--------- LDA = 4 ---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0009 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.870

Best Parameter: {'max\_iter': 100, 'solver': 'sag', 'tol': 1.0}

Test accuracy: 0.818

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.887

Best Parameter: {'max\_iter': 1000, 'penalty': 'l2', 'tol': 0.1}

Test accuracy: 0.831

Running Time: 0.0003 seconds

--------- LDA = 5 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0006 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0003 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.876

Best Parameter: {'max\_iter': 200, 'solver': 'sag', 'tol': 0.1}

Test accuracy: 0.792

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.881

Best Parameter: {'max\_iter': 50, 'penalty': 'l2', 'tol': 0.01}

Test accuracy: 0.805

Running Time: 0.0005 seconds

--------- LDA = 6 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.876

Best Parameter: {'max\_iter': 100, 'solver': 'sag', 'tol': 1.0}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.887

Best Parameter: {'max\_iter': 750, 'penalty': 'none', 'tol': 0.001}

Test accuracy: 0.805

Running Time: 0.0005 seconds

--------- LDA = 7 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0008 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.876

Best Parameter: {'max\_iter': 10000, 'solver': 'sag', 'tol': 0.1}

Test accuracy: 0.818

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.881

Best Parameter: {'max\_iter': 10, 'penalty': 'l2', 'tol': 0.001}

Test accuracy: 0.805

Running Time: 0.0003 seconds

--------- LDA = 8 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0006 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.870

Best Parameter: {'max\_iter': 10000, 'solver': 'saga', 'tol': 1.0}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.887

Best Parameter: {'max\_iter': 10000, 'penalty': 'l2', 'tol': 0.1}

Test accuracy: 0.818

Running Time: 0.0004 seconds

--------- LDA = 9 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0006 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.870

Best Parameter: {'max\_iter': 50, 'solver': 'sag', 'tol': 1.0}

Test accuracy: 0.818

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.881

Best Parameter: {'max\_iter': 250, 'penalty': 'elasticnet', 'tol': 0.001}

Test accuracy: 0.468

Running Time: 0.0005 seconds

--------- LDA = 10 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.876

Best Parameter: {'max\_iter': 100, 'solver': 'sag', 'tol': 1.0}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.887

Best Parameter: {'max\_iter': 250, 'penalty': 'none', 'tol': 0.001}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- LDA = 11 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0006 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.870

Best Parameter: {'max\_iter': 100, 'solver': 'sag', 'tol': 1.0}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.887

Best Parameter: {'max\_iter': 100, 'penalty': 'l2', 'tol': 0.001}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- LDA = 12 ---------

---------Perceptron---------

Train accuracy: 0.825

Best Parameter: {'perceptron\_\_eta0': 1e-05, 'perceptron\_\_max\_iter': 5}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------Decision Tree---------

Train accuracy: 0.842

Best Parameter: {'max\_depth': 4, 'min\_samples\_leaf': 5}

Test accuracy: 0.766

Running Time: 0.0002 seconds

---------KNN---------

Train accuracy: 0.853

Best Parameter: {'metric': 'minkowski', 'n\_neighbors': 6}

Test accuracy: 0.805

Running Time: 0.0003 seconds

---------Logestic Regression---------

Train accuracy: 0.876

Best Parameter: {'max\_iter': 1000, 'solver': 'sag', 'tol': 1.0}

Test accuracy: 0.805

Running Time: 0.0004 seconds

--------- SVM ---------

Train accuracy: 0.859

Best Parameter: {'C': 10.0, 'gamma': 1.0, 'kernel': 'rbf'}

Test accuracy: 0.805

Running Time: 0.0007 seconds

---------SGD---------

Train accuracy: 0.887

Best Parameter: {'max\_iter': 10000, 'penalty': 'none', 'tol': 0.01}

Test accuracy: 0.792

Running Time: 0.0004 seconds