

Question 1 (Describe Artificial Intelligence workloads and considerations)

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

EXPOSE CORRECT ANSWER

Answer : B

Question 2 (Describe Artificial Intelligence workloads and considerations)

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.

EXPOSE CORRECT ANSWER

Answer : D

Explanation:

In Azure Machine Learning, the percentage split is the available technique to split the data. In this technique, random data of a given percentage will be split to train and test data.

Reference:

<https://www.sqlshack.com/prediction-in-azure-machine-learning/>

Question 3 (Describe Artificial Intelligence workloads and considerations)

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.

NOTE: Each correct selection is worth one point.

Hot Area:

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

Answer :

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

Explanation:

Box 1: 11 -

		Predicted	
		Positive	Negative
Actual True	TP	FN	
	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>

Question 4 (Describe Artificial Intelligence workloads and considerations)

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.

Answer : B

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 explainability, 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/>

Question 5 (Describe Artificial Intelligence workloads and considerations)

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.

Hot Area:

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"/>

Answer :

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 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 checked="" type="radio"/>	<input type="radio"/>

Explanation:

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>

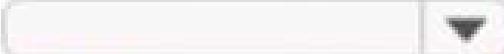
Question 6 (Describe Artificial Intelligence workloads and considerations)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

The handling of unusual or missing values provided to an AI system is a consideration for the Microsoft  principle for responsible AI.

- inclusiveness
- privacy and security
- reliability and safety
- transparency

Answer :

Answer Area

The handling of unusual or missing values provided to an AI system is a consideration for the Microsoft  principle for responsible AI.

inclusiveness
privacy and security
reliability and safety
transparency

Explanation:

Privacy and security.

As AI becomes more prevalent, protecting privacy and securing important personal and business information is becoming more critical and complex. With AI, privacy and data security issues require especially close attention because access to data is essential for AI systems to make accurate and informed predictions and decisions about people. AI systems must comply with privacy laws that require transparency about the collection, use, and storage of data and mandate that consumers have appropriate controls to choose how their data is used. At Microsoft, we are continuing to research privacy and security breakthroughs (see next unit) and invest in robust compliance processes to ensure that data collected and used by our AI systems is handled responsibly.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 7 (Describe Artificial Intelligence workloads and considerations)

DRAG DROP -

Match the types of AI workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Workloads Types

Anomaly detection

Computer vision

Conversational AI

Knowledge mining

Natural language processing

Answer Area

Workload Type

An automated chat to answer questions about refunds and exchange

Workload Type

Determining whether a photo contains a person

Workload Type

Determining whether a review is positive or negative

Answer :

Workloads Types	Answer Area	
Anomaly detection	Conversational AI	An automated chat to answer questions about refunds and exchange
Computer vision	Computer vision	Determining whether a photo contains a person
Conversational AI	Natural language processing	Determining whether a review is positive or negative
Knowledge mining		
Natural language processing		

Explanation:

Box 3: Natural language processing

Natural language processing (NLP) is used for tasks such as sentiment analysis, topic detection, language detection, key phrase extraction, and document categorization.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/natural-language-processing>

Question 8 (Describe Artificial Intelligence workloads and considerations)

You are designing an AI system that empowers everyone, including people who have hearing, visual, and other impairments. This is an example of which Microsoft guiding principle for responsible AI?

- A. fairness
- B. inclusiveness
- C. reliability and safety
- D. accountability

EXPOSE CORRECT ANSWER

Answer : B

Explanation:

Inclusiveness: At Microsoft, we firmly believe everyone should benefit from intelligent technology, meaning it must incorporate and address a broad range of human needs and experiences. For the 1 billion people with disabilities around the world, AI technologies can be a game-changer.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 9 (Describe Artificial Intelligence workloads and considerations)

DRAG DROP -

Match the Microsoft guiding principles for responsible AI to the appropriate descriptions.

To answer, drag the appropriate principle from the column on the left to its description on the right. Each principle may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Principles	Answer Area
Accountability	Principle Ensure that AI systems operate as they were originally designed, respond to unanticipated conditions, and resist harmful manipulation.
Fairness	Principle Implementing processes to ensure that decisions made by AI systems can be overridden by humans.
Inclusiveness	Principle Provide consumers with information and controls over the collection, use, and storage of their data.
Privacy and security	
Reliability and safety	

Answer :

Principles

Accountability

Fairness

Inclusiveness

Privacy and security

Reliability and safety

Answer Area

Reliability and safety

Ensure that AI systems operate as they were originally designed, respond to unanticipated conditions, and resist harmful manipulation.

Fairness

Implementing processes to ensure that decisions made by AI systems can be overridden by humans.

Privacy and security

Provide consumers with information and controls over the collection, use, and storage of their data.

Explanation:

Box 1: Reliability and safety -

To build trust, it's critical that AI systems operate reliably, safely, and consistently under normal circumstances and in unexpected conditions. These systems should be able to operate as they were originally designed, respond safely to unanticipated conditions, and resist harmful manipulation.

Box 2: Fairness -

Fairness: AI systems should treat everyone fairly and avoid affecting similarly situated groups of people in different ways. For example, when AI systems provide guidance on medical treatment, loan applications, or employment, they should make the same recommendations to everyone with similar symptoms, financial circumstances, or professional qualifications.

We believe that mitigating bias starts with people understanding the implications and limitations of AI predictions and recommendations. Ultimately, people should supplement AI decisions with sound human judgment and be held accountable for consequential decisions that affect others.

Box 3: Privacy and security -

As AI becomes more prevalent, protecting privacy and securing important personal and business information is becoming more critical and complex. With AI, privacy and data security issues require especially close attention because access to data is essential for AI systems to make accurate and informed predictions and decisions about people. AI systems must comply with privacy laws that require transparency about the collection, use, and storage of data and mandate that consumers have appropriate controls to choose how their data is used

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 10 (Describe Artificial Intelligence workloads and considerations)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

When developing an AI system for self-driving cars, the Microsoft
for responsible AI should be applied to ensure consistent operation
system during unexpected circumstances.

inclusiveness
accountability
reliability and safety
fairness

principle
of the

Answer :

When developing an AI system for self-driving cars, the Microsoft
for responsible AI should be applied to ensure consistent operation
system during unexpected circumstances.

inclusiveness
accountability
reliability and safety
fairness

principle
of the

Explanation:

Reliability and safety: To build trust, it's critical that AI systems operate reliably, safely, and consistently under normal circumstances and in unexpected conditions.

These systems should be able to operate as they were originally designed, respond safely to unanticipated conditions, and resist harmful manipulation.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 11 (Describe Artificial Intelligence workloads and considerations)

You are building an AI system.

Which task should you include to ensure that the service meets the Microsoft transparency principle for responsible AI?

- A. Ensure that all visuals have an associated text that can be read by a screen reader.
- B. Enable autoscaling to ensure that a service scales based on demand.
- C. Provide documentation to help developers debug code.
- D. Ensure that a training dataset is representative of the population.

EXPOSE CORRECT ANSWER

Answer : C

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 12 (Describe Artificial Intelligence workloads and considerations)

DRAG DROP -

Match the types of AI workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Workload Types	Answer Area	
Anomaly detection	Workload Type	Identify handwritten letters.
Computer vision	Workload Type	Predict the sentiment of a social media post.
Machine Learning (Regression)	Workload Type	Identify a fraudulent credit card payment.
Natural language processing	Workload Type	Predict next month's toy sales.

Answer:

Workload Types

Anomaly detection

Computer vision

Machine Learning (Regression)

Natural language processing

Answer Area

Computer vision

Natural language processing

Anomaly detection

Machine Learning (Regression)

Identify handwritten letters.

Predict the sentiment of a social media post.

Identify a fraudulent credit card payment.

Predict next month's toy sales.

Reference:

<https://docs.microsoft.com/en-us/learn/patterns/get-started-with-artificial-intelligence-on-azure/>

Question 13 (Describe Artificial Intelligence workloads and considerations)

Your company is exploring the use of voice recognition technologies in its smart home devices. The company wants to identify any barriers that might unintentionally leave out specific user groups.

This is an example of which Microsoft guiding principle for responsible AI?

- A. accountability
- B. fairness
- C. inclusiveness
- D. privacy and security

EXPOSE CORRECT ANSWER

Answer : C

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 14 (Describe Artificial Intelligence workloads and considerations)

What are three Microsoft guiding principles for responsible AI? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. knowledgeability
- B. decisiveness
- C. inclusiveness
- D. fairness
- E. opinionatedness
- F. reliability and safety

EXPOSE CORRECT ANSWER

Answer : CDF

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question 15 (Describe Artificial Intelligence workloads and considerations)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

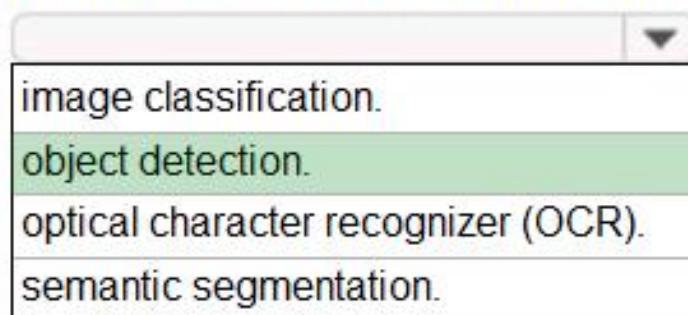
Returning a bounding box that indicates the location of a vehicle in an image is an example of

- image classification.
- object detection.
- optical character recognizer (OCR).
- semantic segmentation.

Answer :

Answer Area

Returning a bounding box that indicates the location of a vehicle in an image is an example of



A dropdown menu containing four items:

- image classification.
- object detection.
- optical character recognizer (OCR).
- semantic segmentation.

The second item, "object detection.", is highlighted with a green background.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/concept-object-detection>

Question 16 (Describe Artificial Intelligence workloads and considerations)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

	▼
Feature engineering	
Feature selection	
Model evaluation	
Model training	

is used to generate additional features.

Answer :

Answer Area

	▼
Feature engineering	
Feature selection	
Model evaluation	
Model training	

is used to generate additional features.

Reference:

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

Question 17 (Describe Artificial Intelligence workloads and considerations)

You run a charity event that involves posting photos of people wearing sunglasses on Twitter. You need to ensure that you only retweet photos that meet the following requirements:

- > Include one or more faces.
- > Contain at least one person wearing sunglasses.

What should you use to analyze the images?

- A. the Verify operation in the Face service
- B. the Detect operation in the Face service
- C. the Describe Image operation in the Computer Vision service
- D. the Analyze Image operation in the Computer Vision service

EXPOSE CORRECT ANSWER

Answer : B

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/face/overview>

Question 18 (Describe fundamental principles of machine learning on Azure)

Which metric can you use to evaluate a classification model?

- A. true positive rate
- B. mean absolute error (MAE)
- C. coefficient of determination (R^2)
- D. root mean squared error (RMSE)

EXPOSE CORRECT ANSWER

Answer : A

Explanation:

What does a good model look like?

An ROC curve that approaches the top left corner with 100% true positive rate and 0% false positive rate will be the best model. A random model would display as a flat line from the bottom left to the top right corner. Worse than random would dip below the $y=x$ line.

Reference:

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

Question 19 (Describe fundamental principles of machine learning on Azure)

Which two components can you drag onto a canvas in Azure Machine Learning designer? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. dataset
- B. compute
- C. pipeline
- D. module

EXPOSE CORRECT ANSWER

Answer : AD

Explanation:

You can drag-and-drop datasets and modules onto the canvas.

Reference:

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

Question 20 (Describe fundamental principles of machine learning on Azure)

You need to create a training dataset and validation dataset from an existing dataset.

Which module in the Azure Machine Learning designer should you use?

- A. Select Columns in Dataset
- B. Add Rows
- C. Split Data
- D. Join Data

EXPOSE CORRECT ANSWER

Answer : C

Explanation:

A common way of evaluating a model is to divide the data into a training and test set by using Split Data, and then validate the model on the training data.

Use the Split Data module to divide a dataset into two distinct sets.

The studio currently supports training/validation data splits

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-configure-cross-validation-data-splits>

Question 21 (Describe fundamental principles of machine learning on Azure)

DRAG DROP -

Match the types of machine learning to the appropriate scenarios.

To answer, drag the appropriate machine learning type from the column on the left to its scenario on the right. Each machine learning type may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Learning Types	Answer Area		
Classification	<table border="1"><tr><td>Learning Type</td><td>Predict how many minutes late a flight will arrive based on the amount of snowfall at an airport.</td></tr></table>	Learning Type	Predict how many minutes late a flight will arrive based on the amount of snowfall at an airport.
Learning Type	Predict how many minutes late a flight will arrive based on the amount of snowfall at an airport.		
Clustering	<table border="1"><tr><td>Learning Type</td><td>Segment customers into different groups to support a marketing department.</td></tr></table>	Learning Type	Segment customers into different groups to support a marketing department.
Learning Type	Segment customers into different groups to support a marketing department.		
Regression	<table border="1"><tr><td>Learning Type</td><td>Predict whether a student will complete a university course.</td></tr></table>	Learning Type	Predict whether a student will complete a university course.
Learning Type	Predict whether a student will complete a university course.		

Answer :

Learning Types

Classification

Clustering

Regression

Answer Area

Regression

Classification

Clustering

Predict how many minutes late a flight will arrive based on the amount of snowfall at an airpot.

Segment customers into different groups to support a marketing department.

Predict whether a student will complete a university course.

Explanation:

Box 1: Regression -

In the most basic sense, regression refers to prediction of a numeric target.

Linear regression attempts to establish a linear relationship between one or more independent variables and a numeric outcome, or dependent variable.

You use this module to define a linear regression method, and then train a model using a labeled dataset. The trained model can then be used to make predictions.

Box 2: Classification -

Classification is a machine learning method that uses data to determine the category, type, or class of an item or row of data.

Box 3: Clustering -

Clustering, in machine learning, is a method of grouping data points into similar clusters. It is also called segmentation.

Over the years, many clustering algorithms have been developed. Almost all clustering algorithms use the features of individual items to find similar items. For example, you might apply clustering to find similar people by demographics. You might use clustering with text analysis to group sentences with similar topics or sentiment.

Reference:

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

Question 22 (Describe fundamental principles of machine learning on Azure)

DRAG DROP -

Match the machine learning tasks to the appropriate scenarios.

To answer, drag the appropriate task from the column on the left to its scenario on the right. Each task may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Learning Types	Answer Area
Feature engineering	Task Examining the values of a confusion matrix
Feature selection	Task Splitting a date into month, day, and year fields
Model deployment	Task Picking temperature and pressure to train a weather model
Model evaluation	
Model training	

Answer :

Learning Types

Feature engineering

Feature selection

Model deployment

Model evaluation

Model training

Answer Area

Model evaluation

Examining the values of a confusion matrix

Feature engineering

Splitting a date into month, day, and year fields

Feature selection

Picking temperature and pressure to train a weather model

Explanation:

Box 1: Model evaluation -

The Model evaluation module outputs a confusion matrix showing the number of true positives, false negatives, false positives, and true negatives, as well as ROC, Precision/Recall, and Lift curves.

Box 2: Feature engineering -

Feature engineering is the process of using domain knowledge of the data to create features that help ML algorithms learn better. In Azure Machine Learning, scaling and normalization techniques are applied to facilitate feature engineering. Collectively, these techniques and feature engineering are referred to as featurization.

Note: Often, features are created from raw data through a process of feature engineering. For example, a time stamp in itself might not be useful for modeling until the information is transformed into units of days, months, or categories that are relevant to the problem, such as holiday versus working day.

Box 3: Feature selection -

In machine learning and statistics, feature selection is the process of selecting a subset of relevant, useful features to use in building an analytical model. Feature selection helps narrow the field of data to the most valuable inputs. Narrowing the field of data helps reduce noise and improve training performance.

Reference:

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

Question 23 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Data values that influence the prediction of a model are called

dependant variables.

features.

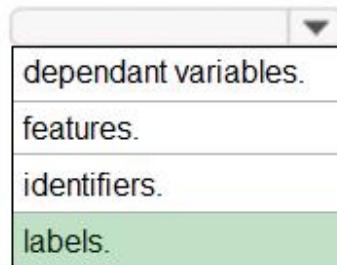
identifiers.

labels.

Answer :

Answer Area

Data values that influence the prediction of a model are called



Explanation:

In machine learning, if you have labeled data, that means your data is marked up, or annotated, to show the target, which is the answer you want your machine learning model to predict.

In general, data labeling can refer to tasks that include data tagging, annotation, classification, moderation, transcription, or processing.

Incorrect Answers:

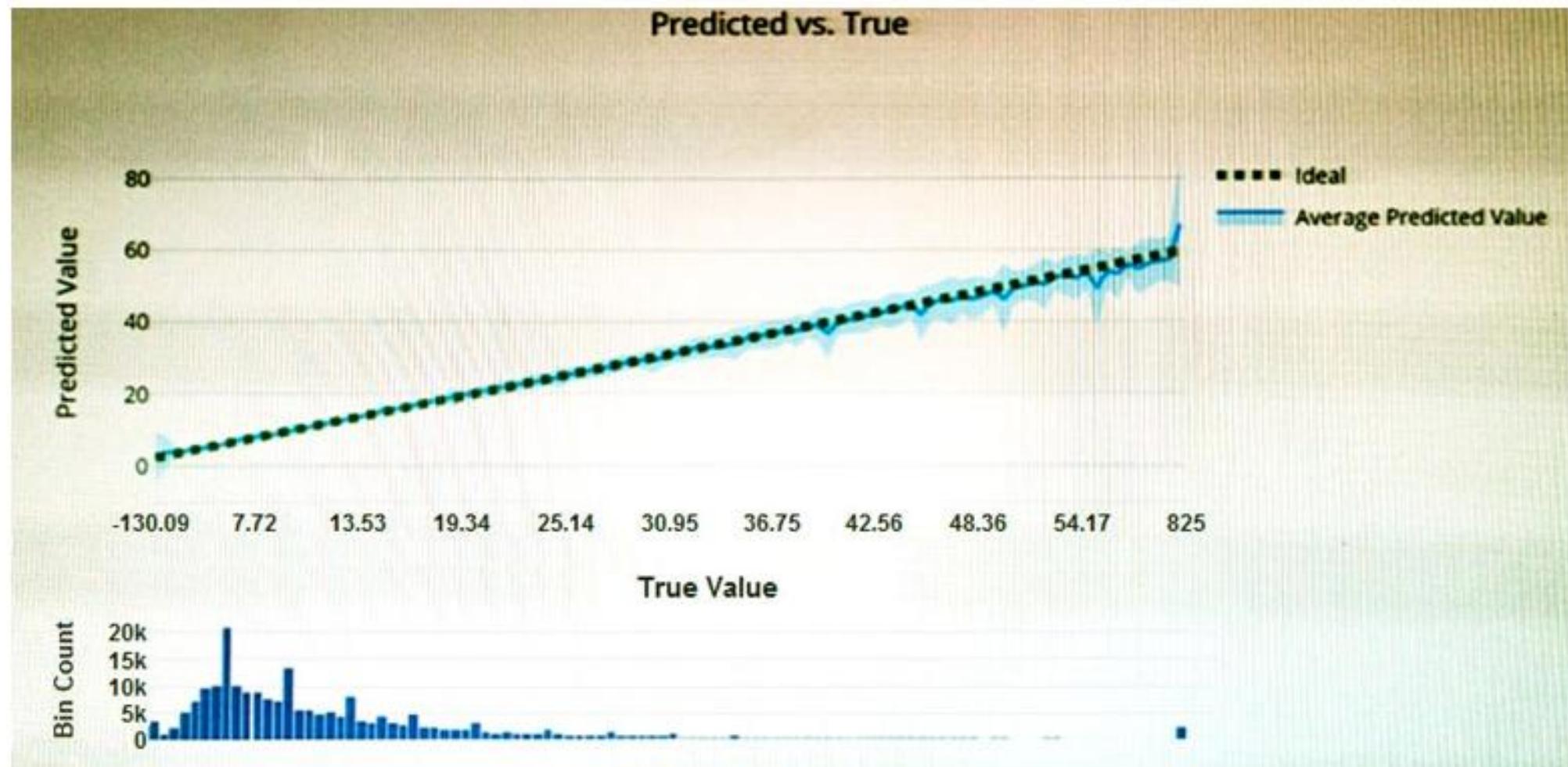
Not features: In machine learning and statistics, feature selection is the process of selecting a subset of relevant, useful features to use in building an analytical model. Feature selection helps narrow the field of data to the most valuable inputs. Narrowing the field of data helps reduce noise and improve training performance.

Reference:

<https://www.cloudfactory.com/data-labeling-guide>

Question 24 (Describe fundamental principles of machine learning on Azure)

You have the Predicted vs. True chart shown in the following exhibit.



Which type of model is the chart used to evaluate?

- A. classification
- B. regression
- C. clustering

EXPOSE CORRECT ANSWER

Answer : B

Explanation:

What is a Predicted vs. True chart?

Predicted vs. True shows the relationship between a predicted value and its correlating true value for a regression problem. This graph can be used to measure performance of a model as the closer to the $y=x$ line the predicted values are, the better the accuracy of a predictive model.

Reference:

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

Question 25 (Describe fundamental principles of machine learning on Azure)

Which type of machine learning should you use to predict the number of gift cards that will be sold next month?

- A. classification
- B. regression
- C. clustering

EXPOSE CORRECT ANSWER

Answer : C

Explanation:

Clustering, in machine learning, is a method of grouping data points into similar clusters. It is also called segmentation. Over the years, many clustering algorithms have been developed. Almost all clustering algorithms use the features of individual items to find similar items. For example, you might apply clustering to find similar people by demographics. You might use clustering with text analysis to group sentences with similar topics or sentiment.

Reference:

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

Question 26 (Describe fundamental principles of machine learning on Azure)

You have a dataset that contains information about taxi journeys that occurred during a given period. You need to train a model to predict the fare of a taxi journey.
What should you use as a feature?

- A. the number of taxi journeys in the dataset
- B. the trip distance of individual taxi journeys
- C. the fare of individual taxi journeys
- D. the trip ID of individual taxi journeys

Answer : B

Explanation:

The label is the column you want to predict. The identified Features are the inputs you give the model to predict the Label.

Example:

The provided data set contains the following columns:

vendor_id: The ID of the taxi vendor is a feature.

rate_code: The rate type of the taxi trip is a feature.

passenger_count: The number of passengers on the trip is a feature. trip_time_in_secs: The amount of time the trip took. You want to predict the fare of the trip before the trip is completed. At that moment, you don't know how long the trip would take. Thus, the trip time is not a feature and you'll exclude this column from the model. trip_distance: The distance of the trip is a feature. payment_type: The payment method (cash or credit card) is a feature. fare_amount: The total taxi fare paid is the label.

Reference:

<https://docs.microsoft.com/en-us/dotnet/machine-learning/tutorials/predict-prices>

Question 27 (Describe fundamental principles of machine learning on Azure)

You need to predict the sea level in meters for the next 10 years.

Which type of machine learning should you use?

- A. classification
- B. regression
- C. clustering

EXPOSE CORRECT ANSWER

Answer : B

Explanation:

In the most basic sense, regression refers to prediction of a numeric target.

Linear regression attempts to establish a linear relationship between one or more independent variables and a numeric outcome, or dependent variable.

You use this module to define a linear regression method, and then train a model using a labeled dataset. The trained model can then be used to make predictions.

Reference:

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

Question 28 (Describe fundamental principles of machine learning on Azure)

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.

Hot Area:

Answer Area

Statements	Yes	No
Automated machine learning is the process of automating the time-consuming, iterative tasks of machine learning model development.	<input type="radio"/>	<input type="radio"/>
Automated machine learning can automatically infer the training data from the use case provided.	<input type="radio"/>	<input type="radio"/>
Automated machine learning works by running multiple training iterations that are scored and ranked by the metrics you specify.	<input type="radio"/>	<input type="radio"/>
Automated machine learning enables you to specify a dataset and will automatically understand which label to predict.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Automated machine learning is the process of automating the time-consuming, iterative tasks of machine learning model development.	<input checked="" type="radio"/>	<input type="radio"/>
Automated machine learning can automatically infer the training data from the use case provided.	<input type="radio"/>	<input checked="" type="radio"/>
Automated machine learning works by running multiple training iterations that are scored and ranked by the metrics you specify.	<input checked="" type="radio"/>	<input type="radio"/>
Automated machine learning enables you to specify a dataset and will automatically understand which label to predict.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: Yes -

Automated machine learning, also referred to as automated ML or AutoML, is the process of automating the time consuming, iterative tasks of machine learning model development. It allows data scientists, analysts, and developers to build ML models with high scale, efficiency, and productivity all while sustaining model quality.

Box 2: No -

Box 3: Yes -

During training, Azure Machine Learning creates a number of pipelines in parallel that try different algorithms and parameters for you. The service iterates through

ML algorithms paired with feature selections, where each iteration produces a model with a training score. The higher the score, the better the model is considered to "fit" your data. It will stop once it hits the exit criteria defined in the experiment.

Box 4: No -

Apply automated ML when you want Azure Machine Learning to train and tune a model for you using the target metric you specify.

The label is the column you want to predict.

Reference:

<https://azure.microsoft.com/en-us/services/machine-learning/automatedml/#features>

Question 29 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

A banking system that predicts whether a loan will be repaid is an example of the type of machine learning.

classification

regression

clustering

Answer :

Answer Area

A banking system that predicts whether a loan will be repaid is an example of the type of machine learning.

- classification
- regression
- clustering

Explanation:

In the most basic sense, regression refers to prediction of a numeric target.

Example: Regression Model: A Boosted Decision Tree algorithm was used to create and train the model for predicting the repayment rate.

Reference:

<https://gallery.azure.ai/Experiment/Student-Loan-Repayment-Rate-Prediction>

Question 30 (Describe fundamental principles of machine learning on Azure)

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.

Hot Area:

Answer Area

Statements	Yes	No
Labelling is the process of tagging training data with known values.	<input type="radio"/>	<input type="radio"/>
You should evaluate a model by using the same data used to train the model.	<input type="radio"/>	<input type="radio"/>
Accuracy is always the primary metric used to measure a model's performance.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Labelling is the process of tagging training data with known values.	<input type="radio"/>	<input type="radio"/>
You should evaluate a model by using the same data used to train the model.	<input type="radio"/>	<input checked="" type="radio"/>
Accuracy is always the primary metric used to measure a model's performance.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: Yes -

In machine learning, if you have labeled data, that means your data is marked up, or annotated, to show the target, which is the answer you want your machine learning model to predict.

In general, data labeling can refer to tasks that include data tagging, annotation, classification, moderation, transcription, or processing.

Box 2: No -

Box 3: No -

Accuracy is simply the proportion of correctly classified instances. It is usually the first metric you look at when evaluating a classifier. However, when the test data is unbalanced (where most of the instances belong to one of the classes), or you are more interested in the performance on either one of the classes, accuracy doesn't really capture the effectiveness of a classifier.

Reference:

<https://www.cloudfactory.com/data-labeling-guide>

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

Question 31 (Describe fundamental principles of machine learning on Azure)

Which service should you use to extract text, key/value pairs, and table data automatically from scanned documents?

- A. Form Recognizer
- B. Text Analytics
- C. Ink Recognizer
- D. Custom Vision

EXPOSE CORRECT ANSWER

Answer : A

Explanation:

Accelerate your business processes by automating information extraction. Form Recognizer applies advanced machine learning to accurately extract text, key/ value pairs, and tables from documents. With just a few samples, Form Recognizer tailors its understanding to your documents, both on-premises and in the cloud. Turn forms into usable data at a fraction of the time and cost, so you can focus more time acting on the information rather than compiling it.

Reference:

<https://azure.microsoft.com/en-us/services/cognitive-services/form-recognizer/>

Question 32 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

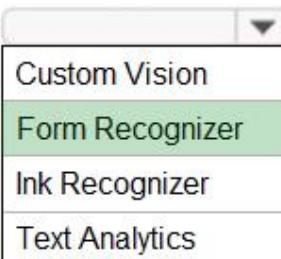
The ability to extract subtotals and totals from a receipt is a capability of the

service.

Custom Vision
Form Recognizer
Ink Recognizer
Text Analytics

Answer :

Answer Area

The ability to extract subtotals and totals from a receipt is a capability of the  service.



Explanation:

Accelerate your business processes by automating information extraction. Form Recognizer applies advanced machine learning to accurately extract text, key/ value pairs, and tables from documents. With just a few samples, Form Recognizer tailors its understanding to your documents, both on-premises and in the cloud. Turn forms into usable data at a fraction of the time and cost, so you can focus more time acting on the information rather than compiling it.

Reference:

<https://azure.microsoft.com/en-us/services/cognitive-services/form-recognizer/>

Question 33 (Describe fundamental principles of machine learning on Azure)

You use Azure Machine Learning designer to publish an inference pipeline.

Which two parameters should you use to consume the pipeline? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. the model name
- B. the training endpoint
- C. the authentication key
- D. the REST endpoint

Answer : AD

Explanation:

A: The trained model is stored as a Dataset module in the module palette. You can find it under My Datasets.

Azure Machine Learning designer lets you visually connect datasets and modules on an interactive canvas to create machine learning models.

D: You can consume a published pipeline in the Published pipelines page. Select a published pipeline and find the REST endpoint of it.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-run-batch-predictions-designer> <https://docs.microsoft.com/en-us/azure/machine-learning/concept-designer>

Question 34 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

From Azure Machine Learning designer, to deploy a real-time inference pipeline as a service for others to consume, you must deploy the model to

a local web service.
Azure Container Instances.
Azure Kubernetes Service (AKS).
Azure Machine Learning compute.

Answer :

Answer Area

From Azure Machine Learning designer, to deploy a real-time inference pipeline as a service for others to consume, you must deploy the model to

- a local web service.
- Azure Container Instances.
- Azure Kubernetes Service (AKS).
- Azure Machine Learning compute.

Explanation:

To perform real-time inferencing, you must deploy a pipeline as a real-time endpoint. Real-time endpoints must be deployed to an Azure Kubernetes Service cluster.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/concept-designer#deploy>

Question 35 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

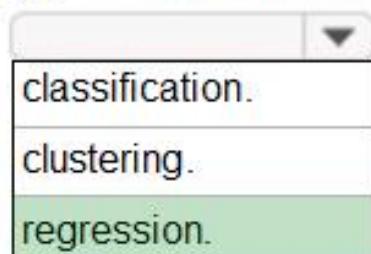
Predicting how many hours of overtime a delivery person will work based on the number of order received is an example of

classification.
clustering.
regression.

Answer :

Answer Area

Predicting how many hours of overtime a delivery person will work based on the number of order received is an example of



A dropdown menu containing three items:

- classification.
- clustering.
- regression.

The "regression" option is highlighted with a green background.

Explanation:

In the most basic sense, regression refers to prediction of a numeric target.

Linear regression attempts to establish a linear relationship between one or more independent variables and a numeric outcome, or dependent variable.

You use this module to define a linear regression method, and then train a model using a labeled dataset. The trained model can then be used to make predictions.

Incorrect Answers:

-> Classification is a machine learning method that uses data to determine the category, type, or class of an item or row of data.

-> Clustering, in machine learning, is a method of grouping data points into similar clusters. It is also called segmentation.

Over the years, many clustering algorithms have been developed. Almost all clustering algorithms use the features of individual items to find similar items. For example, you might apply clustering to find similar people by demographics. You might use clustering with text analysis to group sentences with similar topics or sentiment.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/algorithm-module-reference/linear-regression> <https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/machine-learning-initialize-model-clustering>

Question 36 (Describe fundamental principles of machine learning on Azure)

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.

Hot Area:

Answer Area

Statements	Yes	No
Azure Machine Learning designer provides a drag-and-drop visual canvas to build, test, and deploy machine learning models.	<input type="radio"/>	<input type="radio"/>
Azure Machine Learning designer enables you to save your progress as a pipeline draft.	<input type="radio"/>	<input type="radio"/>
Azure Machine Learning designer enables you to include custom JavaScript functions.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Azure Machine Learning designer provides a drag-and-drop visual canvas to build, test, and deploy machine learning models.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Machine Learning designer enables you to save your progress as a pipeline draft.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Machine Learning designer enables you to include custom JavaScript functions.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: Yes -

Azure Machine Learning designer lets you visually connect datasets and modules on an interactive canvas to create machine learning models.

Box 2: Yes -

With the designer you can connect the modules to create a pipeline draft.

As you edit a pipeline in the designer, your progress is saved as a pipeline draft.

Box 3: No -

Reference:

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

Question 37 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

You have the following dataset.

Household Income	Postal Code	House Price Category
20,000	55555	Low
23,000	20541	Middle
80,000	87960	High

You plan to use the dataset to train a model that will predict the house price categories of houses.

What are Household Income and House Price Category? To answer, select the appropriate option in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Household Income:

A feature
A label

House Price Category:

A feature
A label

Answer:

Answer Area

Household Income:



House Price Category:



Reference:

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

Question 38 (Describe fundamental principles of machine learning on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Azure Machine Learning designer lets you create machine learning models by

- adding and connecting modules on a visual canvas.
- automatically performing common data preparation tasks.
- automatically selecting an algorithm to build the most accurate model.
- using a code-first notebook experience.

Answer :

Answer Area

Azure Machine Learning designer lets you create machine learning models by

adding and connecting modules on a visual canvas.

automatically performing common data preparation tasks.

automatically selecting an algorithm to build the most accurate model.

using a code-first notebook experience.

Reference:

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

Question 39 (Describe fundamental principles of machine learning on Azure)

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.

Hot Area:

Answer Area

Statements	Yes	No
Automated machine learning provides you with the ability to include custom Python scripts in a training pipeline.	<input type="radio"/>	<input type="radio"/>
Automated machine learning implements machine learning solutions without the need for programming experience.	<input type="radio"/>	<input type="radio"/>
Automated machine learning provides you with the ability to visually connect datasets and modules on an interactive canvas.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Automated machine learning provides you with the ability to include custom Python scripts in a training pipeline.	<input checked="" type="radio"/>	<input type="radio"/>
Automated machine learning implements machine learning solutions without the need for programming experience.	<input checked="" type="radio"/>	<input type="radio"/>
Automated machine learning provides you with the ability to visually connect datasets and modules on an interactive canvas.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

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

Question 40 (Describe fundamental principles of machine learning on Azure)

A medical research project uses a large anonymized dataset of brain scan images that are categorized into predefined brain haemorrhage types. You need to use machine learning to support early detection of the different brain haemorrhage types in the images before the images are reviewed by a person.

This is an example of which type of machine learning?

- A. clustering
- B. regression
- C. classification

EXPOSE CORRECT ANSWER

Answer : C

Reference:

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

Question 41 (Describe fundamental principles of machine learning on Azure)

When training a model, why should you randomly split the rows into separate subsets?

- A. to train the model twice to attain better accuracy
- B. to train multiple models simultaneously to attain better performance
- C. to test the model by using data that was not used to train the model

EXPOSE CORRECT ANSWER

Answer : C

Question 42 (Describe fundamental principles of machine learning on Azure)

You are evaluating whether to use a basic workspace or an enterprise workspace in Azure Machine Learning.

What are two tasks that require an enterprise workspace? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Use a graphical user interface (GUI) to run automated machine learning experiments.
- B. Create a compute instance to use as a workstation.
- C. Use a graphical user interface (GUI) to define and run machine learning experiments from Azure Machine Learning designer.
- D. Create a dataset from a comma-separated value (CSV) file.

EXPOSE CORRECT ANSWER

Answer : AC

Explanation:

Note: Enterprise workspaces are no longer available as of September 2020. The basic workspace now has all the functionality of the enterprise workspace.

Reference:

<https://www.azure.cn/en-us/pricing/details/machine-learning/>

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

Question 43 (Describe fundamental principles of machine learning on Azure)

You need to predict the income range of a given customer by using the following dataset.

First Name	Last Name	Age	Education Level	Income Range
Orlando	Gee	45	University	25,000-50,000
Keith	Harris	36	High school	25,000-50,000
Donna	Carreras	52	University	50,000-75,000
Janet	Gates	21	University	75,000-100,000
Lucy	Harrington	68	High school	50,000-75,000

Which two fields should you use as features? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. Education Level
- B. Last Name
- C. Age
- D. Income Range
- E. First Name

Answer : AC

Explanation:

First Name, Last Name, Age and Education Level are features. Income range is a label (what you want to predict). First Name and Last Name are irrelevant in that they have no bearing on income. Age and Education level are the features you should use.

Question 44 (Describe features of computer vision workloads on Azure)

You need to develop a mobile app for employees to scan and store their expenses while travelling.
Which type of computer vision should you use?

- A. semantic segmentation
- B. image classification
- C. object detection
- D. optical character recognition (OCR)

EXPOSE CORRECT ANSWER

Answer : D

Explanation:

Azure's Computer Vision API includes Optical Character Recognition (OCR) capabilities that extract printed or handwritten text from images. You can extract text from images, such as photos of license plates or containers with serial numbers, as well as from documents - invoices, bills, financial reports, articles, and more.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/concept-recognizing-text>

Question 45 (Describe features of computer vision workloads on Azure)

DRAG DROP -

Match the facial recognition tasks to the appropriate questions.

To answer, drag the appropriate task from the column on the left to its question on the right. Each task may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Tasks	Answer Area
grouping	Task Do two images of a face belong to the same person?
identification	Task Does this person look like other people?
similarity	Task Do all the faces belong together?
verification	Task Who is this person in this group of people?

Answer :

Tasks	Answer Area	
grouping	verification	Do two images of a face belong to the same person?
identification	similarity	Does this person look like other people?
similarity	grouping	Do all the faces belong together?
verification	identification	Who is this person in this group of people?

Explanation:

Box 1: verification -

Face verification: Check the likelihood that two faces belong to the same person and receive a confidence score.

Box 2: similarity -

Box 3: Grouping -

Box 4: identification -

Face detection: Detect one or more human faces along with attributes such as: age, emotion, pose, smile, and facial hair, including 27 landmarks for each face in the image.

Reference:

<https://azure.microsoft.com/en-us/services/cognitive-services/face/#features>

Question 46 (Describe features of computer vision workloads on Azure)

DRAG DROP -

Match the types of computer vision to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Select and Place:

Workloads Types

Facial recognition

Image classification

Object detection

Optical character recognition (OCR)

Answer Area

Workload Type

Identify celebrities in images.

Workload Type

Extract movie title names from movie poster images.

Workload Type

Locate vehicles in images.

Answer :

Workloads Types

Facial recognition

Image classification

Object detection

Optical character recognition (OCR)

Answer Area

Facial recognition

Optical character recognition (OCR)

Object detection

Identify celebrities in images.

Extract movie title names from movie poster images.

Locate vehicles in images.

Explanation:

Box 1: Facial recognition –

Face detection that perceives faces and attributes in an image; person identification that matches an individual in your private repository of up to 1 million people; perceived emotion recognition that detects a range of facial expressions like happiness, contempt, neutrality, and fear; and recognition and grouping of similar faces in images.

Box 2: OCR –

Box 3: Objection detection –

Object detection is similar to tagging, but the API returns the bounding box coordinates (in pixels) for each object found. For example, if an image contains a dog, cat and person, the Detect operation will list those objects together with their coordinates in the image. You can use this functionality to process the relationships between the objects in an image. It also lets you determine whether there are multiple instances of the same tag in an image.

The Detect API applies tags based on the objects or living things identified in the image. There is currently no formal relationship between the tagging taxonomy and the object detection taxonomy. At a conceptual level, the Detect API only finds objects and living things, while the Tag API can also include contextual terms like "indoor", which can't be localized with bounding boxes.

Reference:

<https://azure.microsoft.com/en-us/services/cognitive-services/face/> <https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/concept-object-detection>

Question 47 (Describe features of computer vision workloads on Azure)

You need to determine the location of cars in an image so that you can estimate the distance between the cars. Which type of computer vision should you use?

- A. optical character recognition (OCR)
- B. object detection
- C. image classification
- D. face detection

Answer : B

Explanation:

Object detection is similar to tagging, but the API returns the bounding box coordinates (in pixels) for each object found. For example, if an image contains a dog, cat and person, the Detect operation will list those objects together with their coordinates in the image. You can use this functionality to process the relationships between the objects in an image. It also lets you determine whether there are multiple instances of the same tag in an image.

The Detect API applies tags based on the objects or living things identified in the image. There is currently no formal relationship between the tagging taxonomy and the object detection taxonomy. At a conceptual level, the Detect API only finds objects and living things, while the Tag API can also include contextual terms like "indoor", which can't be localized with bounding boxes.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/concept-object-detection>

Question 48 (Describe features of computer vision workloads on Azure)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

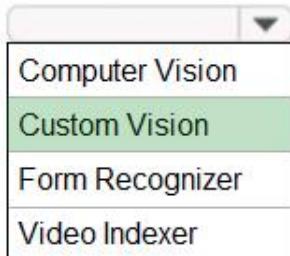
You can use the

Computer Vision
Custom Vision
Form Recognizer
Video Indexer

service to train an object detection model by using your own images.

Answer Area

You can use the  service to train an object detection model by using your own images.



Explanation:

Azure Custom Vision is a cognitive service that lets you build, deploy, and improve your own image classifiers. An image classifier is an AI service that applies labels (which represent classes) to images, according to their visual characteristics. Unlike the Computer Vision service, Custom Vision allows you to specify the labels to apply.

Note: The Custom Vision service uses a machine learning algorithm to apply labels to images. You, the developer, must submit groups of images that feature and lack the characteristics in question. You label the images yourself at the time of submission. Then the algorithm trains to this data and calculates its own accuracy by testing itself on those same images. Once the algorithm is trained, you can test, retrain, and eventually use it to classify new images according to the needs of your app. You can also export the model itself for offline use.

Incorrect Answers:

Computer Vision:

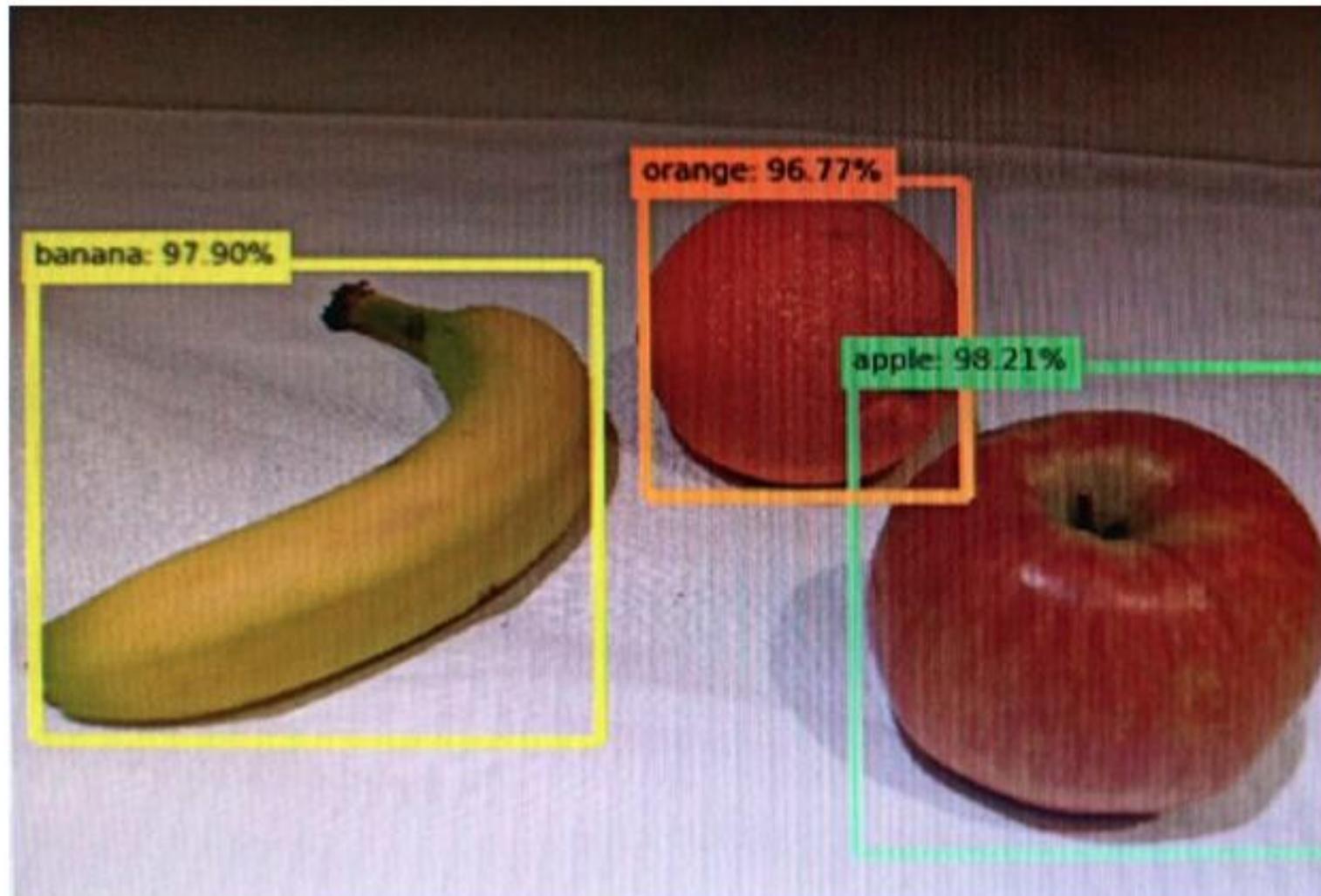
Azure's Computer Vision service provides developers with access to advanced algorithms that process images and return information based on the visual features you're interested in. For example, Computer Vision can determine whether an image contains adult content, find specific brands or objects, or find human faces.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/custom-vision-service/home>

Question 49 (Describe features of computer vision workloads on Azure)

You send an image to a Computer Vision API and receive back the annotated image shown in the exhibit.



Which type of computer vision was used?

Which type of computer vision was used?

- A. object detection
- B. semantic segmentation
- C. optical character recognition (OCR)
- D. image classification

Answer : A

Explanation:

Object detection is similar to tagging, but the API returns the bounding box coordinates (in pixels) for each object found. For example, if an image contains a dog, cat and person, the Detect operation will list those objects together with their coordinates in the image. You can use this functionality to process the relationships between the objects in an image. It also lets you determine whether there are multiple instances of the same tag in an image.

The Detect API applies tags based on the objects or living things identified in the image. There is currently no formal relationship between the tagging taxonomy and the object detection taxonomy. At a conceptual level, the Detect API only finds objects and living things, while the Tag API can also include contextual terms like "indoor", which can't be localized with bounding boxes.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/concept-object-detection>

Question 50 (Describe features of computer vision workloads on Azure)

What are two tasks that can be performed by using the Computer Vision service? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Train a custom image classification model.
- B. Detect faces in an image.
- C. Recognize handwritten text.
- D. Translate the text in an image between languages.

EXPOSE CORRECT ANSWER

Answer : BC

Explanation:

B: Azure's Computer Vision service provides developers with access to advanced algorithms that process images and return information based on the visual features you're interested in. For example, Computer Vision can determine whether an image contains adult content, find specific brands or objects, or find human faces.

C: Computer Vision includes Optical Character Recognition (OCR) capabilities. You can use the new Read API to extract printed and handwritten text from images and documents.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/home>