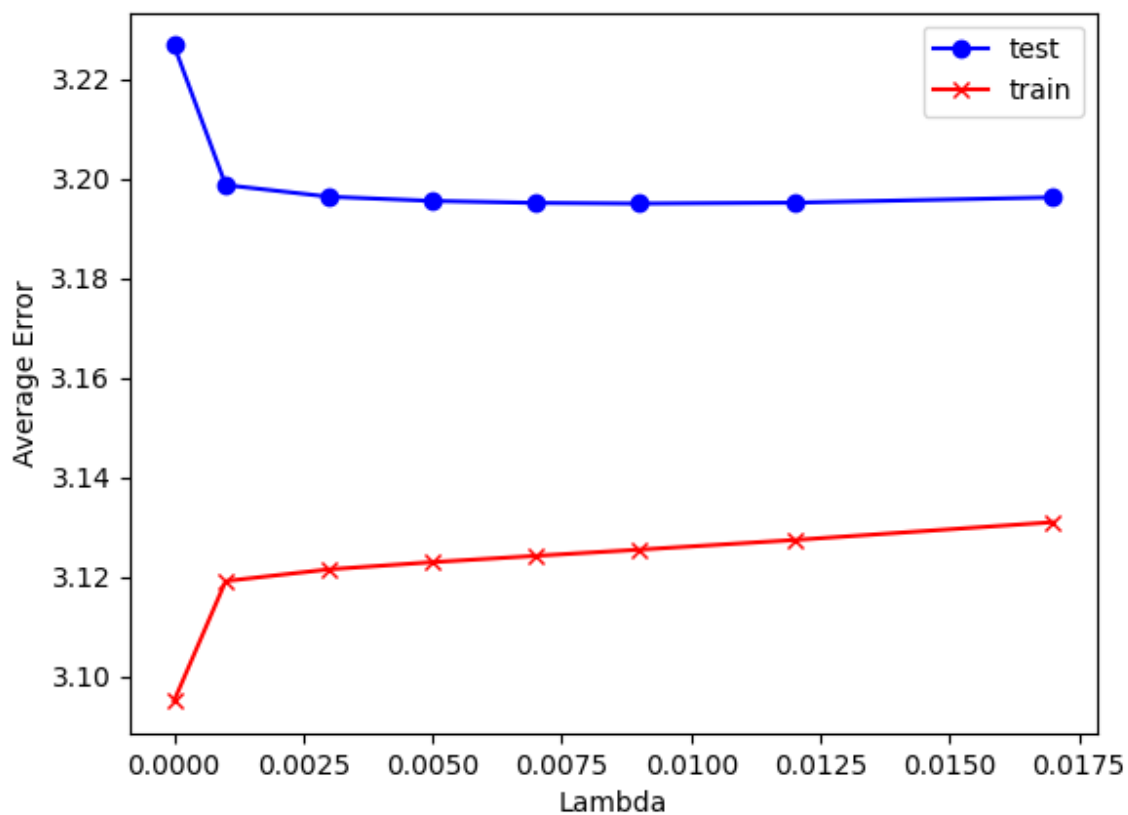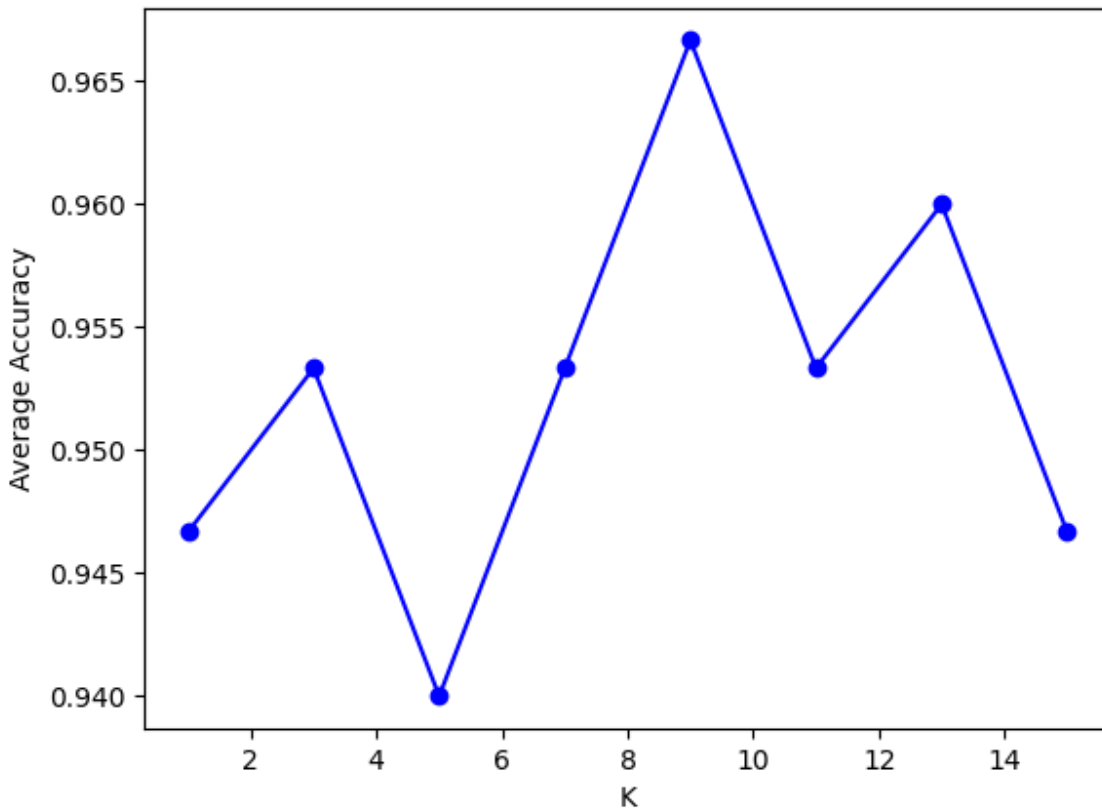1.

b) Feature Matrix Size: (1001, 501)

Lambda of 0.012 would work best because that is where the test error is

lowest. The test and train graphs seem to follow the expected pattern as lambda

increases. Ps4-1-a.png:

2. I suggest a K value of 9 as it has the highest accuracy. The optimal K value is based on the specific data set, so a K value of 9 may not work for a different problem.

Ps4-2-a.png:

3. Training Accuracy: 0.9360

Testing Accuracy: 0.8400

The training accuracy is not 100% as that would indicate overfitting. The testing accuracy is relatively close to the training accuracy.