**K-NNC**

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**QUESTION:**

Implement K-Nearest Neighbour Classifier on the OCR data sets given 3-fold cross validation .

**Aim:**

->For an unclassified example, we can assign its class by observing the class of its nearest neighbors.

->But out of those k nearest neighbors few will be assigned to 1 class and few will be assigned to another class.

->Finally, we assign the class with the most probability to our unclassified example.

**Algorithm:**

->In r-fold cross validation, we divide our training set into r-folds. In our case we took r=3.

->And then we assume each of the r-fold blocks as a validation set and find out the best k by considering the other blocks as our training set.

->Now to classify each of our training examples we find out the best k between 1 and 25 in our case.

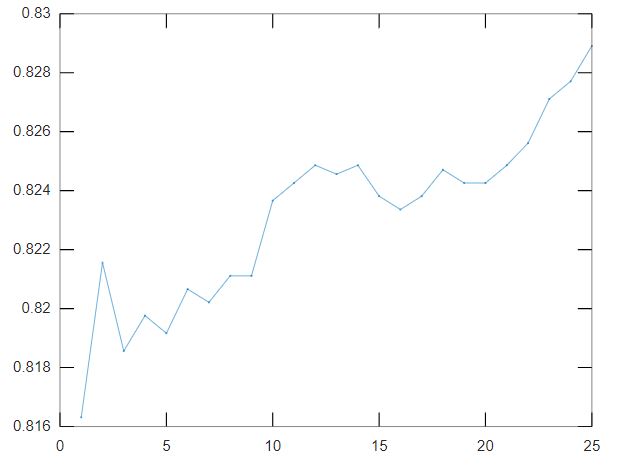
->Later we use this k to classify each of all the testing examples.

-> We also calculate the error rate and accuracy.

**Results:**

Accuracy:84.40%

**PLOT:**

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