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Question 1 :

x=[0.840375529753905 -0.888032082329010 0.100092833139322 -0.544528929990548 0.303520794649354 -0.600326562133734 0.489965321173948 0.739363123604474 1.71188778298155 -0.194123535758265 -2.13835526943994 -0.839588747336614 1.35459432800464 -1.07215528838425 0.960953869740567 0.124049800003193 1.43669662271894 -1.96089999936503 -0.197698225974150 -1.20784548525980]

y=[-10.1133735220716 -8.90566319411387 -9.75534983866017 -9.72001613450629 -10.4206746899245 -9.46779079017881 -10.2153591667018 -10.8088311068014 -11.5365024184407 -10.3188305392195 -7.95010723000367 -9.36630788395260 -11.7488585837044 -8.80085104888926 -10.8904578538229 -10.1156798294421 -11.7701161085760 -7.75722693104957 -9.71475692137502 -8.86692102232345]

Do you think y is linearly related to x? Why?

Yes it is linearly related, because the r2 value is 0.966851

Graphical user interface, application

Description automatically generated

Chart, scatter chart

Description automatically generated

Question 2-Compute the linear regressor for the following data, using the matrix formulation involving R and P (assume no bias term):

x1= {-0.5, -0.2, -0.1, 0.3,0.4, 0.5, 0.7} and

x2= {3, 3, 2.5, 2, -1, -1, -4} (2D input, X=[x1 x1]')

D= {-3, -1, 0, 1.2, 1.5, 3, 4} (output)

W optimal is as follows: These are the regressors to the equation

Graphical user interface, application

Description automatically generated

A screenshot of a computer

Description automatically generated