# Implementation 1: KNN Classifier

What you need to submit:

* src.zip – the zip file which contains all of your source codes in Java
* knn.jar – the executable file where we can run in consoles
* knn.pdf – a document introduces how KNN algorithm works in the classification, also provide instructions about how to run the knn.jar so that TA can run it and verify whether it works or not. In addition, provide bar graphs which describe the accuracy by using different settings

Requirements and notes:

* By given the training and testing set, implement the KNN model which can learn from the training set and make predictions and testing set. Note the last column of the data is the label
* You should implement the algorithm which is able to load the data, learn the model, make predictions and produce the value of accuracy
* You should provide friendly user interface – you can build a console program, or build a Java GUI program. It doesn’t matter.
* You should let the user to give the two parameters – K and distance metric. For K, the user can input any odd and positive integer. For distance metrics, the user can make a choice between Manhattan distance and Euclidean distance
* After running the program, the program should output a document, results.txt, which contains the original test set with predictions for each row, as the last column. Also, the program should directly output the value of accuracy – in the console or in the Java GUI interface
* For the source codes, you should provide comments if necessary
* The Java program should be built and compiled within JDK 7. Do not use JDK 8
* You cannot use any 3rd party library in this implementation work
* The grading will be given based on whether you meet the basic requirements and how good your program looks like
* If the grader cannot run the knn.jar or cannot run it in the console at all. You will get a zero score directly. Test it before your submission.