CS583 - Programming Assignment 3

Demo and code submission: around October 5, 2020

Task: Given the test results of a classification model on a test data,

1. Compute (1) the classification accuracy, (2) the positive class (represented by 1) precision, recall, F1 score, and (3) TPR (true positive rate), FPR (false positive rate), sensitivity, and specificity. Negative class is represented by 0. If Pr(1 | x) > 0.5, we predict x as positive; otherwise negative.
2. Compute the AUC (area under the ROC curve) of the positive class.

Input: A plain text file containing the prediction results in the following format, where the first number of each row is the test instance id, the second number is the probability Pr(1 | x), where x represents a test instance, and the third number is the true label of the test instance.

```
1, 0.3, 1
2, 0.6, 1
3, 0.7, 0
4, 0.4, 0
```

Output: <value> is the computed value for the corresponding evaluation measure.

```
(
(Accuracy <value>)
(Precision <value>)
(Recall <value>)
(F1 <value>)
(TPR <value>)
(FPR <value>)
(Specificity <value>)
(Sensitivity <value>)
(AUC <value>)
)
```