

Module 1 Quiz

Quiz, 10 questions

1
point

1.

Select the option that correctly completes the sentence:

Training a model using labeled data and using this model to predict the labels for new data is known as _____.

- ☐ Clustering
 - ☐ Density Estimation
 - ☒ Supervised Learning
 - ☐ Unsupervised Learning
-

1
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2.

Select the option that correctly completes the sentence:

Modeling the features of an unlabeled dataset to find hidden structure is known as _____.

- ☐ Supervised Learning
 - ☐ Classification
 - ☒ Unsupervised Learning
 - ☐ Regression
-

1
point

3.

Select the option that correctly completes the sentence:

Training a model using categorically labelled data to predict labels for new data is known as _____.

- ☐ Clustering

Module 1 Quiz

Quiz, 10 questions

- ☒ Classification
 - ☐ Regression
 - ☐ Feature Extraction
-

1
point

4.
Select the option that correctly completes the sentence:

Training a model using labelled data where the labels are continuous quantities to predict labels for new data is known as _____.

- ☐ Clustering
 - ☐ Classification
 - ☒ Regression
 - ☐ Feature Extraction
-

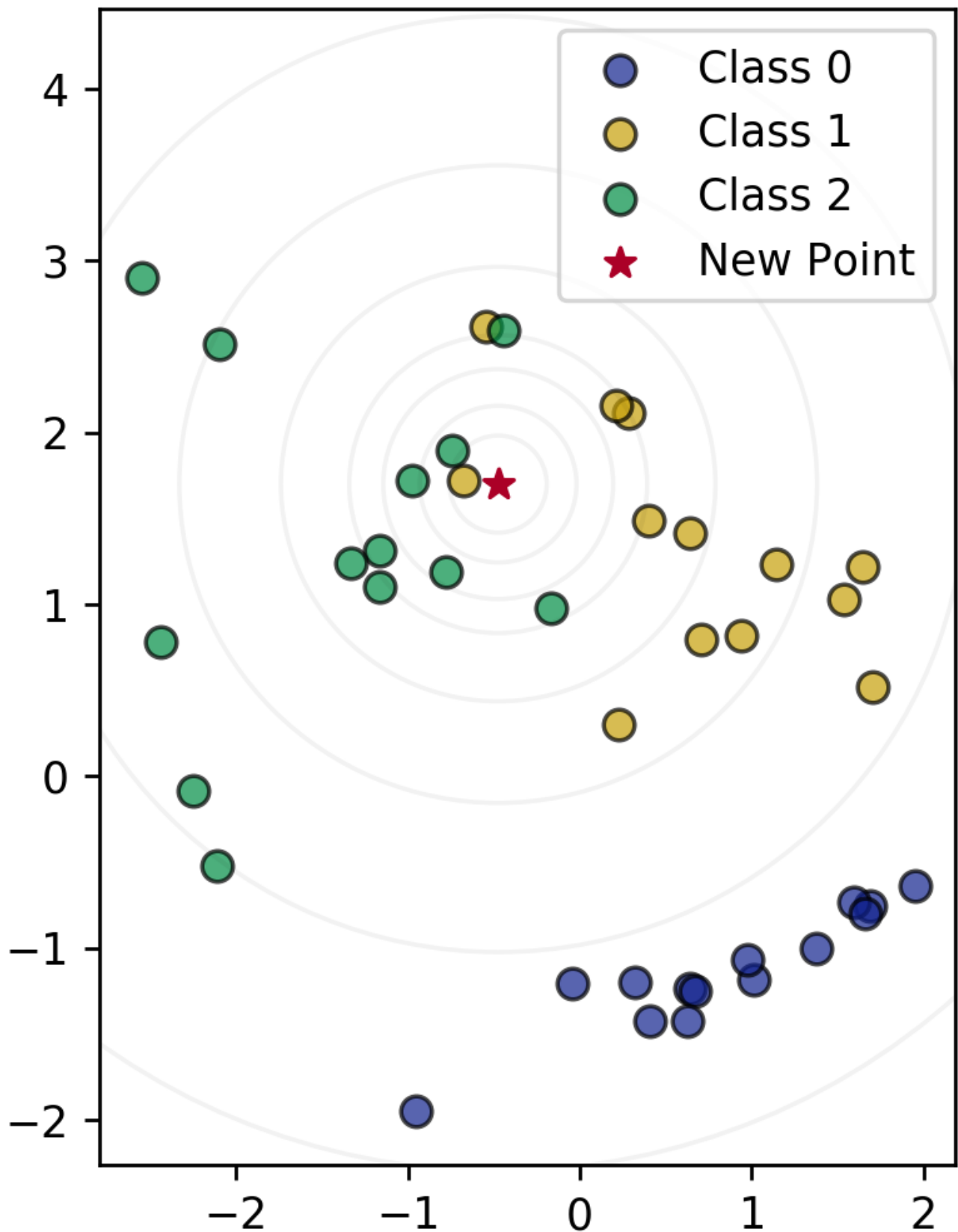
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5.

Using the data for classes 0, 1, and 2 plotted below, what class would a KNeighborsClassifier classify the new point as for $k = 1$ and $k = 3$?

Module 1 Quiz

Quiz, 10 questions



- $k=1$: Class 1
- $k=3$: Class 0



Module 1 Quiz

Quiz, 10 questions

- k=1: Class 1
- k=3: Class 2

- ☐ • k=1: Class 2
- k=3: Class 1

- ☐ • k=1: Class 0
- k=3: Class 2

- ☐ • k=1: Class 0
- k=3: Class 1
-

1
point

6.

Which of the following is true for the nearest neighbor classifier (Select all that apply):

- ☐ Memorizes the entire training set
- ☒ Given a data instance to classify, computes the probability of each possible class using a statistical model of the input features
- ☐ Partitions observations into k clusters where each observation belongs to the cluster with the nearest mean
- ☐ A higher value of k leads to a more complex decision boundary
-

1
point

7.

Why is it important to examine your dataset as a first step in applying machine learning? (Select all that apply):

- ☒ See what type of cleaning or preprocessing still needs to be done
- ☒ You might notice missing data
- ☒ Gain insight on what machine learning model might be appropriate, if any
- ☐ Get a sense for how difficult the problem might be
- ☐ It is not important

Module 1 Quiz

Quiz, 10 questions

1
point

8.

The key purpose of splitting the dataset into training and test sets is:

- ☐ To speed up the training process
 - ☐ To reduce the amount of labelled data needed for evaluating classifier accuracy
 - ☐ To reduce the number of features we need to consider as input to the learning algorithm
 - ☒ To estimate how well the learned model will generalize to new data
-

1
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9.

The purpose of setting the random_state parameter in train_test_split is: (Select all that apply)

- ☒ To avoid bias in data splitting
 - ☐ To split the data into similar subsets so that bias is not introduced into the final results
 - ☒ To avoid predictable splitting of the data
 - ☐ To make experiments easily reproducible by always using the same partitioning of the data
-

1
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10.

Given a dataset with 10,000 observations and 50 features plus one label, what would be the dimensions of X_train, y_train, X_test, and y_test? Assume a train/test split of 75%/25%.

- ☐
 - X_train: (2500,)
 - y_train: (2500, 50)
 - X_test: (7500,)
 - y_test: (7500, 50)
- ☐
 - X_train: (2500, 50)
 - y_train: (2500,)
 - X_test: (7500, 50)

Module 1 Quiz

Quiz, 10 questions



- y_{test} : (7500,)
- X_{train} : (10000, 28)
- y_{train} : (10000,)
- X_{test} : (10000, 12)
- y_{test} : (10000,)



- X_{train} : (7500, 50)
- y_{train} : (7500,)
- X_{test} : (2500, 50)
- y_{test} : (2500,)



- X_{train} : (10000, 50)
- y_{train} : (10000,)
- X_{test} : (10000, 50)
- y_{test} : (10000,)



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