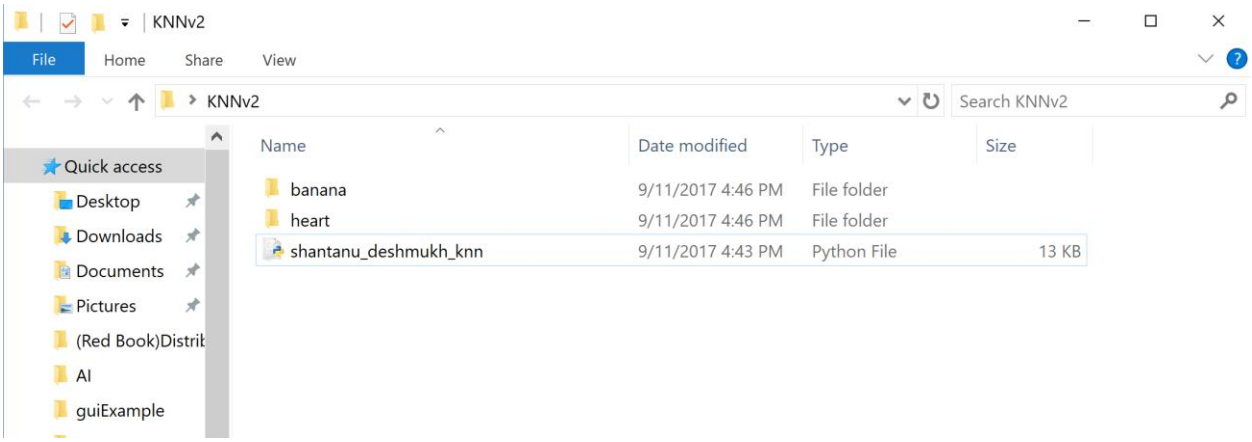
The directory structure before running the program should be as below (any no. of data folders) -



The correct training data set (any 10-dobscv) should be downloaded from keel. Any dataset would work (recommended is heart or banana).

Extract the zip and copy the data folder besides the shantanu_deshmukh_knn.py file as shown in the image above.

For plotting the graph, I have used matplotlib, so to install it use ->

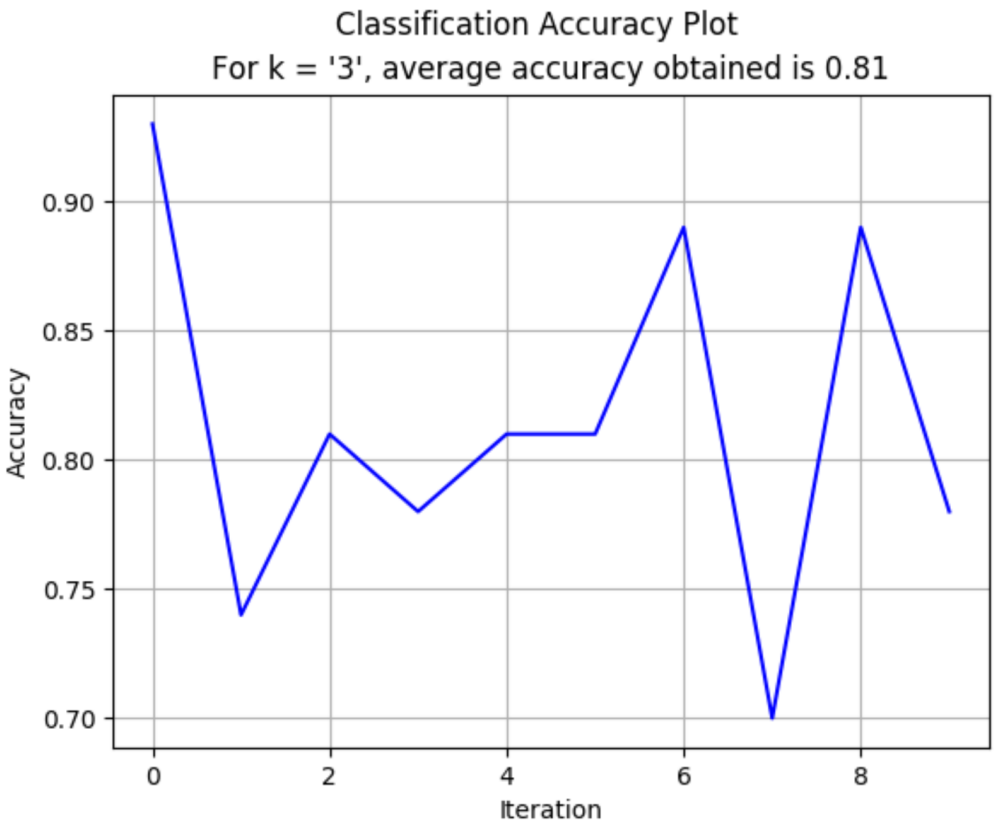
sudo apt-get install python-matplotlib

That's it, now simply RUN the program..

Command line driven menu will appear, select options as required -
[Just enter the choice no. to select]

```
..####  Hey there!! Welcome to the class predictor bot  ####..

Enter the value of k (Enter 0 if you want me to evaluate how accuracy depends on k)
3

Select one of the distance algorithms below:
1.Intelligent(I will decide distance algorithm for each attribute individually)
2.Euclidian
3.Manhattan
2

Do you want attribute data to be in the same range interval?
1.Yes
2.No
1

Select the folder with data
1.banana
2.heart
2
```

Output of above selection is shown below :



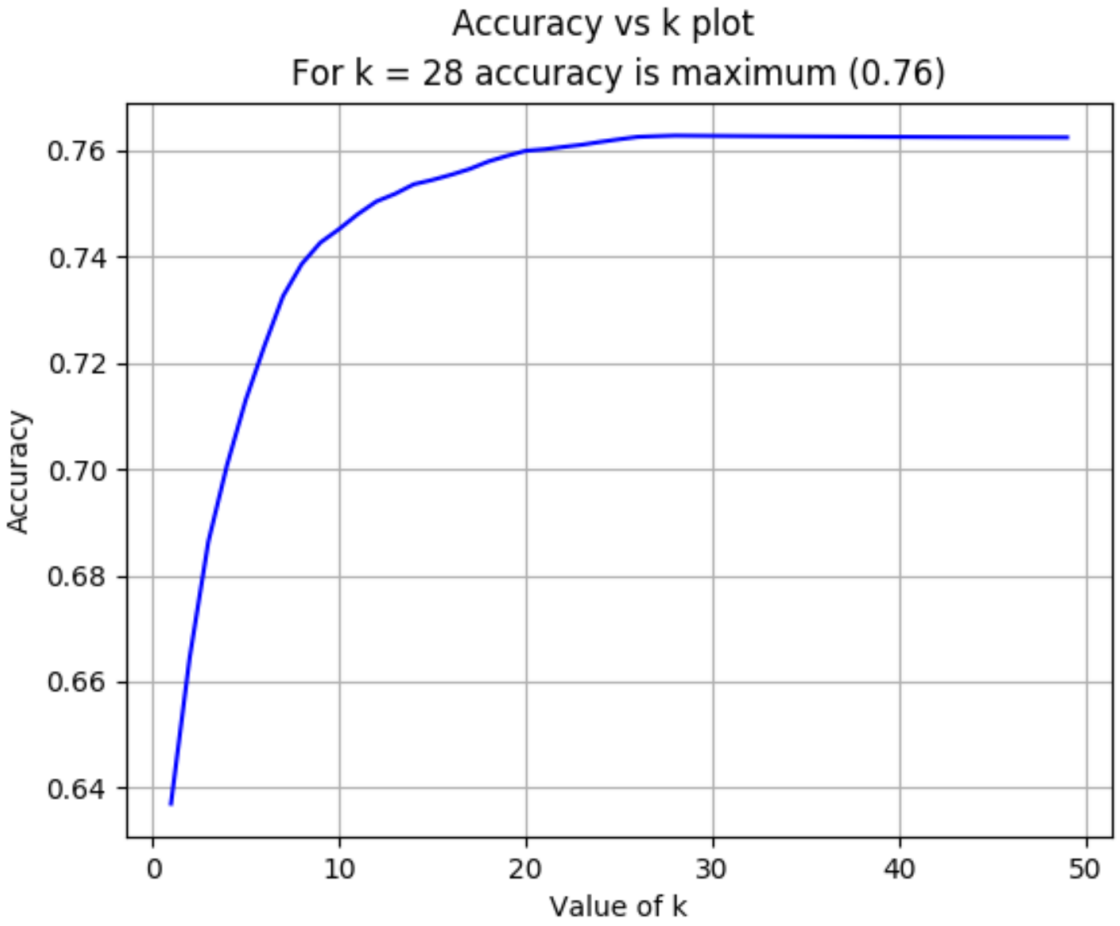
After closing the above output window, program will ask if you want to terminate or continue. Press any key other than 'e' to continue, as below:

(Press enter key after every selection)

```
Enter e to exit.. Enter any other key to rerun..
a

Enter the value of k (Enter 0 if you want me to evaluate how accuracy depends on k)
0

Enter maximum value of k (Note - Computing time will be higher for high values of k)
50

Select one of the distance algorithms below:
1.Intelligent(I will decide distance algorithm for each attribute individually)
2.Euclidian
3.Manhattan
1

Do you want attribute data to be in the same range interval?
1.Yes
2.No
1

Select the folder with data
1.banana
2.heart
1
```

In the above menu, since I entered k as 0, the agent is saying that it will evaluate accuracy for every value of k.

Below is the output:



Highlights of the program, besides the baseline requirements:

1. Automates the tasks to study how accuracy depends on the value of k.
2. Can run any 10-dobscv dataset on Keel
3. Uses Python library to plot graphs
4. Intelligently use information contained in the @attribute field to select the most appropriate distance metric
5. There is an option to run the program directly using command line arguments, as below:

```
C:\Users\deshm\Desktop\KNNv2>python shantanu_deshmukh_knn.py 5 banana
..####  Hey there!! Welcome to the class predictor bot  ####..
```