

School of Computer Science Engineering and Technology

Course- BTech

Course Code- CSET211

Year- Second

Date- 09/08/2022

Type- AI Core-1

Course Name- Statistical Machine Learning

Semester- ODD

Batch- CSE 3rd Semester

Lab Assignment (29th Aug to 02nd Sep 2022)

Lab 3 Set 1 – (Least Square Method)

CO-Mapping:

Exp. No.	Name	CO1	CO2	CO3
03	Least Square Methods		✓	✓

Objective: Apply least square methods on dataset for finding Line of best fit and accuracy of model.

Total: 2 Marks

Question-1:

0.5 Marks

Consider the set of points: (1, 1), (-2, -1), (2, 3), (-1, 4) and (3, 2).

(a) Plot these points and the least-squares regression line in the same graph.

Question-2:

0.5 Marks

Consider the set of points: (-1, 0), (0, 2), (1, 4), and (k, 5). The values of slope and y-intercept in the equation of least squares are 1.7 and 1.9 respectively.

(a) Can you determine the value of k?

Question-3:

0.5 Marks

The following data shows the sales (in million dollars) of a company.

x	2015	2016	2017	2018	2019
y	12	19	29	37	45

Can you estimate the sales in the year 2020 using the regression line?

Question-4:

0.5 Marks

Consider the time series data given below:

x_i	8	3	2	10	11	3	6	5	6	8
y_i	4	12	1	12	9	4	9	6	1	14

Use the least square method to determine the equation of line of best fit for the data. Then plot the line.