# GROUP – 4 : Multiple/Multivariate Regression

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## Exercise for You:

Q1: What Is Multiple Linear Regression (MLR)?

Q2: How to Use Multiple Linear Regression explain with proper example?

Q3: What are the Difference Between Linear Vs Polynomial Vs Multiple Regression?

Q4: Why would one use a multiple regression over a simple OLS regression?

Q5: Consider the following set of points: {(-2 , -1) , (1 , 1) , (3 , 2)}

   a) Find the least square regression line for the given data points.

   b) Plot the given points and the regression line in the same rectangular system of axes.

Q6: a) Find the least square regression line for the following set of data

        {(-1 , 0),(0 , 2),(1 , 4),(2 , 5)}

   b) Plot the given points and the regression line in the same rectangular system of axes.

Q7: The values of y and their corresponding values of y are shown in the table below

| x | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| y | 2 | 3 | 5 | 4 | 6 |

   a) Find the least square regression line y = a x + b.

   b) Estimate the value of y when x = 10.


Q8: The sales of a company (in million dollars) for each year are shown in the table below.

| x (year) | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| y (sales) | 12 | 19 | 29 | 37 | 45 |

   a) Find the least square regression line y = a x + b.

   b) Use the least squares regression line as a model to estimate the sales of the company in

   2012.