Session 18 Addtional Exercise

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Introduction

This assignment will help you understand linear regression.

Problem Statement

Given the following data set, use the sklearn package to find the co-efficients of the line that describes the following relationships:

1) x_1 and y
2) x_2 and y
3) x_3 and y

Also, plot the line and the data using matplotlib and report the co-efficient of determination for the lines using the metrics library.

SI No.	TV advertisement cost in thousands of dollars (x_1)	Radio advertisement cost in thousands of dollars (x_2)	Newspaper advertisement cost in thousands of dollars (x_3)	Sales of product in terms of thousands of dollars
1	230.1	37.8	69.2	22.1
2	44.5	39.3	45.1	10.4
3	17.2	45.9	69.3	9.3
4	151.5	41.3	58.5	18.5
5	180.8	10.8	58.4	12.9
6	8.7	48.9	75	7.2
7	57.5	32.8	23.5	11.8
8	120.2	19.6	11.6	13.2
9	8.6	2.1	1	4.8
10	199.8	2.6	21.2	10.6
11	66.1	5.8	24.2	8.6
12	214.7	24	4	17.4
13	23.8	35.1	65.9	9.2
14	97.5	7.6	7.2	9.7
15	204.1	32.9	46	19

Output:

The equation of the lines and the r^2 values for the 3 lines. Also visualization of the goodness of fit.