We test a decision tree classifiers using different dimensionality reduction methods

With pca we can see roughly a 2.5% increase in accuracy for the predictions. Runtime remains negligibly the same. See output below for results with the iris dataset:

running time for dt: 0.0009970664978027344 seconds
Accuracy for dt: 0.8888888888888888
running time for dt+pca: 0.0009970664978027344 seconds
Accuracy for dt+pca: 0.9111111111111111

With lda we see a 5% increase which is more than pca. However wee see an increase of about 700% in runtime. See output below:

running time for dt: 0.0009975433349609375 seconds
Accuracy for dt: 0.8888888888888888
running time for dt+lda: 0.006982088088989258 seconds
Accuracy for dt+lda: 0.9333333333333333

However, with kpca we see a percent 35% decrease in accuracy and nearly a 2900% increase in runtime. See output below:

running time for kpca: 0.0009975433349609375 seconds
Accuracy for dt: 0.8888888888888888
running time for dt+kpca: 0.028922319412231445 seconds
Accuracy for dt+kpca: 0.5777777777777777