Module 1 Quiz

TOTAL POINTS 10

1.Question 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 _____.

- Unsupervised Learning
- Supervised Learning
- Density Estimation
- Clustering

1 point

2.Question 2
Select the option that correctly completes the sentence:

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

- Regression
- Classification
- Unsupervised Learning
- Supervised Learning

1 point

3.Question 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
- Regression
- Feature Extraction
- Classification

1 point

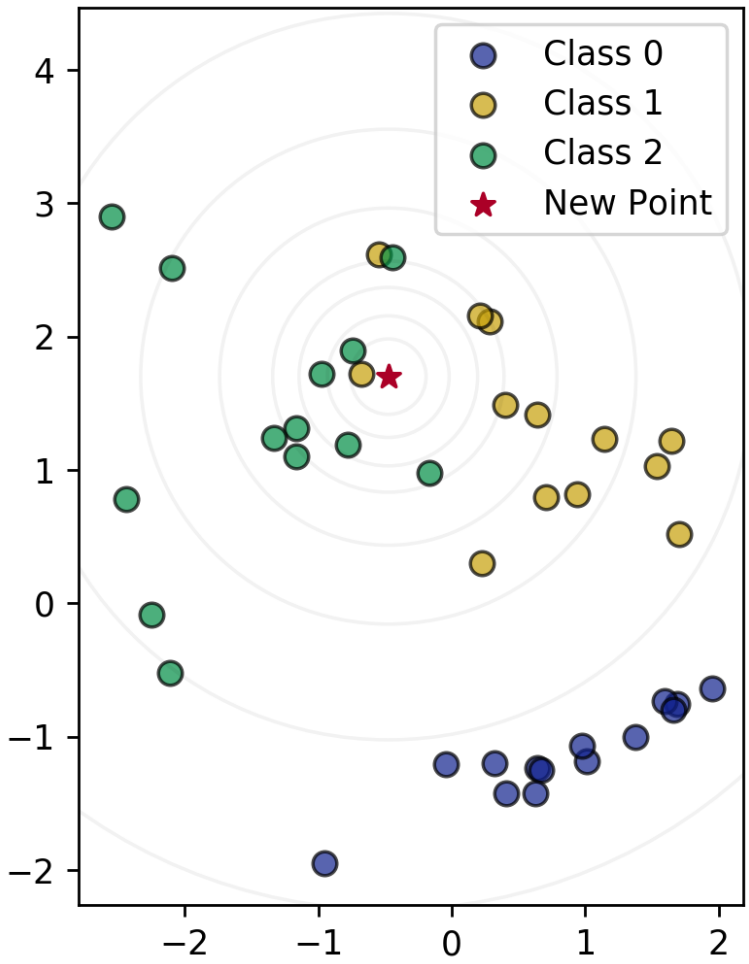
4.Question 4
Select the option that correctly completes the sentence:

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

- Clustering
- Regression
- Classification
- Feature Extraction

1 point

5.Question 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?



k=1: Class 0

k=3: Class 2

k=1: Class 1

k=3: Class 2

k=1: Class 0

k=3: Class 1

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

k=1: Class 1

k=3: Class 0

1 point

6.Question 6

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

- [ ] A higher value of k leads to a more complex decision boundary
- [ ] Partitions observations into k clusters where each observation belongs to the cluster with the nearest mean
- [x] 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

1 point

7.Question 7
Why is it important to examine your dataset as a first step in applying machine learning? (Select all that apply):

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

1 point

8.Question 8
The key purpose of splitting the dataset into training and test sets is:

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

1 point

9.Question 9
The purpose of setting the random_state parameter in train_test_split is: (Select all that apply)

- [x] To make experiments easily reproducible by always using the same partitioning of the data
- [ ] 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

1 point

10.Question 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, 50)

  y_train: (2500,)

  X_test: (7500, 50)

  y_test: (7500,)

- 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,)

- X_train: (10000, 28)

  y_train: (10000,)

  X_test: (10000, 12)

  y_test: (10000,)

- X_train: (2500,)

  y_train: (2500, 50)

  X_test: (7500,)

  y_test: (7500, 50)

1 point