End of Course Assessment

Question 1

0 points possible (ungraded)

What is the first step when creating a new Jupyter notebook?

- ○ Give the notebook a name
- ◉ Choose a kernel ✔
- ○ Start typing code
- ○ Click Run

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Question 2

3/3 points (graded)

What is the difference between artificial intelligence, machine learning, and deep learning?

This term is used to describe the field of computer science dedicated to solving cognitive problems commonly associated with human intelligence.

Artificial Intelligence ✔**Answer:** Artificial Intelligence

This term is used to describe a collection of algorithms that can learn from and make predictions based on recorded data, optimize a given utility function under uncertainty, extract hidden structures from data and classify data into concise descriptions.

Machine Learning ✔**Answer:** Machine Learning

This term is used to describe a branch of machine learning that involves layering algorithms in an effort to gain greater understanding of the data.

Deep Learning ✔**Answer:** Deep Learning

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Question 3

1/1 point (graded)

The **pd.crosstab()** function lets you select multiple columns in a DataFrame and see how many transactions overlap for different column values.

- (•) True ✔
- ( ) False

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Question 4

1/1 point (graded)

In supervised learning, algorithms discern patterns and relationships from an unlabeled dataset.

- True
- False ✔

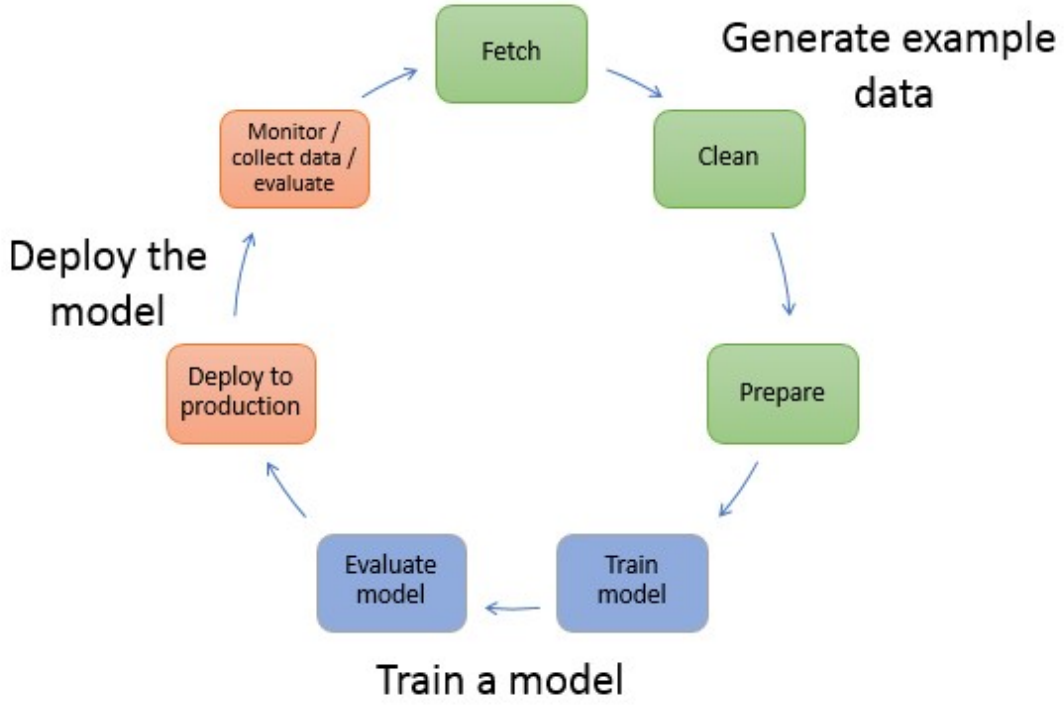
Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Question 5

1/1 point (graded)

The following diagram illustrates the typical workflow for creating a machine learning model:



In which phase would you choose a learning algorithm?

Train the model ✔**Answer:** Train the model

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Question 6

1/1 point (graded)

The K-means algorithm is one of the most popular supervised machine learning algorithms

- True

- ◉ False ✔

Submit | You have used 1 of 3 attempts

ℹ Answers are displayed within the problem

Question 7

1/1 point (graded)

Which statement is true about hyperparameter tuning?

- ○ Hyperparameter tuning is an unsupervised machine learning regression problem.
- ○ Hyperparameter tuning does not require any input values.
- ◉ Hyperparameter tuning uses regression to choose the best values to test. ✔
- ○ Hyperparameter tuning is a guaranteed way to improve your model.

Submit | You have used 2 of 3 attempts

ℹ Answers are displayed within the problem

Question 8

4/4 points (graded)

You would like to predict rent for a house based on the area (measured in square feet) and the number of bedrooms it has. For your machine algorithm to learn, you have compiled the following training data:

	Area	Bedrooms	Rent
House 1	1,500	2	$1,000
House 2	2,000	3	$2,500
House 3	1,800	2	$2,000

As you recall from the SageMaker/ML Terminology video, prediction models use input (Features) to determine output (Target). We are using this data to predict rent for a new house.

In the example above, the entire table of house information can be called our:

Dataset ✔

In the example above, one particular house can be called our:

Data point ✔

In the example above, Area and Bedroom data can be called our:

Features ✔

In the example above, the Rent is our:

Target or Label ✔

Submit You have used 1 of 3 attempts

Question 9

1/1 point (graded)

What algorithms can you use for supervised learning models such classification and regression? Check all that apply.

☑ Linear Learner ✔

☐ K-means

☑ XGBoost ✔

✔

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Question 10

2/2 points (graded)

You would like to turn your Amazon SageMaker machine learning models and endpoints into customer-facing applications. You decide to put these on a single web server that can be accessed by customers via a browser. However, you realize that the web server is not inherently scalable; if it receives a lot of traffic, it could run out of CPU or memory.

How can you make this approach more scalable and secure? Select 3 answers.

☑ Deploy a load balancer and setup autoscaling. ✔

☑ Create an IAM Role so the web server can access SageMaker endpoints. ✔

☑ Keep operating system and language runtimes for the web server patch secured. ✔

☐ Make all customers IAM users so they can access SageMaker endpoints.

✔

This sounds like a lot of work. What AWS service can we use to automate server and operating system maintenance, capacity provisioning, and automatic scaling?

AWS Lambda ✔ **Answer:** AWS Lambda

Submit You have used 1 of 3 attempts

Answers are displayed within the problem