M2.3: Data Visualization

Scatterplots

Scatterplots show many points plotted in the Cartesian plane. Each point represents the values of two variables. One variable is chosen in the horizontal axis and another in the vertical axis.

The simple scatterplot is created using the **plot()** function.

Syntax

The basic syntax for creating scatterplot in R is −

```
plot(x, y, main, xlab, ylab, xlim, ylim, axes)
```

Following is the description of the parameters used −

x is the data set whose values are the horizontal coordinates.

y is the data set whose values are the vertical coordinates.

main is the tile of the graph.

xlab is the label in the horizontal axis.

ylab is the label in the vertical axis.

xlim is the limits of the values of x used for plotting.

ylim is the limits of the values of y used for plotting.

axes indicates whether both axes should be drawn on the plot.

We use the data set **"mtcars"** available in the R environment to create a basic scatterplot. Let's use the columns "wt" and "mpg" in mtcars.

```
input <- mtcars[,c('wt','mpg')]
print(head(input))
```

When we execute the above code, it produces the following result −

```
                  wt      mpg
Mazda RX4         2.620   21.0
Mazda RX4 Wag     2.875   21.0
```

```
Datsun 710          2.320   22.8
Hornet 4 Drive      3.215   21.4
Hornet Sportabout   3.440   18.7
Valiant             3.460   18.1
```

Creating the Scatterplot

The below script will create a scatterplot graph for the relation between wt(weight) and mpg(miles per gallon).

```
# Get the input values.
input <- mtcars[,c('wt','mpg')]

# Give the chart file a name.
png(file = "scatterplot.png")

# Plot the chart for cars with weight between 2.5 to 5 and mileage bet
ween 15 and 30.
plot(x = input$wt,y = input$mpg,
   xlab = "Weight",
   ylab = "Milage",
   xlim = c(2.5,5),
   ylim = c(15,30),
   main = "Weight vs Milage"
)

# Save the file.
dev.off()
```

Unique solution ID: #1084
Author: UserAdmin
Last update: 2020-01-01 12:46