Started on	Friday, March 10, 2023, 8:54 PM
State	Finished
Completed on	Friday, March 10, 2023, 9:04 PM
Time taken	10 mins 16 secs
Points	8.00/10.00
Grade	**80.00** out of 100.00

Question **1**

Correct

1.00 points out of 1.00

When working with data that has been split into training and testing sets, the purpose of the testing set is to

Select one:

- test the trained model for regularization.
- balance the categories in the training set.
- compute the log-odds of the training set.
- speed up training.
- test the trained model for generalization. ✔

Your answer is correct.

The correct answer is: test the trained model for generalization.

Question **2**

Correct

1.00 points out of 1.00

The class labels produced by logistic regression for binary classification are

Select one:

- 0 and 1 ✔
- 0 and 2
- $-e$ and e
- 0 and e
- -1 and 1

Your answer is correct.

The correct answer is: 0 and 1

Question **3**

Correct

1.00 points out of 1.00

The purpose of regularization is to

Select one:

- minimize the log-likelihood.
- tune the bias-variance tradeoff. ✔
- prevent division-by-zero errors.
- ensure fair classification.
- standardize the feature values.

Your answer is correct.

The correct answer is: tune the bias-variance tradeoff.

Question **4**

Correct

1.00 points out of 1.00

Which of the following is among the datasets included in the scikit-learn library?

Select one:

- sigmoid
- apples_oranges
- logistic
- digits ✔
- hotdog
- threshold
- Adaline
- tulip

Your answer is correct.

The correct answer is: digits

Question **5**

Correct

1.00 points out of 1.00

Suppose that you want to train a classifier on a dataset that contains only 50 samples, each of which belongs to one of two classes. You want to produce both the classifier and an indication of whether it is likely to generalize to unseen data. This will be challenging, since there are so few samples. In this context, what would be a reasonable training/testing percentage split?

Select one:

- 1/99
- 10/90
- 0.1/99.9
- 999/1
- 70/30 ✔
- 99.9/0.1

Your answer is correct.

The correct answer is: 70/30

Question **6**

Correct

1.00 points out of 1.00

In logistic regression, the output of the activation function is interpreted as

Select one:

- the variance with respect to the sum of the weights.
- the conditional probability that the instance belongs to class 1, as opposed to class 0. ✔
- the squared log of the bias.
- the standard deviation of the features.
- the learning rate.

Your answer is correct.

The correct answer is: the conditional probability that the instance belongs to class 1, as opposed to class 0.

Question **7**

Incorrect

0.00 points out of 1.00

When working with data that has been split into training and testing sets, and standardizing feature values,

Select one:

- all features, in both the training and testing sets, should be standardized on the basis of the statistics of the testing set.
- the features in the training set should be standardized , but the features in the testing should not be.
- all features, in both the training and testing sets, should be standardized on the basis of the statistics of the training set.
- the features in the training set should be standardized on the basis of the statistics of the training set, and the features in the testing set should be standardized on the basis of the statistics of the testing set. ✖
- the features in the testing set should be standardized , but the features in the training should not be.
- the features in the training set should be standardized on the basis of the statistics of the testing set, and the features in the testing set should be standardized on the basis of the statistics of the training set.

Your answer is incorrect.

The correct answer is: all features, in both the training and testing sets, should be standardized on the basis of the statistics of the training set.

Question **8**

Correct

1.00 points out of 1.00

The stratify argument to scikit-learn's `train_test_split` is usually used to

Select one:

- sort the training and testing sets in layers ("strata") according to the sum of the squares of the feature values.
- make the proportions of each category in the testing set the same as the proportions in the training set, or as close to the same as possible. ✔
- separate high-category-value from low-category-value instances in the testing set.
- give more weight to higher-valued categories.
- produce training and testing sets using lazy evaluation.
- give more weight to lower-valued categories.

Your answer is correct.

The correct answer is: make the proportions of each category in the testing set the same as the proportions in the training set, or as close to the same as possible.

Question **9**

Correct

1.00 points out of 1.00

In logistic regression, the threshold against which we compare $\phi(z)$, to determine if the instance is or isn't in the class, is

Select one:

- 1
- $-e$
- $\frac{1}{e}$
- $-\frac{1}{e}$
- 0
- -1
- -0.5
- e
- 0.5 ✔

Your answer is correct.

The correct answer is: 0.5

Question **10**

Incorrect

0.00 points out of 1.00

In logistic regression, the activation function is

Select one:

- RELU
- a constant function equal to the bias.
- the logit function. ✖
- the identity function.
- the step function.
- the sigmoid function.
- the inverted threshold function.

Your answer is incorrect.

The correct answer is: the sigmoid function.

◄ Code from class (svm)

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Linear Classifiers Assignment ►