

CSE 4/574
Gaussian Discriminant Analysis and Linear
Regression

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Problem 1

Problem 2

$$w = (X^T X)^{-1} X^T y$$

Train data

MSE without intercept: 19099.446844570746

MSE with intercept: 2187.1602949303892

Test data

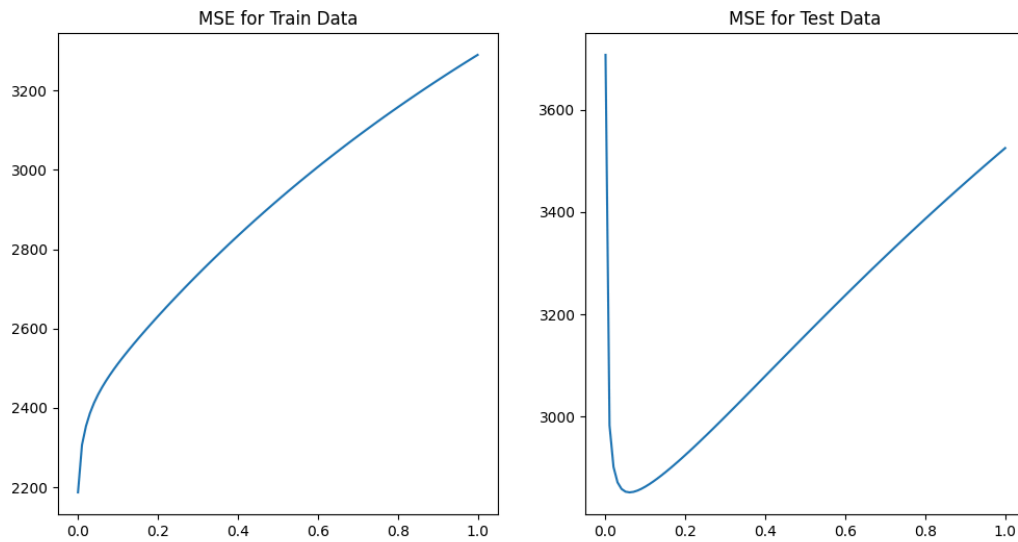
MSE without intercept: 106775.36153972965

MSE with intercept: 3707.8401811277313

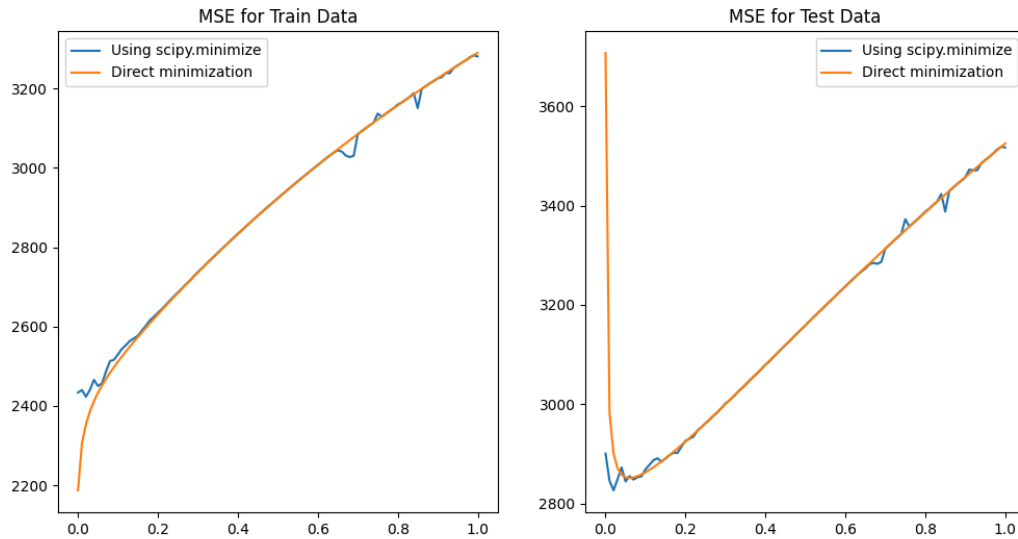
In both the datasets (train and test), MSE with intercept is significantly less than MSE without intercept, and thus MSE with intercept is better.

Problem 3

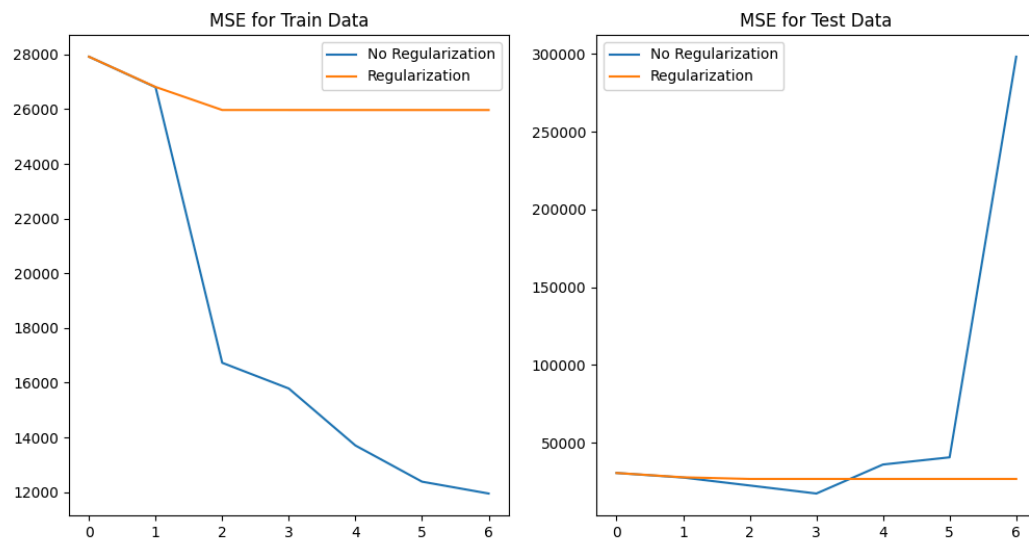
$$w = (\lambda I + X^T X)^{-1} X^T y$$



Problem 4



Problem 5



Problem 6