**Linear regression**

**Plot the points , (plot the best fit line? Minimum error( summa:delta error^2))**

**Liner Equation of the line : y = mx +b**

**m: linear gradient; b:y intercept ; y is dependent variable; x is independent variable**

**python code:**

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

from sklearn import linear\_model

df = pd.read\_csv("E:\ML\homeprices.csv")

%matplotlib inline

plt.xlabel("Area in Sq.ft")

plt.ylabel("Price of the house")

plt.scatter(df.area,df.price, color="red", marker ="+")

plt.plot(df.area, reg.predict(df[['area']]),color='blue')

reg = linear\_model.LinearRegression()

reg.fit(df[['area']],df.price)

reg.predict([[3300]])

reg.coef\_

reg.intercept\_

d = pd.read\_csv(r"E:\ML\areas.csv")

d.to\_csv("E:\ML\predcition.csv", index =False)

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Logistic regression is a technique frequently used to solve classification problem

Link: [codebasicsvideo](https://www.youtube.com/watch?v=zM4VZR0px8E&list=PLeo1K3hjS3uvCeTYTeyfe0-rN5r8zn9rw&index=8)

Classification Types:

1. Binary cLassification ( Yes or No)
2. Multiclass Classification

Plot the graph first , It may not appear Linear

S shaped model , Sigmoidal or Logit Function

Coming up with range 0 to 1

**Decision Tree**

Decision Tree is used to solve the classification problem

Support Vector Machine

Popular method of classification

It tries to maximize the margin between the datapoints.

Gamma and Regularization