

```
> a=2

> b<-3

> print(a)
[1] 2

> paste0("b nin degeri:",b,"dir")
[1] "b nin degeri:3dir"

> ls()

> rm(b)

> #bu bir yorum satırıdır
```

Vektörler (diziler)

```
> #karakter tipinde vektör tanımlama
> ogr <- c("Ali","Ayşe","Elif")

> #factor tipinde vektör tanımlama
> cns <- factor(c("Erkek","Kadın","Kadın"))
factor, alfabetik sıraya göre eşleştirme yapmaktadır. Bu durumda Erkek =1, Kadın = 2

> vize <- c(60,70,80)
> final <- c(50,60,80)

> uzunluk = length(final) #boyutu
> ogr[3] #3.eleman
> ogr[-3] #3.eleman dışındakiler
> ogr[2:3] # belirli aralıktakiler
> ogr[-(2:3)] #belirli aralık dışındakiler
> final[final>55]
> (d1=seq(-10,10,by=2))
> (d2=seq(length=30,from=0,by=0.6))
> getwd(), setwd(....)
```

PIE CHART

```
pie(x, labels, radius, main, col, clockwise)
```

- **x** is a vector containing the numeric values used in the pie chart.
- **labels** is used to give description to the slices.
- **radius** indicates the radius of the circle of the pie chart.(value between -1 and +1).
- **main** indicates the title of the chart.
- **col** indicates the color palette.
- **clockwise** is a logical value indicating if the slices are drawn clockwise or anti clockwise.

```
# Create data for the graph.
x <- c(21, 62, 10, 53)
labels <- c("London", "New York", "Singapore", "Mumbai")

# Give the chart file a name.
png(file = "city.jpg") //GEREK YOK

# Plot the chart.
pie(x,labels)

# Save the file.
dev.off() //GEREK OLMAYABILIR
```

Pie Chart Title and Colors

```
pie(x, labels, main = "City pie chart", col = rainbow(length(x)))
```

Slice Percentages and Chart Legend

```
piepercent<- round(100*x/sum(x), 1)
pie(x, labels = piepercent, main = "City pie chart",col = rainbow(length(x)))
legend("topright", c("London","New York","Singapore","Mumbai"), cex = 0.8,
      fill = rainbow(length(x)))
```

3D Pie Chart

```
library(plotrix)

pie3D(x, labels = labels, explode = 0.1, main = "Pie Chart of Countries ")
```

BAR CHART

```
barplot(H,xlab,ylab,main, names.arg,col)
```

- **H** is a vector or matrix containing numeric values used in bar chart.
- **xlab** is the label for x axis.
- **ylab** is the label for y axis.
- **main** is the title of the bar chart.
- **names.arg** is a vector of names appearing under each bar.
- **col** is used to give colors to the bars in the graph.

```
# Create the data for the chart
H <- c(7,12,28,3,41)

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

# Plot the bar chart
barplot(H)

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

Bar Chart Labels, Title and Colors

```
H <- c(7,12,28,3,41)
M <- c("Mar", "Apr", "May", "Jun", "Jul")

barplot(H,names.arg=M,xlab="Month",ylab="Revenue",col="blue",
main="Revenue chart",border="red")
```

HISTOGRAM

```
hist(v,main,xlab,xlim,ylim,breaks,col,border)
```

- **v** is a vector containing numeric values used in histogram.
- **main** indicates title of the chart.
- **col** is used to set color of the bars.
- **border** is used to set border color of each bar.
- **xlab** is used to give description of x-axis.
- **xlim** is used to specify the range of values on the x-axis.
- **ylim** is used to specify the range of values on the y-axis.
- **breaks** is used to mention the width of each bar.

```
# Create data for the graph.  
v <- c(9,13,21,8,36,22,12,41,31,33,19)  
  
# Give the chart file a name.  
png(file = "histogram.png")  
  
# Create the histogram.  
hist(v,xlab = "Weight",col = "yellow",border = "blue")  
  
# Save the file.  
dev.off()
```

Range of X and Y values

```
hist(v,xlab = "Weight",col = "green",border = "red", xlim = c(0,40), ylim =  
c(0,5),breaks = 5)
```

LINE GRAPHS

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

- **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

```
# 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

```
plot(v,type = "o", col = "red", xlab = "Month", ylab = "Rain fall",  
     main = "Rain fall chart")
```

Multiple Lines in a Line Chart

```
v <- c(7,12,28,3,41)  
t <- c(14,7,6,19,3)  
  
plot(v,type = "o",col = "red", xlab = "Month", ylab = "Rain fall", main = "Rain  
fall chart")  
  
lines(t, type = "o", col = "blue")
```

SCATTER PLOTS

```
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 title 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.

```
data("mtcars") #gerek varmı
input <- mtcars[,c('wt','mpg')]
print(head(input))
plot(x = input$wt,y = input$mpg,
     xlab = "Weight",
     ylab = "Milage",
     xlim = c(2.5,5),
     ylim = c(15,30),
     main = "Weight vs Milage"
)
```

Scatterplot Matrices

```
pairs(formula, data)
```

- **formula** represents the series of variables used in pairs.
- **data** represents the data set from which the variables will be taken.

```
# Give the chart file a name.  
png(file = "scatterplot_matrices.png") #Gerek yok  
# Plot the matrices between 4 variables giving 12 plots.  
# One variable with 3 others and total 4 variables.  
pairs(~wt+mpg+disp+cyl,data = mtcars, main = "Scatterplot Matrix")  
dev.off()#gerek yok
```

URL OKUMA

```
> veriDosyasi = "http://archive.ics.uci.edu/ml/machine-learning-databases/t  
ae/tae.data"  
  
> ogretimPerformansi <- as.data.frame(read.csv(veriDosyasi,header=FALSE,sep  
="," ,dec="."))
```

SHINY

```
> library(shiny)  
> runExample("01_hello")
```

```
>rm(list=ls(all=TRUE)) #herseyi siler
```