**Descriptions of each python file:**

* **Regression & Correlation** folder contains python code for finding out correlations and regression results.
* **Outputs folder** contains results of different programs generate.
* **ageBinning.py:** This code was used for making age categorical using binning.
* **ClusteringResilienceK\_1\_10.py:** This program uses find cluster on resilience score (cluster 2 to 10)
* **ClusteringResilienceK\_Fixed\_GenerateLevels.py:** This program generates resilience levels based on input value and save two csv files.
* **CrossValidation.py:** For classification of 6 classes with SMOTE.
* **featureImportance\_Correlation.py:** Find the feature importance and correlation saves in CSV file in outputs folder.
* **FindCorrelHeatmap.ipynb:** This file should be run in Jupyter Notebook to find the correlation heatmap.
* **hypterparameterTuning.py:** This program generates the hyper-parameter tuning results on validation set and test set also. Generates the bar charts of hyper-parameter tuning results.
* **oneHotEncoding.py:** Performs one hot encoding on categorical variables. This code was used to encode the categorical variables having more than 2 possible values.

**File Names for different variations of our dataset: (Change the file names in the code to generate different results)**

**# 2 Class (Age categorized) file name = datasetOneHotEncoded\_AgeCategorized\_2.csv**

**# 2 Class (Age numeric) file name = datasetOneHotEncoded\_AgeNumeric\_2.csv**

**# 3 Class (Age categorized) file name = datasetOneHotEncoded\_AgeCategorized\_3.csv**

**# 3 Class (Age numeric) file name = datasetOneHotEncoded\_AgeNumeric\_3.csv**

**# Raw dataset = dataset.csv**

**# 6 Class (Age categorized) file name = datasetOneHotEncoded\_AgeCategorized.csv**

**# 6 Class (Age numeric) file name = datasetOneHotEncoded\_AgeNumeric.csv**