

House price prediction using Linear Regression

1 Problem

Predicting the price of the House based on Area

2 Dataset

X-Area | Y-Price
House price with its Area

3 Summarize Dataset

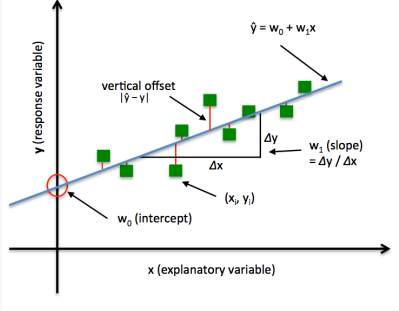
(1460, 2)
dataset.shape
dataset.head(5)

4 Visualize Dataset

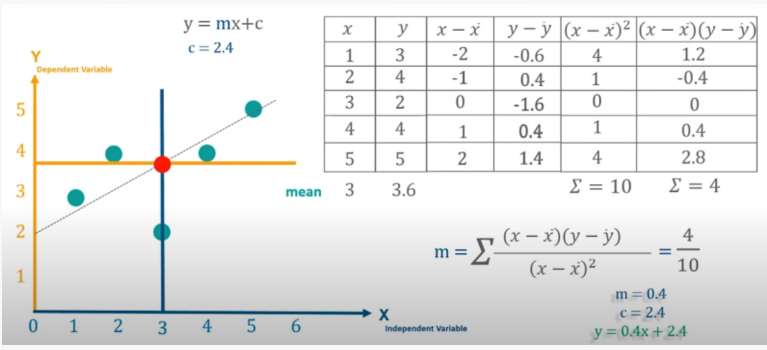
Plot the Graph between Area & Price

5 Segregate Dataset into X & Y

Input
X = dataset.drop('price',axis='columns')
Output
Y = dataset.price



Data modeled using Straight line
Y=MX+B (M- Slope | B-Intercept)



Detail

6 Algorithm

Linear Regression

DRAW LINE

- 1 Plot X & Y
- 2 Finding Mean for X
- 3 Finding Mean for Y
- 4 Drawing Vertical line(X-axis) from the point of mean(X) - X'
- 5 Drawing Horizontal line(Y-axis) from the point of mean(Y) - Y'
- 6 Mark the point of Intersection of that 2-Lines (mean(X),mean(Y))
- 7 Calculate X-X'
- 8 Calculate Y-Y'
- 9 Calculate (X-X')^2
- 10 Calculate (X-X')(Y-Y')

Steps

M - SLOPE

$$m = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

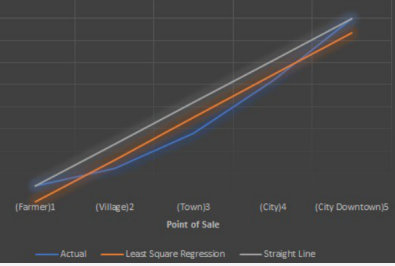
- 11 m- Substitute Values in Slope Formula

B - INTERCEPT

$$\text{Intercept } b = Y' - m * X'$$

Y = mX + b

- 13 Substitute m & b in Straight line equation



Least Square Regression will provide better result than straight Line

Sum square error of least square is less than Sum square error of Straight line

7 Training

8 Prediction