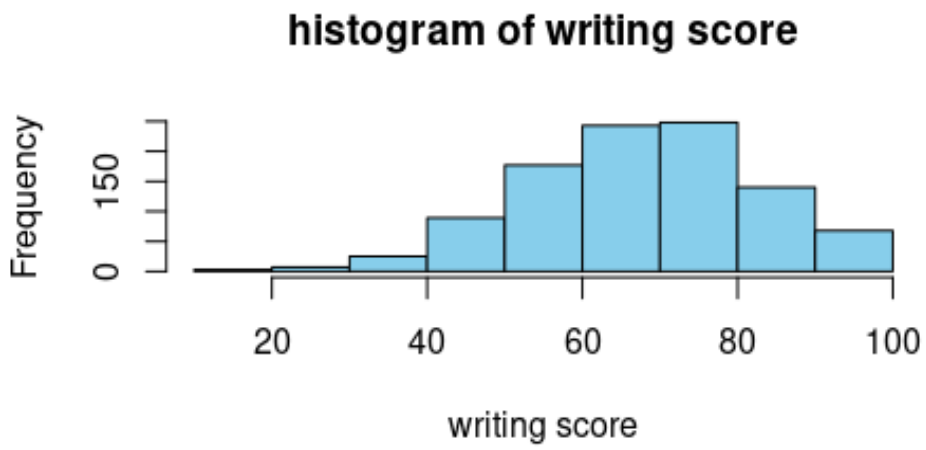
A histogram is one of the most common graphs used to depict frequency distribution. The frequency distribution, as we know, determines how frequently each individual value occurs in the data set.

Here in this plot we have taken the “writing score” column data from the dataset for plotting the histogram:

Code:



Output:

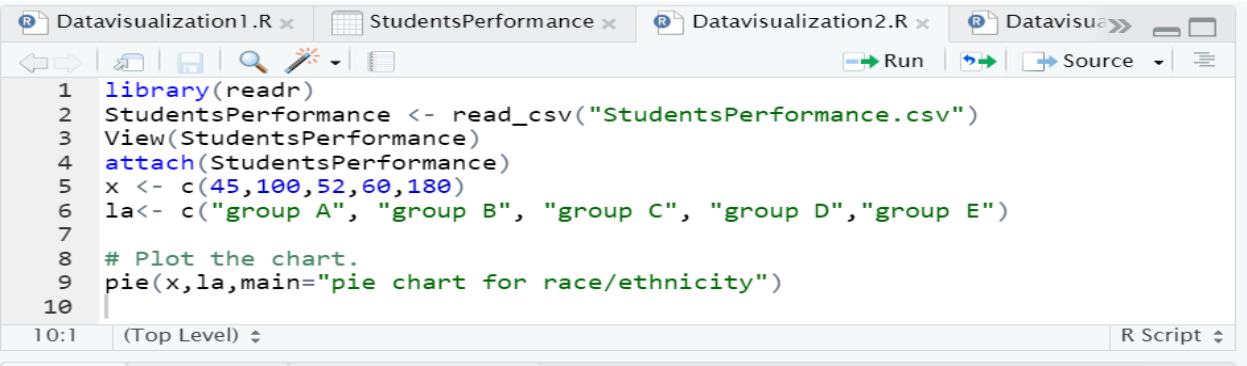


Plot 2: Pie Chart

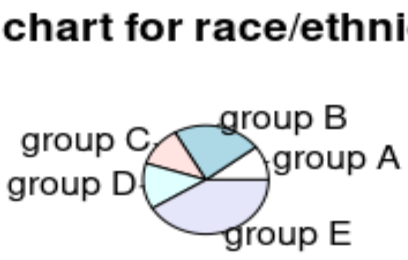
A circular statistical visual with slices illustrating numerical proportion is called a pie chart. Each slice's arc length in a pie chart corresponds to the quantity it represents.

Here in this pie chart we have used the column “Race/ethnicity” for plotting the graph.

Code:



Output:

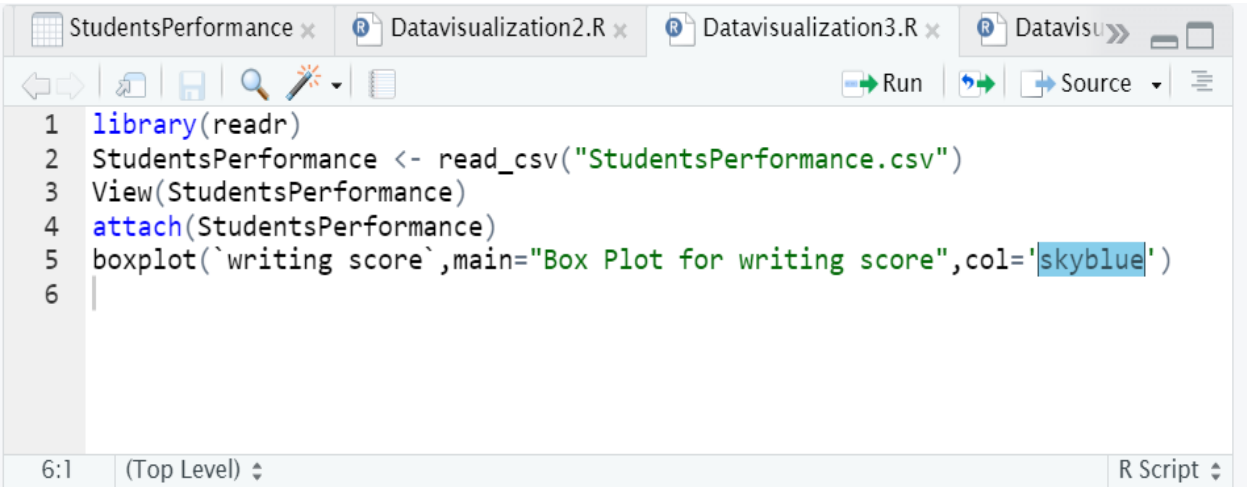


Plot 3: Box Plot

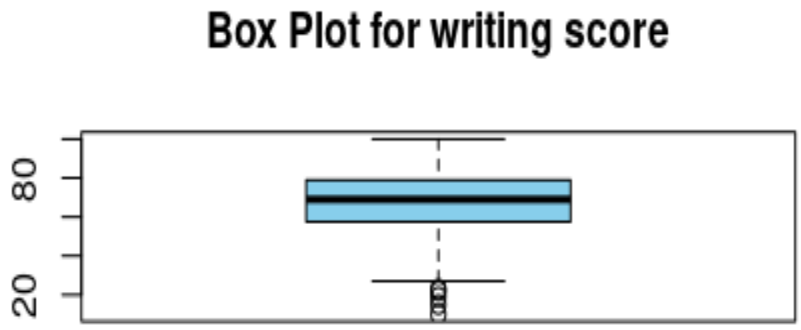
A box plot or boxplot is a way for graphically displaying the localization, spread, and skewness groups of numerical data through their quartiles in descriptive statistics. The box plot can be defined simply in terms of ideas relating to descriptive statistics. It indicates that a box or whiskers plot is a technique for graphically representing groups of numerical data through their quartiles.

Here in this case we have chosen column “writing score” from the dataset to plot the box plot.

Code:



Output:



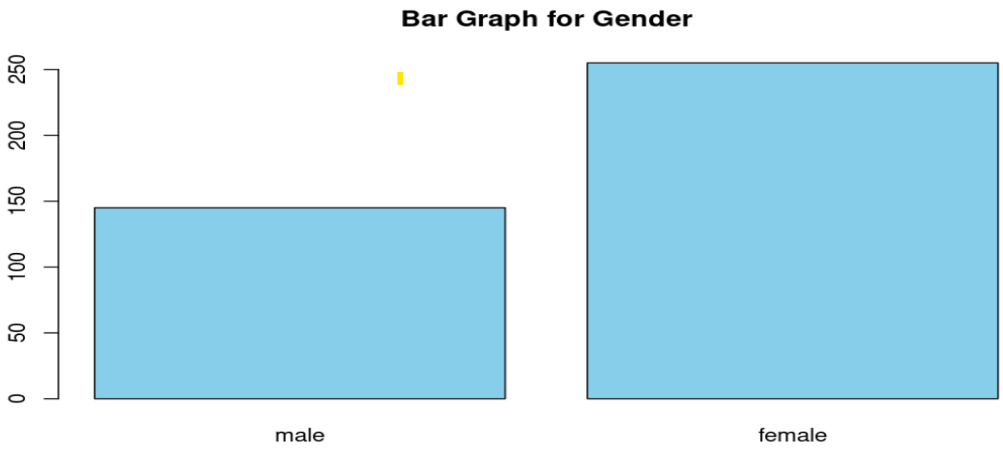
Plot 4: Bar Graph

Using rectangular bars with heights or lengths proportional to the values they represent, a bar chart or bar graph displays categorical data. Both a vertical and a horizontal bar plot are possible.

Here in this case we have chosen the column “Gender” to plot the Bargraph.

Code:

Output:

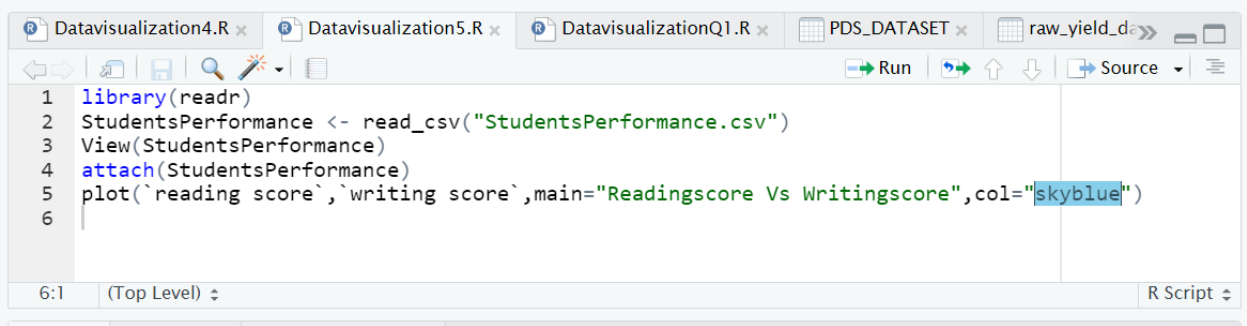


Plot 5: Scatter Plot

A scatter plot is a particular kind of plot or mathematical diagram that displays values for typically two variables for a collection of data. It uses Cartesian coordinates.

Here in this case we have plotted the scatter graph between the “Reading score” and “writing score” columns data.

Code:



Output: