Read me:

I am using mac os and the IDE that i have used is VS studio code, it is also running fine is visual studio code, if all the plugins are installed.

The project folder contain the 3 folders
1)code - contains the code and csv files
2)screenshots - contains all the screenshots added in the report
3)report - contains the report

To run the codes

1) **Apply Nearest Neighbour classification to your data set:**
   a) **Write a distance metric for your data set**
      Program to run this is '1a.py' and output will produced in the terminal itself
      Python3 1a.py

   b) **Implement Nearest Neighbour classification for your test set**
   c) **Evaluate your classifier**
      Both B&C, these tasks are done in a single python file, it will provide the accuracy of the nearest neighbour, the error in the nearest neighbour and also the confusion matrix(which is asked as an extension). The Python file to run both B and C is
      Python3 1b.py

   d)**Experiment with your classifier**
      Program to run this is '1d.py' and output will be produced in the terminal.
      Python3 1d.py

2) **Experiment with clustering and PCA on two structured data sets:**
   a)**Download and plot the example data**
      Program to run this is '2a.py' and output will produced in the terminal itself
      Python3 2a.py

   b)**Cluster the example data**
      Program to run this is '2b.py' and output will produced in the terminal itself
      Python3 2b.py

   c)**Compare using different numbers of clusters**
      Program to run this is '2c.py' and output will produced in the terminal itself
      Python3 2c.py

   d)**Apply PCA to the example data**
      Program to run this is '2d.py' and output will produced in the terminal itself
      Python3 2d.py

e)Recluster using the projected data

Program to run this is '2e.py' , eg :   **Python3 2e.py**

3) Apply K-Means Clustering to your data set

Program to run this is '3.py' and output will produced in the terminal itself

Python3 3.py

4)Use K-Nearest Neighbour and PCA to classify activity from phone measurements:

Program to run this is '4.py' and output will produced in the terminal itself

Python3 4.py

Extensions:

I have implemented extensions with this project and file to run the extension is given as extensions.py and to run the file

Python3 extensions.py

PS: I have not used any time travel days for this project and the project is submitted before the due date.