Introduction to Machine Learning Algorithms in R.

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Branches

- Supervised Learning
- Unsupervised Learning
- Association Analysis
- Reinforcement Learning

What is it like to do a machine learning project

- Define the problem to solve
- clean, manipulate, understand, feature scale and split the data (data preprocessing or wrangling)
- Train the model
- Visualize the predictions
- Evaluate model performance
- Model Improvement

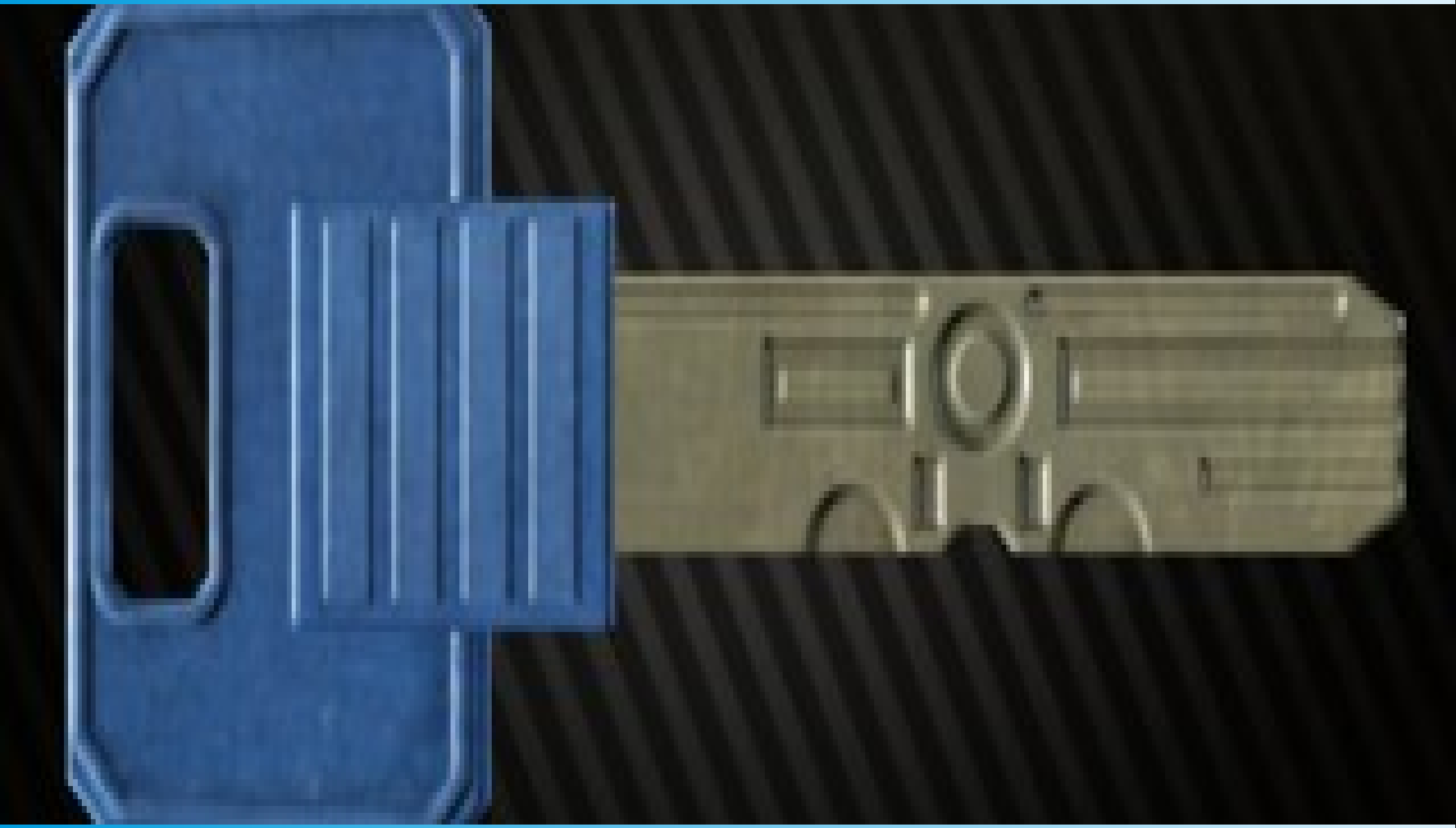


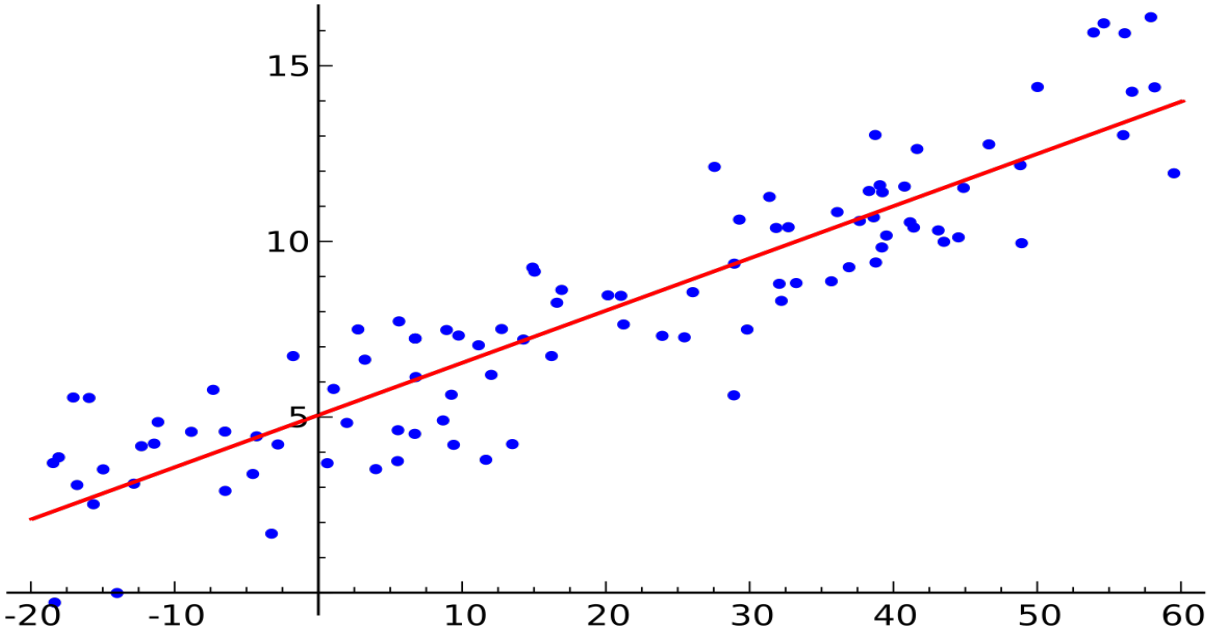
Image Source: [Escape from Tarkov Wiki - Gamepedia]

Regression

- Is a technique of studying dependence with a view of estimating an average value
- Regression is being used more and more in “analytics”
- There are two types; linear and non linear Regression

Simple Linear Regression

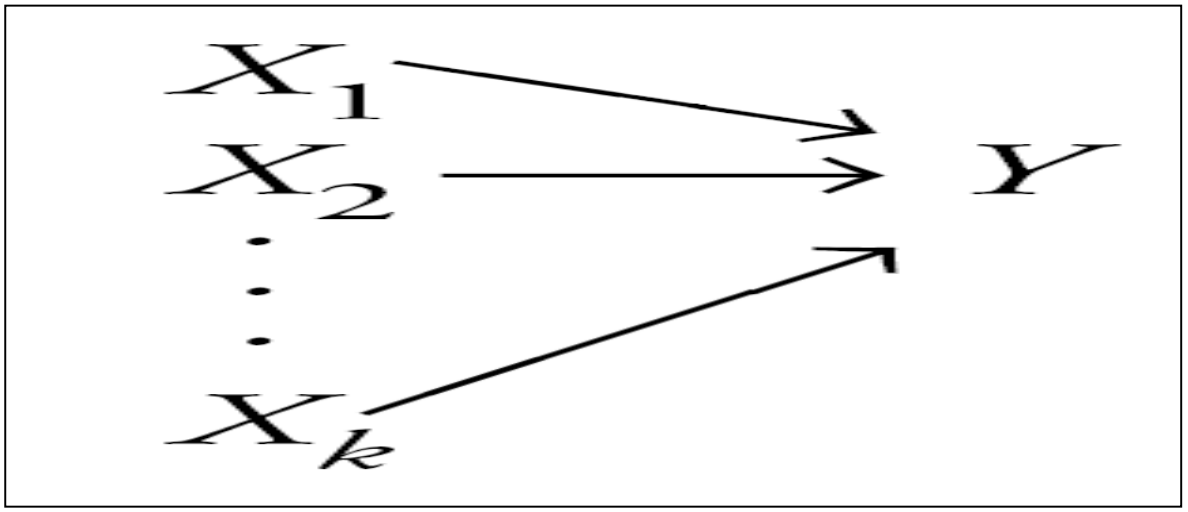
$$Y = mX + c$$



Demo Time

Multiple Linear Regression

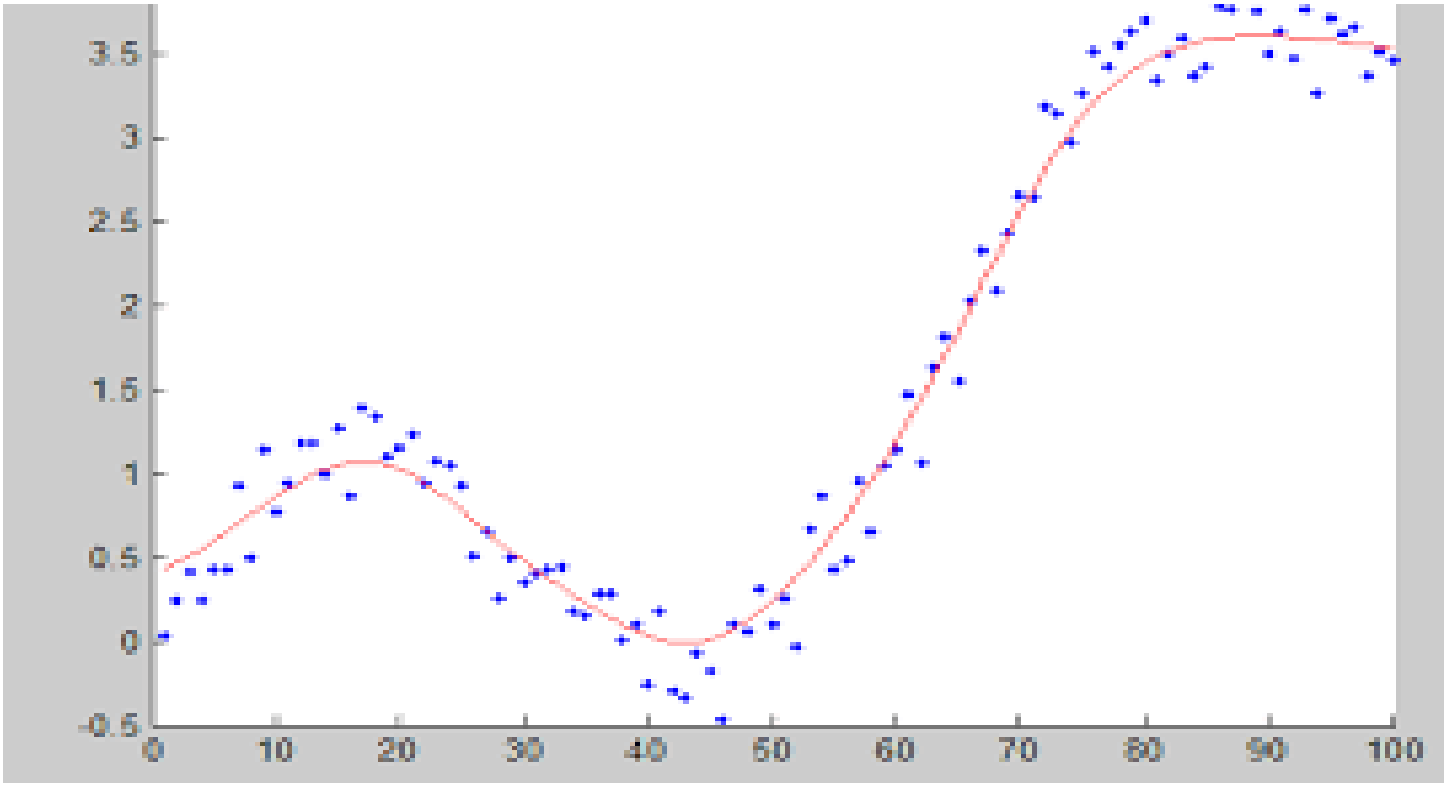
$$y = c + m_1 x_1 + m_2 x_2 + \cdots m_k x_k$$



More in the Demo

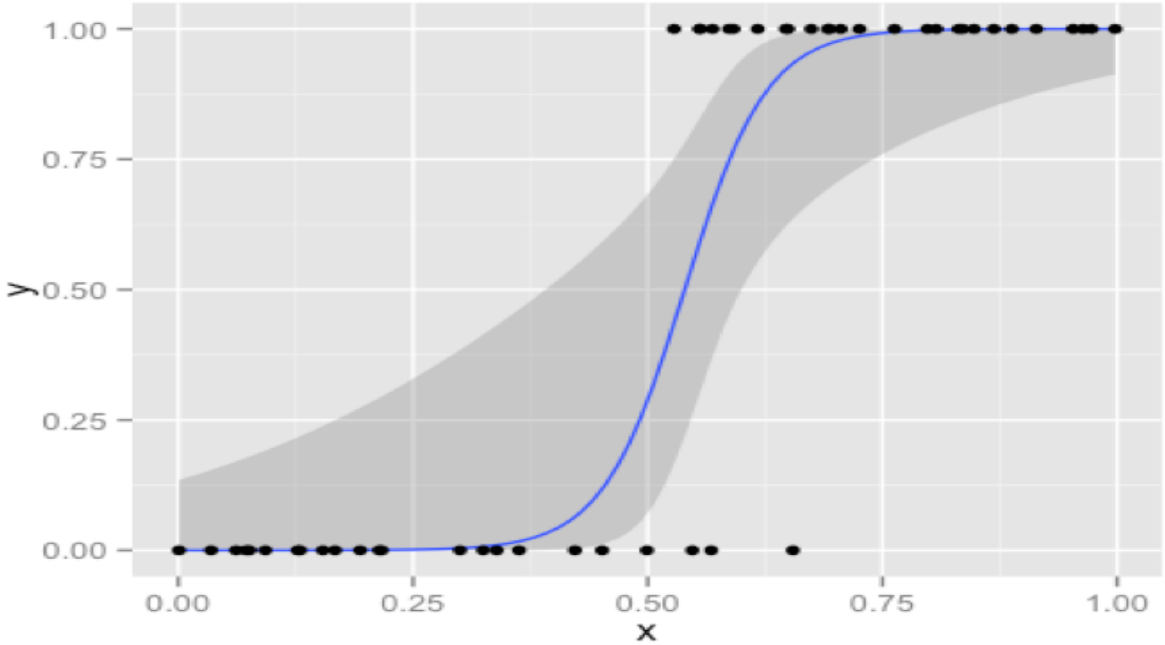
Polynomial Regression

$$Y = C + m_1X + m_2X^2 + \ldots + m_kX^k$$



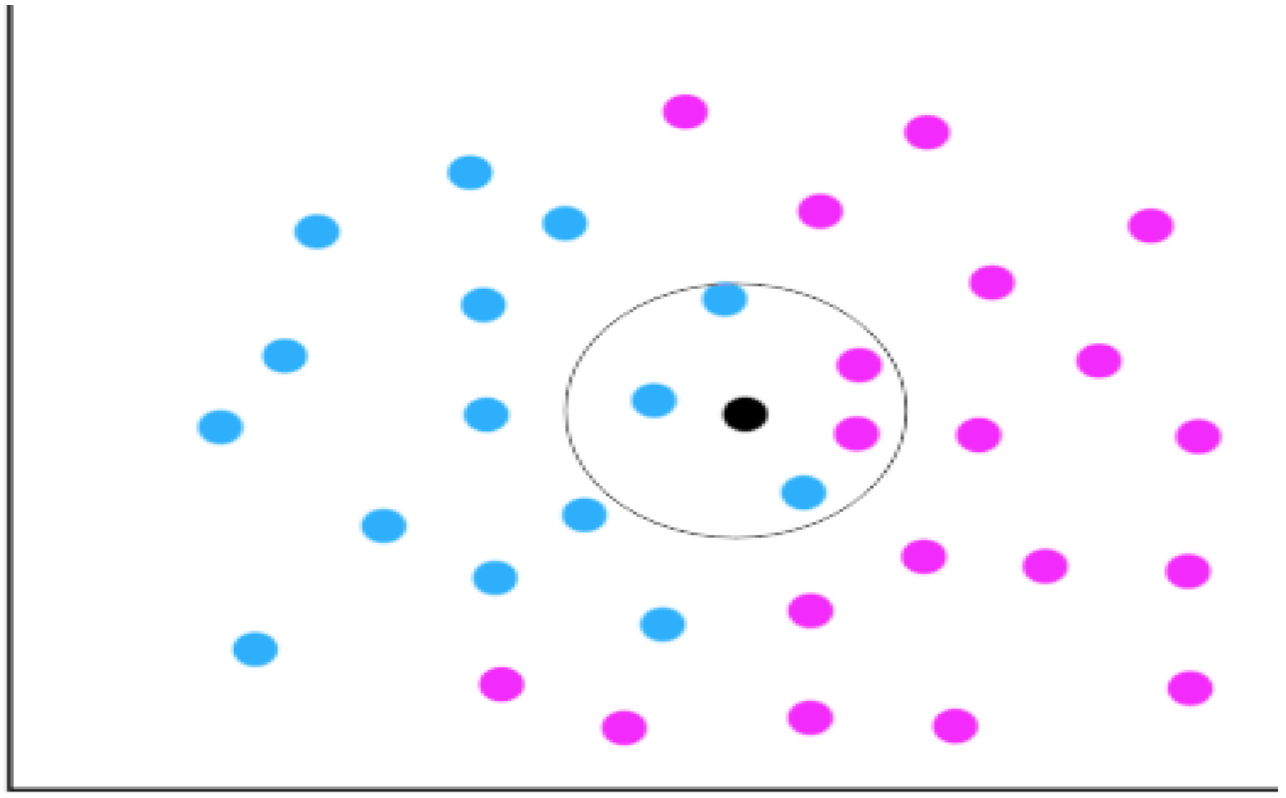
Classification
Logistic Regression

$$\ln(p/(1-p)) = C + MX$$



Demo Time

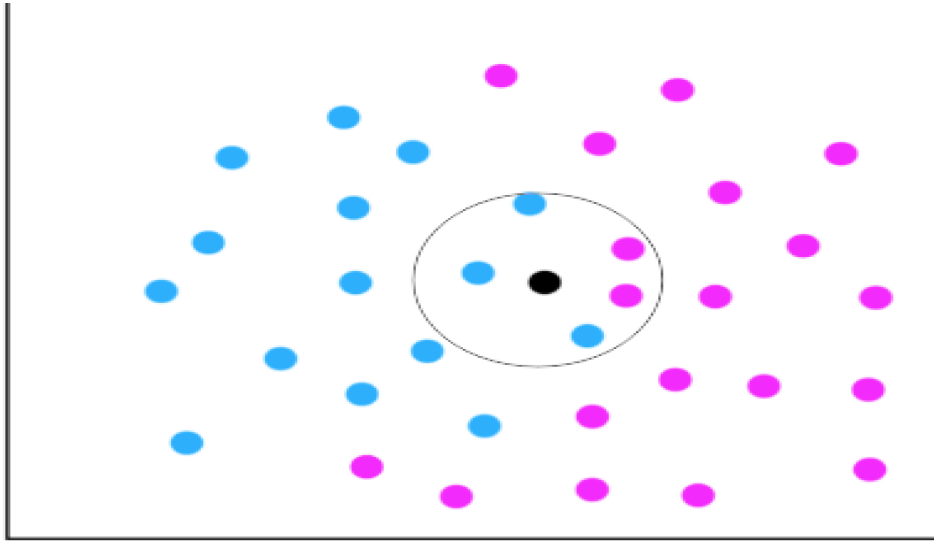
KNN



Naive Bayes

Bayes Theorem

$$P(A / B) = (P(B/ A) * P(A)) / P(B)$$



Decision Tree

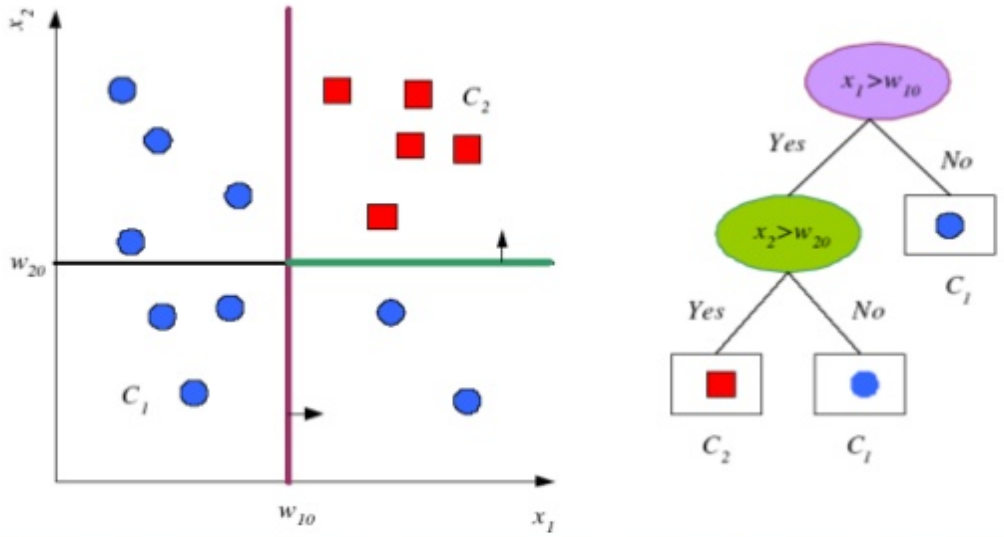
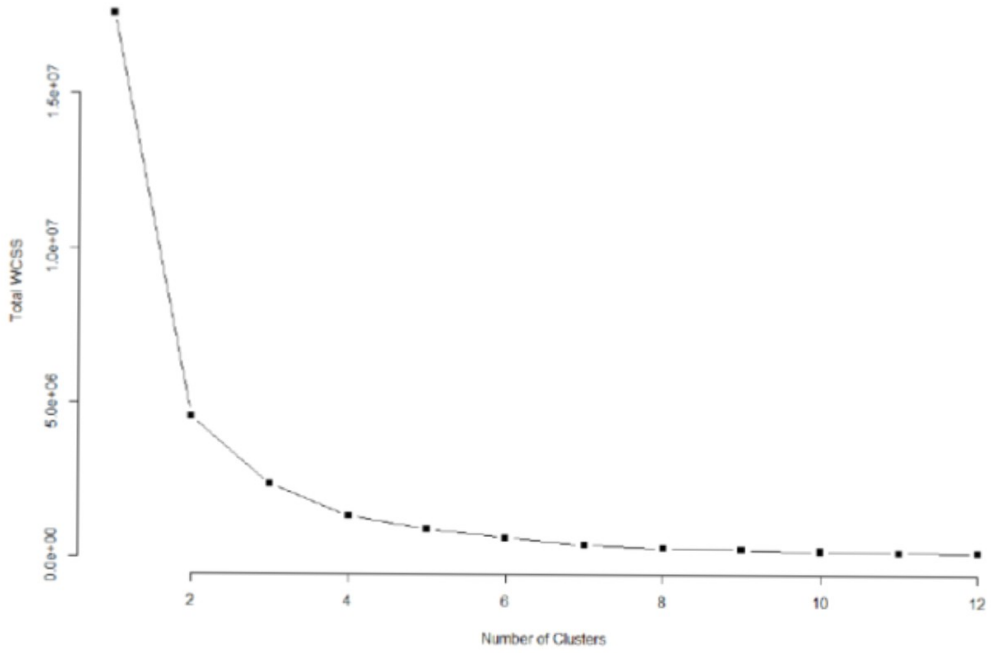


Image Source : Machine Learning for Language Technology

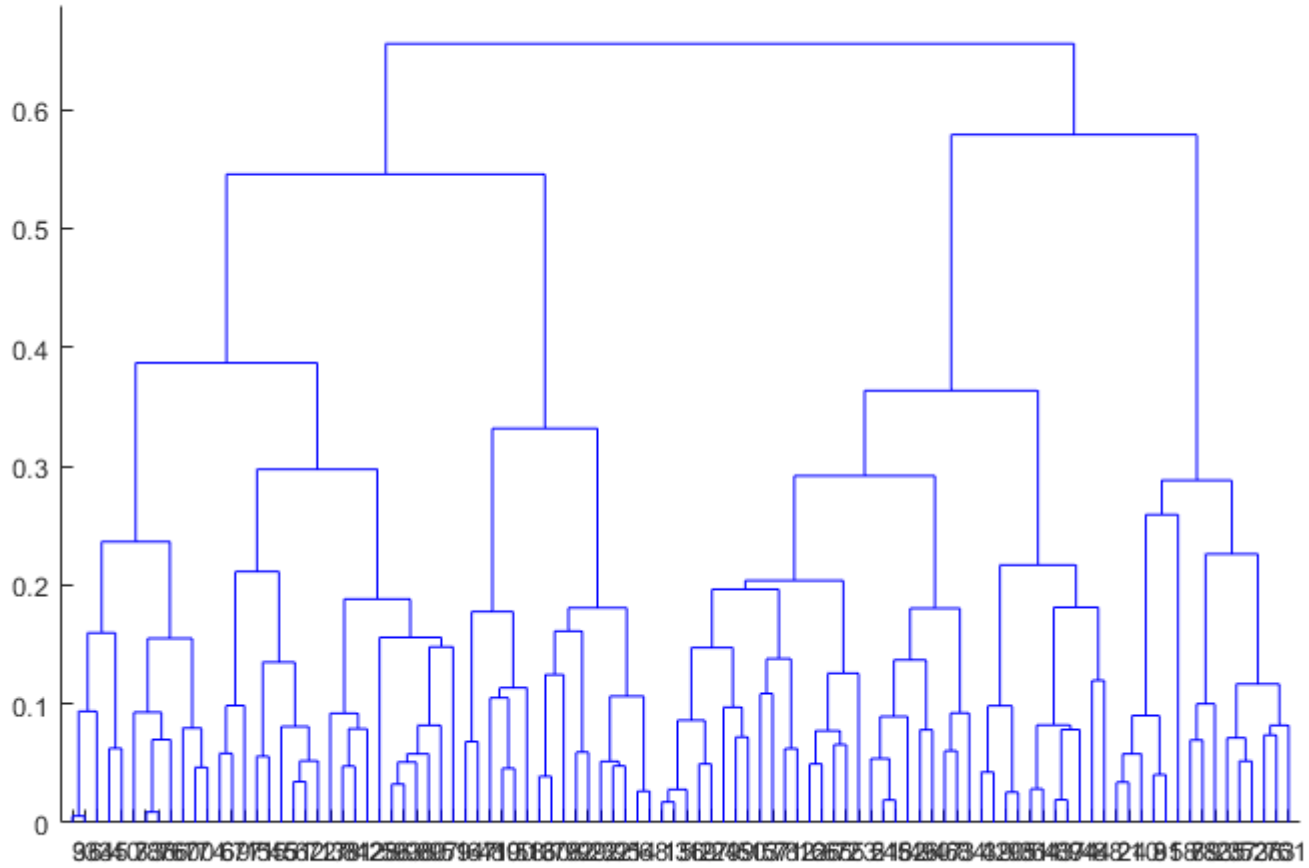
Random Forest

Image Source : Forest Stock 40 by Sed-rah-Stock

Clustering
K Means Clustering



Hierachical Clustering



Q / A

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