Assignment 4

Algorithm Design and Machine Learning Course (CS60020)

February 2017

X	Y
0	1
1	3
2	7
3	13
4	21

Table 1: Demo Dataset

- Consider you have a dataset given by Table 1. Here X is the feature and Y is the actual value. You want to fit a linear model on this data i.e. you want to fit a line using this data which will give you the minimum error between the actual (y_i) and predicted $(\hat{y}_i)$. Consider $\hat{y}_i = w_0 + w_1 x_i$ as the prediction line to be fitted on the data. Given the equation of the error function you want to minimise is $\sum_i^n (y_i - \hat{y}_i)^2$, analytically derive the formula for w_0, w_1 and find their value in this dataset.