CS 4824 / ECE 4424 HW 1 Rubric (Programming Portion) [Total Points: 15]

Rubric for tests (in order of appearance in the execution of tests.py):

Cross-validation tests:

- cv_predictors.ipynb **[2 points]** (outside of tests.py)
  Prints: "Decision tree testing accuracy: 0.381746"
  Test: DT test accuracy is > 0.34

- test_crossval_naive_bayes **[1 point]**
  Prints: "Cross-validation score was 0.687374. Naive Bayes accuracy was 0.621985"
  Test: the two scores should be close

- test_crossval_correctness: **[1 point]**
  Checks: number of models is equal to number of folds

- test_crossval_speed **[1 point]**
  Prints: "..Finished doing data splitting for cross validation in 0.303049 seconds."
  Test: cross-validation is fast

Decision tree tests:

- test_decision_tree_depth **[0.5 points]**
  Test: number of correct predictions at varying max_depths is equal to their expected values.

- test_decision_tree_improvement **[1 point]**
  Prints: "Shallow tree correctly labels 599 training examples
  Deep tree correctly labels 930 training examples
  Shallow tree correctly labels 930 training examples
  Deep tree correctly labels 1289 training examples
  Shallow tree correctly labels 1289 training examples
  Deep tree correctly labels 1723 training examples
  ..Shallow tree correctly labels 1723 training examples
  Deep tree correctly labels 1958 training examples"
  Test: decision tree training accuracy only improves with depth

- test_decision_tree_memorization **[1 point]**
  Test: an unrestricted DT can memorize any data

- test_decision_tree_speed **[0.5 points]**
  Prints: ".Decision tree training and prediction took 1.688375 seconds."
  Test: DT speed is fast (<10 seconds) on an arbitrary data

- test_decision_tree_test_accuracy **[2 points]**

Prints: ".Decision tree accuracy was 0.342172"
Test: DT accuracy is > 0.3

Naïve Bayes tests:

- test_naive_bayes_accuracy **[2 points]**
  Prints: "...Naive Bayes accuracy was 0.621985"
  Test: NB accuracy is > 0.61
  (Partial credit of 1 point is given if accuracy >= 0.57)

- test_naive_bayes_simple **[2 points]**
  Prints: "Accuracy on toy data was 1.000000"
  Test: Accuracy of NB is 1

- test_naive_bayes_speed **[1 point]**
  Prints: "Naive Bayes training and prediction took 0.128035 seconds."
  Test: NB is fast (< 1 second) on an arbitrary data