SVM for Multiclass Classification

Assignment 3:ELL784

Training Support Vector Machines for **Human Activity Detection (***Multiclass Classification)*

The train set comprises of the following classes and instances respectively:

Activity	Count
LAYING	1407
SITTING	1286
STANDING	1374
WALKING	1226
WALKING_DOWNSTAIRS	986
WALKING_UPSTAIRS	1073

- The task is to utilise multi-class Support Vector Machines for Multi Class Classification. The test and train csv files are shared for the same.
- Apply different kernels and give reasoning which kernel works the best and why?
- Plot the confusion matrix and the precision, recall, f1 scores for different trial.
- Tune various parameters such as C ,gamma and degree to find out the best performing model.

NOTE:

SVM is very well documented and if you're using python, you may use sklearn (scikit learn) library for the same. It's better to Normalize the feature set before training. You may also try to use other preprocessing if necessary.