Assignment 1 - Implement KNN

Description:

1. funtion `pickUnseenData(df, num)` split the data into two sets T and U
2. We use euclidean distance as our distance metric in function `getDistance(ins1, ins2)`

Performance:

We set the size for U=60

k	average_accuracy
200	56.67%
100	47.33%
50	59.0%
20	51.0%
10	56.0%
5	55.33%

A best K would be k=50. It does not suffer from overfitting or underfitting, and has the highest accuracy out of the presented K values.

Implementation testing

Test with different values for neighbors k. Test with different amounts of unknown instances U. Test with more unknown instances than training data T. Test with more training data T than unknown instances.

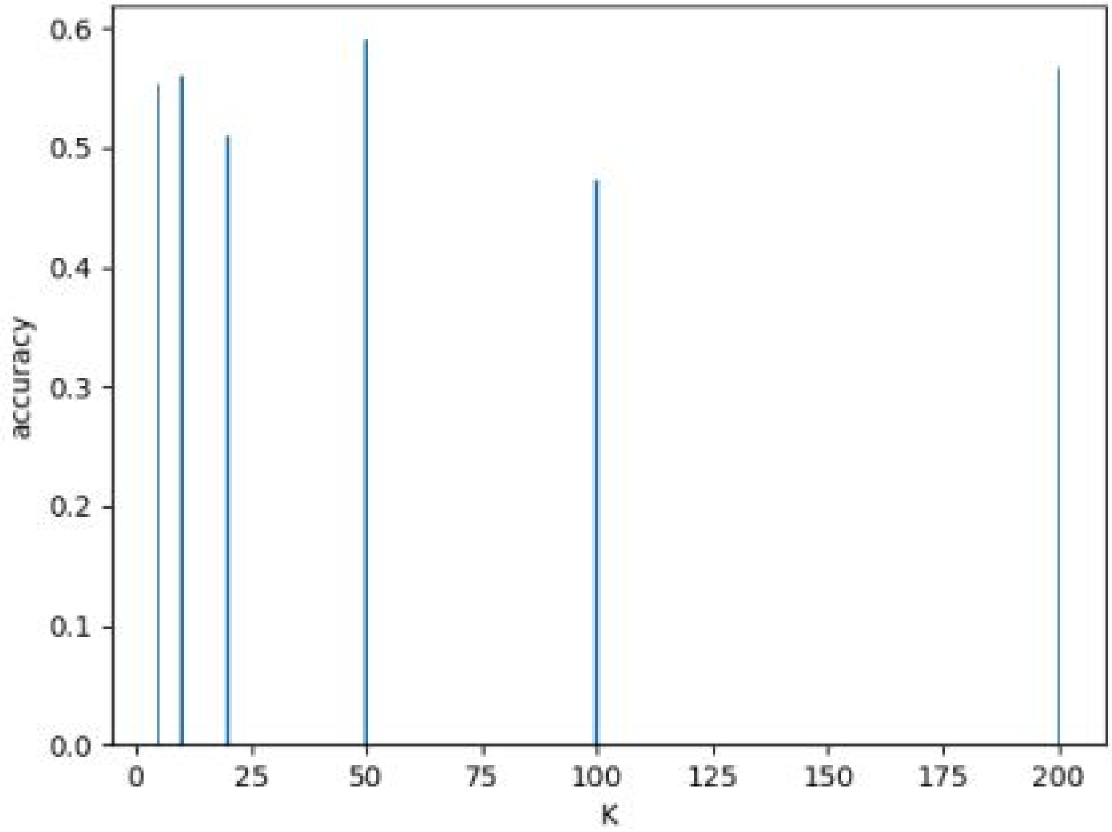
Collaboration and Online sources

Github used for group collaboration

Specification

python version: 3.8.6
libraries we used: pandas, sys, random

Accuracy with different K


0.6
0.5
0.4
0.3
0.2
0.1
0.0
accuracy
0
25
50
75
100
125
150
175
200
K