

Microsoft

Exam Questions DP-100

Designing and Implementing a Data Science Solution on Azure



NEW QUESTION 1

- (Exam Topic 3)

You train a machine learning model.

You must deploy the model as a real-time inference service for testing. The service requires low CPU utilization and less than 48 MB of RAM. The compute target for the deployed service must initialize automatically while minimizing cost and administrative overhead.

Which compute target should you use?

- A. Azure Kubernetes Service (AKS) inference cluster
- B. Azure Machine Learning compute cluster
- C. Azure Container Instance (ACI)
- D. attached Azure Databricks cluster

Answer: C

Explanation:

Azure Container Instances (ACI) are suitable only for small models less than 1 GB in size. Use it for low-scale CPU-based workloads that require less than 48 GB of RAM.

Note: Microsoft recommends using single-node Azure Kubernetes Service (AKS) clusters for dev-test of larger models.

Reference:

<https://docs.microsoft.com/id-id/azure/machine-learning/how-to-deploy-and-where>

NEW QUESTION 2

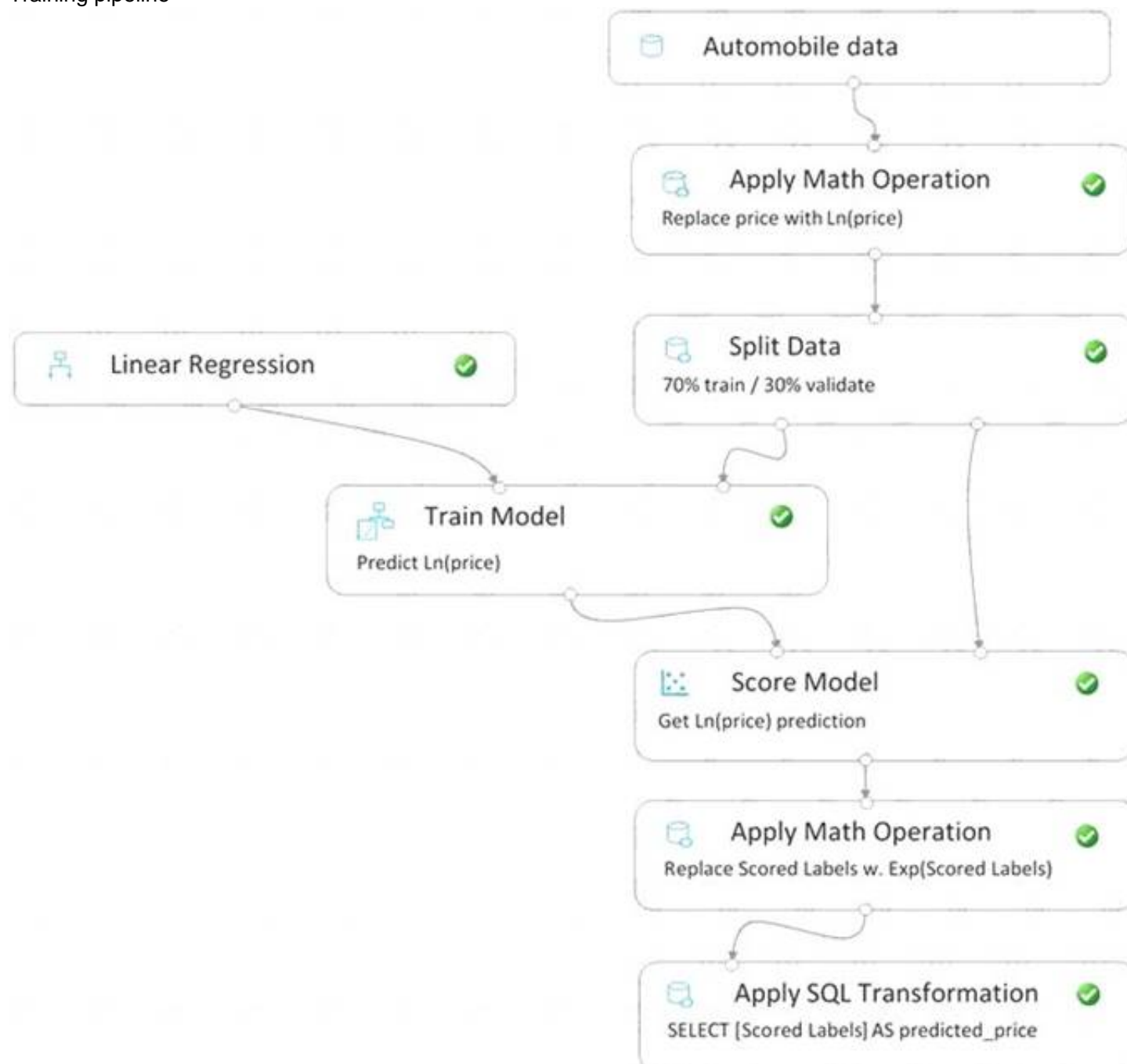
- (Exam Topic 3)

You create a pipeline in designer to train a model that predicts automobile prices.

Because of non-linear relationships in the data, the pipeline calculates the natural log (Ln) of the prices in the training data, trains a model to predict this natural log of price value, and then calculates the exponential of the scored label to get the predicted price.

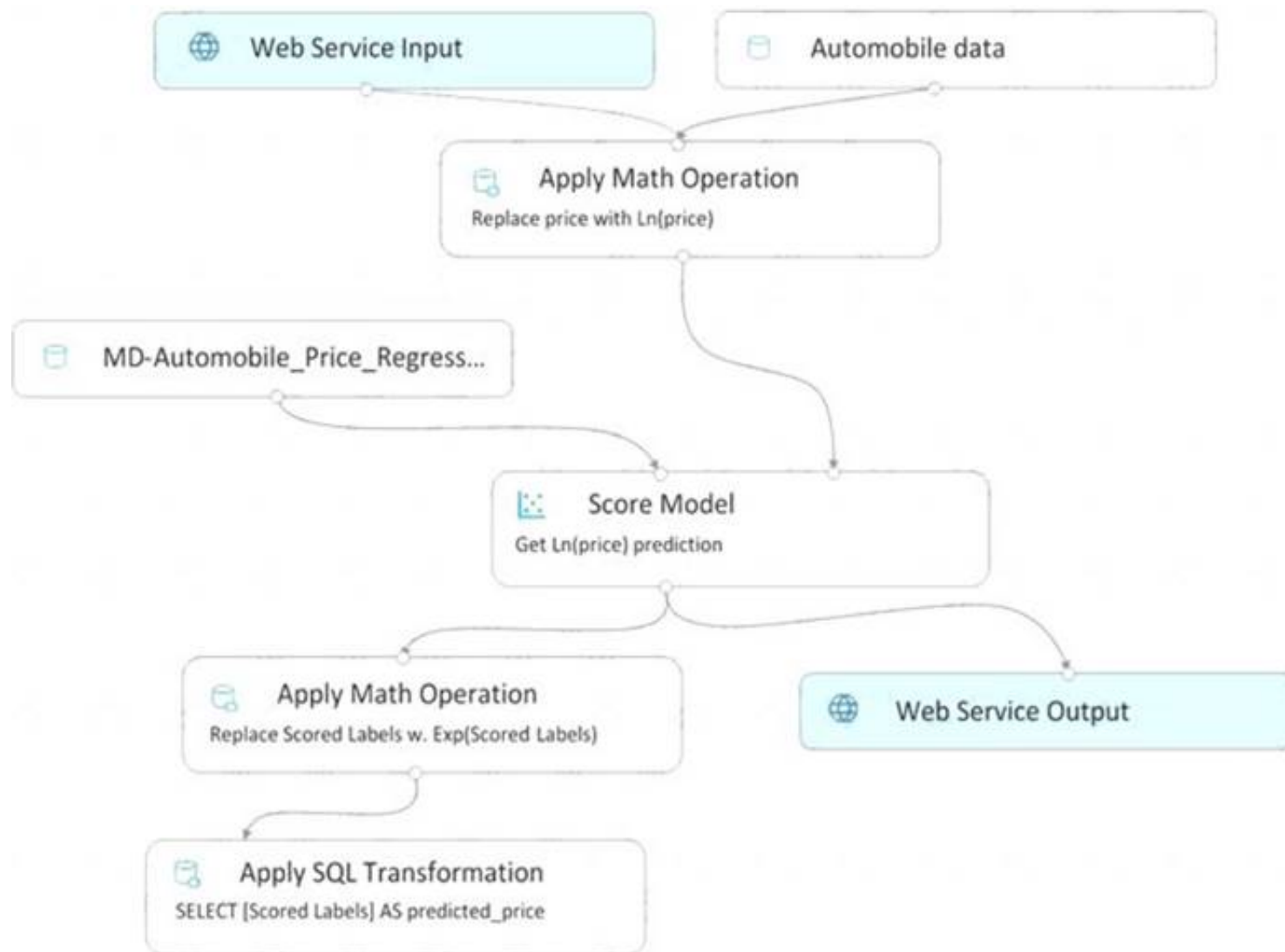
The training pipeline is shown in the exhibit. (Click the Training pipeline tab.)

Training pipeline



You create a real-time inference pipeline from the training pipeline, as shown in the exhibit. (Click the Real-time pipeline tab.)

Real-time pipeline



You need to modify the inference pipeline to ensure that the web service returns the exponential of the scored label as the predicted automobile price and that client applications are not required to include a price value in the input values.

Which three modifications must you make to the inference pipeline? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Connect the output of the Apply SQL Transformation to the Web Service Output module.
- B. Replace the Web Service Input module with a data input that does not include the price column.
- C. Add a Select Columns module before the Score Model module to select all columns other than price.
- D. Replace the training dataset module with a data input that does not include the price column.
- E. Remove the Apply Math Operation module that replaces price with its natural log from the data flow.
- F. Remove the Apply SQL Transformation module from the data flow.

Answer: ACE

NEW QUESTION 3

- (Exam Topic 3)

You are creating a classification model for a banking company to identify possible instances of credit card fraud. You plan to create the model in Azure Machine Learning by using automated machine learning.

The training dataset that you are using is highly unbalanced. You need to evaluate the classification model.

Which primary metric should you use?

- A. normalized_mean_absolute_error
- B. [spearman_correlation
- C. AUC.weighted
- D. accuracy
- E. normalized_root_mean_squared_error

Answer: C

Explanation:

AUC_weighted is a Classification metric.

Note: AUC is the Area under the Receiver Operating Characteristic Curve. Weighted is the arithmetic mean of the score for each class, weighted by the number of true instances in each class.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-understand-automated-ml>

NEW QUESTION 4

- (Exam Topic 3)

You create an Azure Machine Learning workspace.

You need to detect data drift between a baseline dataset and a subsequent target dataset by using the DataDriftDetector class.

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.core import Workspace, Dataset
from datetime import datetime

ws = Workspace.from_config()
dset = Dataset.get_by_name(ws, 'target')
baseline = target.time_before(datetime(2021, 2, 1))
features = ['windAngle', 'windSpeed', 'temperature', 'stationName']

monitor = DataDriftDetector.      (ws, 'drift-monitor', baseline,
                                backfill
                                create_from_datasets
                                create_from_model

target, compute_target='cpu-cluster', frequency='Week', feature_list=None,
drift_threshold=.6, latency=24)

monitor = DataDriftDetector.get_by_name(ws, 'drift-monitor')
monitor = monitor.update(feature_list=features)
complete = monitor.      (datetime(2021, 1, 1), datetime.today())
                                backfill
                                list
                                update
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Graphical user interface, text, application, Word Description automatically generated

Box 1: create_from_datasets

The create_from_datasets method creates a new DataDriftDetector object from a baseline tabular dataset and a target time series dataset.

Box 2: backfill

The backfill method runs a backfill job over a given specified start and end date.

Syntax: backfill(start_date, end_date, compute_target=None, create_compute_target=False) Reference:

[https://docs.microsoft.com/en-us/python/api/azureml-datadrift/azureml.datadrift.datadriftdetector\(class\)](https://docs.microsoft.com/en-us/python/api/azureml-datadrift/azureml.datadrift.datadriftdetector(class))

NEW QUESTION 5

- (Exam Topic 3)

You use the designer to create a training pipeline for a classification model. The pipeline uses a dataset that includes the features and labels required for model training.

You create a real-time inference pipeline from the training pipeline. You observe that the schema for the generated web service input is based on the dataset and includes the label column that the model predicts. Client applications that use the service must not be required to submit this value.

You need to modify the inference pipeline to meet the requirement. What should you do?

- A. Add a Select Columns in Dataset module to the inference pipeline after the dataset and use it to select all columns other than the label.
- B. Delete the dataset from the training pipeline and recreate the real-time inference pipeline.
- C. Delete the Web Service Input module from the inference pipeline.
- D. Replace the dataset in the inference pipeline with an Enter Data Manually module that includes data for the feature columns but not the label column.

Answer: A

Explanation:

By default, the Web Service Input will expect the same data schema as the module output data which connects to the same downstream port as it. You can remove the target variable column in the inference pipeline using Select Columns in Dataset module. Make sure that the output of Select Columns in Dataset removing target variable column is connected to the same port as the output of the Web Service Input module.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/tutorial-designer-automobile-price-deploy>

NEW QUESTION 6

- (Exam Topic 3)

A set of CSV files contains sales records. All the CSV files have the same data schema.

Each CSV file contains the sales record for a particular month and has the filename sales.csv. Each file is stored in a folder that indicates the month and year when the data was recorded. The folders are in an Azure blob container for which a datastore has been defined in an Azure Machine Learning workspace. The folders are organized in a parent folder named sales to create the following hierarchical structure:

```
/sales
  /01-2019
    /sales.csv
  /02-2019
    /sales.csv
  /03-2019
    /sales.csv
  ...
```

At the end of each month, a new folder with that month's sales file is added to the sales folder.

You plan to use the sales data to train a machine learning model based on the following requirements:

- You must define a dataset that loads all of the sales data to date into a structure that can be easily converted to a dataframe.
- You must be able to create experiments that use only data that was created before a specific previous month, ignoring any data that was added after that month.
- You must register the minimum number of datasets possible.

You need to register the sales data as a dataset in Azure Machine Learning service workspace. What should you do?

- A. Create a tabular dataset that references the datastore and explicitly specifies each 'sales/mm-yyyy/ sales.csv' file every mont
- B. Register the dataset with the name sales_dataset each month, replacing the existing dataset and specifying a tag named month indicating the month and year it was registere
- C. Use this dataset for all experiments.
- D. Create a tabular dataset that references the datastore and specifies the path 'sales/*/sales.csv', register the dataset with the name sales_dataset and a tag named month indicating the month and year it was registered, and use this dataset for all experiments.
- E. Create a new tabular dataset that references the datastore and explicitly specifies each 'sales/mm-yyyy/ sales.csv' file every mont
- F. Register the dataset with the name sales_dataset_MM-YYYY each month with appropriate MM and YYYY values for the month and yea
- G. Use the appropriate month-specific dataset for experiments.
- H. Create a tabular dataset that references the datastore and explicitly specifies each 'sales/mm-yyyy/ sales.csv' fil
- I. Register the dataset with the name sales_dataset each month as a new version and with a tag named month indicating the month and year it was registere
- J. Use this dataset for all experiments, identifying the version to be used based on the month tag as necessary.

Answer: B

Explanation:

Specify the path. Example:

The following code gets the workspace existing workspace and the desired datastore by name. And then passes the datastore and file locations to the path parameter to create a new TabularDataset, weather_ds.

```
from azureml.core import Workspace, Datastore, Dataset
datastore_name = 'your datastore name'
# get existing workspace
workspace = Workspace.from_config()
# retrieve an existing datastore in the workspace by name
datastore = Datastore.get(workspace, datastore_name)
# create a TabularDataset from 3 file paths in datastore
datastore_paths = [(datastore, 'weather/2018/11.csv'), (datastore, 'weather/2018/12.csv'), (datastore, 'weather/2019/*.csv')]
weather_ds = Dataset.Tabular.from_delimited_files(path=datastore_paths)
```

NEW QUESTION 7

- (Exam Topic 3)

You retrain an existing model.

You need to register the new version of a model while keeping the current version of the model in the registry.

What should you do?

- A. Register a model with a different name from the existing model and a custom property named versionwith the value 2.
- B. Register the model with the same name as the existing model.
- C. Save the new model in the default datastore with the same name as the existing mode
- D. Do not register the new model.
- E. Delete the existing model and register the new one with the same name.

Answer: B

Explanation:

Model version: A version of a registered model. When a new model is added to the Model Registry, it is added as Version 1. Each model registered to the same model name increments the version number.

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/applications/mlflow/model-registry>

NEW QUESTION 8

- (Exam Topic 3)

You create a new Azure subscription. No resources are provisioned in the subscription. You need to create an Azure Machine Learning workspace.

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. Run Python code that uses the Azure ML SDK library and calls the Workspace.create method with name, subscription_id, resource_group, and location parameters.
- B. Use an Azure Resource Management template that includes a Microsoft.MachineLearningServices/ workspaces resource and its dependencies.
- C. Use the Azure Command Line Interface (CLI) with the Azure Machine Learning extension to call the az group create function with --name and --location parameters, and then the az ml workspace create function, specifying -w and -g parameters for the workspace name and resource group.
- D. Navigate to Azure Machine Learning studio and create a workspace.
- E. Run Python code that uses the Azure ML SDK library and calls the Workspace.get method with name, subscription_id, and resource_group parameters.

Answer: BCD

Explanation:

B: You can use an Azure Resource Manager template to create a workspace for Azure Machine Learning. Example:

```
{"type": "Microsoft.MachineLearningServices/workspaces",
```

...

C: You can create a workspace for Azure Machine Learning with Azure CLI Install the machine learning extension.

Create a resource group: az group create --name <resource-group-name> --location <location>

To create a new workspace where the services are automatically created, use the following command: az ml workspace create -w <workspace-name> -g <resource-group-name>

D: You can create and manage Azure Machine Learning workspaces in the Azure portal.

- > Sign in to the Azure portal by using the credentials for your Azure subscription.
- > In the upper-left corner of Azure portal, select + Create a resource.
- > Use the search bar to find Machine Learning.
- > Select Machine Learning.
- > In the Machine Learning pane, select Create to begin.

Home > New > Machine Learning >

Machine Learning

Create a machine learning workspace

Basics Networking Advanced Tags Review + create

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Documentation-team ▼

Resource group * ⓘ docs-ws ▼

[Create new](#)


Workspace details

Specify the name, region, and edition for the workspace.

Workspace name * ⓘ docs-mlw ✓

Region * ⓘ West Central US ▼

Workspace edition * ⓘ Basic ^

 For your convenience, these resources are available in the workspace: Application Insights, Azure Key Vault

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-create-workspace-template> <https://docs.microsoft.com/en-us/azure/machine-learning/how-to-manage-workspace-cli> <https://docs.microsoft.com/en-us/azure/machine-learning/how-to-manage-workspace>

NEW QUESTION 9

- (Exam Topic 3)

You run an experiment that uses an AutoMLConfig class to define an automated machine learning task with a maximum of ten model training iterations. The task will attempt to find the best performing model based on a metric named accuracy.

You submit the experiment with the following code:

You need to create Python code that returns the best model that is generated by the automated machine learning task. Which code segment should you use?

- A)
- ```
best_model = automl_run.get_details()
```
- B)
- ```
best_model = automl_run.get_output()[1]
```
- C)
- ```
best_model = automl_run.get_file_names()[1]
```
- D)
- ```
best_model = automl_run.get_metrics()
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: B

Explanation:

The get_output method returns the best run and the fitted model. Reference:
<https://notebooks.azure.com/azureml/projects/azureml-getting-started/html/how-to-use-azureml/automated-mach>

NEW QUESTION 10

- (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 10

- (Exam Topic 3)

You are a lead data scientist for a project that tracks the health and migration of birds. You create a multi-image classification deep learning model that uses a set of labeled bird photos collected by experts. You plan to use the model to develop a cross-platform mobile app that predicts the species of bird captured by app users.

You must test and deploy the trained model as a web service. The deployed model must meet the following requirements:

- > An authenticated connection must not be required for testing.
- > The deployed model must perform with low latency during inferencing.
- > The REST endpoints must be scalable and should have a capacity to handle large number of requests when multiple end users are using the mobile application.

You need to verify that the web service returns predictions in the expected JSON format when a valid REST request is submitted.

Which compute resources should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Context

Resource

Test

	▼
ds-workstation notebook VM	
aks-compute cluster	
cpu-compute cluster	
gpu-compute cluster	

Production

	▼
ds-workstation notebook VM	
aks-compute cluster	
cpu-compute cluster	
gpu-compute cluster	

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: ds-workstation notebook VM

An authenticated connection must not be required for testing.

On a Microsoft Azure virtual machine (VM), including a Data Science Virtual Machine (DSVM), you create local user accounts while provisioning the VM. Users then authenticate to the VM by using these credentials.

Box 2: gpu-compute cluster

Image classification is well suited for GPU compute clusters

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/data-science-virtual-machine/dsvm-common-identity> <https://docs.microsoft.com/en-us/azure/architecture/reference-architectures/ai/training-deep-learning>

NEW QUESTION 14

- (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 using Azure Machine Learning to run an experiment that trains a classification model.

You want to use Hyperdrive to find parameters that optimize the AUC metric for the model. You configure a HyperDriveConfig for the experiment by running the following code:

```
hyperdrive = HyperDriveConfig(estimator=your_estimator,  
    hyperparameter_sampling=your_params,  
    policy=policy,  
    primary_metric_name='AUC',  
    primary_metric_goal=PrimaryMetricGoal.MAXIMIZE,  
    max_total_runs=6,  
    max_concurrent_runs=4)
```

You plan to use this configuration to run a script that trains a random forest model and then tests it with validation data. The label values for the validation data are stored in a variable named `y_test` variable, and the predicted probabilities from the model are stored in a variable named `y_predicted`.

You need to add logging to the script to allow Hyperdrive to optimize hyperparameters for the AUC metric. Solution: Run the following code:

```
import numpy as np  
from sklearn.metrics import roc_auc_score  
# code to train model omitted  
auc = roc_auc_score(y_test, y_predicted)  
print(np.float(auc))
```

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Use a solution with `logging.info(message)` instead. Note: Python printing/logging example: `logging.info(message)`

Destination: Driver logs, Azure Machine Learning designer Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-debug-pipelines>

NEW QUESTION 17

- (Exam Topic 3)

You use the Azure Machine Learning service to create a tabular dataset named `training.data`. You plan to use this dataset in a training script.

You create a variable that references the dataset using the following code: `training_ds = workspace.datasets.get("training_data")`

You define an estimator to run the script.

You need to set the correct property of the estimator to ensure that your script can access the `training.data` dataset

Which property should you set?

A)

```
inputs = [training_ds.as_named_input('training_ds')]
```

B)

```
script_params = {"--training_ds":training_ds}
```

C)

```
environment_definition = {"training_data":training_ds}
```

D)

```
source_directory = training_ds
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: A

Explanation:

Example:

Get the training dataset

`diabetes_ds = ws.datasets.get("Diabetes Dataset")`

Create an estimator that uses the remote compute `hyper_estimator = SKLearn(source_directory=experiment_folder,`

`inputs=[diabetes_ds.as_named_input('diabetes')], # Pass the dataset as an input compute_target = cpu_cluster, conda_packages=['pandas','ipykernel','matplotlib'],`

`pip_packages=['azureml-sdk','argparse','pyarrow'], entry_script='diabetes_training.py')`

Reference:

<https://notebooks.azure.com/GraemeMalcolm/projects/azureml-primers/html/04%20-%20Optimizing%20Model>

NEW QUESTION 20

- (Exam Topic 3)

You are evaluating a completed binary classification machine learning model. You need to use the precision as the valuation metric.

Which visualization should you use?

- A. Binary classification confusion matrix
- B. box plot
- C. Gradient descent

D. coefficient of determination

Answer: A

Explanation:

References:

<https://machinelearningknowledge.ai/confusion-matrix-and-performance-metrics-machine-learning/>

NEW QUESTION 23

- (Exam Topic 3)

You create a batch inference pipeline by using the Azure ML SDK. You run the pipeline by using the following code:

```
from azureml.pipeline.core import Pipeline
```

```
from azureml.core.experiment import Experiment
```

pipeline = Pipeline(workspace=ws, steps=[parallelrun_step]) pipeline_run = Experiment(ws, 'batch_pipeline').submit(pipeline) You need to monitor the progress of the pipeline execution.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A. Run the following code in a notebook:

```
from azureml.contrib.interpret.explanation.explanation_client import ExplanationClient
client = ExplanationClient.from_run(pipeline_run)
explanation = client.download_model_explanation()
explanation = client.download_model_explanation(top_k=4)
global_importance_values = explanation.get_ranked_global_values()
global_importance_names = explanation.get_ranked_global_names()
print('global importance values: {}'.format(global_importance_values))
print('global importance names: {}'.format(global_importance_names))
```

B. Use the Inference Clusters tab in Machine Learning Studio.

C. Use the Activity log in the Azure portal for the Machine Learning workspace.

D. Run the following code in a notebook:

```
from azureml.widgets import RunDetails
RunDetails(pipeline_run).show()
```

E. Run the following code and monitor the console output from the PipelineRun object:

```
pipeline_run.wait_for_completion(show_output=True)
```

A. Option A

B. Option B

C. Option C

D. Option D

E. Option E

Answer: DE

Explanation:

A batch inference job can take a long time to finish. This example monitors progress by using a Jupyter widget. You can also manage the job's progress by using:

➤ Azure Machine Learning Studio.

➤ Console output from the PipelineRun object. from azureml.widgets import RunDetails RunDetails(pipeline_run).show()

pipeline_run.wait_for_completion(show_output=True) Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-use-parallel-run-step#monitor-the-parallel-run>

NEW QUESTION 24

- (Exam Topic 3)

You use Azure Machine Learning designer to create a training pipeline for a regression model.

You need to prepare the pipeline for deployment as an endpoint that generates predictions asynchronously for a dataset of input data values.

What should you do?

A. Clone the training pipeline.

B. Create a batch inference pipeline from the training pipeline.

C. Create a real-time inference pipeline from the training pipeline.

D. Replace the dataset in the training pipeline with an Enter Data Manually module.

Answer: C

Explanation:

You must first convert the training pipeline into a real-time inference pipeline. This process removes training modules and adds web service inputs and outputs to handle requests.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/tutorial-designer-automobile-price-deploy> <https://docs.microsoft.com/en-us/azure/machine-learning/algorithm-module-reference/enter-data-manually>

NEW QUESTION 29

- (Exam Topic 3)

You create a datastore named training_data that references a blob container in an Azure Storage account. The blob container contains a folder named csv_files in which multiple comma-separated values (CSV) files are stored.

You have a script named train.py in a local folder named ./script that you plan to run as an experiment using an estimator. The script includes the following code to read data from the csv_files folder:

```
import os
import argparse
import pandas as pd

from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from azureml.core import Run

run = Run.get_context()
parser = argparse.ArgumentParser()
parser.add_argument('--data-folder', type=str, dest='data_folder', help='data reference')
args = parser.parse_args()

data_folder = args.data_folder
csv_files = os.listdir(data_folder)
training_data = pd.concat((pd.read_csv(os.path.join(data_folder, csv_file)) for csv_file in csv_files))

# Code goes on to split the training data and train a logistic regression model
```

You have the following script.

```
from azureml.core import Workspace, Datastore, Experiment
from azureml.train.sklearn import SKLearn
```

```
ws = Workspace.from_config()
exp = Experiment(workspace=ws, name='csv_training')
ds = Datastore.get(ws, datastore_name='training_data')
data_ref = ds.path('csv_files')
```

Code to define estimator goes here

```
run = exp.submit(config=estimator)
run.wait_for_completion(show_output=True)
```

You need to configure the estimator for the experiment so that the script can read the data from a data reference named data_ref that references the csv_files folder in the training_data datastore.

Which code should you use to configure the estimator?

- A.

```
estimator = SKLearn(source_directory='./script',
    inputs=[data_ref.as_named_input('data-folder').to_pandas_dataframe()],
    compute_target='local',
    entry_script='train.py')
```
- B.

```
script_params = {
    '--data-folder': data_ref.as_mount()
}
estimator = SKLearn(source_directory='./script',
    script_params=script_params,
    compute_target='local',
    entry_script='train.py')
```
- C.

```
estimator = SKLearn(source_directory='./script',
    inputs=[data_ref.as_named_input('data-folder').as_mount()],
    compute_target='local',
    entry_script='train.py')
```
- D.

```
script_params = {
    '--data-folder': data_ref.as_download(path_on_compute='csv_files')
}
estimator = SKLearn(source_directory='./script',
    script_params=script_params,
    compute_target='local',
    entry_script='train.py')
```
- E.

```
estimator = SKLearn(source_directory='./script',
    inputs=[data_ref.as_named_input('data-folder').as_download(path_on_compute='csv_files')],
    compute_target='local',
    entry_script='train.py')
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

Answer: B

Explanation:

Besides passing the dataset through the inputs parameter in the estimator, you can also pass the dataset through script_params and get the data path (mounting point) in your training script via arguments. This way, you can keep your training script independent of azureml-sdk. In other words, you will be able use the same

training script for local debugging and remote training on any cloud platform.

Example:

```
from azureml.train.sklearn import SKLearn script_params = {
# mount the dataset on the remote compute and pass the mounted path as an argument to the training script '--data-folder':
mnist_ds.as_named_input('mnist').as_mount(),
'--regularization': 0.5
}
est = SKLearn(source_directory=script_folder, script_params=script_params, compute_target=compute_target, environment_definition=env,
entry_script='train_mnist.py')
# Run the experiment
run = experiment.submit(est) run.wait_for_completion(show_output=True) Reference:
https://docs.microsoft.com/es-es/azure/machine-learning/how-to-train-with-datasets
```

NEW QUESTION 32

- (Exam Topic 3)

You are building a machine learning model for translating English language textual content into French language textual content.

You need to build and train the machine learning model to learn the sequence of the textual content. Which type of neural network should you use?

- A. Multilayer Perceptions (MLPs)
- B. Convolutional Neural Networks (CNNs)
- C. Recurrent Neural Networks (RNNs)
- D. Generative Adversarial Networks (GANs)

Answer: C

Explanation:

To translate a corpus of English text to French, we need to build a recurrent neural network (RNN).

Note: RNNs are designed to take sequences of text as inputs or return sequences of text as outputs, or both. They're called recurrent because the network's hidden layers have a loop in which the output and cell state from each time step become inputs at the next time step. This recurrence serves as a form of memory. It allows contextual information to flow through the network so that relevant outputs from previous time steps can be applied to network operations at the current time step.

References:

<https://towardsdatascience.com/language-translation-with-rnns-d84d43b40571>

NEW QUESTION 34

- (Exam Topic 3)

You are the owner of an Azure Machine Learning workspace.

You must prevent the creation or deletion of compute resources by using a custom role. You must allow all other operations inside the workspace.

You need to configure the custom role.

How should you complete the configuration? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
{
  "Name": "Data Scientist Custom",
  "IsCustom": true
  "Description": "Description"
  "Actions": [
    ],
  "NotActions": [
    ],
  "AssignableScopes": [
    "/subscriptions/<subscription_id>"
  ]
}
```

Microsoft.MachineLearningServices/workspaces/*/read
 Microsoft.MachineLearningServices/workspaces/computes/*/write
 Microsoft.MachineLearningServices/workspaces/delete

Microsoft.MachineLearningServices/workspaces/*/write
 Microsoft.MachineLearningServices/workspaces/computes/*/write
 Microsoft.MachineLearningServices/workspaces/delete

Microsoft.MachineLearningServices/workspaces/*/read
 Microsoft.MachineLearningServices/workspaces/*/write
 Microsoft.MachineLearningServices/workspaces/computes/*/delete

Microsoft.MachineLearningServices/workspaces/*/read
 Microsoft.MachineLearningServices/workspaces/*/write
 Microsoft.MachineLearningServices/workspaces/computes/*/write

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Graphical user interface, application Description automatically generated
Graphical user interface, application Description automatically generated
Box 1: Microsoft.MachineLearningServices/workspaces/*/read
Reader role: Read-only actions in the workspace. Readers can list and view assets, including datastore credentials, in a workspace. Readers can't create or update these assets.
Box 2: Microsoft.MachineLearningServices/workspaces/*/write
If the roles include Actions that have a wildcard (*), the effective permissions are computed by subtracting the NotActions from the allowed Actions.
Box 3: Box 2: Microsoft.MachineLearningServices/workspaces/computes/*/delete
Box 4: Microsoft.MachineLearningServices/workspaces/computes/*/write Reference:
<https://docs.microsoft.com/en-us/azure/role-based-access-control/overview#how-azure-rbac-determines-if-a-use>

NEW QUESTION 36

- (Exam Topic 3)
You create a multi-class image classification deep learning experiment by using the PyTorch framework. You plan to run the experiment on an Azure Compute cluster that has nodes with GPU's.
You need to define an Azure Machine Learning service pipeline to perform the monthly retraining of the image classification model. The pipeline must run with minimal cost and minimize the time required to train the model.
Which three pipeline steps should you run 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

- Configure a DataTransferStep() to fetch new image data from public web portal, running on the cpu-compute compute target.
- Configure an EstimatorStep() to run an estimator that runs the bird_classifier_train.py model training script on the gpu_compute compute target.
- Configure a PythonScriptStep() to run both image_fetcher.py and image_resize.py on the cpu-compute compute target.
- Configure an EstimatorStep() to run an estimator that runs the bird_classifier_train.py model training script on the cpu_compute compute target.
- Configure a PythonScriptStep() to run image_fetcher.py on the cpu-compute compute target.
- Configure a PythonScriptStep() to run image_resize.py on the cpu-compute compute target.
- Configure a PythonScriptStep() to run bird_classifier_train.py on the cpu-compute compute target.
- Configure a PythonScriptStep() to run bird_classifier_train.py on the gpu-compute compute target.

Answer Area

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Step 1: Configure a DataTransferStep() to fetch new image data...
Step 2: Configure a PythonScriptStep() to run image_resize.y on the cpu-compute compute target. Step 3: Configure the EstimatorStep() to run training script on the gpu_compute computer target.
The PyTorch estimator provides a simple way of launching a PyTorch training job on a compute target. Reference:
<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-train-pytorch>

NEW QUESTION 38

- (Exam Topic 3)
You plan to run a Python script as an Azure Machine Learning experiment.
The script must read files from a hierarchy of folders. The files will be passed to the script as a dataset argument.
You must specify an appropriate mode for the dataset argument.
Which two modes can you use? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. to_pandas_dataframe ()
- B. as_download()
- C. as_upload()
- D. as mount ()

Answer: B

Explanation:

Reference:
<https://docs.microsoft.com/en-us/python/api/azureml-core/azureml.data.filedataset?view=azure-ml-py>

NEW QUESTION 43

- (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 have a Python script named train.py in a local folder named scripts. The script trains a regression model by using scikit-learn. The script includes code to load a training data file which is also located in the scripts folder.

You must run the script as an Azure ML experiment on a compute cluster named aml-compute.

You need to configure the run to ensure that the environment includes the required packages for model training. You have instantiated a variable named aml-compute that references the target compute cluster.

Solution: Run the following code:

```
from azureml.train.estimator import Estimator
sk_est = Estimator(source_directory='./scripts',
    compute_target=aml-compute,
    entry_script='train.py',
    conda_packages=[ 'scikit-learn'])
```

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

The scikit-learn estimator provides a simple way of launching a scikit-learn training job on a compute target. It is implemented through the SKLearn class, which can be used to support single-node CPU training.

Example:

```
from azureml.train.sklearn import SKLearn
}
estimator = SKLearn(source_directory=project_folder, compute_target=compute_target, entry_script='train_iris.py'
)
```

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-train-scikit-learn>

NEW QUESTION 47

- (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 train and register a machine learning model.

You plan to deploy the model as a real-time web service. Applications must use key-based authentication to use the model.

You need to deploy the web service. Solution:

Create an AksWebservice instance.

Set the value of the auth_enabled property to True.

Deploy the model to the service. Does the solution meet the goal?

- A. Yes
- B. No

Answer: A

Explanation:

Key-based authentication.

Web services deployed on AKS have key-based auth enabled by default. ACI-deployed services have key-based auth disabled by default, but you can enable it by setting auth_enabled = TRUE when creating the ACI web service. The following is an example of creating an ACI deployment configuration with key-based auth enabled.

```
deployment_config <- aci_webservice_deployment_config(cpu_cores = 1, memory_gb = 1,
auth_enabled = TRUE)
```

Reference:

<https://azure.github.io/azureml-sdk-for-r/articles/deploying-models.html>

NEW QUESTION 50

- (Exam Topic 3)

The finance team asks you to train a model using data in an Azure Storage blob container named finance-data. You need to register the container as a datastore in an Azure Machine Learning workspace and ensure that an error will be raised if the container does not exist.

How should you complete the code? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

```
datastore = Datastore. 

|                               |
|-------------------------------|
| register_azure_blob_container |
| register_azure_file_share     |
| register_azure_data_lake      |
| register_azure_sql_database   |

 (workspace = ws,
```

```
datastore_name = 'finance_datastore',
container_name = 'finance-data',
account_name = 'fintrainingdatastorage',
account_key = 'FWUYORRv3XoyNe...',
```

create_if_not_exists = True
create_if_not_exists = False
overwrite = True
overwrite = False

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: register_azure_blob_container
 Register an Azure Blob Container to the datastore.
 Box 2: create_if_not_exists = False
 Create the file share if it does not exists, defaults to False. Reference:
<https://docs.microsoft.com/en-us/python/api/azureml-core/azureml.core.datastore.datastore>

NEW QUESTION 54

- (Exam Topic 3)

You use the Azure Machine Learning Python SDK to define a pipeline to train a model.
 The data used to train the model is read from a folder in a datastore.
 You need to ensure the pipeline runs automatically whenever the data in the folder changes. What should you do?

- A. Set the regenerate_outputs property of the pipeline to True
- B. Create a ScheduleRecurrance object with a Frequency of aut
- C. Use the object to create a Schedule for the pipeline
- D. Create a PipelineParameter with a default value that references the location where the training data is stored
- E. Create a Schedule for the pipelin
- F. Specify the datastore in the datastore property, and the folder containing the training data in the path_on_datascor

Answer: D

Explanation:

Reference:
<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-trigger-published-pipeline>

NEW QUESTION 56

- (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 create a model to forecast weather conditions based on historical data.
 You need to create a pipeline that runs a processing script to load data from a datastore and pass the processed data to a machine learning model training script.
 Solution: Run the following code:

```
datastore = ws.get_default_datastore()
data_input = PipelineData("raw_data", datastore=rawdatastore)
data_output = PipelineData("processed_data", datastore=datastore)
process_step = PythonScriptStep(script_name="process.py",
    arguments=["--data_for_train", data_input],
    outputs=[data_output], compute_target=aml_compute,
    source_directory=process_directory)
train_step = PythonScriptStep(script_name="train.py",
    arguments=["--data_for_train", data_input], inputs=[data_output],
    compute_target=aml_compute, source_directory=train_directory)
pipeline = Pipeline(workspace=ws, steps=[process_step, train_step])
```

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Note: Data used in pipeline can be produced by one step and consumed in another step by providing a PipelineData object as an output of one step and an input of one or more subsequent steps.

Compare with this example, the pipeline train step depends on the process_step_output output of the pipeline process step:

```
from azureml.pipeline.core import Pipeline, PipelineData
from azureml.pipeline.steps import PythonScriptStep
```

```
datastore = ws.get_default_datastore()
```

```
process_step_output = PipelineData("processed_data", datastore=datastore)
process_step = PythonScriptStep(script_name="process.py",
    arguments=["--data_for_train", process_step_output], outputs=[process_step_output], compute_target=aml_compute, source_directory=process_directory)
```

```
train_step = PythonScriptStep(script_name="train.py", arguments=["--data_for_train", process_step_output], inputs=[process_step_output],
    compute_target=aml_compute, source_directory=train_directory)
```

```
pipeline = Pipeline(workspace=ws, steps=[process_step, train_step])
```

Reference:

<https://docs.microsoft.com/en-us/python/api/azureml-pipeline-core/azureml.pipeline.core.pipelinedata?view=azu>

NEW QUESTION 61

- (Exam Topic 3)

You train and register a model by using the Azure Machine Learning SDK on a local workstation. Python 3.6 and Visual Studio Code are installed on the workstation.

When you try to deploy the model into production as an Azure Kubernetes Service (AKS)-based web service, you experience an error in the scoring script that causes deployment to fail.

You need to debug the service on the local workstation before deploying the service to production.

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	Answer Area
Create an AksWebservice deployment configuration for the service and deploy the model to it	
Install Docker on the workstation	
Create a LocalWebservice deployment configuration for the service and deploy the model to it	
Debug and modify the scoring script as necessary. Use the reload() method of the service after each modification	
Create an AciWebservice deployment configuration for the service and deploy the model to it	

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Graphical user interface, text, application, email Description automatically generated

Step 1: Install Docker on the workstation

Prerequisites include having a working Docker installation on your local system. Build or download the dockerfile to the compute node.

Step 2: Create an AksWebservice deployment configuration and deploy the model to it

To deploy a model to Azure Kubernetes Service, create a deployment configuration that describes the compute resources needed.


```
# If deploying to a cluster configured for dev/test, ensure that it was created with enough
# cores and memory to handle this deployment configuration. Note that memory is also used by
# things such as dependencies and AML components.
deployment_config = AksWebbservice.deploy_configuration(cpu_cores = 1, memory_gb = 1)
service = Model.deploy(ws, "myservice", [model], inference_config, deployment_config, aks_target) service.wait_for_deployment(show_output = True)
print(service.state) print(service.get_logs())
```

Step 3: Create a LocalWebbservice deployment configuration for the service and deploy the model to it
 To deploy locally, modify your code to use LocalWebbservice.deploy_configuration() to create a deployment configuration. Then use Model.deploy() to deploy the service.

Step 4: Debug and modify the scoring script as necessary. Use the reload() method of the service after each modification.
 During local testing, you may need to update the score.py file to add logging or attempt to resolve any problems that you've discovered. To reload changes to the score.py file, use reload(). For example, the following code reloads the script for the service, and then sends data to it.

Reference:
<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-deploy-azure-kubernetes-service> <https://docs.microsoft.com/en-us/azure/machine-learning/how-to-troubleshoot-deployment-local>

NEW QUESTION 66

- (Exam Topic 3)

You are building a recurrent neural network to perform a binary classification. You review the training loss, validation loss, training accuracy, and validation accuracy for each training epoch.

You need to analyze model performance.

Which observation indicates that the classification model is over fitted?

- A. 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.
- B. The training loss increases while the validation loss decreases when training the model.
- C. The training loss decreases while the validation loss increases when training the model.
- D. The training loss stays constant and the validation loss decreases when training the model.

Answer: B

NEW QUESTION 68

- (Exam Topic 3)

You write code to retrieve an experiment that is run from your Azure Machine Learning workspace.

The run used the model interpretation support in Azure Machine Learning to generate and upload a model explanation.

Business managers in your organization want to see the importance of the features in the model.

You need to print out the model features and their relative importance in an output that looks similar to the following.

Feature	Importance
0	1.5627435610083558
2	0.6077689312583112
4	0.5574002432900718
3	0.42858759955671777
1	0.3501361539771977

How should you complete the code? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

```
# Assume required modules are imported

ws = Workspace.from_config()
feature_importances = explanation.
```

from_run

list_model_explanations

from_run_id

download_model_explanation

(workspace = ws,

experiment_name='train_and_explain',

run_id='train_and_explain_12345')

upload_model_explanation

list_model_explanations

run

download_model_explanation

()

```
explanation = client.
```

explanation

explanation_client

get_feature_important_dict

download_model_explanation

()

```
feature_importances = explanation.
```

```
for key, value in feature_importances.items():
    print(key, "\t", value)
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: from_run_id

from_run_id(workspace, experiment_name, run_id) Create the client with factory method given a run ID. Returns an instance of the explanations Client.

Parameters

- > Workspace Workspace An object that represents a workspace.
- > experiment_name str The name of an experiment.
- > run_id str A GUID that represents a run.

Box 2: list_model_explanations

list_model_explanations returns a dictionary of metadata for all model explanations available.

Returns

A dictionary of explanation metadata such as id, data type, explanation: method, model type, and upload time, sorted by upload time

Box 3: explanation:

Reference:

<https://docs.microsoft.com/en-us/python/api/azureml-contrib-interpret/azureml.contrib.interpret>.

NEW QUESTION 70

- (Exam Topic 3)

You have a Python script that executes a pipeline. The script includes the following code:

```
from azureml.core import Experiment
```

```
pipeline_run = Experiment(ws, 'pipeline_test').submit(pipeline) You want to test the pipeline before deploying the script.
```

You need to display the pipeline run details written to the STDOUT output when the pipeline completes. Which code segment should you add to the test script?

- A. pipeline_run.get.metrics()
- B. pipeline_run.wait_for_completion(show_output=True)
- C. pipeline_param = PipelineParameter(name="stdout", default_value="console")
- D. pipeline_run.get_status()

Answer: B

Explanation:

wait_for_completion: Wait for the completion of this run. Returns the status object after the wait. Syntax: wait_for_completion(show_output=False,

wait_post_processing=False, raise_on_error=True) Parameter: show_output

Indicates whether to show the run output on sys.stdout.

NEW QUESTION 71

- (Exam Topic 3)

You have a Python data frame named salesData in the following format:

	shop	2017	2018
0	Shop X	34	25
1	Shop Y	65	76
2	Shop Z	48	55

The data frame must be unpivoted to a long data format as follows:

	shop	year	value
0	Shop X	2017	34
1	Shop Y	2017	65
2	Shop Z	2017	48
3	Shop X	2018	25
4	Shop Y	2018	76
5	Shop Z	2018	55

You need to use the pandas.melt() function in Python to perform the transformation.

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

```
import pandas as pd
salesData = pd.melt(
```

dataFrame

pandas

salesData

year

, id_vars='

shop

year

value

Shop X, Shop Y, Shop Z

' , value_vars=

'shop'

'year'

['year']

['2017', '2018']

```
)
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: dataFrame

Syntax: pandas.melt(frame, id_vars=None, value_vars=None, var_name=None, value_name='value', col_level=None)[source]

Where frame is a DataFrame Box 2: shop

Paramter id_vars id_vars : tuple, list, or ndarray, optional Column(s) to use as identifier variables.

Box 3: ['2017','2018']
value_vars : tuple, list, or ndarray, optional
Column(s) to unpivot. If not specified, uses all columns that are not set as id_vars. Example:
df = pd.DataFrame({'A': {0: 'a', 1: 'b', 2: 'c'},
'B': {0: 1, 1: 3, 2: 5},
'C': {0: 2, 1: 4, 2: 6}})
pd.melt(df, id_vars=['A'], value_vars=['B', 'C']) A variable value
0 a B 1
1 b B 3
2 c B 5
3 a C 2
4 b C 4
5 c C 6
References:
<https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.melt.html>

NEW QUESTION 73

- (Exam Topic 3)

You have a Python script that executes a pipeline. The script includes the following code: from azureml.core import Experiment
pipeline_run = Experiment(ws, 'pipeline_test').submit(pipeline) You want to test the pipeline before deploying the script.
You need to display the pipeline run details written to the STDOUT output when the pipeline completes. Which code segment should you add to the test script?

- A. pipeline_run.get.metrics()
- B. pipeline_run.wait_for_completion(show_output=True)
- C. pipeline_param = PipelineParameter(name="stdout", default_value="console")
- D. pipeline_run.get_status()

Answer: B

Explanation:

wait_for_completion: Wait for the completion of this run. Returns the status object after the wait. Syntax: wait_for_completion(show_output=False, wait_post_processing=False, raise_on_error=True) Parameter: show_output
Indicates whether to show the run output on sys.stdout.

NEW QUESTION 74

- (Exam Topic 3)

You create an experiment in Azure Machine Learning Studio. You add a training dataset that contains 10,000 rows. The first 9,000 rows represent class 0 (90 percent).
The remaining 1,000 rows represent class 1 (10 percent).
The training set is imbalances between two classes. You must increase the number of training examples for class 1 to 4,000 by using 5 data rows. You add the Synthetic Minority Oversampling Technique (SMOTE) module to the experiment.
You need to configure the module.
Which values should you use? To answer, select the appropriate options in the dialog box in the answer area. NOTE: Each correct selection is worth one point.

▲ SMOTE

Label column

Selected columns:
All labels

Launch column selector

SMOTE percentage

	▼
0	
300	
3000	
4000	

Number of nearest neighbors

	▼
0	
1	
5	
4000	

Random seed

0

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: 300

You type 300 (%), the module triples the percentage of minority cases (3000) compared to the original dataset (1000).

Box 2: 5

We should use 5 data rows.

Use the Number of nearest neighbors option to determine the size of the feature space that the SMOTE algorithm uses when in building new cases. A nearest neighbor is a row of data (a case) that is very similar to some target case. The distance between any two cases is measured by combining the weighted vectors of all features.

By increasing the number of nearest neighbors, you get features from more cases.

By keeping the number of nearest neighbors low, you use features that are more like those in the original sample.

References:

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

NEW QUESTION 79

- (Exam Topic 3)

You define a datastore named ml-data for an Azure Storage blob container. In the container, you have a folder named train that contains a file named data.csv.

You plan to use the file to train a model by using the Azure Machine Learning SDK.

You plan to train the model by using the Azure Machine Learning SDK to run an experiment on local compute.

You define a DataReference object by running the following code:

```
from azureml.core import Workspace, Datastore, Environment
from azureml.train.estimator import Estimator
ws = Workspace.from_config()
ml_data = Datastore.get(ws, datastore_name='ml-data')
data_ref = ml_data.path('train').as_download(path_on_compute='train_data')
estimator = Estimator(source_directory='experiment_folder',
    script_params={'--data-folder': data_ref},
    compute_target = 'local',
    entry_script='training.py')
run = experiment.submit(config=estimator)
run.wait_for_completion(show_output=True)
```

You need to load the training data. Which code segment should you use?

- A.

```
import os
import argparse
import pandas as pd

parser = argparse.ArgumentParser()
parser.add_argument('--data-folder', type=str, dest='data_folder')
data_folder = args.data_folder
data = pd.read_csv(os.path.join(data_folder, 'ml-data', 'train_data', 'data.csv'))
```
- B.

```
import os
import argparse
import pandas as pd

parser = argparse.ArgumentParser()
parser.add_argument('--data-folder', type=str, dest='data_folder')
data_folder = args.data_folder
data = pd.read_csv(os.path.join(data_folder, 'train', 'data.csv'))
```
- C.

```
import pandas as pd

data = pd.read_csv('./data.csv')
```
- D.

```
import os
import argparse
import pandas as pd

parser = argparse.ArgumentParser()
parser.add_argument('--data-folder', type=str, dest='data_folder')
data_folder = args.data_folder
data = pd.read_csv(os.path.join('ml_data', data_folder, 'data.csv'))
```
- E.

```
import os
import argparse
import pandas as pd

parser = argparse.ArgumentParser()
parser.add_argument('--data-folder', type=str, dest='data_folder')
data_folder = args.data_folder
data = pd.read_csv(os.path.join(data_folder, 'data.csv'))
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

Answer: E

Explanation:

Example:
data_folder = args.data_folder
Load Train and Test data
train_data = pd.read_csv(os.path.join(data_folder, 'data.csv')) Reference:
<https://www.element61.be/en/resource/azure-machine-learning-services-complete-toolbox-ai>

NEW QUESTION 83

- (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 create a model to forecast weather conditions based on historical data.

You need to create a pipeline that runs a processing script to load data from a datastore and pass the processed data to a machine learning model training script.

Solution: Run the following code:

```
datastore = ws.get_default_datastore()
data_output = pd.read_csv("traindata.csv")
process_step = PythonScriptStep(script_name="process.py",
    arguments=["--data_for_train", data_output],
    outputs=[data_output], compute_target=aml_compute,
    source_directory=process_directory)
train_step = PythonScriptStep(script_name="train.py",
    arguments=["--data_for_train", data_output],
    inputs=[data_output], compute_target=aml_compute,
    source_directory=train_directory)
pipeline = Pipeline(workspace=ws, steps=[process_step, train_step])
```

Does the solution meet the goal?

- A. Yes
- B. No

Answer: A

Explanation:

The two steps are present: process_step and train_step Note:

Data used in pipeline can be produced by one step and consumed in another step by providing a PipelineData object as an output of one step and an input of one or more subsequent steps.

PipelineData objects are also used when constructing Pipelines to describe step dependencies. To specify that a step requires the output of another step as input, use a PipelineData object in the constructor of both steps.

For example, the pipeline train step depends on the process_step_output output of the pipeline process step: from azureml.pipeline.core import Pipeline, PipelineData

```
from azureml.pipeline.steps import PythonScriptStep
datastore = ws.get_default_datastore()
process_step_output = PipelineData("processed_data", datastore=datastore)
process_step = PythonScriptStep(script_name="process.py",
    arguments=["--data_for_train", process_step_output],
    outputs=[process_step_output],
    compute_target=aml_compute,
    source_directory=process_directory)
train_step = PythonScriptStep(script_name="train.py",
    arguments=["--data_for_train", process_step_output],
    inputs=[process_step_output],
    compute_target=aml_compute,
    source_directory=train_directory)
pipeline = Pipeline(workspace=ws, steps=[process_step, train_step])
```

 Reference:
<https://docs.microsoft.com/en-us/python/api/azureml-pipeline-core/azureml.pipeline.core.pipelinedata?view=azu>

NEW QUESTION 86

- (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 90

- (Exam Topic 3)

You train and register a model in your Azure Machine Learning workspace.

You must publish a pipeline that enables client applications to use the model for batch inferencing. You must use a pipeline with a single ParallelRunStep step that runs a Python inferencing script to get predictions from the input data.
You need to create the inferencing script for the ParallelRunStep pipeline step.
Which two functions should you include? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

- A. run(mini_batch) D
- B. main()
- C. batch()
- D. init()
- E. score(mini_batch)

Answer: AD

Explanation:
Reference:
<https://github.com/Azure/MachineLearningNotebooks/tree/master/how-to-use-azureml/machine-learningpipelin>

NEW QUESTION 95

- (Exam Topic 3)
You are analyzing a raw dataset that requires cleaning.
You must perform transformations and manipulations by using Azure Machine Learning Studio. You need to identify the correct modules to perform the transformations.
Which modules should you choose? To answer, drag the appropriate modules to the correct scenarios. Each module 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.

Answer Area

Methods	Scenario	Module
Clean Missing Data	Replace missing values by removing rows and columns.	
SMOTE	Increase the number of low-incidence examples in the dataset.	
Convert to Indicator Values	Convert a categorical feature into a binary indicator.	
Remove Duplicate Rows	Remove potential duplicates from a dataset.	
Threshold Filter		

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:
Box 1: Clean Missing Data Box 2: SMOTE
Use the SMOTE module in Azure Machine Learning Studio 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.
Box 3: Convert to Indicator Values
Use the Convert to Indicator Values module in Azure Machine Learning Studio. The purpose of this module is to convert columns that contain categorical values into a series of binary indicator columns that can more easily be used as features in a machine learning model.
Box 4: Remove Duplicate Rows References:
<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/smote> <https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/convert-to-indicator-values>

NEW QUESTION 98

- (Exam Topic 3)
You plan to use the Hyperdrive feature of Azure Machine Learning to determine the optimal hyperparameter values when training a model.
You must use Hyperdrive to try combinations of the following hyperparameter values. You must not apply an early termination policy.
learning_rate: any value between 0.001 and 0.1
• batch_size: 16, 32, or 64
You need to configure the sampling method for the Hyperdrive experiment
Which two sampling methods can you use? Each correct answer is a complete solution. NOTE: Each correct selection is worth one point.

- A. Grid sampling
- B. No sampling
- C. Bayesian sampling
- D. Random sampling

Answer: CD

Explanation:

C: Bayesian sampling is based on the Bayesian optimization algorithm and makes intelligent choices on the hyperparameter values to sample next. It picks the sample based on how the previous samples performed, such that the new sample improves the reported primary metric.

Bayesian sampling does not support any early termination policy Example:

```
from azureml.train.hyperdrive import BayesianParameterSampling from azureml.train.hyperdrive import uniform, choice param_sampling = BayesianParameterSampling( { "learning_rate": uniform(0.05, 0.1), "batch_size": choice(16, 32, 64, 128) } )
```

D: 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.

Reference:

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

NEW QUESTION 101

- (Exam Topic 3)

You publish a batch inferencing pipeline that will be used by a business application.

The application developers need to know which information should be submitted to and returned by the REST interface for the published pipeline.

You need to identify the information required in the REST request and returned as a response from the published pipeline.

Which values should you use in the REST request and to expect in the response? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

REST Request	Value
Request Header	<div>JSON containing the run ID JSON containing the pipeline ID JSON containing the experiment name JSON containing an OAuth bearer token</div>
Response	<div>JSON containing the run ID JSON containing the pipeline ID JSON containing the experiment name JSON containing an OAuth bearer token</div>
Response	<div>JSON containing the run ID JSON containing a list of predictions JSON containing the experiment name JSON containing a path to the parallel_run_step.txt output file</div>

A. Mastered

B. Not Mastered

Answer: A

Explanation:

Box 1: JSON containing an OAuth bearer token Specify your authentication header in the request.

To run the pipeline from the REST endpoint, you need an OAuth2 Bearer-type authentication header. Box 2: JSON containing the experiment name

Add a JSON payload object that has the experiment name. Example:

```
rest_endpoint = published_pipeline.endpoint response = requests.post(rest_endpoint, headers=auth_header, json={"ExperimentName": "batch_scoring", "ParameterAssignments": {"process_count_per_node": 6}}) run_id = response.json()["Id"]
```

Box 3: JSON containing the run ID

Make the request to trigger the run. Include code to access the Id key from the response dictionary to get the value of the run ID.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/tutorial-pipeline-batch-scoring-classification>

NEW QUESTION 103

- (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 train and register a machine learning model.

You plan to deploy the model as a real-time web service. Applications must use key-based authentication to use the model.

You need to deploy the web service.

Solution:

Create an AksWebService instance.

Set the value of the auth_enabled property to False.

Set the value of the token_auth_enabled property to True.

Deploy the model to the service. Does the solution meet the goal?

A. Yes

B. No

Answer: B

Explanation:

Instead use only auth_enabled = TRUE Note: Key-based authentication.

Web services deployed on AKS have key-based auth enabled by default. ACI-deployed services have

key-based auth disabled by default, but you can enable it by setting auth_enabled = TRUE when creating the ACI web service. The following is an example of creating an ACI deployment configuration with key-based auth enabled.

```
deployment_config <- aci_websevice_deployment_config(cpu_cores = 1, memory_gb = 1,  
auth_enabled = TRUE) Reference:  
https://azure.github.io/azureml-sdk-for-r/articles/deploying-models.html
```

NEW QUESTION 106

- (Exam Topic 3)

```
source_directory=scripts_folder,  
entry_script="batch_pipeline.py",  
mini_batch_size="5",  
error_threshold=10,  
output_action="append_row",  
environment=batch_env,  
compute_target=compute_target,  
logging_level="DEBUG",  
node_count=4)
```

You need to obtain the output from the pipeline execution. Where will you find the output?

- A. the Activity Log in the Azure portal for the Machine Learning workspace
- B. a file named parallel_run_step.txt located in the output folder
- C. the digitidentification.py script
- D. the Inference Clusters tab in Machine Learning studio
- E. the debug log

Answer: B

Explanation:

output_action (str): How the output is to be organized. Currently supported values are 'append_row' and 'summary_only'.

➤ 'append_row' – All values output by run() method invocations will be aggregated into one unique file named parallel_run_step.txt that is created in the output location.

➤ 'summary_only' Reference:

<https://docs.microsoft.com/en-us/python/api/azureml-contrib-pipeline-steps/azureml.contrib.pipeline.steps.parall>

NEW QUESTION 108

- (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 a data scientist using Azure Machine Learning Studio.

You need to normalize values to produce an output column into bins to predict a target column. Solution: Apply a Quantiles normalization with a QuantileIndex normalization.

Does the solution meet the GOAL?

- A. Yes
- B. No

Answer: B

Explanation:

Use the Entropy MDL binning mode which has a target column. References:

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

NEW QUESTION 109

- (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 112

- (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 stopwords 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 117

- (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 using Azure Machine Learning Studio to perform feature engineering on a dataset. You need to normalize values to produce a feature column grouped into bins.

Solution: Apply an Entropy Minimum Description Length (MDL) binning mode. Does the solution meet the goal?

- A. Yes
B. No

Answer: A

Explanation:

Entropy MDL binning mode: This method requires that you select the column you want to predict and the column or columns that you want to group into bins. It then makes a pass over the data and attempts to determine the number of bins that minimizes the entropy. In other words, it chooses a number of bins that allows

the data column to best predict the target column. It then returns the bin number associated with each row of your data in a column named <colname>quantized.

References:

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

NEW QUESTION 122

- (Exam Topic 3)

You use Azure Machine Learning designer to create a real-time service endpoint. You have a single Azure Machine Learning service compute resource. You train the model and prepare the real-time pipeline for deployment. You need to publish the inference pipeline as a web service. Which compute type should you use?

- A. HDInsight
- B. Azure Databricks
- C. Azure Kubernetes Services
- D. the existing Machine Learning Compute resource
- E. a new Machine Learning Compute resource

Answer: C

Explanation:

Azure Kubernetes Service (AKS) can be used for real-time inference. Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/concept-compute-target>

NEW QUESTION 126

- (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 131

- (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 plan to use a Python script to run an Azure Machine Learning experiment. The script creates a reference to the experiment run context, loads data from a file, identifies the set of unique values for the label column, and completes the experiment run:

```
from azureml.core import Run
import pandas as pd

run = Run.get_context()
data = pd.read_csv('data.csv')
label_vals = data['label'].unique()
# Add code to record metrics here
run.complete()
```

The experiment must record the unique labels in the data as metrics for the run that can be reviewed later.

You must add code to the script to record the unique label values as run metrics at the point indicated by the comment.

Solution: Replace the comment with the following code: `run.log_table('Label Values', label_vals)`

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Instead use the `run.log` function to log the contents in `label_vals`: `run.log('Label Values', label_val)` for `label_val` in `label_vals`:

run.log('Label Values', label_val) Reference:

<https://www.element61.be/en/resource/azure-machine-learning-services-complete-toolbox-ai>

NEW QUESTION 134

- (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: Mean Absolute Error, Root Mean Absolute Error, Relative Absolute Error, Accuracy, Precision, Recall, F1 score, and AUC.

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Accuracy, Precision, Recall, F1 score, and AUC are metrics for evaluating classification models. Note: Mean Absolute Error, Root Mean Absolute Error, Relative Absolute Error are OK for the linear regression model.

References:

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

NEW QUESTION 139

- (Exam Topic 3)

You create an Azure Machine Learning compute resource to train models. The compute resource is configured as follows:

- > Minimum nodes: 2
- > Maximum nodes: 4

You must decrease the minimum number of nodes and increase the maximum number of nodes to the following values:

- > Minimum nodes: 0
- > Maximum nodes: 8

You need to reconfigure the compute resource.

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. Use the Azure Machine Learning studio.
- B. Run the update method of the AmlCompute class in the Python SDK.
- C. Use the Azure portal.
- D. Use the Azure Machine Learning designer.
- E. Run the refresh_state() method of the BatchCompute class in the Python SDK

Answer: ABC

Explanation:

Reference:

[https://docs.microsoft.com/en-us/python/api/azureml-core/azureml.core.compute.amlcompute\(class\)](https://docs.microsoft.com/en-us/python/api/azureml-core/azureml.core.compute.amlcompute(class))

NEW QUESTION 144

- (Exam Topic 3)

You use Azure Machine Learning to train a model based on a dataset named dataset1. You define a dataset monitor and create a dataset named dataset2 that contains new data.

You need to compare dataset1 and dataset2 by using the Azure Machine Learning SDK for Python. Which method of the DataDriftDetector class should you use?

- A. run
- B. get
- C. backfill
- D. update

Answer: C

Explanation:

A backfill run is used to see how data changes over time. Reference:

<https://docs.microsoft.com/en-us/python/api/azureml-datadrift/azureml.datadrift.datadriftdetector.datadriftdetect>

NEW QUESTION 147

- (Exam Topic 3)

You create a binary classification model. The model is registered in an Azure Machine Learning workspace. You use the Azure Machine Learning Fairness SDK to assess the model fairness.

You develop a training script for the model on a local machine.

You need to load the model fairness metrics into Azure Machine Learning studio. What should you do?

- A. Implement the download_dashboard_by_upload_id function
- B. Implement the create_group_metric_sec function
- C. Implement the upload_dashboard_dictionary function
- D. Upload the training script

Answer: C

Explanation:

import azureml.contrib.fairness package to perform the upload:

from azureml.contrib.fairness import upload_dashboard_dictionary, download_dashboard_by_upload_id Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-machine-learning-fairness-aml>

NEW QUESTION 151

- (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

```
early_termination_policy =  
TruncationSelectionPolicy(evaluation_interval=1,  
truncation_percentage=20, delay_evaluation=5)  
  
import TruncationSelectionPolicy  
  
from azureml.train.hyperdrive  
  
import BanditPolicy  
  
early_termination_policy = BanditPolicy  
(slack_factor = 0.1, evaluation_interval=1,  
delay_evaluation=5)
```

Answer Area

⏪

⏩

⏴

⏵

- 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 155

- (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-importance>

NEW QUESTION 158

- (Exam Topic 1)

You need to implement a feature engineering strategy for the crowd sentiment local models. What should you do?

- A. Apply an analysis of variance (ANOVA).
- B. Apply a Pearson correlation coefficient.
- C. Apply a Spearman correlation coefficient.
- D. Apply a linear discriminant analysis.

Answer: D

Explanation:

The linear discriminant analysis method works only on continuous variables, not categorical or ordinal variables.

Linear discriminant analysis is similar to analysis of variance (ANOVA) in that it works by comparing the means of the variables.

Scenario:

Data scientists must build notebooks in a local environment using automatic feature engineering and model building in machine learning pipelines.

Experiments for local crowd sentiment models must combine local penalty detection data. All shared features for local models are continuous variables.

NEW QUESTION 161

- (Exam Topic 2)

You need to configure the Feature Based Feature Selection module based on the experiment requirements and datasets.

How should you configure the module properties? To answer, select the appropriate options in the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

Filter Based Feature Selection

Feature scoring method

Feature scoring method
▼

Fisher Score

Chi-squared

Mutual information

Counts

☒ Operate on feature columns only

Target column

Target column
▼

MedianValue

AvgRooms/nHouse

Launch column selector

Number of desired features

1

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Mutual Information.

The mutual information score is particularly useful in feature selection because it maximizes the mutual information between the joint distribution and target variables in datasets with many dimensions.

Box 2: MedianValue

MedianValue is the feature column, , it is the predictor of the dataset.

Scenario: The MedianValue and AvgRoomsInHouse columns both hold data in numeric format. You need to select a feature selection algorithm to analyze the relationship between the two columns in more detail.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/filter-based-feature-selection>

NEW QUESTION 162

- (Exam Topic 1)

You need to select an environment that will meet the business and data requirements. Which environment should you use?

- A. Azure HDInsight with Spark MLlib
- B. Azure Cognitive Services
- C. Azure Machine Learning Studio
- D. Microsoft Machine Learning Server

Answer: D

NEW QUESTION 164

- (Exam Topic 1)

You need to resolve the local machine learning pipeline performance issue. What should you do?

- A. Increase Graphic Processing Units (GPUs).
- B. Increase the learning rate.
- C. Increase the training iterations,
- D. Increase Central Processing Units (CPUs).

Answer: A

NEW QUESTION 167

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