1. For all questions: Screenshot of each methods/classes (code) you wrote (for all question), simple explanation of each method (if you include comments in the code, that would be sufficient as a snapshot)

Please see the HTML or jupiter notebook file I submitted

2. question 3 and 4: The plot of your metric with different K (let's say five different K are tried) (either 5 curves with x-axis as ten folders, or one curve with x-axis with different K)

Please see the plot I incorporated in my submission

- 3. question 5: K chosen, your confusion matrix and overall accuracy.
- K = 3, best accuracy overall is 81% with SVM on 10-fold CV
- 4. For the report on question 7 you will need to include all the snapshots of the processes of rapid miner and add short comments on your learning outcomes from this exercise.

I didn't use rapid miner for ensemble learning, instead I just implemented it in python, because

- (1) The time limit, I'm more fluent to do ensemble learning in python. Yet for rapid miner i need to first save my vectors for texts, then do all those works which requires more time to put my hands on.
- (2) People today in industry are using python and Scala for offline training, and GO for online deployment.