# Homework Assignment 1

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This assignment of calculating Rubine features for different shapes of letters and building classifiers using Weka was quite essential for understanding the process of sketch recognition. In the process of writing the code for calculating Rubine features, I realized the need for so much data in order to test our algorithm. Initially, I obtained vary deviated values for different sample shapes as I didn’t consider the need for preprocessing the data before feeding it to algorithm for calculating the Rubine features. As my algorithm moved to much closer to the actual values for the sample shapes, I created the result set for entire letter shapes to start building my classifier on Weka. I did not the various classifier available, so I started with “Multilayer perceptron”. I got F-measure of 85. Later, I tried LMT (weka.classifiers.trees.LMT) 'logistic model trees' to have a brief understanding of tree based linear classifier. Similarly, I began exploring other classifier to get an idea about them. Following are the classifiers which I have used:

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| **Classifier** | **F-Measure** |
| weka.classifiers.functions.MultilayerPerceptron | 0.8577 |
| weka.classifiers.trees.LMT | 0.8461 |
| weka.classifiers.lazy.KStar | 0.8211 |
| weka.classifiers.meta.RandomCommittee | 0.8135 |
| weka.classifiers.trees.RandomForest | 0.8635 |

I think this project as a good assignment to strengthen my fundamentals of sketch recognition. This will help me to think about new features which I can use for Sketch Recognition. The read-me file on know-how of the code is added here.