Q10. Report the 10-fold cross-validation results (average precision,recall and F1) for each of the 3 kernel types (linear, RBF and polynomial degree 2) for the cost factors, 1, 10, 100 and 1000. Briefly explain your observations of the effect of kernel types and cost factors on computation time and accuracy?





* The RBF kernel clearly outperforms the Linear kernel in terms of F1-score and also in terms of scalability with respect to the cost factors.

For Adaboosting, you will experiment with using weak and strong base classifiers. Does Adaboosting help boost the performance of both? Specifically, compare the 10-fold cross-validation results (average precision,recall and F1) for the base classifiers, with the Adaboosted versions of these base classifiers.



* In the max depth = 1 case, the Adaboosted DT clf slightly outperforms the Vanilla DT Classifier in terms of F1-score.





* However, we find that as we increase the max depth for the Decision Tree base classifier, the performance of the Adaboosted Decision Tree classifier deteriorates due to the noise in the dataset and also the fact that DT clf is quite stable without boosting.