CSS 490
Term Project
Yeseul (Ashley) An

The TermProject.zip contains following files:
  main.py   Code file
  data.csv   Original data file
  README.pdf   This file contains instructions on how to re-compile the program
  FinalReport_YeseulAn Final report following LNCS format
  Figure   Folder that contains figures that are created from the program

How to recompile the code:
  1. Download the [TermProject_YeseulAn] zip file.

  2. Extract the zip file.

  3. Go and open the terminal program.

  4. Type "cd TermProject_YeseulAn" to change directory to the folder.

```
[D-10-156-20-141:~ yeseulan$ cd TermProject_YeseulAn
```

  5. Type python ./main.py to run the program

```
D-10-156-20-141:TermProject_YeseulAn yeseulan$ python ./main.py
```

  6. The program runs and creates figures in the same folder.

```
--------------------------------------------------------------------------
 Classification report: SVM

             precision    recall  f1-score   support

          0       0.96      1.00      0.98        67
          1       1.00      0.94      0.97        47

avg / total       0.97      0.97      0.97       114


 Confusion matrix: SVM

[[67  0]
 [ 3 44]]
Accuracy of SVM on the training subset: 0.985
Accuracy of SVM on the testing subset: 0.974
--------------------------------------------------------------------------
Classifier: KNN
Thresholds: [1.   0.8 0.6 0.4 0.2 0. ]
Tpr       : [0.723 0.872 0.915 0.936 0.957 1.   ]
Fpr       : [0.    0.    0.    0.03  0.179 1.   ]
Classifier: Logistic
Thresholds: [1.    0.742 0.461 0.431 0.414 0.371 0.035 0.027 0.   ]
Tpr       : [0.021 0.936 0.936 0.957 0.957 0.979 0.979 1.    1.   ]
Fpr       : [0.    0.    0.03  0.03  0.045 0.045 0.239 0.239 1.   ]
Classifier: D_Tree
Thresholds: [1.    0.991 0.967 0.833 0.2   0.012 0.   ]
Tpr       : [0.021 0.681 0.851 0.894 0.894 0.936 1.   ]
Fpr       : [0.    0.06  0.075 0.09  0.119 0.91  1.   ]
Classifier: Naive Bayes
Thresholds: [1.    0.853 0.844 0.464 0.342 0.294 0.274 0.267 0.239 0.193 0.118 0.108
 0.004]
Tpr       : [0.021 0.532 0.532 0.894 0.894 0.936 0.936 0.957 0.957 0.979 0.979 1.
 1.   ]
Fpr       : [0.    0.    0.015 0.015 0.06  0.06  0.075 0.075 0.09  0.09  0.239 0.239
 1.   ]
Classifier: SVM
Thresholds: [1.    0.58  0.412 0.321 0.296 0.291 0.   ]
Tpr       : [0.021 0.936 0.936 0.979 0.979 1.    1.   ]
Fpr       : [0.    0.    0.03  0.03  0.045 0.045 1.   ]
D-10-156-20-141:TermProject_YeseulAn yeseulan$
```

7. Type 'dot -Tpng cancertree.dot -o cancertree.png' to create the cancertree.png file from the cancertree.dot file.

```
D-10-156-20-141:TermProject_YeseulAn yeseulan$ dot -Tpng cancertree.dot -o cancertree.png
```

8. The folder creates cancertree.png file for the decision tree.

9. In the folder, it creates all png files for the program.

Name	⌃
cancertree.dot	
cancertree.png	
data.csv	
DecisionTree_matrix.png	
feature_importance.png	
FeatureCorr.png	
▶ Figure	
KNN_matrix.png	
KNN_Recall.png	
Logistic_matrix.png	
main.py	
NavieBayes_matrix.png	
PCA.png	
ROC.png	
SVM_matrix.png	