IE406 LAB ASSIGNMENT 1

1. Plot θ vs. L(θ), where L(θ) =θ2 . θ varies from -10 to +10 with step size of 0.1.

Now locate the minimum value of L(θ) with corresponding θ value from plot.

1. Plot θ vs. L(θ), where L(θ) =θ12 + θ22. θ1and θ2 vary from -10 to +10 with step size of 0.1 .

Locate the minimum value of L(θ1, θ2) with corresponding θ1 , θ2 values from the plot.

1. Plot for L(θ) = where m is the number of input examples and x(i), y(i) are the values taken from given data file.

Obtain the minimum value of L(θ) with corresponding θ0, θ1 values from the plot.

1. Apply Pseudo Inverse (Least Squares (LS)) approach to get θ vector for the cost function (objective function) L(θ) given in example 3.Verify whether θ1 ,θ2 obtained are same as that found in example 3.
2. Calculate the value of L(θ) using the θ vector obtained by Pseudo Inverse (as done in Example 4). Now Assume any θ vector (other than the one obtained in Example 4) and compute the new L(θ) value. Comment on why the Pseudo Inverse is also called LS method.