

# AI-900 Demo

Topic 1, Describe Artificial Intelligence workloads and considerations

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## Question: 1

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A company employs a team of customer service agents to provide telephone and email support to customers.

The company develops a webchat bot to provide automated answers to common customer queries.

Which business benefit should the company expect as a result of creating the webchat bot solution?

- A. increased sales
- B. a reduced workload for the customer service agents
- C. improved product reliability

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**Answer: B**

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Explanation:

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## Question: 2

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For a machine learning progress, how should you split data for training and evaluation?

- A. Use features for training and labels for evaluation.
- B. Randomly split the data into rows for training and rows for evaluation.
- C. Use labels for training and features for evaluation.
- D. Randomly split the data into columns for training and columns for evaluation.

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**Answer: B**

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Explanation:

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

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## Question: 3

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HOTSPOT

You are developing a model to predict events by using classification.

You have a confusion matrix for the model scored on test data as shown in the following exhibit.

		Actual	
		1	0
Predicted	1	11	5
	0	1033	13951

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

NOTE: Each correct selection is worth one point.

## Answer Area

There are **[answer choice]** correctly predicted positives.

▼

5

11

1,033

13,951

There are **[answer choice]** false negatives.

▼

5

11

1,033

13,951

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**Answer:**

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Explanation:

## Answer Area

There are **[answer choice]** correctly predicted positives.

5  
11  
1,033  
13,951

There are **[answer choice]** false negatives.

5  
11  
1,033  
13,951

Box 1: 11

	Predicted	
	Positive	Negative
Actual True	TP	FN
Actual False	FP	TN

TP = True Positive.

The class labels in the training set can take on only two possible values, which we usually refer to as positive or negative. The positive and negative instances that a classifier predicts correctly are called true positives (TP) and true negatives (TN), respectively. Similarly, the incorrectly classified instances are called false positives (FP) and false negatives (FN).

Box 2: 1,033

FN = False Negative

Reference:

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

Finding TP is easy. It basically means the value where Predicted and True value is 1 and that is 11 in this case.

False Negative means where true value was 1 but predicted value was 0 and that is 1033 in this case. The confusion matrix shows cases where both the predicted and actual values were 1 (known as true positives) at the top left, and cases where both the predicted and the actual values were 0 (true negatives) at the bottom right. The other cells show cases where the predicted and actual values differ (false positives and false negatives).

<https://docs.microsoft.com/en-us/learn/modules/create-classification-model-azure-machine-learning-designer/evaluate-model>

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### Question: 4

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You build a machine learning model by using the automated machine learning user interface (UI).

You need to ensure that the model meets the Microsoft transparency principle for responsible AI.

What should you do?

- A. Set Validation type to Auto.
- B. Enable Explain best model.
- C. Set Primary metric to accuracy.
- D. Set Max concurrent iterations to 0.

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**Answer: B**

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Explanation:

Model Explain Ability.

Most businesses run on trust and being able to open the ML “black box” helps build transparency and trust. In heavily regulated industries like healthcare and banking, it is critical to comply with regulations and best practices. One key aspect of this is understanding the relationship between input variables (features) and model output. Knowing both the magnitude and direction of the impact each feature (feature importance) has on the predicted value helps better understand and explain the model. With model explain ability, we enable you to understand feature importance as part of automated ML runs.

Reference:

<https://azure.microsoft.com/en-us/blog/new-automated-machine-learning-capabilities-in-azure-machine-learning-service/>

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### Question: 5

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## HOTSPOT

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

### Answer Area

Statements	Yes	No
Forecasting housing prices based on historical data is an example of anomaly detection.	<input type="radio"/>	<input type="radio"/>
Identifying suspicious sign-ins by looking for deviations from usual patterns is an example of anomaly detection.	<input type="radio"/>	<input type="radio"/>
Predicting whether a patient will develop diabetes based on the patient's medical history is an example of anomaly detection.	<input type="radio"/>	<input type="radio"/>

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**Answer:**

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Explanation:

### Answer Area

Statements	Yes	No
Forecasting housing prices based on historical data is an example of anomaly detection.	<input type="radio"/>	<input checked="" type="radio"/>
Identifying suspicious sign-ins by looking for deviations from usual patterns is an example of anomaly detection.	<input checked="" type="radio"/>	<input type="radio"/>
Predicting whether a patient will develop diabetes based on the patient's medical history is an example of anomaly detection.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: No

Box 2: Yes

Box 3: Yes

Anomaly detection encompasses many important tasks in machine learning:  
 Identifying transactions that are potentially fraudulent.  
 Learning patterns that indicate that a network intrusion has occurred.

Finding abnormal clusters of patients.  
Checking values entered into a system.

Reference:

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