

# Microsoft

## Exam Questions DP-100

Designing and Implementing a Data Science Solution on Azure



### NEW QUESTION 1

- (Exam Topic 3)

You are determining if two sets of data are significantly different from one another by using Azure Machine Learning Studio.

Estimated values in one set of data may be more than or less than reference values in the other set of data. You must produce a distribution that has a constant Type I error as a function of the correlation.

You need to produce the distribution.

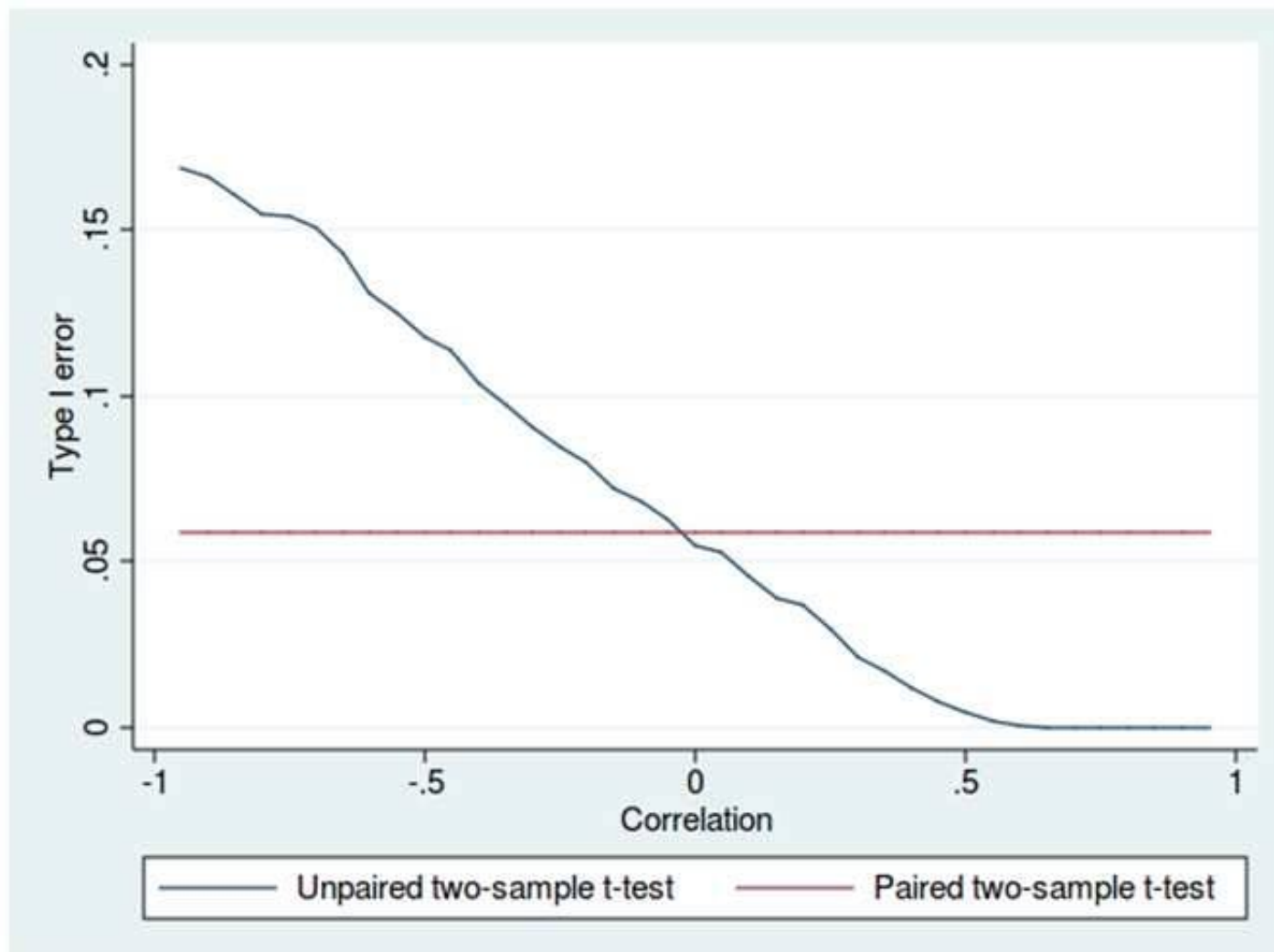
Which type of distribution should you produce?

- A. Paired t-test with a two-tail option
- B. Unpaired t-test with a two tail option
- C. Paired t-test with a one-tail option
- D. Unpaired t-test with a one-tail option

**Answer: A**

#### Explanation:

Choose a one-tail or two-tail test. The default is a two-tailed test. This is the most common type of test, in which the expected distribution is symmetric around zero. Example: Type I error of unpaired and paired two-sample t-tests as a function of the correlation. The simulated random numbers originate from a bivariate normal distribution with a variance of 1.



Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/test-hypothesis-using-t-test> [https://en.wikipedia.org/wiki/Student%27s\\_t-test](https://en.wikipedia.org/wiki/Student%27s_t-test)

### NEW QUESTION 2

- (Exam Topic 3)

You are using the Azure Machine Learning Service to automate hyperparameter exploration of your neural network classification model.

You must define the hyperparameter space to automatically tune hyperparameters using random sampling according to following requirements:

- The learning rate must be selected from a normal distribution with a mean value of 10 and a standard deviation of 3.
- Batch size must be 16, 32 and 64.
- Keep probability must be a value selected from a uniform distribution between the range of 0.05 and 0.1.

You need to use the param\_sampling method of the Python API for the Azure Machine Learning Service. How should you complete the code segment? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

```
from azureml.train.hyperdrive import RandomParameterSampling
param_sampling = RandomParameterSampling( {
    "learning_rate" :
        uniform(10,3)
        normal(10,3)
        choice(10,3)
        Loguniform(10,3)

    "batch_size":
        choice(16,32,64)
        choice(range(16,64))
        normal(16,32,64)
        normal(range(16,64))

    "keep_probability" :
        choice(range(0.05, 0.1))
        uniform(0.05, 0.1)
        normal(0.05, 0.1)
        lognormal(0.05, 0.1)

})
```

- A. Mastered  
 B. Not Mastered

**Answer:** A

**Explanation:**

In random sampling, hyperparameter values are randomly selected from the defined search space. Random sampling allows the search space to include both discrete and continuous hyperparameters.

Example:

```
from azureml.train.hyperdrive import RandomParameterSampling
param_sampling = RandomParameterSampling( { "learning_rate": normal(10, 3),
    "keep_probability": uniform(0.05, 0.1),
    "batch_size": choice(16, 32, 64)
})
```

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-tune-hyperparameters>

**NEW QUESTION 3**

- (Exam Topic 3)

You are tuning a hyperparameter for an algorithm. The following table shows a data set with different hyperparameter, training error, and validation errors.

Hyperparameter (H)	Training error (TE)	Validation error (VE)
1	105	95
2	200	85
3	250	100
4	105	100
5	400	50

Use the drop-down menus to select the answer choice that answers each question based on the information presented in the graphic.

## Question

## Answer Choise

Which H value should you select based on the data?

▼

1

2

3

4

5

What H value displays the poorest training result?

▼

1

2

3

4

5

- A. Mastered  
 B. Not Mastered

**Answer: A**

### Explanation:

Box 1: 4  
 Choose the one which has lower training and validation error and also the closest match. Minimize variance (difference between validation error and train error).  
 Box 2: 5  
 Minimize variance (difference between validation error and train error). Reference:  
<https://medium.com/comet-ml/organizing-machine-learning-projects-project-management-guidelines-2d2b8565>

### NEW QUESTION 4

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are analyzing a numerical dataset which contains missing values in several columns.

You must clean the missing values using an appropriate operation without affecting the dimensionality of the feature set.

You need to analyze a full dataset to include all values.

Solution: Calculate the column median value and use the median value as the replacement for any missing value in the column.

Does the solution meet the goal?

- A. Yes  
 B. No

**Answer: B**

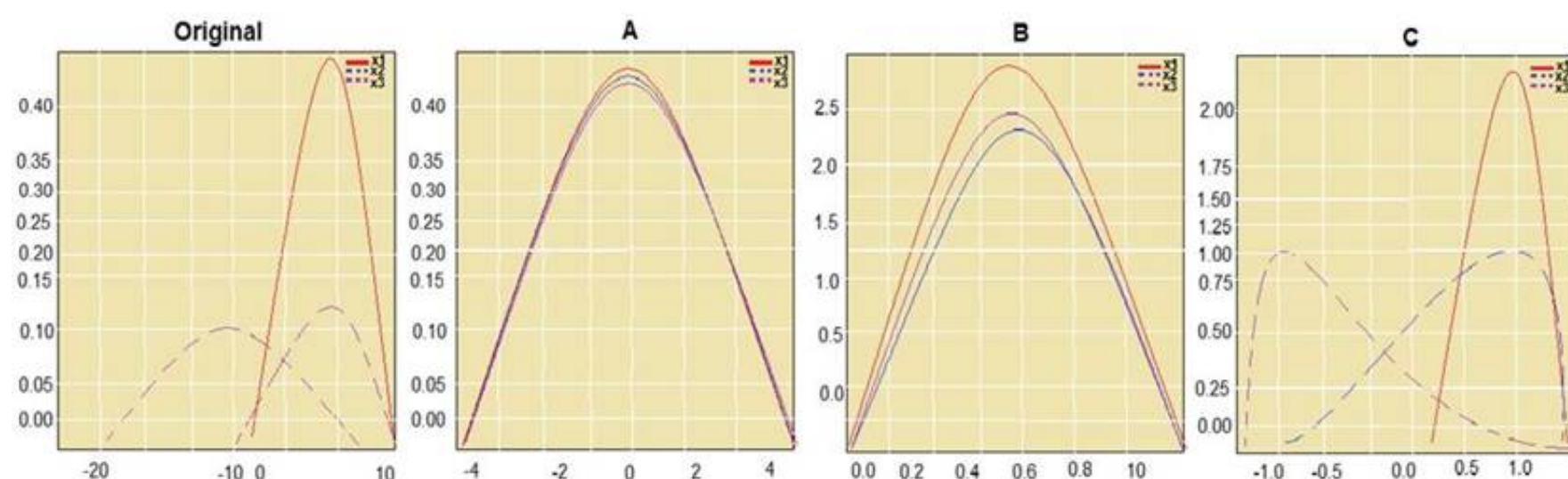
### Explanation:

Use the Multiple Imputation by Chained Equations (MICE) method. References: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3074241/>  
<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/clean-missing-data>

### NEW QUESTION 5

- (Exam Topic 3)

You are performing feature scaling by using the scikit-learn Python library for x.1 x2, and x3 features. Original and scaled data is shown in the following image.



Use the drop-down menus to select the answer choice that answers each question based on the information presented in the graphic.  
 NOTE: Each correct selection is worth one point.

### Question

### Answer choice

Which scaler is used in graph A?

▼

Standard Scaler

Min Max Scale

Normalizer

Which scaler is used in graph B?

▼

Standard Scaler

Min Max Scale

Normalizer

Which scaler is used in graph C?

▼

Standard Scaler

Min Max Scale

Normalizer

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

Box 1: StandardScaler

The StandardScaler assumes your data is normally distributed within each feature and will scale them such that the distribution is now centred around 0, with a standard deviation of 1.

Example:

All features are now on the same scale relative to one another. Box 2: Min Max Scaler

Notice that the skewness of the distribution is maintained but the 3 distributions are brought into the same scale so that they overlap.

Box 3: Normalizer References:

<http://benalexkeen.com/feature-scaling-with-scikit-learn/>

#### NEW QUESTION 6

- (Exam Topic 3)

You are analyzing a dataset by using Azure Machine Learning Studio.

YOU need to generate a statistical summary that contains the p value and the unique value count for each feature column.

Which two modules can you users? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

- A. Execute Python Script
- B. Export Count Table
- C. Convert to Indicator Values
- D. Summarize Data
- E. Compute linear Correlation

**Answer:** BE

#### Explanation:

The Export Count Table module is provided for backward compatibility with experiments that use the Build Count Table (deprecated) and Count Featurizer (deprecated) modules.

E: Summarize Data statistics are useful when you want to understand the characteristics of the complete dataset. For example, you might need to know: How many missing values are there in each column? How many unique values are there in a feature column?

What is the mean and standard deviation for each column?

The module calculates the important scores for each column, and returns a row of summary statistics for each variable (data column) provided as input.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/export-count-table> <https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/summarize-data>

#### NEW QUESTION 7

- (Exam Topic 3)

You are building a binary classification model by using a supplied training set. The training set is imbalanced between two classes.

You need to resolve the data imbalance.

What are three possible ways to achieve this goal? Each correct answer presents a complete solution NOTE: Each correct selection is worth one point.

- A. Penalize the classification
- B. Resample the data set using under sampling or oversampling
- C. Generate synthetic samples in the minority class.
- D. Use accuracy as the evaluation metric of the model.
- E. Normalize the training feature set.

**Answer:** BCD



**NEW QUESTION 8**

- (Exam Topic 3)

You are a data scientist building a deep convolutional neural network (CNN) for image classification. The CNN model you built shows signs of overfitting. You need to reduce overfitting and converge the model to an optimal fit.

Which two actions should you perform? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

- A. Reduce the amount of training data.
- B. Add an additional dense layer with 64 input units
- C. Add L1/L2 regularization.
- D. Use training data augmentation
- E. Add an additional dense layer with 512 input units.

**Answer:** AC

**Explanation:**

References:

<https://machinelearningmastery.com/how-to-reduce-overfitting-in-deep-learning-with-weight-regularization/>

[https://en.wikipedia.org/wiki/Convolutional\\_neural\\_network](https://en.wikipedia.org/wiki/Convolutional_neural_network)

**NEW QUESTION 9**

- (Exam Topic 3)

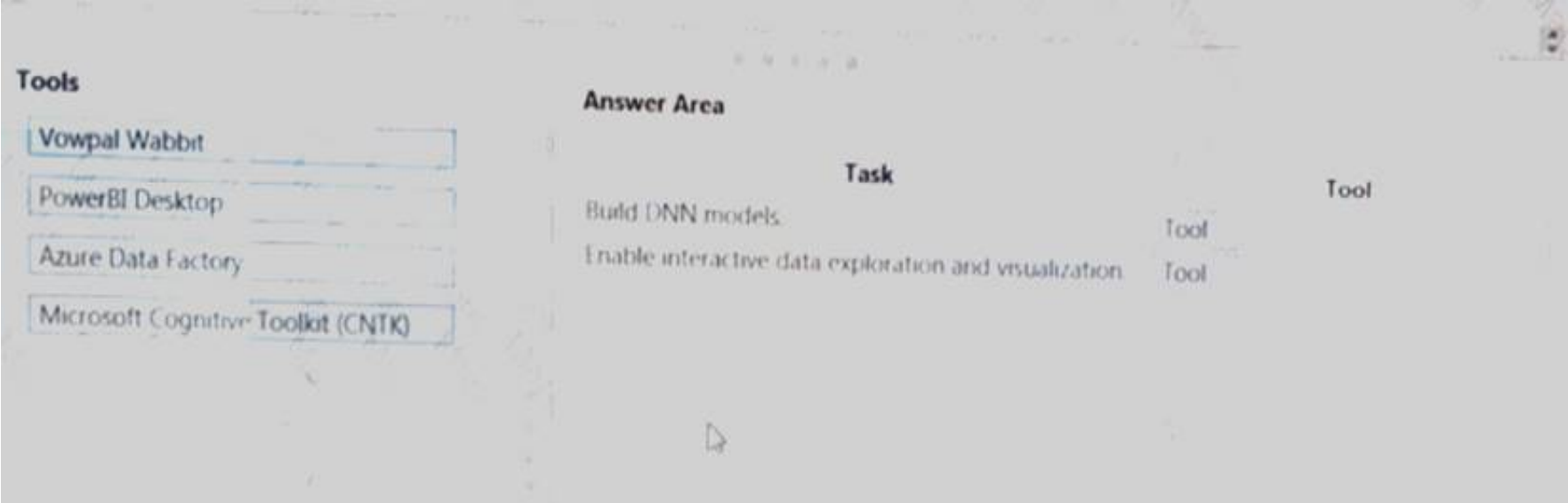
You configure a Deep Learning Virtual Machine for Windows.

You need to recommend tools and frameworks to perform the following: Build deep rwur.il network (DNN) models.

Perform interactive data exploration and visualization.

Which tools and frameworks should you recommend? To answer, drag the appropriate tools to the correct tasks. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

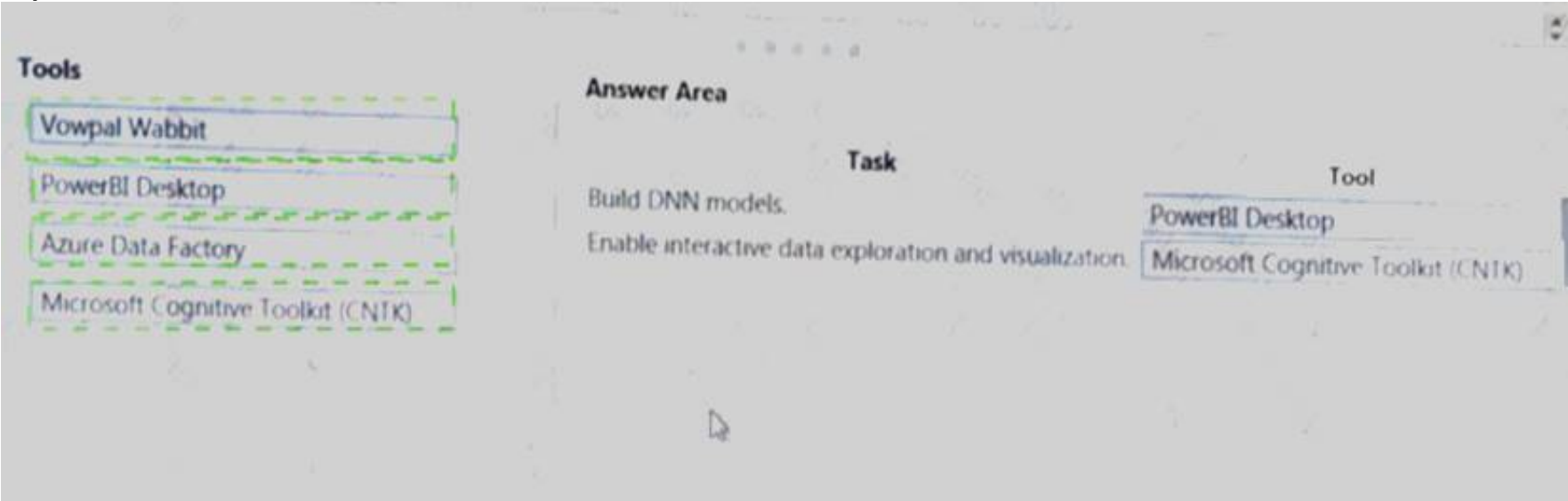
NOTE: Each correct selection is worth one point.



- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**



**NEW QUESTION 10**

- (Exam Topic 3)

You use Azure Machine Learning Studio to build a machine learning experiment.

You need to divide data into two distinct datasets. Which module should you use?

- A. Partition and Sample
- B. Assign Data to Clusters
- C. Group Data into Bins
- D. Test Hypothesis Using t-Test

**Answer:** A

**Explanation:**

Partition and Sample with the Stratified split option outputs multiple datasets, partitioned using the rules you specified.  
References:  
<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/partition-and-sample>

**NEW QUESTION 10**

- (Exam Topic 2)  
You need to configure the Permutation Feature Importance module for the model training requirements. What should you do? To answer, select the appropriate options in the dialog box in the answer area. NOTE: Each correct selection is worth one point.

**Answer Area**

Permutation Feature importance

Random seed

▼

0

500

▼

Regression – Root Mean Square Error

Regression – R-squared

Regression – Mean Zero One Error

Regression – Mean Absolute Error

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: 500  
For Random seed, type a value to use as seed for randomization. If you specify 0 (the default), a number is generated based on the system clock. A seed value is optional, but you should provide a value if you want reproducibility across runs of the same experiment.  
Here we must replicate the findings. Box 2: Mean Absolute Error  
Scenario: Given a trained model and a test dataset, you must compute the Permutation Feature Importance scores of feature variables. You need to set up the Permutation Feature Importance module to select the correct metric to investigate the model's accuracy and replicate the findings.  
Regression. Choose one of the following: Precision, Recall, Mean Absolute Error , Root Mean Squared Error, Relative Absolute Error, Relative Squared Error, Coefficient of Determination  
References:  
<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/permutation-feature-importan>

**NEW QUESTION 11**

- (Exam Topic 2)  
You need to implement early stopping criteria as suited in the model training requirements.  
Which three code segments should you use to develop the solution? To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.  
NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Code segments	Answer Area
<pre>early_termination_policy = TruncationSelectionPolicy(evaluation_interval=1, truncation_percentage=20, delay_evaluation=5)</pre>	
<pre>import TruncationSelectionPolicy</pre>	
<pre>from azureml.train.hyperdrive</pre>	⬅️ ⬆️
<pre>import BanditPolicy</pre>	⬆️ ⬇️
<pre>early_termination_policy = BanditPolicy (slack_factor = 0.1, evaluation_interval=1, delay_evaluation=5)</pre>	

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

You need to implement an early stopping criterion on models that provides savings without terminating promising jobs. Truncation selection cancels a given percentage of lowest performing runs at each evaluation interval. Runs are compared based on their performance on the primary metric and the lowest X% are terminated.  
 Example:  

```
from azureml.train.hyperdrive import TruncationSelectionPolicy
early_termination_policy = TruncationSelectionPolicy(evaluation_interval=1, truncation_percentage=20, delay_evaluation=5)
```

**NEW QUESTION 13**

- (Exam Topic 1)

You need to implement a model development strategy to determine a user's tendency to respond to an ad. Which technique should you use?

- A. Use a Relative Expression Split module to partition the data based on centroid distance.
- B. Use a Relative Expression Split module to partition the data based on distance travelled to the event.
- C. Use a Split Rows module to partition the data based on distance travelled to the event.
- D. Use a Split Rows module to partition the data based on centroid distance.

**Answer:** A

**Explanation:**

Split Data partitions the rows of a dataset into two distinct sets. The Relative Expression Split option in the Split Data module of Azure Machine Learning Studio is helpful when you need to divide a dataset into training and testing datasets using a numerical expression.  
 Relative Expression Split: Use this option whenever you want to apply a condition to a number column. The number could be a date/time field, a column containing age or dollar amounts, or even a percentage. For example, you might want to divide your data set depending on the cost of the items, group people by age ranges, or separate data by a calendar date.  
 Scenario:  
 Local market segmentation models will be applied before determining a user's propensity to respond to an advertisement. The distribution of features across training and production data are not consistent References:  
<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/split-data>

**NEW QUESTION 18**

- (Exam Topic 1)

You need to build a feature extraction strategy for the local models. How should you complete the code segment? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.



**Answer Area**

```
with C.layers.default_options(init=C.glorot_uniform(), activation=C.relu):
h = features

h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
h = C.layers.Convolution2D(num_filters=16...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)

r = C.layers.Dense...
```

```
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)
h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.Convolution2D(num_filters=16...)(h)
```

```
h = C.layers.Convolution2D(num_filters=16...)(h)
h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
```

```
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)
h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.Convolution2D(num_filters=16...)(h)
```

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

**Answer Area**

```
with C.layers.default_options(init=C.glorot_uniform(), activation=C.relu):
h = features

h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
h = C.layers.Convolution2D(num_filters=16...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)

r = C.layers.Dense...
```

```
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)
h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.Convolution2D(num_filters=16...)(h)
```

```
h = C.layers.Convolution2D(num_filters=16...)(h)
h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
```

```
h = C.layers.MaxPooling(filter_shape=(3,3)...)(h)
h = C.layers.MaxPooling(filter_shape=(2,2)...)(h)
h = C.layers.Convolution2D(num_filters=8...)(h)
h = C.layers.Convolution2D(num_filters=16...)(h)
```

**NEW QUESTION 22**

- (Exam Topic 3)

You create a binary classification model. You need to evaluate the model performance.

Which two metrics can you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. relative absolute error
- B. precision
- C. accuracy
- D. mean absolute error
- E. coefficient of determination

**Answer:** BC

**Explanation:**

The evaluation metrics available for binary classification models are: Accuracy, Precision, Recall, F1 Score, and AUC.

Note: A very natural question is: 'Out of the individuals whom the model, how many were classified correctly (TP)?'  
 This question can be answered by looking at the Precision of the model, which is the proportion of positives that are classified correctly.  
 References:  
<https://docs.microsoft.com/en-us/azure/machine-learning/studio/evaluate-model-performance>

#### NEW QUESTION 26

- (Exam Topic 3)

You must store data in Azure Blob Storage to support Azure Machine Learning. You need to transfer the data into Azure Blob Storage.  
 What are three possible ways to achieve the goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Bulk Insert SQL Query
- B. AzCopy
- C. Python script
- D. Azure Storage Explorer
- E. Bulk Copy Program (BCP)

**Answer:** BCD

#### Explanation:

You can move data to and from Azure Blob storage using different technologies: Azure Storage-Explorer  
 AzCopy Python SSIS

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/team-data-science-process/move-azure-blob>

#### NEW QUESTION 30

- (Exam Topic 3)

You are developing a hands-on workshop to introduce Docker for Windows to attendees. You need to ensure that workshop attendees can install Docker on their devices.

Which two prerequisite components should attendees install on the devices? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Microsoft Hardware-Assisted Virtualization Detection Tool
- B. Kitematic
- C. BIOS-enabled virtualization
- D. VirtualBox
- E. Windows 10 64-bit Professional

**Answer:** E

#### Explanation:

C: Make sure your Windows system supports Hardware Virtualization Technology and that virtualization is enabled.  
 Ensure that hardware virtualization support is turned on in the BIOS settings. For example:



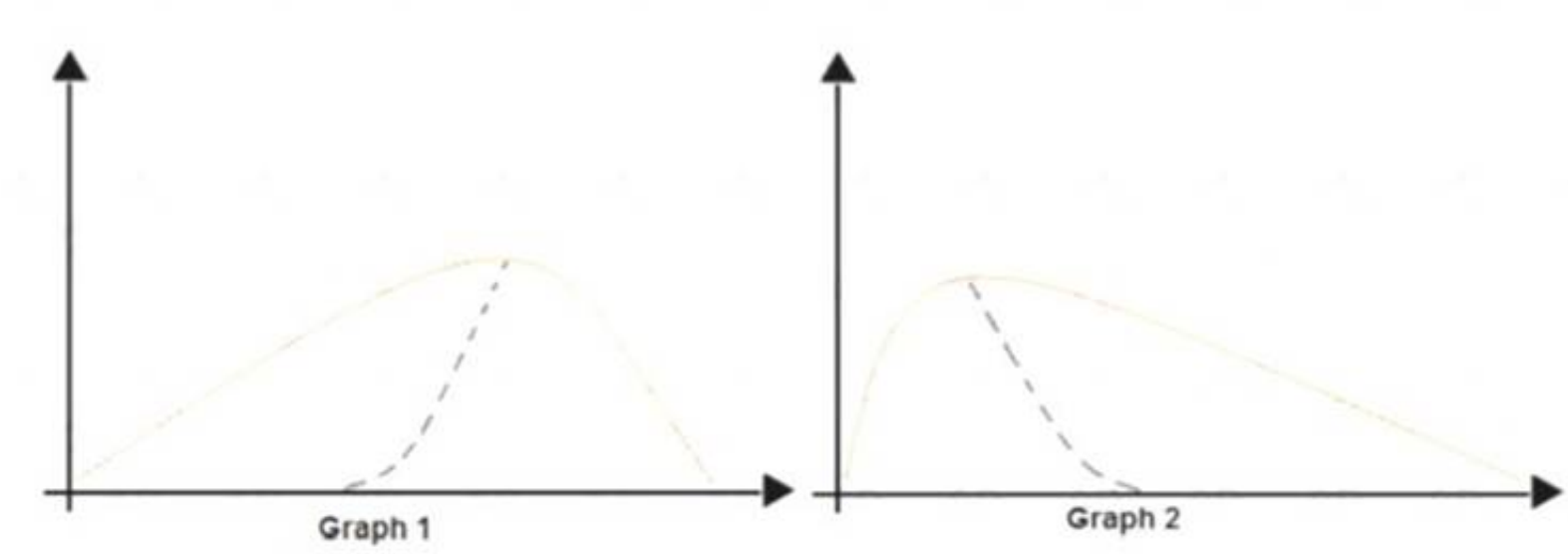
E: To run Docker, your machine must have a 64-bit operating system running Windows 7 or higher. References:  
[https://docs.docker.com/toolbox/toolbox\\_install\\_windows/](https://docs.docker.com/toolbox/toolbox_install_windows/) <https://blogs.technet.microsoft.com/canitpro/2015/09/08/step-by-step-enabling-hyper-v-for-use-on-windows-10/>

#### NEW QUESTION 32

- (Exam Topic 3)

You are analyzing the asymmetry in a statistical distribution.

The following image contains two density curves that show the probability distribution of two datasets.



Use the drop-down menus to select the answer choice that answers each question based on the information presented in the graphic.  
NOTE: Each correct selection is worth one point.

Question	Answer choice
Which type of distribution is shown for the dataset density curve of Graph 1?	<div><div></div><div>Negative skew Positive skew Normal distribution Bimodal distribution</div></div>
Which type of distribution is shown for the dataset density curve of Graph 2?	<div><div></div><div>Negative skew Positive skew Normal distribution Bimodal distribution</div></div>

- A. Mastered
- B. Not Mastered

Answer: A

**Explanation:**  
Box 1: Positive skew  
Positive skew values means the distribution is skewed to the right. Box 2: Negative skew  
Negative skewness values mean the distribution is skewed to the left. References:  
<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/compute-elementary-statistic>

NEW QUESTION 33

- (Exam Topic 3)  
You are performing a classification task in Azure Machine Learning Studio.  
You must prepare balanced testing and training samples based on a provided data set. You need to split the data with a 0.75:0.25 ratio.  
Which value should you use for each parameter? To answer, select the appropriate options in the answer area.  
NOTE: Each correct selection is worth one point.

Parameter	Value
Splitting mode	<div><div></div><div>Split rows Recommender Split Regular Expression Split Relative Expression Split</div></div>
Fraction of rows in the first output dataset	<div><div></div><div>0.75 0.25 0.5 1</div></div>
Randomized split	<div><div></div><div>True False</div></div>
Stratified split	<div><div></div><div>True False</div></div>



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Split rows

Use the Split Rows option if you just want to divide the data into two parts. You can specify the percentage of data to put in each split, but by default, the data is divided 50-50.

You can also randomize the selection of rows in each group, and use stratified sampling. In stratified sampling, you must select a single column of data for which you want values to be apportioned equally among the two result datasets.

Box 2: 0.75

If you specify a number as a percentage, or if you use a string that contains the "%" character, the value is interpreted as a percentage. All percentage values must be within the range (0, 100), not including the values 0 and 100.

Box 3: Yes

To ensure splits are balanced. Box 4: No

If you use the option for a stratified split, the output datasets can be further divided by subgroups, by selecting a strata column.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/split-data>

NEW QUESTION 38

- (Exam Topic 3)

You are using C-Support Vector classification to do a multi-class classification with an unbalanced training dataset. The C-Support Vector classification using Python code shown below:

```
from sklearn.svm import svc
import numpy as np
svc = SVC(kernel= 'linear', class_weight= 'balanced', C=1.0, random_state=0)
model1 = svc.fit(X_train, y)
```

You need to evaluate the C-Support Vector classification code.

Which evaluation statement should you use? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Code Segment	Evaluation Statement
class_weight=balanced	<div>Automatically select the performance metrics for the classification.</div> <div>Automatically adjust weights directly proportional to class frequencies in the input data.</div> <div>Automatically adjust weights inversely proportional to class frequencies in the input data.</div>
C parameter	<div>Penalty parameter</div> <div>Degree of polynomial kernel function</div> <div>Size of the kernel cache</div>

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Automatically adjust weights inversely proportional to class frequencies in the input data

The "balanced" mode uses the values of y to automatically adjust weights inversely proportional to class frequencies in the input data as  $n_{\text{samples}} / (n_{\text{classes}} * \text{np.bincount}(y))$ .

Box 2: Penalty parameter

Parameter: C : float, optional (default=1.0)

Penalty parameter C of the error term. References:

<https://scikit-learn.org/stable/modules/generated/sklearn.svm.SVC.html>

NEW QUESTION 39

- (Exam Topic 3)

You are creating a machine learning model. You need to identify outliers in the data.

Which two visualizations can you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point. NOTE: Each correct selection is worth one point.

- A. box plot
- B. scatter
- C. random forest diagram

- D. Venn diagram
- E. ROC curve

**Answer:** AB

**Explanation:**

The box-plot algorithm can be used to display outliers.

One other way to quickly identify Outliers visually is to create scatter plots. References:

<https://blogs.msdn.microsoft.com/azuredev/2017/05/27/data-cleansing-tools-in-azure-machine-learning/>

**NEW QUESTION 42**

- (Exam Topic 3)

You are conducting feature engineering to prepuce data for further analysis. The data includes seasonal patterns on inventory requirements.

You need to select the appropriate method to conduct feature engineering on the data. Which method should you use?

- A. Exponential Smoothing (ETS) function.
- B. One Class Support Vector Machine module
- C. Time Series Anomaly Detection module
- D. Finite Impulse Response (FIR) Filter module.

**Answer:** D

**NEW QUESTION 45**

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are creating a model to predict the price of a student's artwork depending on the following variables: the student's length of education, degree type, and art form.

You start by creating a linear regression model.

You need to evaluate the linear regression model.

Solution: Use the following metrics: Relative Squared Error, Coefficient of Determination, Accuracy, Precision, Recall, F1 score, and AUC.

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**Explanation:**

Relative Squared Error, Coefficient of Determination are good metrics to evaluate the linear regression model, but the others are metrics for classification models.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/evaluate-model>

**NEW QUESTION 49**

- (Exam Topic 3)

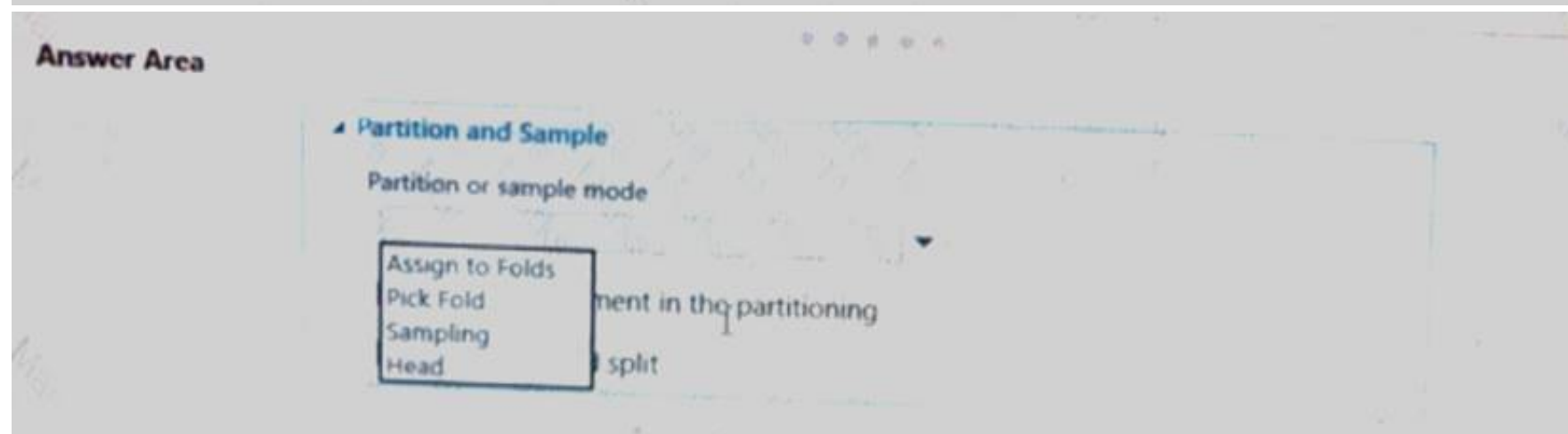
You have a dataset contains 2,000 rows. You arc building a machine learning classification model by using Azure Machine Learning Studio. You add a Partition and Sample module to the experiment.

You need to configure the module. You must meet the following requirements:

- Divide the data into subsets.
- Assign the rows into folds using a round-robin method.
- Allow rows in the dataset to be reused.

How should you configure the module? To answer select the appropriate Options m the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

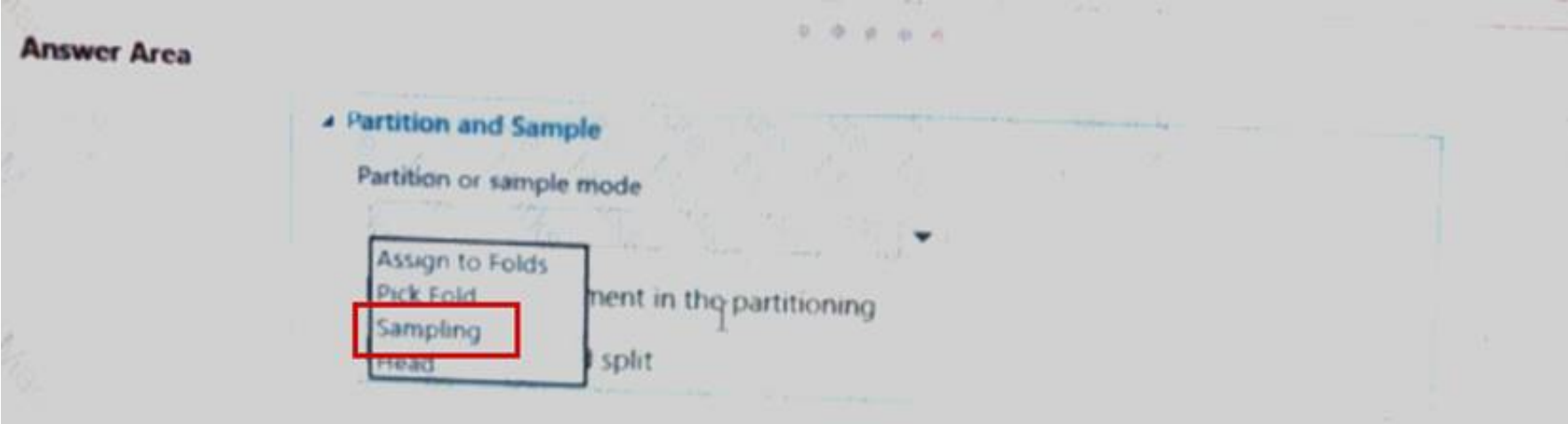


- A. Mastered
- B. Not Mastered



Answer: A

Explanation:



**NEW QUESTION 54**

- (Exam Topic 3)

You are building an intelligent solution using machine learning models. The environment must support the following requirements:

- Data scientists must build notebooks in a cloud environment
- Data scientists must use automatic feature engineering and model building in machine learning pipelines.
- Notebooks must be deployed to retrain using Spark instances with dynamic worker allocation.
- Notebooks must be exportable to be version controlled locally.

You need to create the environment.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Actions

Install the Azure Machine Learning SDK for Python on the cluster.

When the cluster is ready, export Zeppelin notebooks to a local environment.

Create and execute a Jupyter notebook by using automated machine learning (AutoML) on the cluster.

Install Microsoft Machine Learning for Apache Spark.

When the cluster is ready and has processed the notebook, export your Jupyter notebook to a local environment.

Create an Azure HDInsight cluster to include the Apache Spark Mlib library.

Create and execute the Zeppelin notebooks on the cluster.

Create an Azure Databricks cluster.

Answer area

⏪

⏩

⏴

⏵

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Step 1: Create an Azure HDInsight cluster to include the Apache Spark Mlib library Step 2: Install Microsot Machine Learning for Apache Spark

You install AzureML on your Azure HDInsight cluster.

Microsoft Machine Learning for Apache Spark (MMLSpark) provides a number of deep learning and data science tools for Apache Spark, including seamless integration of Spark Machine Learning pipelines with Microsoft Cognitive Toolkit (CNTK) and OpenCV, enabling you to quickly create powerful, highly-scalable predictive and analytical models for large image and text datasets.

Step 3: Create and execute the Zeppelin notebooks on the cluster

Step 4: When the cluster is ready, export Zeppelin notebooks to a local environment. Notebooks must be exportable to be version controlled locally.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/spark/apache-spark-zeppelin-notebook> <https://azuremlbuild.blob.core.windows.net/pysparkapi/intro.html>

**NEW QUESTION 55**

- (Exam Topic 3)

You are building recurrent neural network to perform a binary classification.

The training loss, validation loss, training accuracy, and validation accuracy of each training epoch has been provided. You need to identify whether the classification model is over fitted.

Which of the following is correct?

- A. The training loss increases while the validation loss decreases when training the model.
- B. The training loss decreases while the validation loss increases when training the model.
- C. The training loss stays constant and the validation loss decreases when training the model.
- D. The training loss stays constant and the validation loss stays on a constant value and close to the training loss value when training the model.

**Answer: B**

**Explanation:**

An overfit model is one where performance on the train set is good and continues to improve, whereas performance on the validation set improves to a point and then begins to degrade.

References:

<https://machinelearningmastery.com/diagnose-overfitting-underfitting-lstm-models/>

**NEW QUESTION 58**

- (Exam Topic 3) You are solving a classification task. The dataset is imbalanced.

You need to select an Azure Machine Learning Studio module to improve the classification accuracy. Which module should you use?

- A. Fisher Linear Discriminant Analysis.
- B. Filter Based Feature Selection
- C. Synthetic Minority Oversampling Technique (SMOTE)
- D. Permutation Feature Importance

**Answer: C**

**Explanation:**

Use the SMOTE module in Azure Machine Learning Studio (classic) to increase the number of underrepresented cases in a dataset used for machine learning. SMOTE is a better way of increasing the number of rare cases than simply duplicating existing cases.

You connect the SMOTE module to a dataset that is imbalanced. There are many reasons why a dataset might be imbalanced: the category you are targeting might be very rare in the population, or the data might simply be difficult to collect. Typically, you use SMOTE when the class you want to analyze is under-represented.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/smote>

**NEW QUESTION 63**

- (Exam Topic 3)

You plan to preprocess text from CSV files. You load the Azure Machine Learning Studio default stop words list.

You need to configure the Preprocess Text module to meet the following requirements:

- Ensure that multiple related words from a single canonical form.
- Remove pipe characters from text.
- Remove words to optimize information retrieval.

Which three options should you select? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

## Preprocess Text

Language

English

Remove by part of speech

False

Text column to clean

Selected columns:

Column names: **String, Feature**

Launch column selector

☐ Remove stop words

☐ Lemmatization

☐ Detect sentences

☐ Normalize case to lowercase

☐ Remove numbers

☐ Remove special characters

☐ Remove duplicate characters

☐ Remove email addresses

☐ Remove URLs

☐ Expand verb contractions

☐ Normalize backslashes to slashes

☐ Split tokens on special characters

- A. Mastered
- B. Not Mastered

Answer: A

### Explanation:

Box 1: Remove stop words

Remove words to optimize information retrieval.

Remove stop words: Select this option if you want to apply a predefined stopword list to the text column. Stop word removal is performed before any other processes.

Box 2: Lemmatization

Ensure that multiple related words from a single canonical form. Lemmatization converts multiple related words to a single canonical form Box 3: Remove special characters

Remove special characters: Use this option to replace any non-alphanumeric special characters with the pipe | character.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/preprocess-text>

### NEW QUESTION 64

- (Exam Topic 3)

You need to select a feature extraction method. Which method should you use?

- A. Spearman correlation
- B. Mutual information
- C. Mann-Whitney test
- D. Pearson's correlation

Answer: D

**NEW QUESTION 65**

- (Exam Topic 3)

You are performing clustering by using the K-means algorithm. You need to define the possible termination conditions.

Which three conditions can you use? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

- A. A fixed number of iterations is executed.
- B. The residual sum of squares (RSS) rises above a threshold.
- C. The sum of distances between centroids reaches a maximum.
- D. The residual sum of squares (RSS) falls below a threshold.
- E. Centroids do not change between iterations.

**Answer:** ADE

**Explanation:**

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/k-means-clustering> <https://nlp.stanford.edu/IR-book/html/htmledition/k-means-1.html>

**NEW QUESTION 66**

- (Exam Topic 3)

You create a binary classification model by using Azure Machine Learning Studio.

You must tune hyperparameters by performing a parameter sweep of the model. The parameter sweep must meet the following requirements:

- > iterate all possible combinations of hyperparameters
- > minimize computing resources required to perform the sweep
- > You need to perform a parameter sweep of the model.

Which parameter sweep mode should you use?

- A. Random sweep
- B. Sweep clustering
- C. Entire grid
- D. Random grid
- E. Random seed

**Answer:** D

**Explanation:**

Maximum number of runs on random grid: This option also controls the number of iterations over a random sampling of parameter values, but the values are not generated randomly from the specified range; instead, a matrix is created of all possible combinations of parameter values and a random sampling is taken over the matrix. This method is more efficient and less prone to regional oversampling or undersampling.

If you are training a model that supports an integrated parameter sweep, you can also set a range of seed values to use and iterate over the random seeds as well. This is optional, but can be useful for avoiding bias introduced by seed selection.

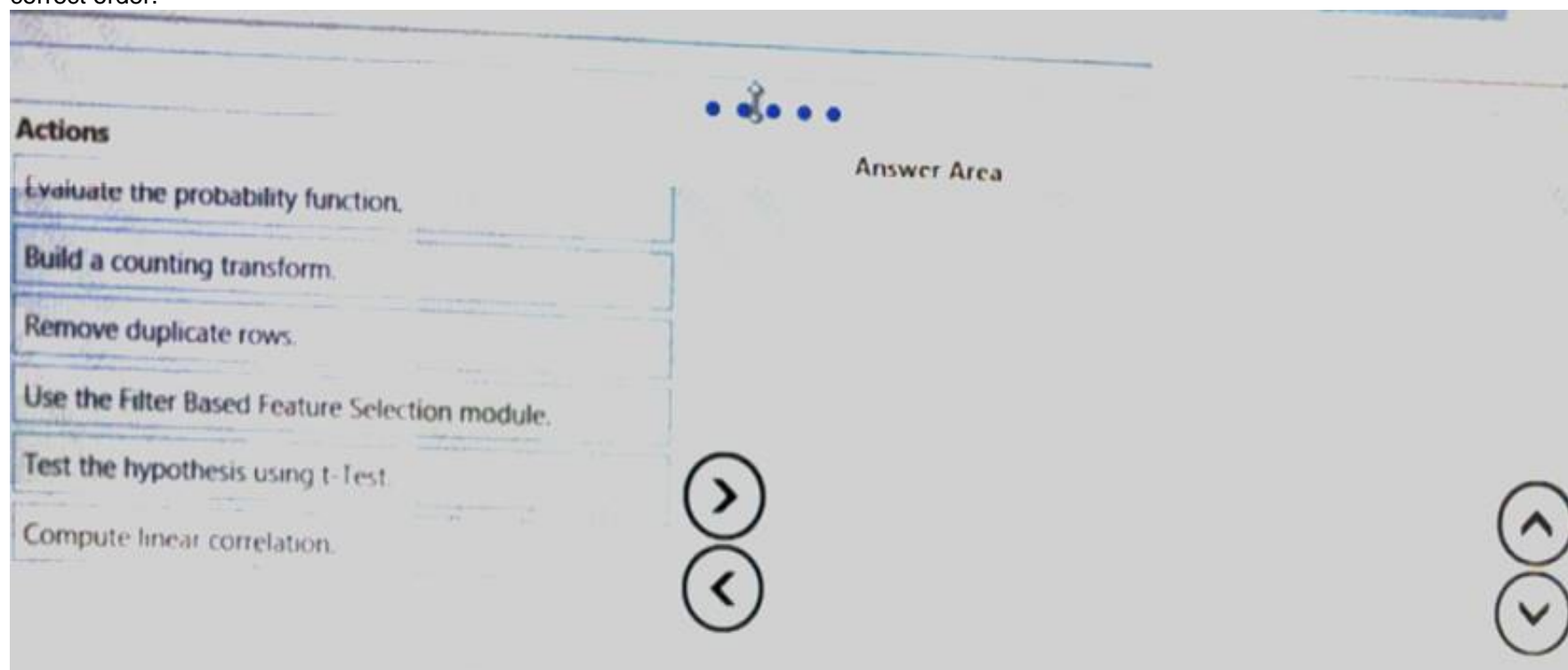
**NEW QUESTION 67**

- (Exam Topic 3)

You are producing a multiple linear regression model in Azure Machine learning Studio. Several independent variables are highly correlated.

You need to select appropriate methods for conducting elective feature engineering on all the data.

Which three actions should you perform in sequence? To answer, move the appropriate Actions from the list of actions to the answer area and arrange them in the correct order.

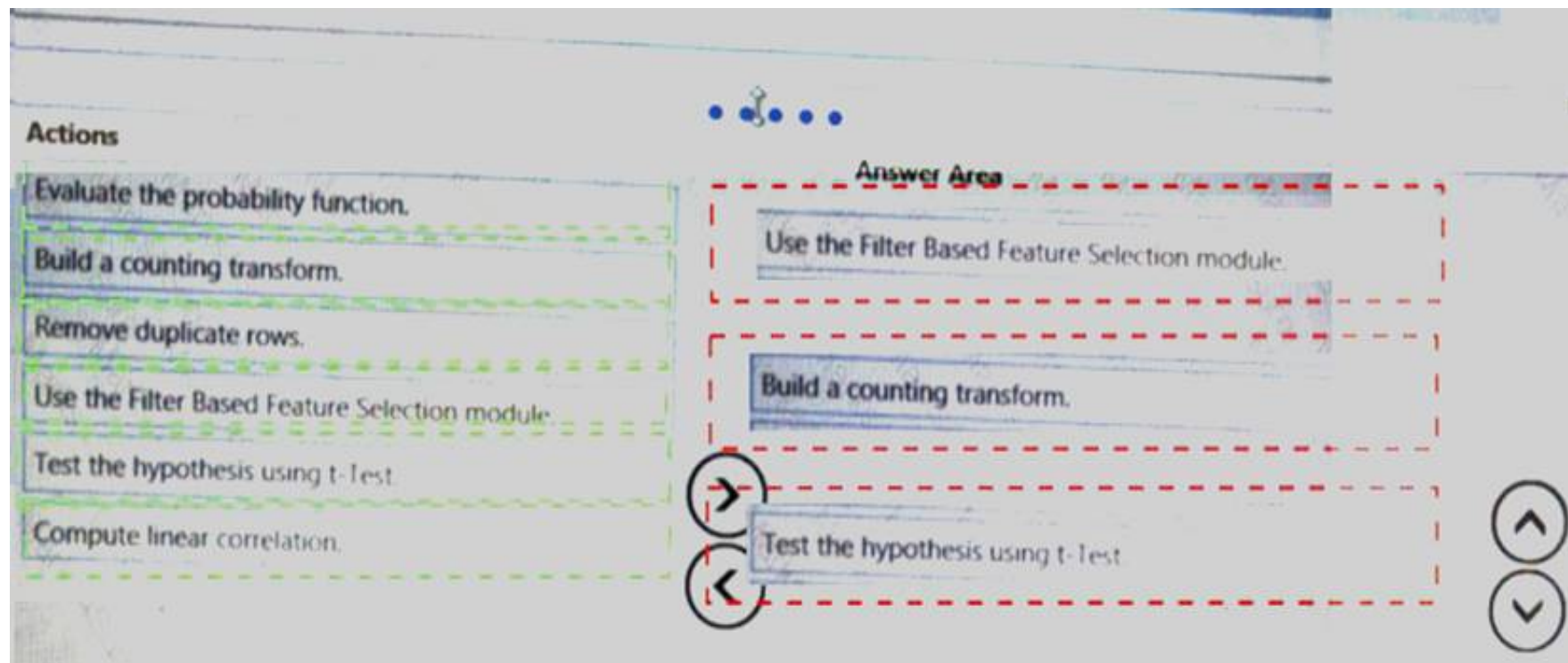


- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**





#### NEW QUESTION 70

- (Exam Topic 3)

You are creating a binary classification by using a two-class logistic regression model. You need to evaluate the model results for imbalance. Which evaluation metric should you use?

- A. Relative Absolute Error
- B. AUC Curve
- C. Mean Absolute Error
- D. Relative Squared Error

**Answer:** B

#### Explanation:

One can inspect the true positive rate vs. the false positive rate in the Receiver Operating Characteristic (ROC) curve and the corresponding Area Under the Curve (AUC) value. The closer this curve is to the upper left corner, the better the classifier's performance is (that is maximizing the true positive rate while minimizing the false positive rate). Curves that are close to the diagonal of the plot, result from classifiers that tend to make predictions that are close to random guessing.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio/evaluate-model-performance#evaluating-a-bina>

#### NEW QUESTION 73

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