**Line Charts**

A line chart is a graph that connects a series of points by drawing line segments between them. These points are ordered in one of their coordinate (usually the x-coordinate) value. Line charts are usually used in identifying the trends in data.

The plot() function in R is used to create the line graph.

Syntax

The basic syntax to create a line chart in R is −

plot(v,type,col,xlab,ylab)

Following is the description of the parameters used −

v is a vector containing the numeric values.

type takes the value "p" to draw only the points, "l" to draw only the lines and "o" to draw both points and lines.

xlab is the label for x axis.

ylab is the label for y axis.

main is the Title of the chart.

col is used to give colors to both the points and lines.

Example

A simple line chart is created using the input vector and the type parameter as "O". The below script will create and save a line chart in the current R working directory.

# Create the data for the chart.

v <- c(7,12,28,3,41)

# Give the chart file a name.

png(file = "line\_chart.jpg")

# Plot the bar chart.

plot(v,type = "o")

# Save the file.

dev.off()



Line Chart Title, Color and Labels

The features of the line chart can be expanded by using additional parameters. We add color to the points and lines, give a title to the chart and add labels to the axes.

Example

# Create the data for the chart.

v <- c(7,12,28,3,41)

# Give the chart file a name.

png(file = "line\_chart\_label\_colored.jpg")

# Plot the bar chart.

plot(v,type = "o", col = "red", xlab = "Month", ylab = "Rain fall",

main = "Rain fall chart")

# Save the file.

dev.off()



Multiple Lines in a Line Chart

More than one line can be drawn on the same chart by using the lines()function.

After the first line is plotted, the lines() function can use an additional vector as input to draw the second line in the chart,

# Create the data for the chart.

v <- c(7,12,28,3,41)

t <- c(14,7,6,19,3)

# Give the chart file a name.

png(file = "line\_chart\_2\_lines.jpg")

# Plot the bar chart.

plot(v,type = "o",col = "red", xlab = "Month", ylab = "Rain fall",

main = "Rain fall chart")

lines(t, type = "o", col = "blue")

# Save the file.

dev.off()

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

Line Chart with multiple lines in R



**R - 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)

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 between 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()

