K-means Clustering:

```
newiris <- iris
newiris$Species <- NULL
(kc <- kmeans (newiris,3))
table(iris$Species,kc$cluster)

plot(newiris[c("Sepal.Length","Sepal.Width")],col=1:3,pch=8,cex=2)
```

Classification algorithm in R:

```
rainfall <-
c(799,1174.8,865.1,1334.6,635.4,918.5,685.5,998.6,784.2,985,882.8,1071)
rainfall.timeseries <- ts(rainfall,start = c(2012,1),frequency = 12)
print(rainfall.timeseries)
png(file = "rainfall.png")
plot(rainfall.timeseries)
dev.off()
plot(rainfall.timeseries)
```

Linear Regression:

```
x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)
y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)
relation <- lm(y~x)
print(relation)

x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)
y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)
relation <- lm(y~x)
print(summary(relation))

x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)
y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)
relation <- lm(y~x)
a <- data.frame(x = 170)
result <- predict(relation,a)
print(result)

x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)
y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)
relation <- lm(y~x)
png(file = "linearregression.png")
plot(y,x,col = "blue",main = "Height & Weight Regression",
```

```
abline(lm(x~y)),cex = 1.3,pch = 16,xlab = "Weight in Kg",ylab = "Height in cm")
dev.off()
plot(y,x,col = "blue",main = "Height & Weight Regression",
abline(lm(x~y)),cex = 1.3,pch = 16,xlab = "Weight in Kg",ylab = "Height in cm")
```

Time Series Analysis:

```
rainfall <-
c(799,1174.8,865.1,1334.6,635.4,918.5,685.5,998.6,784.2,985,882.8,1071)
rainfall.timeseries <- ts(rainfall,start = c(2012,1),frequency = 12)
print(rainfall.timeseries)
png(file = "rainfall.png")
plot(rainfall.timeseries)
dev.off()
plot(rainfall.timeseries)
```

Decision Tree using R Tool:

```
library(party)
print(head(readingSkills))
library(party)
input.dat <- readingSkills[c(1:105),]
png(file = "decision_tree.png")
output.tree <- ctree(
nativeSpeaker ~ age + shoeSize + score,data = input.dat)
plot(output.tree)
dev.off()
plot(output.tree)
```