

**a.** Not quite, unless we claim that  $k=1$ . This program divides the data into a training and test set, trains the model once using said training set, then predicts the classes using the test set. If we instead utilized  $k=2$  cross-validation folding as in part one, then there would be a fit to  $x_{fold1}$ ,  $y_{fold1}$  and a predict for  $x_{fold2}$ ; then a fit to  $x_{fold2}$ ,  $y_{fold2}$  and a predict to  $x_{fold1}$ . That is, the DBN algorithm would execute the train-test step at least twice. I suspect the omission of  $k>1$  here is simply due to the amount of time the program would require to run.

**b.** The training data consists of 80% of the total sample.

**c.** There are 360 instances in the test set.

**d.** The training data contains 1437 instances.

**e.** Each instance in the test set contains 64 features (the length of a single array, which in turn is a flattened  $8 \times 8$  px image). In total, there are  $64 \times 360 = 23040$  features in total comprising the test set.

**f.** Again, each instance contains 64 features. The total number of training set features, then, is  $64 \times 1437 = 91968$ .

**g.** From the README file, there are 10 classes.

**h.** Each class is an integer, ranging from 0 to 9. More explicitly, the classes are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.