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AI-100

Designing and Implementing an Azure AI Solution

Version 7.0

Analyze solution requirements

Question Set 1

QUESTION 1

HOTSPOT

You are designing an application to parse images of business forms and upload the data to a database. The upload process will occur once a week.

You need to recommend which services to use for the application. The solution must minimize infrastructure costs.

Which services should you recommend? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Parse the images:

Azure Bot Service
Azure Cognitive Services
Azure Linguistic Analysis API

Upload the data to the database:

Azure API Apps
Azure Batch AI
Azure Data Factory
Azure Functions

Correct Answer:

Answer Area

Parse the images:

Azure Bot Service
Azure Cognitive Services
Azure Linguistic Analysis API

Upload the data to the database:

Azure API Apps
Azure Batch AI
Azure Data Factory
Azure Functions

Section: (none)**Explanation****Explanation/Reference:**

Explanation:

Box 1: Azure Cognitive Services

Azure Cognitive Services include image-processing algorithms to smartly identify, caption, index, and moderate your pictures and videos.

Not: Azure Linguistic Analytics API, which provides advanced natural language processing over raw text.

Box 2: Azure Data Factory

The Azure Data Factory (ADF) is a service designed to allow developers to integrate disparate data sources. It is a platform somewhat like SSIS in the cloud to manage the data you have both on-prem and in the cloud.

It provides access to on-premises data in SQL Server and cloud data in Azure Storage (Blob and Tables) and Azure SQL Database.

References:

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

<https://www.jamesserra.com/archive/2014/11/what-is-azure-data-factory/>

QUESTION 2**HOTSPOT**

You plan to deploy an Azure Data Factory pipeline that will perform the following:

- Move data from on-premises to the cloud.
- Consume Azure Cognitive Services APIs.

You need to recommend which technologies the pipeline should use. The solution must minimize custom code.

What should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Move data from on-premises to the cloud:

Azure-SSIS Integration Runtime
Common language runtime (CLR)
Integration Runtime (IR)
Self-hosted integration runtime

Consume Cognitive Services APIs:

Azure API Management
Azure Logic Apps
WebJobs in Azure

Correct Answer:

Answer Area

Move data from on-premises to the cloud:

Azure-SSIS Integration Runtime
Common language runtime (CLR)
Integration Runtime (IR)
Self-hosted integration runtime

Consume Cognitive Services APIs:

Azure API Management
Azure Logic Apps
WebJobs in Azure

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Self-hosted Integration Runtime

A self-hosted IR is capable of running copy activity between a cloud data stores and a data store in private network.

Not Azure-SSIS Integration Runtime, as you would need to write custom code.

Box 2: Azure Logic Apps

Azure Logic Apps helps you orchestrate and integrate different services by providing 100+ ready-to-use connectors, ranging from on-premises SQL Server or SAP to Microsoft Cognitive Services.

Incorrect:

Not Azure API Management: Use Azure API Management as a turnkey solution for publishing APIs to external and internal customers.

References:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-integration-runtime>

<https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-examples-and-scenarios>

QUESTION 3

HOTSPOT

You need to build an interactive website that will accept uploaded images, and then ask a series of predefined questions based on each image.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Dynamically ask questions based on an uploaded image:

Azure Analysis Services
Azure Bot Service
Azure Data Factory
Azure Linguistic Analysis API

Analyze and classify an image:

Bing Image Search
Bing Visual Search
Computer Vision
Video Indexer

Correct Answer:

Answer Area

Dynamically ask questions based on an uploaded image:

Azure Analysis Services
Azure Bot Service
Azure Data Factory
Azure Linguistic Analysis API

Analyze and classify an image:

Bing Image Search
Bing Visual Search
Computer Vision
Video Indexer

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Azure Bot Service

Box 2: Computer Vision

The Computer Vision Analyze an image feature, returns information about visual content found in an image. Use tagging, domain-specific models, and descriptions in four languages to identify content and label it with confidence. Use Object Detection to get location of thousands of objects within an image. Apply the adult/racy settings to help you detect potential adult content. Identify image types and color schemes in pictures.

References:

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

QUESTION 4

You are designing an AI solution that will analyze millions of pictures by using Azure HDInsight Hadoop cluster.

You need to recommend a solution for storing the pictures. The solution must minimize costs.

Which storage solution should you recommend?

- A. an Azure Data Lake Storage Gen1
- B. Azure File Storage
- C. Azure Blob storage
- D. Azure Table storage

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Data Lake will be a bit more expensive although they are in close range of each other. Blob storage has more options for pricing depending upon things like how frequently you need to access your data (cold vs hot storage).

Reference:

<http://blog.pragmaticworks.com/azure-data-lake-vs-azure-blob-storage-in-data-warehousing>

QUESTION 5

You are configuring data persistence for a Microsoft Bot Framework application. The application requires a structured NoSQL cloud data store.

You need to identify a storage solution for the application. The solution must minimize costs.

What should you identify?

- A. Azure Blob storage
- B. Azure Cosmos DB
- C. Azure HDInsight
- D. Azure Table storage

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Table Storage is a NoSQL key-value store for rapid development using massive semi-structured datasets. You can develop applications on Cosmos DB using popular NoSQL APIs.

Both services have a different scenario and pricing model.

While Azure Storage Tables is aimed at high capacity on a single region (optional secondary read only region but no failover), indexing by PK/RK and storage-optimized pricing; Azure Cosmos DB Tables aims for high throughput (single-digit millisecond latency), global distribution (multiple failover), SLA-backed predictive performance with automatic indexing of each attribute/property and a pricing model focused on throughput.

References:

<https://db-engines.com/en/system/Microsoft+Azure+Cosmos+DB%3BMicrosoft+Azure+Table+Storage>

QUESTION 6

You have an Azure Machine Learning model that is deployed to a web service.

You plan to publish the web service by using the name ml.contoso.com.

You need to recommend a solution to ensure that access to the web service is encrypted.

Which three actions should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Generate a shared access signature (SAS)
- B. Obtain an SSL certificate
- C. Add a deployment slot
- D. Update the web service
- E. Update DNS
- F. Create an Azure Key Vault

Correct Answer: BDE

Section: (none)

Explanation

Explanation/Reference:

The process of securing a new web service or an existing one is as follows:

1. Get a domain name.
2. Get a digital certificate.
3. Deploy or update the web service with the SSL setting enabled.
4. Update your DNS to point to the web service.

Note: To deploy (or re-deploy) the service with SSL enabled, set the `ssl_enabled` parameter to `True`, wherever applicable. Set the `ssl_certificate` parameter to the value of the certificate file and the `ssl_key` to the value of the key file.

References:

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

QUESTION 7

Your company recently deployed several hardware devices that contain sensors.

The sensors generate new data on an hourly basis. The data generated is stored on-premises and retained for several years.

During the past two months, the sensors generated 300 GB of data.

You plan to move the data to Azure and then perform advanced analytics on the data.

You need to recommend an Azure storage solution for the data.

Which storage solution should you recommend?

- A. Azure Queue storage
- B. Azure Cosmos DB
- C. Azure Blob storage
- D. Azure SQL Database

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

References:

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

QUESTION 8

You plan to design an application that will use data from Azure Data Lake and perform sentiment analysis by using Azure Machine Learning algorithms.

The developers of the application use a mix of Windows- and Linux-based environments. The developers contribute to shared GitHub repositories.

You need all the developers to use the same tool to develop the application.

What is the best tool to use? More than one answer choice may achieve the goal.

- A. Microsoft Visual Studio Code
- B. Azure Notebooks
- C. Azure Machine Learning Studio
- D. Microsoft Visual Studio

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

References:

<https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/machine-learning/studio/algorithm-choice.md>

QUESTION 9

You have several AI applications that use an Azure Kubernetes Service (AKS) cluster. The cluster supports a maximum of 32 nodes.

You discover that occasionally and unpredictably, the application requires more than 32 nodes.

You need to recommend a solution to handle the unpredictable application load.

Which scaling methods should you recommend? (Choose two.)

- A. horizontal pod autoscaler
- B. cluster autoscaler
- C. AKS cluster virtual 32 node autoscaling
- D. Azure Container Instances

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

Explanation:

B: To keep up with application demands in Azure Kubernetes Service (AKS), you may need to adjust the number of nodes that run your workloads. The cluster autoscaler component can watch for pods in your cluster that can't be scheduled because of resource constraints. When issues are detected, the number of nodes is increased to meet the application demand. Nodes are also regularly checked for a lack of running pods, with the number of nodes then decreased as needed. This ability to automatically scale up or down the number of nodes in your AKS cluster lets you run an efficient, cost-effective cluster.

A: You can also use the horizontal pod autoscaler to automatically adjust the number of pods that run your application.

Reference:

<https://docs.microsoft.com/en-us/azure/aks/cluster-autoscaler>

QUESTION 10

You deploy an infrastructure for a big data workload.

You need to run Azure HDInsight and Microsoft Machine Learning Server. You plan to set the RevoScaleR compute contexts to run `rx` function calls in parallel.

What are three compute contexts that you can use for Machine Learning Server? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. SQL
- B. Spark
- C. local parallel
- D. HBase
- E. local sequential

Correct Answer: ABC

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Remote computing is available for specific data sources on selected platforms. The following tables document the supported combinations.

- RxInSqlServer, sqlserver: Remote compute context. Target server is a single database node (SQL Server 2016 R Services or SQL Server 2017 Machine Learning Services). Computation is parallel, but not distributed.
- RxSpark, spark: Remote compute context. Target is a Spark cluster on Hadoop.
- RxLocalParallel, localpar: Compute context is often used to enable controlled, distributed computations relying on instructions you provide rather than a built-in scheduler on Hadoop. You can use compute context for manual distributed computing.

References:

<https://docs.microsoft.com/en-us/machine-learning-server/r/concept-what-is-compute-context>

QUESTION 11

Your company has 1,000 AI developers who are responsible for provisioning environments in Azure.

You need to control the type, size, and location of the resources that the developers can provision.

What should you use?

- A. Azure Key Vault
- B. Azure service principals
- C. Azure managed identities
- D. Azure Security Center
- E. Azure Policy

Correct Answer: E

Section: (none)

Explanation

Explanation/Reference:

Explanation:

When an application needs access to deploy or configure resources through Azure Resource Manager in Azure Stack, you create a service principal, which is a credential for your application. You can then delegate only the necessary permissions to that service principal.

References:

<https://docs.microsoft.com/en-us/azure/azure-stack/azure-stack-create-service-principals>

QUESTION 12

You are designing an AI solution in Azure that will perform image classification.

You need to identify which processing platform will provide you with the ability to update the logic over time. The solution must have the lowest latency for inferencing without having to batch.

Which compute target should you identify?

- A. graphics processing units (GPUs)
- B. field-programmable gate arrays (FPGAs)
- C. central processing units (CPUs)
- D. application-specific integrated circuits (ASICs)

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

FPGAs, such as those available on Azure, provide performance close to ASICs. They are also flexible and reconfigurable over time, to implement new logic.

Incorrect Answers:

D: ASICs are custom circuits, such as Google's TensorFlow Processor Units (TPU), provide the highest efficiency. They can't be reconfigured as your needs change.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/concept-accelerate-with-fpgas>

QUESTION 13

You have a solution that runs on a five-node Azure Kubernetes Service (AKS) cluster. The cluster uses an N-series virtual machine.

An Azure Batch AI process runs once a day and rarely on demand.

You need to recommend a solution to maintain the cluster configuration when the cluster is not in use. The solution must not incur any compute costs.

What should you include in the recommendation?

- A. Downscale the cluster to one node
- B. Downscale the cluster to zero nodes
- C. Delete the cluster

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

An AKS cluster has one or more nodes.

References:

<https://docs.microsoft.com/en-us/azure/aks/concepts-clusters-workloads>

QUESTION 14

HOTSPOT

You are designing an AI solution that will be used to find buildings in aerial pictures.

Users will upload the pictures to an Azure Storage account. A separate JSON document will contain for the pictures.

The solution must meet the following requirements:

- Store metadata for the pictures in a data store.
- Run a custom vision Azure Machine Learning module to identify the buildings in a picture and the position of the buildings' edges.
- Run a custom mathematical module to calculate the dimensions of the buildings in a picture based on the metadata and data from the vision module.

You need to identify which Azure infrastructure services are used for each component of the AI workflow. The solution must execute as quickly as possible.

What should you identify? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Location to store the metadata:

Azure Blob storage	▼
Azure Cosmos DB	▼
Azure File Storage	▼

Virtual machine series to run the vision module:

A	▼
F	▼
NV	▼

Virtual machine series to run the mathematical module:

A	▼
F	▼
NV	▼

Correct Answer:

Answer Area

Location to store the metadata:

Azure Blob storage
Azure Cosmos DB
Azure File Storage

Virtual machine series to run the vision module:

A
F
NV

Virtual machine series to run the mathematical module:

A
F
NV

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Azure Blob Storage

Containers and blobs support custom metadata, represented as HTTP headers.

Box 2: NV

The NV-series enables powerful remote visualisation workloads and other graphics-intensive applications backed by the NVIDIA Tesla M60 GPU.

Note: The N-series is a family of Azure Virtual Machines with GPU capabilities. GPUs are ideal for compute and graphics-intensive workloads, helping customers to fuel innovation through scenarios like high-end remote visualisation, deep learning and predictive analytics.

Box 3: F

F-series VMs feature a higher CPU-to-memory ratio. Example use cases include batch processing, web servers, analytics and gaming.

Incorrect:

A-series VMs have CPU performance and memory configurations best suited for entry level workloads like development and test.

References:

<https://azure.microsoft.com/en-in/pricing/details/virtual-machines/series/>

QUESTION 15

Your company has recently deployed 5,000 Internet-connected sensors for a planned AI solution.

You need to recommend a computing solution to perform a real-time analysis of the data generated by the sensors.

Which computing solution should you recommend?

- A. an Azure HDInsight Storm cluster

- B. Azure Notification Hubs
- C. an Azure HDInsight Hadoop cluster
- D. an Azure HDInsight R cluster

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure HDInsight makes it easy, fast, and cost-effective to process massive amounts of data. You can use HDInsight to process streaming data that's received in real time from a variety of devices.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/hadoop/apache-hadoop-introduction>

QUESTION 16

HOTSPOT

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

You plan to deploy an application that will perform image recognition. The application will store image data in two Azure Blob storage stores named Blob1 and Blob2.

You need to recommend a security solution that meets the following requirements:

- Access to Blob1 must be controlled by using a role.
- Access to Blob2 must be time-limited and constrained to specific operations.

What should you recommend using to control access to each blob store? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Blob1

	V
Azure Active Directory (Azure AD)	
Shared Access Signature (SAS)	
Shared Key Authentication	
Storage Keys	

Blob2

	V
Azure Active Directory (Azure AD)	
Shared Access Signature (SAS)	
Shared Key Authentication	
Storage Keys	

Correct Answer:

Answer Area

Blob1

	V
Azure Active Directory (Azure AD)	
Shared Access Signature (SAS)	
Shared Key Authentication	
Storage Keys	

Blob2

	V
Azure Active Directory (Azure AD)	
Shared Access Signature (SAS)	
Shared Key Authentication	
Storage Keys	

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-auth>

QUESTION 17

You deploy an application that performs sentiment analysis on the data stored in Azure Cosmos DB.

Recently, you loaded a large amount of data to the database. The data was for a customer named Contoso, Ltd.

You discover that queries for the Contoso data are slow to complete, and the queries slow the entire application.

You need to reduce the amount of time it takes for the queries to complete. The solution must minimize costs.

What is the best way to achieve the goal? More than one answer choice may achieve the goal. Select the BEST answer.

- A. Change the request units.
- B. Change the partitioning strategy.
- C. Change the transaction isolation level.

D. Migrate the data to the Cosmos DB database.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Throughput provisioned for a container is divided evenly among physical partitions.

Incorrect:

Not A: Increasing request units would also improve throughput, but at a cost.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/best-practices/data-partitioning>

QUESTION 18

You have an AI application that uses keys in Azure Key Vault.

Recently, a key used by the application was deleted accidentally and was unrecoverable.

You need to ensure that if a key is deleted, it is retained in the key vault for 90 days.

Which two features should you configure? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. The expiration date on the keys
- B. Soft delete
- C. Purge protection
- D. Auditors
- E. The activation date on the keys

Correct Answer: BC

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/architecture/best-practices/data-partitioning>

QUESTION 19

DRAG DROP

You are designing an AI solution that will analyze media data. The data will be stored in Azure Blob storage.

You need to ensure that the storage account is encrypted by using a key generated by the hardware security module (HSM) of your company.

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

Select and Place:

Answer Area

Actions

Enable encryption that uses customer-managed keys.

Upload a key to an Azure key vault.



Generate an encryption key.

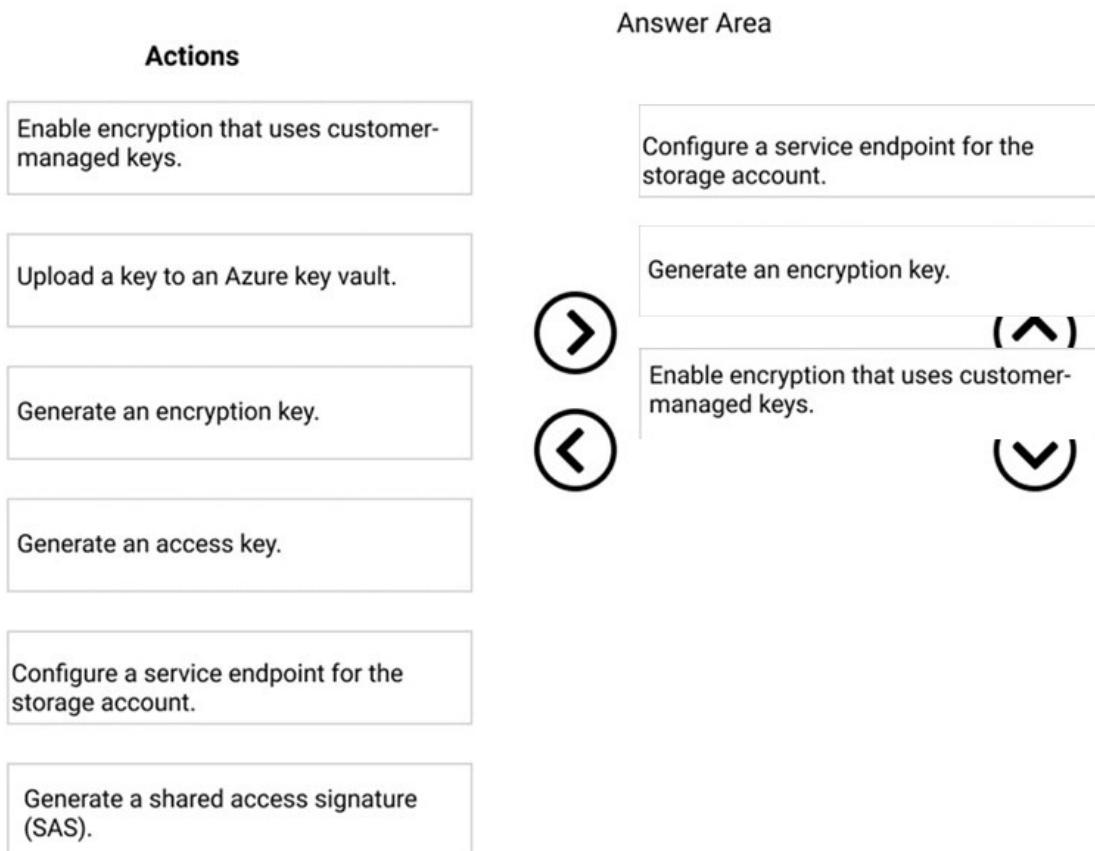


Generate an access key.

Configure a service endpoint for the storage account.

Generate a shared access signature (SAS).

Correct Answer:



Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-encryption-keys-portal>

<https://docs.microsoft.com/en-us/azure/key-vault/key-vault-hsm-protected-keys>

QUESTION 20

You plan to implement a new data warehouse for a planned AI solution.

You have the following information regarding the data warehouse:

- The data files will be available in one week.
- Most queries that will be executed against the data warehouse will be ad-hoc queries.
- The schemas of data files that will be loaded to the data warehouse will change often.
- One month after the planned implementation, the data warehouse will contain 15 TB of data.

You need to recommend a database solution to support the planned implementation.

What two solutions should you include in the recommendation? Each correct answer is a complete solution.

NOTE: Each correct selection is worth one point.

- A. Apache Hadoop
- B. Apache Spark
- C. A Microsoft Azure SQL database
- D. An Azure virtual machine that runs Microsoft SQL Server

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

QUESTION 21

You need to build a solution to monitor Twitter. The solution must meet the following requirements:

- Send an email message to the marketing department when negative Twitter messages are detected.
- Run sentiment analysis on Twitter messages that mention specific tags.
- Use the least amount of custom code possible.

Which two services should you include in the solution? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Azure Databricks
- B. Azure Stream Analytics
- C. Azure Functions
- D. Azure Cognitive Services
- E. Azure Logic Apps

Correct Answer: BE

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/streaming-technologies>

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-twitter-sentiment-analysis-trends>

QUESTION 22

HOTSPOT

You need to configure security for an Azure Machine Learning service used by groups of data scientists. The groups must have access to only their own experiments and must be able to grant permissions to the members of their team.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Grant permissions to:

A resource group
A subscription
A workspace

Role to assign to manage access:

Contributor
Owner
Reader

Correct Answer:

Answer Area

Grant permissions to:

A resource group
A subscription
A workspace

Role to assign to manage access:

Contributor
Owner
Reader

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/machine-learning-server/operationalize/configure-roles#how-are-roles-assigned>

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

QUESTION 23

You plan to build an application that will perform predictive analytics. Users will be able to consume the application data by using Microsoft Power BI or a custom website.

You need to ensure that you can audit application usage.

Which auditing solution should you use?

- A. Azure Storage Analytics
- B. Azure Application Insights
- C. Azure diagnostics logs
- D. Azure Active Directory (Azure AD) reporting

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/active-directory/reports-monitoring/concept-audit-logs>

QUESTION 24

HOTSPOT

You need to build a sentiment analysis solution that will use input data from JSON documents and PDF documents. The JSON documents must be processed in batches and aggregated.

Which storage type should you use for each file type? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

JSON documents:

	▼
Azure Blob storage	
Azure Cosmos DB	
Azure Managed Disks	
Azure Table storage	

PDF documents:

	▼
Azure Blob storage	
Azure Cosmos DB	
Azure Managed Disks	
Azure Table storage	

Correct Answer:

Answer Area

JSON documents:

Azure Blob storage
Azure Cosmos DB
Azure Managed Disks
Azure Table storage

PDF documents:

Azure Blob storage
Azure Cosmos DB
Azure Managed Disks
Azure Table storage

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Azure Blob Storage

The following technologies are recommended choices for batch processing solutions in Azure.

Data storage

- Azure Storage Blob Containers. Many existing Azure business processes already use Azure blob storage, making this a good choice for a big data store.
- Azure Data Lake Store. Azure Data Lake Store offers virtually unlimited storage for any size of file, and extensive security options, making it a good choice for extremely large-scale big data solutions that require a centralized store for data in heterogeneous formats.

Box 2: Azure Blob Storage

References:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/big-data/batch-processing>

<https://docs.microsoft.com/bs-latn-ba/azure/storage/blobs/storage-blobs-introduction>

QUESTION 25

You are developing a mobile application that will perform optical character recognition (OCR) from photos.

The application will annotate the photos by using metadata, store the photos in Azure Blob storage, and then score the photos by using an Azure Machine Learning model.

What should you use to process the data?

- A. Azure Event Hubs
- B. Azure Functions
- C. Azure Stream Analytics
- D. Azure Logic Apps
- E. Azure Batch AI

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

By using Azure services such as the Computer Vision API and Azure Functions, companies can eliminate the need to manage individual servers, while reducing costs and leveraging the expertise that Microsoft has already developed around processing images with Cognitive Services.

Incorrect:

Not E: The Azure Batch AI service was retired in 2019 and was replaced with Azure Machine Learning Compute.

References: <https://docs.microsoft.com/en-us/azure/architecture/example-scenario/ai/intelligent-apps-image-processing>

QUESTION 26

You create an Azure Cognitive Services resource.

A data scientist needs to call the resource from Azure Logic Apps by using the generic HTTP connector.

Which two values should you provide to the data scientist? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Endpoint URL
- B. Resource name
- C. Access key
- D. Resource group name
- E. Subscription ID

Correct Answer: AC

Section: (none)

Explanation

Explanation/Reference:

References:

<https://social.technet.microsoft.com/wiki/contents/articles/36074.logic-apps-with-azure-cognitive-service.aspx>

QUESTION 27

You plan to deploy an AI solution that tracks the behavior of 10 custom mobile apps. Each mobile app has several thousand users.

You need to recommend a solution for real-time data ingestion for the data originating from the mobile app users.

Which Microsoft Azure service should you include in the recommendation?

- A. Azure Event Hubs
- B. Azure Service Bus queries
- C. Azure Service Bus topics and subscriptions
- D. Apache Storm on Azure HDInsight

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-in/azure/event-hubs/event-hubs-about>

QUESTION 28

You plan to deploy Azure IoT Edge devices that will each store more than 10,000 images locally and classify the images by using a Custom Vision Service classifier.

Each image is approximately 5 MB.

You need to ensure that the images persist on the devices for 14 days.

What should you use?

- A. The device cache
- B. Azure Blob storage on the IoT Edge devices
- C. Azure Stream Analytics on the IoT Edge devices
- D. Microsoft SQL Server on the IoT Edge devices

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/iot-edge/how-to-store-data-blob>

QUESTION 29

Your company is building custom models that integrate into microservices architecture on Azure Kubernetes Services (AKS).

The model is built by using Python and published to AKS.

You need to update the model and enable Azure Application Insights for the model.

What should you use?

- A. the Azure CLI
- B. ML.NET Model Builder
- C. the Azure Machine Learning SDK
- D. the Azure portal

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You can set up Azure Application Insights for Azure Machine Learning. Application Insights gives you the opportunity to monitor:

- Request rates, response times, and failure rates.
- Dependency rates, response times, and failure rates.
- Exceptions.

Requirements include an Azure Machine Learning workspace, a local directory that contains your scripts, and the Azure Machine Learning SDK for Python installed.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/machine-learning/service/how-to-enable-app-insights>

QUESTION 30

You are designing an AI solution that will analyze millions of pictures by using Azure HDInsight Hadoop

cluster.

You need to recommend a solution for storing the pictures. The solution must minimize costs.

Which storage solution should you recommend?

- A. Azure Table storage
- B. Azure File Storage
- C. Azure Data Lake Storage Gen2
- D. Azure Data Lake Storage Gen1

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Data Lake Storage Gen1 is adequate and less expensive compared to Gen2.

References:

<https://visualbi.com/blogs/microsoft/introduction-azure-data-lake-gen2/>

QUESTION 31

You deploy an application that performs sentiment analysis on the data stored in Azure Cosmos DB.

Recently, you loaded a large amount of data to the database. The data was for a customer named Contoso, Ltd.

You discover that queries for the Contoso data are slow to complete, and the queries slow the entire application.

You need to reduce the amount of time it takes for the queries to complete. The solution must minimize costs.

What should you do? More than one answer choice may achieve the goal. (Choose two.)

- A. Change the request units.
- B. Change the partitioning strategy.
- C. Change the transaction isolation level.
- D. Migrate the data to the Cosmos DB database.

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Increasing request units would improve throughput, but at a cost.

Throughput provisioned for a container is divided evenly among physical partitions.

References:

<https://docs.microsoft.com/en-us/azure/architecture/best-practices/data-partitioning>

QUESTION 32

Your company has several AI solutions and bots.

You need to implement a solution to monitor the utilization of the bots. The solution must ensure that analysts at the company can generate dashboards to review the utilization.

What should you include in the solution?

- A. Azure Application Insights
- B. Azure Data Explorer
- C. Azure Logic Apps
- D. Azure Monitor

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Bot Analytics.

Analytics is an extension of Application Insights. Application Insights provides service-level and instrumentation data like traffic, latency, and integrations. Analytics provides conversation-level reporting on user, message, and channel data.

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-service-manage-analytics>

QUESTION 33

Your plan to design a bot that will be hosted by using Azure Bot Service.

Your company identifies the following compliance requirements for the bot:

- Payment Card Industry Data Security Standards (PCI DSS)
- General Data Protection Regulation (GDPR)
- ISO 27001

You need to identify which compliance requirements are met by hosting the bot in the bot service.

What should you identify?

- A. PCI DSS only
- B. PCI DSS, ISO 27001, and GDPR
- C. ISO 27001 only
- D. GDPR only

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Bot service is compliant with ISO 27001:2013, ISO 27019:2014, SOC 1 and 2, Payment Card Industry Data Security Standard (PCI DSS), and Health Insurance Portability and Accountability Act Business Associate Agreement (HIPAA BAA).

Microsoft products and services, including Azure Bot Service, are available today to help you meet the GDPR requirements.

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-service-compliance>

<https://blog.botframework.com/2018/04/23/general-data-protection-regulation-gdpr/>

QUESTION 34

HOTSPOT

You plan to use Azure Cognitive Services to provide the development team at your company with the ability to create intelligent apps without having direct AI or data science skills.

The company identifies the following requirements for the planned Cognitive Services deployment:

- Provide support for the following languages: English, Portuguese, and German.
- Perform text analytics to derive a sentiment score.

Which Cognitive Service service should you deploy for each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Provide support for the following languages:
English, Portuguese, and German:

Text Analytics
Search services
Speech services

Perform text analytics to derive a sentiment score:

Speech APIs
Decision APIs
Language APIs

Correct Answer:

Answer Area

Provide support for the following languages:
English, Portuguese, and German:

Text Analytics
Search services
Speech services

Perform text analytics to derive a sentiment score:

Speech APIs
Decision APIs
Language APIs

Section: (none)
Explanation

Explanation/Reference:
Explanation:

Box 1: Text Analytics

The Language Detection feature of the Azure Text Analytics REST API evaluates text input for each document and returns language identifiers with a score that indicates the strength of the analysis.

Box 2: Language API

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/text-analytics/how-tos/text-analytics-how-to-language-detection>

<https://docs.microsoft.com/en-us/azure/azure-databricks/databricks-sentiment-analysis-cognitive-services>

QUESTION 35

HOTSPOT

You plan to deploy the Text Analytics and Computer Vision services. The Azure Cognitive Services will be deployed to the West US and East Europe Azure regions.

You need to identify the minimum number of service endpoints and API keys required for the planned deployment.

What should you identify? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Service endpoints:

1
2
4

API keys:

1
2
4

Correct Answer:

Answer Area

Service endpoints:	
1	▼
2	▼
4	▼

API keys:	
1	▼
2	▼
4	▼

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: 2

After creating a Cognitive Service resource in the Azure portal, you'll get an endpoint and a key for authenticating your applications. You can access Azure Cognitive Services through two different resources: A multi-service resource, or a single-service one.

Multi-service resource: Access multiple Azure Cognitive Services with a single key and endpoint.

Note: You need a key and endpoint for a Text Analytics resource. Azure Cognitive Services are represented by Azure resources that you subscribe to.

Each request must include your access key and an HTTP endpoint. The endpoint specifies the region you chose during sign up, the service URL, and a resource used on the request

Box 2: 2

You need at least one key per region.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/cognitive-services-apis-create-account>

QUESTION 36

Your company plans to create a mobile app that will be used by employees to query the employee handbook.

You need to ensure that the employees can query the handbook by typing or by using speech.

Which core component should you use for the app?

- A. Language Understanding (LUIS)
- B. QnA Maker
- C. Text Analytics
- D. Azure Search

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Cognitive Search (formerly known as "Azure Search") is a search-as-a-service cloud solution that gives developers APIs and tools for adding a rich search experience over private, heterogeneous content in web, mobile, and enterprise applications. Your code or a tool invokes data ingestion (indexing) to create and load an index. Optionally, you can add cognitive skills to apply AI processes during indexing. Doing so can add new information and structures useful for search and other scenarios.

Incorrect Answers:

B: QnA Maker is a cloud-based API service that lets you create a conversational question-and-answer layer over your existing data. Use it to build a knowledge base by extracting questions and answers from your semi-structured content, including FAQs, manuals, and documents. Answer users' questions with the best answers from the QnAs in your knowledge base—automatically.

References:

<https://docs.microsoft.com/en-us/azure/search/search-what-is-azure-search>

QUESTION 37

You have an existing Language Understanding (LUIS) model for an internal bot.

You need to recommend a solution to add a meeting reminder functionality to the bot by using a prebuilt model. The solution must minimize the size of the model.

Which component of LUIS should you recommend?

- A. domain
- B. intents
- C. entities

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

LUIS includes a set of prebuilt entities for recognizing common types of information, like dates, times, numbers, measurements, and currency. Prebuilt entity support varies by the culture of your LUIS app.

Note: LUIS provides three types of prebuilt models. Each model can be added to your app at any time.

Model type: Includes

- Domain: Intents, utterances, entities
- Intents: Intents, utterances
- Entities: Entities only

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/luis-concept-prebuilt-model>

QUESTION 38

You have an on-premises repository that contains 5,000 videos. The videos feature demonstrations of the products sold by your company.

The company's customers plan to search the videos by using the name of the product demonstrated in each video.

You need to build a custom search tool for the customers.

What should you do first?

- A. Deploy an Azure Media Services resource.
- B. Create an Azure Storage account and a blob container.
- C. Create an Azure Search resource.

D. Deploy a Custom Vision API service.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Media Services can be used to encode and package content, stream videos on-demand, broadcast live, analyze your videos with Media Services v3.

You can analyze recorded videos or audio content. For example, to achieve higher customer satisfaction, organizations can extract speech-to-text and build search indexes and dashboards. Then, they can extract intelligence around common complaints, sources of complaints, and other relevant data.

References:

<https://docs.microsoft.com/en-us/azure/media-services/latest/media-services-overview>

QUESTION 39

Your company manages a sports team.

The company sets up a video booth to record messages for the team.

Before replaying the messages on a video screen, you need to generate captions for the messages and check the sentiment of the video to ensure that only positive messages are played.

Which Azure Cognitive Services service should you use?

- A. Language Understanding (LUIS)
- B. Speaker Recognition
- C. Custom Vision
- D. Video Indexer

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Video Indexer includes Audio transcription: Converts speech to text in 12 languages and allows extensions. Supported languages include English, Spanish, French, German, Italian, Mandarin Chinese, Japanese, Arabic, Russian, Portuguese, Hindi, and Korean.

When indexing by one channel, partial result for those models will be available, such as sentiment analysis: Identifies positive, negative, and neutral sentiments from speech and visual text.

Reference:

<https://docs.microsoft.com/en-us/azure/media-services/video-indexer/video-indexer-overview>

QUESTION 40

HOTSPOT

You plan to build an app that will provide users with the ability to dictate messages and convert the messages into text.

You need to recommend a solution to meet the following requirements for the app:

- Must be able to transcribe streaming dictated messages that are longer than 15 seconds.
- Must be able to upload existing recordings to Azure Blob storage to be transcribed later.

Which solution should you recommend for each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Must be able to transcribe streaming dictated messages that are longer than 15 seconds:

The Speech SDK
The Speech to Text API
The Batch Transcription API

Must be able to upload existing recordings to Blob storage to be transcribed later:

The Speech SDK
The Speech to Text API
The Batch Transcription API

Correct Answer:

Answer Area

Must be able to transcribe streaming dictated messages that are longer than 15 seconds:

The Speech SDK
The Speech to Text API
The Batch Transcription API

Must be able to upload existing recordings to Blob storage to be transcribed later:

The Speech SDK
The Speech to Text API
The Batch Transcription API

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: The Speech SDK

The Speech SDK is not limited to 15 seconds.

Box 2: Batch Transcription API

Batch transcription is a set of REST API operations that enables you to transcribe a large amount of audio in storage. You can point to audio files with a shared access signature (SAS) URI and asynchronously receive transcription results. With the new v3.0 API, you have the choice of transcribing one or more audio files, or process a whole storage container.

Asynchronous speech-to-text transcription is just one of the features.

Reference:

<https://github.com/Azure-Samples/cognitive-services-speech-sdk/issues/13>

<https://docs.microsoft.com/en-us/azure/cognitive-services/speech-service/batch-transcription>

QUESTION 41

Your company plans to monitor twitter hashtags, and then to build a graph of connected people and places

that contains the associated sentiment.

The monitored hashtags use several languages, but the graph will be displayed in English.

You need to recommend the required Azure Cognitive Services endpoints for the planned graph.

Which Cognitive Services endpoints should you recommend?

- A. Language Detection, Content Moderator, and Key Phrase Extraction
- B. Translator Text, Content Moderator, and Key Phrase Extraction
- C. Language Detection, Sentiment Analysis, and Key Phase Extraction
- D. Translator Text, Sentiment Analysis, and Named Entity Recognition

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Sentiment analysis, which is also called opinion mining, uses social media analytics tools to determine attitudes toward a product or idea.

Translator Text: Translate text in real time across more than 60 languages, powered by the latest innovations in machine translation.

The Key Phrase Extraction skill evaluates unstructured text, and for each record, returns a list of key phrases. This skill uses the machine learning models provided by Text Analytics in Cognitive Services. This capability is useful if you need to quickly identify the main talking points in the record. For example, given input text "The food was delicious and there were wonderful staff", the service returns "food" and "wonderful staff".

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/text-analytics/how-tos/text-analytics-how-to-entity-linking>

<https://docs.microsoft.com/en-us/azure/search/cognitive-search-skill-keyphrases>

QUESTION 42

HOTSPOT

You plan to create an intelligent bot to handle internal user chats to the help desk of your company. The bot has the following requirements:

- Must be able to interpret what a user means.
- Must be able to perform multiple tasks for a user.
- Must be able to answer questions from an existing knowledge base.

You need to recommend which solutions meet the requirements.

Which solution should you recommend for each requirement? To answer, drag the appropriate solutions to the correct requirements. Each solution 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.

Hot Area:

Answer Area

Must be able to interpret what a user means:

The Text Analytics API
The QnA Maker service
The Speech to Text API
The Dispatch tool library
The Language Understanding (LUIS) service

Must be able to perform multiple tasks for a user:

The Text Analytics API
The QnA Maker service
The Speech to Text API
The Dispatch tool library
The Language Understanding (LUIS) service

Must be able to answer questions from an existing knowledge base:

The Text Analytics API
The QnA Maker service
The Speech to Text API
The Dispatch tool library
The Language Understanding (LUIS) service

Correct Answer:

Answer Area

Must be able to interpret what a user means:

The Text Analytics API
The QnA Maker service
The Speech to Text API
The Dispatch tool library
The Language Understanding (LUIS) service

Must be able to perform multiple tasks for a user:

The Text Analytics API
The QnA Maker service
The Speech to Text API
The Dispatch tool library
The Language Understanding (LUIS) service

Must be able to answer questions from an existing knowledge base:

The Text Analytics API
The QnA Maker service
The Speech to Text API
The Dispatch tool library
The Language Understanding (LUIS) service

Section: (none)**Explanation****Explanation/Reference:**

Explanation:

Box 1: The Language Understanding (LUIS) service

Language Understanding (LUIS) is a cloud-based API service that applies custom machine-learning intelligence to a user's conversational, natural language text to predict overall meaning, and pull out relevant, detailed information.

Box 2: Text Analytics API

The Text Analytics API is a cloud-based service that provides advanced natural language processing over raw text, and includes four main functions: sentiment analysis, key phrase extraction, named entity recognition, and language detection.

Box 3: The QnA Maker service

QnA Maker is a cloud-based Natural Language Processing (NLP) service that easily creates a natural conversational layer over your data. It can be used to find the most appropriate answer for any given natural language input, from your custom knowledge base (KB) of information.

Incorrect Answers:

Dispatch tool library:

If a bot uses multiple LUIS models and QnA Maker knowledge bases (knowledge bases), you can use Dispatch tool to determine which LUIS model or QnA Maker knowledge base best matches the user input. The dispatch tool does this by creating a single LUIS app to route user input to the correct model.

Reference:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-tutorial-dispatch>

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

Analyze solution requirements

Testlet 2

Overview

Contoso, Ltd. has an office in New York to serve its North American customers and an office in Paris to serve its European customers.

Existing Environment

Infrastructure

Each office has a small data center that hosts Active Directory services and a few off-the-shelf software solutions used by internal users.

The network contains a single Active Directory forest that contains a single domain named contoso.com. Azure Active Directory (Azure AD) Connect is used to extend identity management to Azure.

The company has an Azure subscription. Each office has an Azure ExpressRoute connection to the subscription. The New York office connects to a virtual network hosted in the US East 2 Azure region. The Paris office connects to a virtual network hosted in the West Europe Azure region.

The New York office has an Azure Stack Development Kit (ASDK) deployment that is used for development and testing.

Current Business Model

Contoso has a web app named Bookings hosted in an App Service Environment (ASE). The ASE is in the virtual network in the East US 2 region. Contoso employees and customers use Bookings to reserve hotel rooms.

Data Environment

Bookings connects to a Microsoft SQL Server database named hotelDB in the New York office. The database has a view named vwAvailability that consolidates columns from the tables named Hotels, Rooms, and RoomAvailability. The database contains data that was collected during the last 20 years.

Problem Statements

Contoso identifies the following issues with its current business model:

- European users report that access to Booking is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Requirements

Contoso identifies the following issues with its current business model:

- European users report that access to Bookings is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Business Goals

Contoso wants to provide a new version of the Bookings app that will provide a highly available, reliable service for booking travel packages by interacting with a chatbot named Butler.

Contoso plans to move all production workloads to the cloud.

Technical requirements

Contoso identifies the following technical requirements:

- Data scientists must test Butler by using ASDK.
- Whenever possible, solutions must minimize costs.
- Butler must greet users by name when they first connect.
- Butler must be able to handle up to 10,000 messages a day.
- Butler must recognize the users' intent based on basic utterances.
- All configurations to the Azure Bot Service must be logged centrally.
- Whenever possible, solutions must use the principle of least privilege.
- Internal users must be able to access Butler by using Microsoft Skype for Business.
- The new Bookings app must provide a user interface where users can interact with Butler.
- Users in an Azure AD group named KeyManagers must be able to manage keys for all Azure Cognitive Services.
- Butler must provide users with the ability to reserve a room, cancel a reservation, and view existing reservations.
- The new Bookings app must be available to users in North America and Europe if a single data center or Azure region fails.
- For continuous improvement, you must be able to test Butler by sending sample utterances and comparing the chatbot's responses to the actual intent.
- You must maintain relationships between data after migration.

QUESTION 1

You need to recommend a data storage solution that meets the technical requirements.

What is the best data storage solution to recommend? More than one answer choice may achieve the goal. Select the **BEST** answer.

- A. Azure Databricks
- B. Azure SQL Database
- C. Azure Table storage
- D. Azure Cosmos DB

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/architecture/example-scenario/ai/commerce-chatbot>

Design solutions

Question Set 1

QUESTION 1

You plan to deploy two AI applications named AI1 and AI2. The data for the applications will be stored in a relational database.

You need to ensure that the users of AI1 and AI2 can see only data in each user's respective geographic region. The solution must be enforced at the database level by using row-level security.

Which database solution should you use to store the application data?

- A. Microsoft SQL Server on a Microsoft Azure virtual machine
- B. Microsoft Azure Database for MySQL
- C. Microsoft Azure Data Lake Store
- D. Microsoft Azure Cosmos DB

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Row-level security is supported by SQL Server, Azure SQL Database, and Azure SQL Data Warehouse.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/row-level-security?view=sql-server-2017>

QUESTION 2

You are designing an AI workflow that will aggregate data stored in Azure as JSON documents.

You expect to store more than 2 TB of new data daily.

You need to choose the data storage service for the data. The solution must minimize costs.

Which data storage service should you choose?

- A. Azure Manage Disks
- B. Azure Blob Storage
- C. Azure File Storage
- D. Azure Data Lake Storage

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Generally, Data Lake will be a bit more expensive although they are in close range of each other. Blob storage has more options for pricing depending upon things like how frequently you need to access your data (cold vs hot storage). Data Lake is priced on volume, so it will go up as you reach certain tiers of volume.

References:

<http://blog.pragmaticworks.com/azure-data-lake-vs-azure-blob-storage-in-data-warehousing>

QUESTION 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, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing an application that uses an Azure Kubernetes Service (AKS) cluster.

You are troubleshooting a node issue.

You need to connect to an AKS node by using SSH.

Solution: You run the kubectl command, and then you create an SSH connection.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 4

Your company has a data team of Scala and R experts.

You plan to ingest data from multiple Apache Kafka streams.

You need to recommend a processing technology to broker messages at scale from Kafka streams to Azure Storage.

What should you recommend?

- A. Azure Databricks
- B. Azure Functions
- C. Azure HDInsight with Apache Storm
- D. Azure HDInsight with Microsoft Machine Learning Server

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/hdinsight-streaming-at-scale-overview?toc=https%3A%2F%2Fdocs.microsoft.com%2Fen-us%2Fazure%2Fhdinsight%2Fhadoop%2FTOC.json&bc=https%3A%2F%2Fdocs.microsoft.com%2Fen-us%2Fazure%2Fbread%2Ftoc.json>

QUESTION 5

You are designing an AI application that will use an azure Machine Learning Studio experiment.

The source data contains more than 200 TB of relational tables. The experiment will run once a month.

You need to identify a data storage solution for the application. The solution must minimize compute costs.

Which data storage solution should you identify?

- A. Azure Database for MySQL
- B. Azure SQL Database
- C. Azure SQL Data Warehouse

Correct Answer: C

Section: (none)**Explanation****Explanation/Reference:**

References:

<https://azure.microsoft.com/en-us/pricing/details/sql-database/single/>**QUESTION 6****HOTSPOT**

You are designing a solution that will analyze bank transactions in real time. The transactions will be evaluated by using an algorithm and classified into one of five groups. The transaction data will be enriched with information taken from Azure SQL Database before the transactions are sent to the classification process. The enrichment process will require custom code. Data from different banks will require different stored procedures.

You need to develop a pipeline for the solution.

Which components should you use for data ingestion and data preparation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:**Answer Area****Data ingestion:**

Azure Event Hub
Azure IoT Hub
Azure Relay

Data preparation:

An AI model
Azure Functions
Azure Stream Analytics

Correct Answer:

Answer Area

Data ingestion:

	
Azure Event Hub	
Azure IoT Hub	
Azure Relay	

Data preparation:

	
An AI model	
Azure Functions	
Azure Stream Analytics	

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/bs-latn-ba/azure/architecture/example-scenario/data/fraud-detection>

QUESTION 7

DRAG DROP

You are designing an Azure Batch AI solution that will be used to train many different Azure Machine Learning models. The solution will perform the following:

- Image recognition
- Deep learning that uses convolutional neural networks.

You need to select a compute infrastructure for each model. The solution must minimize the processing time.

What should you use for each model? To answer, drag the appropriate compute infrastructures to the correct models. Each compute infrastructure 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.

Select and Place:

Answer Area

Compute Infrastructures

Compute optimized virtual machines

Memory optimized virtual machines

GPU optimized virtual machines

Image recognition:

Compute Infrastructure

Deep learning that uses convolutional neural networks:

Compute Infrastructure

Correct Answer:

Answer Area

Compute Infrastructures

Compute optimized virtual machines

Memory optimized virtual machines

GPU optimized virtual machines

Image recognition:

GPU optimized virtual machines

Deep learning that uses convolutional neural networks:

GPU optimized virtual machines

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/sizes-gpu>

QUESTION 8

You design an AI workflow that combines data from multiple data sources for analysis. The data sources are composed of:

- JSON files uploaded to an Azure Storage account
- On-premises Oracle databases
- Azure SQL databases

Which service should you use to ingest the data?

- A. Azure Data Factory
- B. Azure SQL Data Warehouse
- C. Azure Data Lake Storage
- D. Azure Databricks

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/data-factory/introduction>

QUESTION 9

HOTSPOT

You are designing a solution that will ingest temperature data from IoT devices, calculate the average temperature, and then take action based on the aggregated data. The solution must meet the following requirements:

- Minimize the amount of uploaded data.
- Take action based on the aggregated data as quickly as possible.

What should you include in the solution? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Service to use:

Apache Hive
Azure Data Factory
Azure Functions
Azure Stream Analytics

Location to deploy the job:

A Web Job in Azure
An Azure IoT Edge device
Azure Event Hubs
Azure Notification Hubs

Correct Answer:

Answer Area

Service to use:

Apache Hive
Azure Data Factory
Azure Functions
Azure Stream Analytics

Location to deploy the job:

A Web Job in Azure
An Azure IoT Edge device
Azure Event Hubs
Azure Notification Hubs

Section: (none)

Explanation

Explanation/Reference:

Box 1: Azure Functions

Azure Function is a (serverless) service to host functions (little piece of code) that can be used for e. g. event driven applications.

General rule is always difficult since everything depends on your requirement but if you have to analyze a data stream, you should take a look at Azure Stream Analytics and if you want to implement something like a serverless event driven or timer-based application, you should check Azure Function or Logic Apps.

Note: Azure IoT Edge allows you to deploy complex event processing, machine learning, image recognition, and other high value AI without writing it in-house. Azure services like Azure Functions, Azure Stream Analytics, and Azure Machine Learning can all be run on-premises via Azure IoT Edge.

Box 2: An Azure IoT Edge device

Azure IoT Edge moves cloud analytics and custom business logic to devices so that your organization can focus on business insights instead of data management.

References:

<https://docs.microsoft.com/en-us/azure/iot-edge/about-iot-edge>

QUESTION 10

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

You have an app named App1 that uses the Face API.

App1 contains several PersonGroup objects.

You discover that a PersonGroup object for an individual named Ben Smith cannot accept additional entries. The PersonGroup object for Ben Smith contains 10,000 entries.

You need to ensure that additional entries can be added to the PersonGroup object for Ben Smith. The solution must ensure that Ben Smith can be identified by all the entries.

Solution: You modify the custom time interval for the training phase of App1.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead, use a LargePersonGroup. LargePersonGroup and LargeFaceList are collectively referred to as large-scale operations. LargePersonGroup can contain up to 1 million persons, each with a maximum of 248 faces. LargeFaceList can contain up to 1 million faces. The large-scale operations are similar to the conventional PersonGroup and FaceList but have some differences because of the new architecture.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/face/face-api-how-to-topics/how-to-use-large-scale>

QUESTION 11

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

You have an app named App1 that uses the Face API.

App1 contains several PersonGroup objects.

You discover that a PersonGroup object for an individual named Ben Smith cannot accept additional entries. The PersonGroup object for Ben Smith contains 10,000 entries.

You need to ensure that additional entries can be added to the PersonGroup object for Ben Smith. The solution must ensure that Ben Smith can be identified by all the entries.

Solution: You create a second PersonGroup object for Ben Smith.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead, use a LargePersonGroup. LargePersonGroup and LargeFaceList are collectively referred to as large-scale operations. LargePersonGroup can contain up to 1 million persons, each with a maximum of 248 faces. LargeFaceList can contain up to 1 million faces. The large-scale operations are similar to the conventional PersonGroup and FaceList but have some differences because of the new architecture.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/face/face-api-how-to-topics/how-to-use-large-scale>

QUESTION 12

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

You have an app named App1 that uses the Face API.

App1 contains several PersonGroup objects.

You discover that a PersonGroup object for an individual named Ben Smith cannot accept additional entries. The PersonGroup object for Ben Smith contains 10,000 entries.

You need to ensure that additional entries can be added to the PersonGroup object for Ben Smith. The solution must ensure that Ben Smith can be identified by all the entries.

Solution: You migrate all the entries to the LargePersonGroup object for Ben Smith.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

LargePersonGroup and LargeFaceList are collectively referred to as large-scale operations.

LargePersonGroup can contain up to 1 million persons, each with a maximum of 248 faces. LargeFaceList can contain up to 1 million faces. The large-scale operations are similar to the conventional PersonGroup and FaceList but have some differences because of the new architecture.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/face/face-api-how-to-topics/how-to-use-large-scale>

QUESTION 13

Your company plans to develop a mobile app to provide meeting transcripts by using speech-to-text. Audio from the meetings will be streamed to provide real-time transcription.

You need to recommend which task each meeting participant must perform to ensure that the transcripts of the meetings can identify all participants.

Which task should you recommend?

- A. Record the meeting as an MP4.
- B. Create a voice signature.
- C. Sign up for Azure Speech Services.
- D. Sign up as a guest in Azure Active Directory (Azure AD)

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The first step is to create voice signatures for the conversation participants. Creating voice signatures is

required for efficient speaker identification.

Note: In addition to the standard baseline model used by the Speech Services, you can customize models to your needs with available data, to overcome speech recognition barriers such as speaking style, vocabulary and background noise.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/cognitive-services/speech-service/how-to-use-conversation-transcription-service>

QUESTION 14

You need to create a prototype of a bot to demonstrate a user performing a task. The demonstration will use the Bot Framework Emulator.

Which botbuilder CLI tool should you use to create the prototype?

- A. Chatdown
- B. QnAMaker
- C. Dispatch
- D. LuDown

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Use Chatdown to produce prototype mock conversations in markdown and convert the markdown to transcripts you can load and view in the new V4 Bot Framework Emulator.

Incorrect Answers:

B: QnA Maker is a cloud-based API service that lets you create a conversational question-and-answer layer over your existing data. Use it to build a knowledge base by extracting questions and answers from your semi-structured content, including FAQs, manuals, and documents. Answer users' questions with the best answers from the QnAs in your knowledge base—automatically. Your knowledge base gets smarter, too, as it continually learns from user behavior.

C: Dispatch lets you build language models that allow you to dispatch between disparate components (such as QnA, LUIS and custom code).

D: LuDown build LUIS language understanding models using markdown files

References:

<https://github.com/microsoft/botframework/blob/master/README.md>

QUESTION 15

DRAG DROP

You need to create a bot to meet the following requirements:

- The bot must support multiple bot channels including Direct Line.
- Users must be able to sign in to the bot by using a Gmail user account and save activities and preferences.

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.

NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Select and Place:

Actions	Answer Area
From the Azure portal, create a client application.	
From the Azure portal, set Guest users permissions are limited to No .	
From the Azure portal, create an Azure Active Directory (Azure AD) B2C service.	
From the Azure portal, enable Azure Multi-Factor Authentication (MFA).	
From the Azure portal, configure an identity provider.	
From the bot code, add the connection settings and OAuthPrompt.	

Correct Answer:

Actions	Answer Area
	From the Azure portal, configure an identity provider.
From the Azure portal, set Guest users permissions are limited to No .	From the Azure portal, create an Azure Active Directory (Azure AD) B2C service.
	From the Azure portal, create a client application.
From the Azure portal, enable Azure Multi-Factor Authentication (MFA).	From the bot code, add the connection settings and OAuthPrompt.

Section: (none)

Explanation

Explanation/Reference:

Step 1: From the Azure portal, configure an identity provider.

The Azure Bot Service and the v4 SDK include new bot authentication capabilities, providing features to make it easier to develop a bot that authenticates users to various identity providers, such as Azure AD (Azure Active Directory), GitHub, Uber, and so on.

Step 2: From the Azure portal, create an Azure Active Directory (Azure AD) B2C service.

Azure Active Directory B2C provides business-to-customer identity as a service. Your customers use their preferred social, enterprise, or local account identities to get single sign-on access to your applications and APIs.

Step 3: From the Azure portal, create a client application

You can enable communication between your bot and your own client application by using the Direct Line API.

Step 4: From the bot code, add the connection settings and OAuthPrompt

Use an OAuth prompt to sign the user in and get a token.

Azure AD B2C uses standards-based authentication protocols including OpenID Connect, OAuth 2.0, and SAML.

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-authentication?view=azure-bot-service-4.0>

QUESTION 16

HOTSPOT

You have an app that uses the Language Understanding (LUIS) API as shown in the following exhibit.

The screenshot shows the Microsoft Cognitive Services | Language Understanding interface. The top navigation bar includes 'Cognitive Services', 'Language Understanding', 'My apps', 'DASHBOARD' (selected), 'BUILD', 'MANAGE', 'Train' (with a red dot), 'Test', and 'Publish'. On the left, a sidebar menu under 'App Assets' has 'Intents' selected. The main area is titled 'Intents' with a sub-section 'None'. It features a search bar 'Search intents' and buttons '+ Create new intent' and '+ Add prebuilt domain intent'. A table lists 'Name' (None) and 'Labeled Utterances' (0).

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.

Hot Area:

Answer Area

To publish the app, you must first [answer choice] the app.

test
train
create utterances in

You can add utterances to the model by [answer choice].

creating intents
testing the model
training the model

The app was [answer choice].

never published
already published
published but never accessed by users

Correct Answer:

Answer Area

To publish the app, you must first [answer choice] the app.

test
train
create utterances in

You can add utterances to the model by [answer choice].

creating intents
testing the model
training the model

The app was [answer choice].

never published
already published
published but never accessed by users

Section: (none)

Explanation

Explanation/Reference:

Box 1: train

Utterances are input from the user that your app needs to interpret. To train LUIS to extract intents and entities from them, it's important to capture a variety of different example utterances for each intent. Active learning, or the process of continuing to train on new utterances, is essential to machine-learned intelligence that LUIS provides.

Box 2: creating intents

Each intent needs to have example utterances, at least 15. If you have an intent that does not have any example utterances, you will not be able to train LUIS. If you have an intent with one or very few example utterances, LUIS will not accurately predict the intent.

Box 3: never published

In each iteration of the model, do not add a large quantity of utterances. Add utterances in quantities of 15. Train, publish, and test again.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/luis-concept-utterance>

QUESTION 17

You are designing an AI solution that will provide feedback to teachers who train students over the Internet. The students will be in classrooms located in remote areas. The solution will capture video and audio data of the students in the classrooms.

You need to recommend Azure Cognitive Services for the AI solution to meet the following requirements:

- Alert teachers if a student facial expression indicates the student is angry or scared.
- Identify each student in the classrooms for attendance purposes.
- Allow the teachers to log voice conversations as text.

Which Cognitive Services should you recommend?

- A. Face API and Text Analytics
- B. Computer Vision and Text Analytics
- C. QnA Maker and Computer Vision
- D. Speech to Text and Face API

Correct Answer: D

Section: (none)**Explanation****Explanation/Reference:**

Explanation:

Speech-to-text from Azure Speech Services, also known as speech-to-text, enables real-time transcription of audio streams into text that your applications, tools, or devices can consume, display, and take action on as command input.

Face detection: Detect one or more human faces in an image and get back face rectangles for where in the image the faces are, along with face attributes which contain machine learning-based predictions of facial features. The face attribute features available are: Age, Emotion, Gender, Pose, Smile, and Facial Hair along with 27 landmarks for each face in the image.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/speech-service/speech-to-text>

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

QUESTION 18**HOTSPOT**

Your company plans to build an app that will perform the following tasks:

- Match a user's picture to a picture of a celebrity.
- Tag a scene from a movie, and then search for movie scenes by using the tags.

You need to recommend which Azure Cognitive Services APIs must be used to perform the tasks.

Which Cognitive Services API should you recommend for each task? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Match a user's picture to a picture of a celebrity:

Bing Video Search
Video Indexer
Custom Vision
Computer Vision

Tag a scene from a movie, and then search for movie scenes by using the tags:

Bing Video Search
Video Indexer
Custom Vision
Computer Vision

Correct Answer:

Answer Area

Match a user's picture to a picture of a celebrity:

Bing Video Search
Video Indexer
Custom Vision
Computer Vision

Tag a scene from a movie, and then search for movie scenes by using the tags:

Bing Video Search
Video Indexer
Custom Vision
Computer Vision

Section: (none)

Explanation

Explanation/Reference:

Box 1: Computer Vision

Azure's Computer Vision service provides developers with access to advanced algorithms that process images and return information.

Computer Vision Detect Faces: Detect faces in an image and provide information about each detected face. Computer Vision returns the coordinates, rectangle, gender, and age for each detected face.

Computer Vision provides a subset of the Face service functionality. You can use the Face service for more detailed analysis, such as facial identification and pose detection.

Box 2: Bing Video Search

Search for videos and get comprehensive results

With Bing Video Search API v7, find videos across the web. Results provide useful metadata including creator, encoding format, video length, view count, improved & simplified paging, and more.

Incorrect Answers:

Video Indexer:

Automatically extract metadata—such as spoken words, written text, faces, speakers, celebrities, emotions, topics, brands, and scenes—from video and audio files.

Custom Vision:

Easily customize your own state-of-the-art computer vision models for your unique use case. Just upload a few labeled images and let Custom Vision Service do the hard work. With just one click, you can export trained models to be run on device or as Docker containers.

References:

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

<https://azure.microsoft.com/en-us/services/cognitive-services/bing-video-search-api/>

QUESTION 19

You need to evaluate trends in fuel prices during a period of 10 years. The solution must identify unusual fluctuations in prices and produce visual representations.

Which Azure Cognitive Services API should you use?

- A. Anomaly Detector
- B. Computer Vision

- C. Text Analytics
- D. Bing Autosuggest

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The Anomaly Detector API enables you to monitor and detect abnormalities in your time series data with machine learning. The Anomaly Detector API adapts by automatically identifying and applying the best-fitting models to your data, regardless of industry, scenario, or data volume. Using your time series data, the API determines boundaries for anomaly detection, expected values, and which data points are anomalies.

References:

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

QUESTION 20

HOTSPOT

Your company plans to deploy several apps that will use Azure Cognitive Services APIs.

You need to recommend which Cognitive Services APIs must be used to meet the following requirements:

- Must be able to identify inappropriate text and profanities in multiple languages.
- Must be able to interpret user requests sent by using text input.
- Must be able to identify named entities in text.

Which API should you recommend for each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Must be able to identify inappropriate text and profanities in multiple languages:

Text Analytics
Content Moderator
Bing Visual Search
Language Understanding (LUIS)

Must be able to interpret user requests sent by using text input:

Text Analytics
Content Moderator
Bing Visual Search
Language Understanding (LUIS)

Must be able to identify named entities in text:

Text Analytics
Content Moderator
Bing Visual Search
Language Understanding (LUIS)

Correct Answer:

Answer Area

Must be able to identify inappropriate text and profanities in multiple languages:

Text Analytics
Content Moderator
Bing Visual Search
Language Understanding (LUIS)

Must be able to interpret user requests sent by using text input:

Text Analytics
Content Moderator
Bing Visual Search
Language Understanding (LUIS)

Must be able to identify named entities in text:

Text Analytics
Content Moderator
Bing Visual Search
Language Understanding (LUIS)

Section: (none)

Explanation

Explanation/Reference:

Box 1: Content Moderator

The Azure Content Moderator API is a cognitive service that checks text, image, and video content for material that is potentially offensive, risky, or otherwise undesirable. When such material is found, the service applies appropriate labels (flags) to the content. Your app can then handle flagged content in order to comply with regulations or maintain the intended environment for users.

Box 2: Language Understanding (LUIS)

Designed to identify valuable information in conversations, LUIS interprets user goals (intents) and distills valuable information from sentences (entities), for a high quality, nuanced language model. LUIS integrates seamlessly with the Azure Bot Service, making it easy to create a sophisticated bot.

Box 3: Text Analytics

The Text Analytics API is a cloud-based service that provides advanced natural language processing over raw text, and includes four main functions: sentiment analysis, key phrase extraction, named entity recognition, and language detection.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/cognitive-services/content-moderator/overview>

<https://www.luis.ai/home>

<https://docs.microsoft.com/en-us/azure/cognitive-services/text-analytics/>

QUESTION 21

You plan to perform analytics of the medical records of patients located around the world.

You need to recommend a solution that avoids storing and processing data in the cloud.

What should you include in the recommendation?

- A. Azure Machine Learning Studio
- B. the Text Analytics API that has container support

- C. Azure Machine Learning services
- D. an Apache Spark cluster that uses MMLSpark

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The Microsoft Machine Learning Library for Apache Spark (MMLSpark) assists in provisioning scalable machine learning models for large datasets, especially for building deep learning problems. MMLSpark works with SparkML pipelines, including Microsoft CNTK and the OpenCV library, which provide end-to-end support for the ingress and processing of image input data, categorization of images, and text analytics using pre-trained deep learning algorithms.

References:

https://subscription.packtpub.com/book/big_data_and_business_intelligence/9781789131956/10/ch10lvl1sec61/an-overview-of-the-microsoft-machine-learning-library-for-apache-spark-mmlspark

QUESTION 22

Your company has an on-premises datacenter.

You plan to publish an app that will recognize a set of individuals by using the Face API. The model is trained.

You need to ensure that all images are processed in the on-premises datacenter.

What should you deploy to host the Face API?

- A. a Docker container
- B. Azure File Sync
- C. Azure Application Gateway
- D. Azure Data Box Edge

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

A container is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing environment to another. A Docker container image is a lightweight, standalone, executable package of software that includes everything needed to run an application: code, runtime, system tools, system libraries and settings.

Incorrect Answers:

D: Azure Data Box Edge is an AI-enabled edge computing device with network data transfer capabilities. This article provides you an overview of the Data Box Edge solution, benefits, key capabilities, and the scenarios where you can deploy this device.

Data Box Edge is a Hardware-as-a-service solution. Microsoft ships you a cloud-managed device with a built-in Field Programmable Gate Array (FPGA) that enables accelerated AI-inferencing and has all the capabilities of a storage gateway.

References:

<https://www.docker.com/resources/what-container>

QUESTION 23

You have a Bing Search service that is used to query a product catalog.

You need to identify the following information:

- The locale of the query

- The top 50 query strings
- The number of calls to the service
- The top geographical regions of the service

What should you implement?

- A. Bing Statistics
- B. Azure API Management (APIM)
- C. Azure Monitor
- D. Azure Application Insights

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The Bing Statistics add-in provides metrics such as call volume, top queries, API response, code distribution, and market distribution. The rich slicing-and-dicing capability lets you gather deeper understanding of your users and their usage to inform your business strategy.

References:

<https://www.bingapistatistics.com/>

QUESTION 24

You have a Face API solution that updates in real time. A pilot of the solution runs successfully on a small dataset.

When you attempt to use the solution on a larger dataset that continually changes, the performance degrades, slowing how long it takes to recognize existing faces.

You need to recommend changes to reduce the time it takes to recognize existing faces without increasing costs.

What should you recommend?

- A. Change the solution to use the Computer Vision API instead of the Face API.
- B. Separate training into an independent pipeline and schedule the pipeline to run daily.
- C. Change the solution to use the Bing Image Search API instead of the Face API.
- D. Distribute the face recognition inference process across many Azure Cognitive Services instances.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Incorrect Answers:

A: The purpose of Computer Vision is to inspects each image associated with an incoming article to (1) scrape out written words from the image and (2) determine what types of objects are present in the image.

C: The Bing API provides an experience similar to Bing.com/search by returning search results that Bing determines are relevant to a user's query. The results include Web pages and may also include images, videos, and more.

D: That would increase cost.

References:

<https://github.com/Azure/cognitive-services>

QUESTION 25

HOTSPOT

You plan to create a bot that will support five languages. The bot will be used by users located in three different countries. The bot will answer common customer questions. The bot will use Language Understanding (LUIS) to identify which skill to use and to detect the language of the customer.

You need to identify the minimum number of Azure resources that must be created for the planned bot.

How many QnA Maker, LUIS and Language Detection instances should you create? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

QnA Maker:

1	▼
3	▼
5	▼

LUIS:

1	▼
3	▼
5	▼

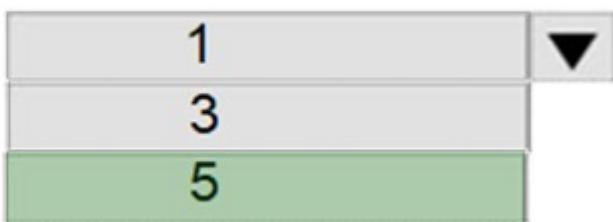
Language Detection:

1	▼
3	▼
5	▼

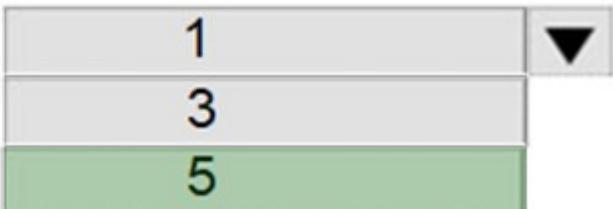
Correct Answer:

Answer Area

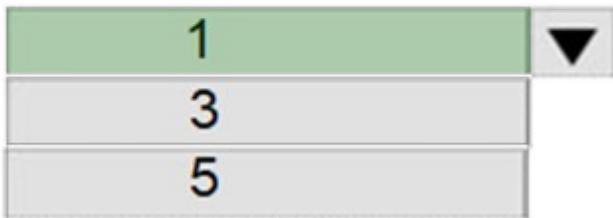
QnA Maker:



Luis:



Language Detection:



Section: (none)

Explanation

Explanation/Reference:

QnA Maker: 5

If the user plans to support multiple languages, they need to have a new QnA Maker resource for each language.

Luis: 5

If you need a multi-language Luis client application such as a chatbot, you have a few options. If Luis supports all the languages, you develop a Luis app for each language. Each Luis app has a unique app ID, and endpoint log. If you need to provide language understanding for a language Luis does not support, you can use Microsoft Translator API to translate the utterance into a supported language, submit the utterance to the Luis endpoint, and receive the resulting scores.

Language detection: 1

The Language Detection feature of the Azure Text Analytics REST API evaluates text input for each document and returns language identifiers with a score that indicates the strength of the analysis.

This capability is useful for content stores that collect arbitrary text, where language is unknown. You can parse the results of this analysis to determine which language is used in the input document. The response also returns a score that reflects the confidence of the model. The score value is between 0 and 1.

The Language Detection feature can detect a wide range of languages, variants, dialects, and some regional or cultural languages. The exact list of languages for this feature isn't published.

References:

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

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/luis-language-support>

<https://docs.microsoft.com/en-us/azure/cognitive-services/text-analytics/how-tos/text-analytics-how-to-language-detection>

QUESTION 26

You have a database that contains sales data.

You plan to process the sales data by using two data streams named Stream1 and Stream2. Stream1 will be used for purchase order data. Stream2 will be used for reference data.

The reference data is stored in CSV files.

You need to recommend an ingestion solution for each data stream.

What two solutions should you recommend? Each correct answer is a complete solution.

NOTE: Each correct selection is worth one point.

- A. an Azure event hub for Stream1 and Azure Blob storage for Stream2
- B. Azure Blob storage for Stream1 and Stream2
- C. an Azure event hub for Stream1 and Stream2
- D. Azure Blob storage for Stream1 and Azure Cosmos DB for Stream2
- E. Azure Cosmos DB for Stream1 and an Azure event hub for Stream2

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Stream1 - Azure Event

Stream2 - Blob Storage

Azure Event Hubs is a highly scalable data streaming platform and event ingestion service, capable of receiving and processing millions of events per second. Event Hubs can process and store events, data, or telemetry produced by distributed software and devices. Data sent to an event hub can be transformed and stored using any real-time analytics provider or batching/storage adapters. Event Hubs provides publish-subscribe capabilities with low latency at massive scale, which makes it appropriate for big data scenarios.

Stream1, Stream2 - Blob Storage

Stream Analytics has first-class integration with Azure data streams as inputs from three kinds of resources:

Azure Event Hubs

Azure IoT Hub

Azure Blob storage

These input resources can live in the same Azure subscription as your Stream Analytics job or a different subscription.

References:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/real-time-ingestion>

QUESTION 27

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

You are developing an application that uses an Azure Kubernetes Service (AKS) cluster.

You are troubleshooting a node issue.

You need to connect to an AKS node by using SSH.

Solution: You create a managed identity for AKS, and then you create an SSH connection.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead add an SSH key to the node, and then you create an SSH connection.

References:

<https://docs.microsoft.com/en-us/azure/aks/ssh>

QUESTION 28

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

You are developing an application that uses an Azure Kubernetes Service (AKS) cluster.

You are troubleshooting a node issue.

You need to connect to an AKS node by using SSH.

Solution: You change the permissions of the AKS resource group, and then you create an SSH connection.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead add an SSH key to the node, and then you create an SSH connection.

References:

<https://docs.microsoft.com/en-us/azure/aks/ssh>

QUESTION 29

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

You are developing an application that uses an Azure Kubernetes Service (AKS) cluster.

You are troubleshooting a node issue.

You need to connect to an AKS node by using SSH.

Solution: You add an SSH key to the node, and then you create an SSH connection.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

By default, SSH keys are generated when you create an AKS cluster. If you did not specify your own SSH keys when you created your AKS cluster, add your public SSH keys to the AKS nodes.

You also need to create an SSH connection to the AKS node.

References:

<https://docs.microsoft.com/en-us/azure/aks/ssh>

QUESTION 30

You are developing a Computer Vision application.

You plan to use a workflow that will load data from an on-premises database to Azure Blob storage, and then connect to an Azure Machine Learning service.

What should you use to orchestrate the workflow?

- A. Azure Kubernetes Service (AKS)
- B. Azure Pipelines
- C. Azure Data Factory
- D. Azure Container Instances

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

With Azure Data Factory you can use workflows to orchestrate data integration and data transformation processes at scale.

Build data integration, and easily transform and integrate big data processing and machine learning with the visual interface.

References:

<https://azure.microsoft.com/en-us/services/data-factory/>

QUESTION 31

DRAG DROP

You are designing an AI solution that will use IoT devices to gather data from conference attendees, and then later analyze the data. The IoT devices will connect to an Azure IoT hub.

You need to design a solution to anonymize the data before the data is sent to the IoT hub.

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

Select and Place:

Actions

- Add the job to the IoT devices in IoT hub
- Create an Azure Stream Analytics Edge job
- Create an Azure Stream Analytics Cloud job
- Create a storage container
- Create a storage queue

Answer Area



Correct Answer:

Actions

-
-
- Create an Azure Stream Analytics Cloud job
-
- Create a storage queue

Answer Area

- Create a storage container
- Create an Azure Stream Analytics Edge job
- Add the job to the IoT devices in IoT hub



Section: (none)

Explanation

Explanation/Reference:

Explanation:

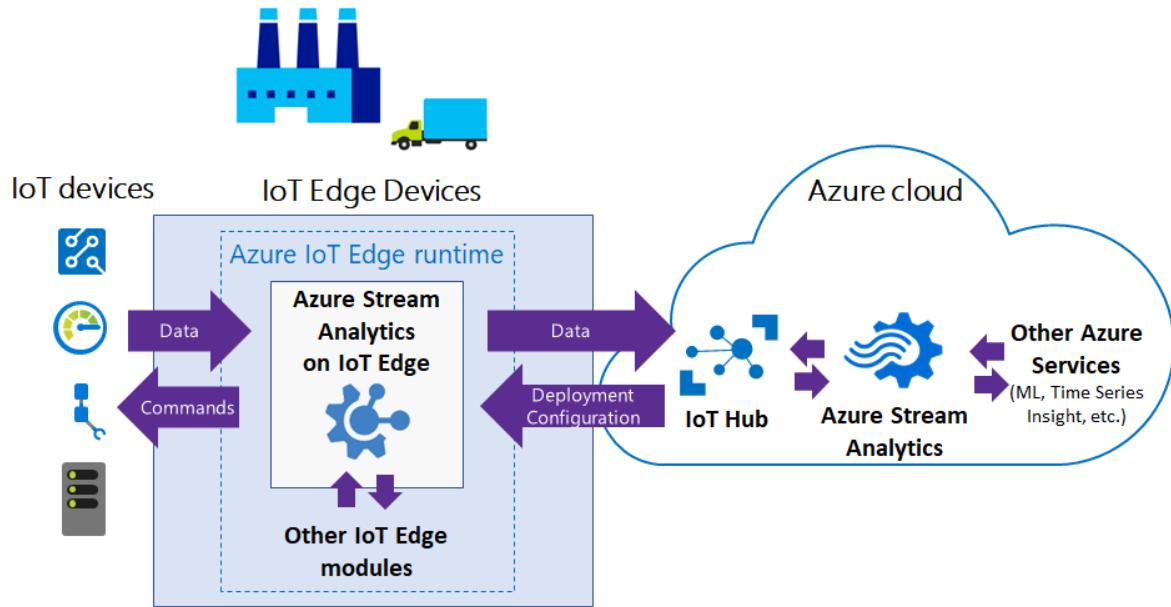
Step 1: Create a storage container

ASA Edge jobs run in containers deployed to Azure IoT Edge devices.

Step 2: Create an Azure Stream Analytics Edge Job

Azure Stream Analytics (ASA) on IoT Edge empowers developers to deploy near-real-time analytical intelligence closer to IoT devices so that they can unlock the full value of device-generated data.

Scenario overview:



Step 3: Add the job to the IoT devices in IoT

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-edge>

QUESTION 32

HOTSPOT

You are designing a solution that will ingest data from an Azure IoT Edge device, preprocess the data in Azure Machine Learning, and then move the data to Azure HDInsight for further processing.

What should you include in the solution? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Machine Learning module to use to move the data into HDInsight:

Export Data
Load Trained Model
Partition and Sample
Unpack Zipped Datasets

Query type to use:

Apache Hive
Apache Spark
C#
Transact-SQL

Output the data to:

Azure Cosmos DB
Azure Data Lake
Azure Table storage
HDFS

Correct Answer:

Answer Area

Machine Learning module to use to move the data into HDInsight:

Export Data
Load Trained Model
Partition and Sample
Unpack Zipped Datasets

Query type to use:

Apache Hive
Apache Spark
C#
Transact-SQL

Output the data to:

Azure Cosmos DB
Azure Data Lake
Azure Table storage
HDFS

Section: (none)**Explanation****Explanation/Reference:**

Explanation:

Box 1: Export Data

The Export data to Hive option in the Export Data module in Azure Machine Learning Studio. This option is useful when you are working with very large datasets, and want to save your machine learning experiment data to a Hadoop cluster or HDInsight distributed storage.

Box 2: Apache Hive

Apache Hive is a data warehouse system for Apache Hadoop. Hive enables data summarization, querying, and analysis of data. Hive queries are written in HiveQL, which is a query language similar to SQL.

Box 3: Azure Data Lake

Default storage for the HDFS file system of HDInsight clusters can be associated with either an Azure Storage account or an Azure Data Lake Storage.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/export-to-hive-query>

<https://docs.microsoft.com/en-us/azure/hdinsight/hadoop/hdinsight-use-hive>

QUESTION 33

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

You need to create an IoT solution that performs the following tasks:

- Identifies hazards
- Provides a real-time online dashboard
- Takes images of an area every minute
- Counts the number of people in an area every minute

Solution: You implement Azure Cognitive Services containers on the IoT devices, and then you configure results to be sent to an Azure IoT hub. You configure Microsoft Power BI to connect to the IoT hub by using Azure Stream Analytics.

Does this meet the goal?

- A. Yes
B. No

Correct Answer: A**Section: (none)****Explanation****Explanation/Reference:**

Explanation:

There is support for running Azure Cognitive Services containers for Text Analytics and Language Understanding containers on edge devices with Azure IoT Edge. This means that all your workloads can be run locally where your data is being generated while keeping the simplicity of the cloud to manage them remotely, securely and at scale.

You would have to set up an IoT Edge device and its IoT Hub.

Note: Azure Stream Analytics enables you to take advantage of one of the leading business intelligence tools, Microsoft Power BI.

Get your IoT hub ready for data access by adding a consumer group.
Create, configure, and run a Stream Analytics job for data transfer from your IoT hub to your Power BI account.
Create and publish a Power BI report to visualize the data.

References:

<https://azure.microsoft.com/es-es/blog/running-cognitive-services-on-iot-edge/>

<https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-live-data-visualization-in-power-bi>

QUESTION 34

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

You need to create an IoT solution that performs the following tasks:

- Identifies hazards
- Provides a real-time online dashboard
- Takes images of an area every minute
- Counts the number of people in an area every minute

Solution: You configure the IoT devices to send the images to an Azure IoT hub, and then you configure an Azure Functions call to Azure Cognitive Services that sends the results to an Azure event hub. You configure Microsoft Power BI to connect to the event hub by using Azure Stream Analytics.

Does this meet the goal?

- A. Yes
B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead use Cognitive Services containers on the IoT devices.

References:

<https://azure.microsoft.com/es-es/blog/running-cognitive-services-on-iot-edge/>

<https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-live-data-visualization-in-power-bi>

QUESTION 35

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.

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You need to create an IoT solution that performs the following tasks:

- Identifies hazards
- Provides a real-time online dashboard
- Takes images of an area every minute
- Counts the number of people in an area every minute

Solution: You configure the IoT devices to send the images to an Azure IoT hub, and then you configure an

Azure Automation call to Azure Cognitive Services that sends the results to an Azure event hub. You configure Microsoft Power BI to connect to the event hub by using Azure Stream Analytics.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead use Cognitive Services containers on the IoT devices.

References:

<https://azure.microsoft.com/es-es/blog/running-cognitive-services-on-iot-edge/>

<https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-live-data-visualization-in-power-bi>

QUESTION 36

You plan to deploy Azure IoT Edge devices. Each device will store more than 10,000 images locally. Each image is approximately 5 MB.

You need to ensure that the images persist on the devices for 14 days.

What should you use?

- A. Azure Stream Analytics on the IoT Edge devices
- B. Azure Database for Postgres SQL
- C. Azure Blob storage on the IoT Edge devices
- D. Microsoft SQL Server on the IoT Edge devices

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Blob Storage on IoT Edge provides a block blob and append blob storage solution at the edge. A blob storage module on your IoT Edge device behaves like an Azure blob service, except the blobs are stored locally on your IoT Edge device.

This is useful where data needs to be stored locally until it can be processed or transferred to the cloud. This data can be videos, images, finance data, hospital data, or any other unstructured data.

References:

<https://docs.microsoft.com/en-us/azure/iot-edge/how-to-store-data-blob>

QUESTION 37

You have an Azure Machine Learning experiment.

You need to validate that the experiment meets GDPR regulation requirements and stores documentation about the experiment.

What should you use?

- A. Compliance Manager
- B. an Azure Log Analytics workspace
- C. Azure Table storage
- D. Azure Security Center

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Compliance Manager for Azure helps you assess and manage GDPR compliance. Compliance Manager is a free, Microsoft cloud services solution designed to help organizations meet complex compliance obligations, including the GDPR, ISO 27001, ISO 27018, and NIST 800-53. Generally available today for Azure customers, the Compliance Manager GDPR dashboard enables you to assign, track, and record your GDPR compliance activities so you can collaborate across teams and manage your documents for creating audit reports more easily.

References:

<https://azure.microsoft.com/en-us/blog/new-capabilities-to-enable-robust-gdpr-compliance/>

QUESTION 38

You are designing a solution that will integrate the Bing Web Search API and will return a JSON response. The development team at your company uses C# as its primary development language.

You provide developers with the Bing endpoint.

Which additional component do the developers need to prepare and to retrieve data by using an API call?

- A. the subscription ID
- B. the API key
- C. a query
- D. the resource group ID

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The Bing Web Search SDK makes it easy to integrate Bing Web Search into your C# application. You instantiate a client, send a request, and receive a response.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/bing-web-search/web-search-sdk-quickstart>

QUESTION 39

DRAG DROP

You need to build an AI solution that will be shared between several developers and customers.

You plan to write code, host code, and document the runtime all within a single user experience.

You build the environment to host the solution.

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

Select and Place:

Actions

Create stream inputs and outputs

Create a new experiment

Build an experiment

Build a notebook

Create an Azure Machine Learning Studio workspace

Create a new notebook

Implement Transact-SQL for the stream query

Create an Azure Stream Analytics service

Answer Area



Correct Answer:

Actions

Create stream inputs and outputs

Create a new experiment

Build an experiment

Build a notebook

Create an Azure Machine Learning Studio workspace

Create a new notebook

Implement Transact-SQL for the stream query

Create an Azure Stream Analytics service

Answer Area

Create an Azure Machine Learning Studio workspace

Create a new notebook

Create a new experiment

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Step 1: Create an Azure Machine Learning Studio workspace

Step 2: Create a notebook

You can manage notebooks using the UI, the CLI, and by invoking the Workspace API.

To create a notebook

1. Click the Workspace button  or the Home button  in the sidebar. Do one of the following:

Next to any folder, click the Menu Dropdown on the right side of the text and select Create > Notebook.
Create Notebook

In the Workspace or a user folder, click Down Caret and select Create > Notebook.

2. In the Create Notebook dialog, enter a name and select the notebook's primary language.

3. If there are running clusters, the Cluster drop-down displays. Select the cluster to attach the notebook to.
4. Click Create.

Step 3: Create a new experiment

Create a new experiment by clicking +NEW at the bottom of the Machine Learning Studio window. Select EXPERIMENT > Blank Experiment.

References:

<https://docs.azure.databricks.net/user-guide/notebooks/notebook-manage.html>

<https://docs.microsoft.com/en-us/azure/machine-learning/service/quickstart-run-cloud-notebook>

QUESTION 40

Your company has a data team of Transact-SQL experts.

You plan to ingest data from multiple sources into Azure Event Hubs.

You need to recommend which technology the data team should use to move and query data from Event Hubs to Azure Storage. The solution must leverage the data team's existing skills.

What is the best recommendation to achieve the goal? More than one answer choice may achieve the goal.

- A. Azure Notification Hubs
- B. Azure Event Grid
- C. Apache Kafka streams
- D. Azure Stream Analytics

Correct Answer: B

Section: (none)

Explanation

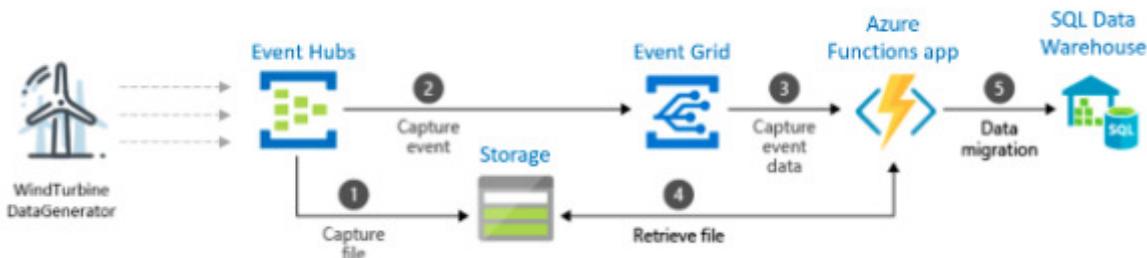
Explanation/Reference:

Explanation:

Event Hubs Capture is the easiest way to automatically deliver streamed data in Event Hubs to an Azure Blob storage or Azure Data Lake store. You can subsequently process and deliver the data to any other storage destinations of your choice, such as SQL Data Warehouse or Cosmos DB.

You can capture data from your event hub into a SQL data warehouse by using an Azure function triggered by an event grid.

Example:



First, you create an event hub with the Capture feature enabled and set an Azure blob storage as the destination. Data generated by WindTurbineGenerator is streamed into the event hub and is automatically captured into Azure Storage as Avro files.

Next, you create an Azure Event Grid subscription with the Event Hubs namespace as its source and the Azure Function endpoint as its destination.

Whenever a new Avro file is delivered to the Azure Storage blob by the Event Hubs Capture feature, Event Grid notifies the Azure Function with the blob URI. The Function then migrates data from the blob to a SQL data warehouse.

References:

<https://docs.microsoft.com/en-us/azure/event-hubs/store-captured-data-data-warehouse>

QUESTION 41

You are designing a Computer Vision AI application.

You need to recommend a deployment solution for the application. The solution must ensure that costs scale linearly without any upfront costs.

What should you recommend?

- A. a containerized Computer Vision API on Azure Container Instances
- B. the Computer Vision API as a single resource
- C. an Azure Container Service
- D. a containerized Computer Vision API on Azure Kubernetes Service (AKS) that has virtual nodes configured

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Containers enable you to run the Computer Vision APIs in your own environment.

Note: The host is a x64-based computer that runs the Docker container. It can be a computer on your premises or a Docker hosting service in Azure, such as:

- Azure Container Instances.
- Azure Kubernetes Service.
- A Kubernetes cluster deployed to Azure Stack.

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/computer-vision-how-to-install-containers>

QUESTION 42

You are implementing the Language Understanding (LUIS) API and are building a GDPR-compliant bot by using the Bot Framework.

You need to recommend a solution to ensure that the implementation of LUIS is GDPR-compliant.

What should you include in the recommendation?

- A. Enable active learning for the bot.
- B. Configure the bot to send the active learning preference of a user.
- C. Delete the utterances from Review endpoint utterances.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Deleting personal data from the device or service and can be used to support your obligations under the GDPR.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/cognitive-services/luis/luis-user-privacy>

QUESTION 43

You need to build a reputation monitoring solution that reviews Twitter activity about your company. The solution must identify negative tweets and tweets that contain inappropriate images.

You plan to use Azure Logic Apps to build the solution.

Which two additional Azure services should you include in the solution? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Corporate Vision
- B. Azure Blueprint
- C. Content Moderator
- D. Text Analytics
- E. Azure Machine Learning Service
- F. Form Recognizer

Correct Answer: CD

Section: (none)

Explanation

Explanation/Reference:

Explanation:

C: You can filter your tweets using Azure Logic Apps & Content Moderation. Azure Content Moderator is a cognitive service that checks text, image, and video content for material that is potentially offensive, risky, or otherwise undesirable. When this material is found, the service applies appropriate labels (flags) to the content. Your app can then handle flagged content in order to comply with regulations or maintain the intended environment for users.

D: You can write an application so that when a user tweets with configured Twitter Hashtag, Logic App gets triggered and passed to Cognitive Text Analytics Connector for detecting the sentiments of the tweet (text). If the tweeted text is found to be harsh or with bad or abusive language, the tweet can be handled appropriately.

References:

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

<https://www.c-sharpcorner.com/article/role-of-text-analytics-service-as-a-connector-in-azure-logic-apps/>

QUESTION 44

Your company uses an internal blog to share news with employees.

You use the Translator Text API to translate the text in the blog from English to several other languages used by the employee.

Several employees report that the translations are often inaccurate.

You need to improve the accuracy of the translations.

What should you add to the translation solution?

- A. Text Analytics
- B. Language Understanding (LUIS)
- C. Azure Media Services
- D. Custom Translator

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Custom Translator is a feature of the Microsoft Translator service. With Custom Translator, enterprises, app developers, and language service providers can build neural translation systems that understand the terminology used in their own business and industry. The customized translation system will then seamlessly integrate into existing applications, workflows and websites.

Custom Translator allows users to customize Microsoft Translator's advanced neural machine translation for Translator's supported neural translation languages. Custom Translator can be used for customizing text when using the Microsoft Translator Text API , and speech translation using the Microsoft Speech services.

References:

<https://www.microsoft.com/en-us/translator/business/customization/>

QUESTION 45

You plan to develop a bot that tracks communications between the employees at your company.

You need to identify which channel the bot must use to monitor reactions to messages by employees.

What should you identify?

- A. Microsoft Cortana
- B. Microsoft Outlook
- C. Microsoft Teams

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Bots in Microsoft Teams can be part of a one-to-one conversation, a group chat, or a channel in a Team.

Note: In Microsoft Teams, teams are groups of people brought together for work, projects, or common interests. Teams are made up of channels. Each channel is built around a topic, like "Team Events," a department name, or just for fun. Channels are where you hold meetings, have conversations, and work on files together.

References:

<https://docs.microsoft.com/en-us/microsoftteams/platform/bots/what-are-bots>

QUESTION 46

You plan to implement a bot that will require user authentication.

You need to recommend a secure solution that provides encryption for the authentication of the bot.

Which two security solutions should you include in the recommendation? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. NTLM
- B. JSON Web Token (JWT)
- C. API keys
- D. smart cards
- E. SSL/TLS

Correct Answer: BE

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Your bot communicates with the Bot Connector service using HTTP over a secured channel (SSL/TLS).

JSON Web Tokens are used to encode tokens that are sent to and from the bot.

References:

<https://docs.microsoft.com/en-us/azure/bot-service/rest-api/bot-framework-rest-connector-authentication>

QUESTION 47

HOTSPOT

You are developing an application that will perform clickstream analysis. The application will ingest and analyze millions of messages in the real time.

You need to ensure that communication between the application and devices is bidirectional.

What should you use for data ingestion and stream processing? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Data ingestion:

Azure Event Hubs
Azure IoT Hub
Azure Queue storage

Stream processing:

Azure HDInsight with Apache HBase
Azure HDInsight with Apache Storm
Azure HDInsight with Azure Machine Learning service

Correct Answer:

Answer Area

Data ingestion:

Azure Event Hubs
Azure IoT Hub
Azure Queue storage

Stream processing:

Azure HDInsight with Apache HBase
Azure HDInsight with Apache Storm
Azure HDInsight with Azure Machine Learning service

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Azure IoT Hub

Azure IoT Hub is the cloud gateway that connects IoT devices to gather data and drive business insights and automation. In addition, IoT Hub includes features that enrich the relationship between your devices and your backend systems. Bi-directional communication capabilities mean that while you receive data from devices you can also send commands and policies back to devices.

Note on why not Azure Event Hubs: An Azure IoT Hub contains an Event Hub and hence essentially is an Event Hub plus additional features. An important additional feature is that an Event Hub can only receive messages, whereas an IoT Hub additionally can also send messages to individual devices. Further, an Event Hub has access security on hub level, whereas an IoT Hub is aware of the individual devices and can grant and revoke access on device level.

Box 2: Azure Hdinsight with Azure Machine Learning service

References:

<https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-compare-event-hubs>

<https://docs.microsoft.com/en-us/azure/hdinsight/hdinsight-machine-learning-overview>

QUESTION 48

HOTSPOT

You are designing an Azure infrastructure to support an Azure Machine Learning solution that will have multiple phases. The solution must meet the following requirements:

- Securely query an on-premises database once a week to update product lists.
- Access the data without using a gateway.
- Orchestrate the separate phases.

What should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

To connect to the on-premises data:

A point-to-site VPN connection
A site-to-site VPN connection
Azure App Service Hybrid Connections

To orchestrate the phases:

A Machine Learning experiment
Azure Machine Learning Studio
Machine Learning pipelines

To control the orchestration:

Azure Automation
Azure Databricks
Azure Notebooks

Correct Answer:

Answer Area

To connect to the on-premises data:

A point-to-site VPN connection
A site-to-site VPN connection
Azure App Service Hybrid Connections

To orchestrate the phases:

A Machine Learning experiment
Azure Machine Learning Studio
Machine Learning pipelines

To control the orchestration:

Azure Automation
Azure Databricks
Azure Notebooks

Section: (none)
Explanation

Explanation/Reference:

Explanation:

Box 1: Azure App Service Hybrid Connections

With Hybrid Connections, Azure websites and mobile services can access on-premises resources as if they were located on the same private network. Application admins thus have the flexibility to simply lift-and-shift

specific most front-end tiers to Azure with minimal configuration changes, extending their enterprise apps for hybrid scenarios.

Incorrect Answer: The VPN connection solution both use gateways.

Box 2: Machine Learning pipelines

Typically when running machine learning algorithms, it involves a sequence of tasks including pre-processing, feature extraction, model fitting, and validation stages. For example, when classifying text documents might involve text segmentation and cleaning, extracting features, and training a classification model with cross-validation. Though there are many libraries we can use for each stage, connecting the dots is not as easy as it may look, especially with large-scale datasets. Most ML libraries are not designed for distributed computation or they do not provide native support for pipeline creation and tuning.

Box 3: Azure Databricks

References:

<https://azure.microsoft.com/is-is/blog/hybrid-connections-preview/>

<https://databricks.com/glossary/what-are-ml-pipelines>

QUESTION 49

You plan to design a solution for an AI implementation that uses data from IoT devices.

You need to recommend a data storage solution for the IoT devices that meets the following requirements:

- Allow data to be queried in real-time as it streams into the solution.
- Provide the lowest amount of latency for loading data into the solution.

What should you include in the recommendation?

- A. a Microsoft Azure Table Storage solution
- B. a Microsoft Azure HDInsight R Server cluster
- C. a Microsoft Azure HDInsight Hadoop cluster
- D. a Microsoft Azure SQL database that has In-Memory OLTP enabled

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You can use HDInsight to process streaming data that's received in real time from a variety of devices.

Internet of Things (IoT)

You can use HDInsight to build applications that extract critical insights from data. You can also use Azure Machine Learning on top of that to predict future trends for your business.

By combining enterprise-scale R analytics software with the power of Apache Hadoop and Apache Spark, Microsoft R Server for HDInsight gives you the scale and performance you need. Multi-threaded math libraries and transparent parallelization in R Server handle up to 1000x more data and up to 50x faster speeds than open-source R, which helps you to train more accurate models for better predictions.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/hadoop/apache-hadoop-introduction>

QUESTION 50

Your company has factories in 10 countries. Each factory contains several thousand IoT devices.

The devices present status and trending data on a dashboard.

You need to ingest the data from the IoT devices into a data warehouse.

Which two Microsoft Azure technologies should you use? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Azure Stream Analytics
- B. Azure Data Factory
- C. an Azure HDInsight cluster
- D. Azure Batch
- E. Azure Data Lake

Correct Answer: CE

Section: (none)

Explanation

Explanation/Reference:

Explanation:

With Azure Data Lake Store (ADLS) serving as the hyper-scale storage layer and HDInsight serving as the Hadoop-based compute engine services. It can be used for prepping large amounts of data for insertion into a Data Warehouse

References:

<https://www.blue-granite.com/blog/azure-data-lake-analytics-holds-a-unique-spot-in-the-modern-data-architecture>

QUESTION 51

You plan to deploy a bot that will use the following Azure Cognitive Services:

- Language Understanding (LUIS)
- Text Analytics

Your company's compliance policy states that all data used by the bot must be stored in the on-premises network.

You need to recommend a compute solution to support the planned bot.

What should you include in the recommendation?

- A. an Azure Databricks cluster
- B. a Docker container
- C. Microsoft Machine Learning Server
- D. the Azure Machine Learning service

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You can deploy LUIS on-premise as Docker Image in a container.

Note: Azure Cognitive LUIS service can be deployed on any hardware or on any host (Linus, Windows and IOS). This feature allows enterprises to quickly train the LUIS model on the cloud and deploy it anywhere which makes Cognitive services to be available truly to every person and every Organization - "Democratizing AI".

Reference:

<https://www.linkedin.com/pulse/deploying-microsoft-azure-cognitive-luis-service-on-premise-s>

QUESTION 52

HOTSPOT

Your company is building a cinema chatbot by using the Bot Framework and Language Understanding (LUIS).

You are designing of the intents and the entities for LUIS.

The following are utterances that customers might provide:

- Which movies are playing on December 8?
- What time is the performance of Movie1?
- I would like to purchase two adult tickets in the balcony section for Movie2.

You need to identify which entity types to use. The solution must minimize development effort.

Which entry type should you use for each entity? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

December 8:

Composite
Simple
Prebuilt

Movie1:

Composite
Simple
Prebuilt

Two adult tickets in the balcony section:

Composite
Simple
Prebuilt

Correct Answer:

Answer Area

December 8:

Composite
Simple
Prebuilt

Movie1:

Composite
Simple
Prebuilt

Two adult tickets in the balcony section:

Composite
Simple
Prebuilt

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Prebuilt

Datetime is prebuilt.

Language Understanding (LUIS) provides prebuilt entities. When a prebuilt entity is included in your application, LUIS includes the corresponding entity prediction in the endpoint response.

Box 2: Simple

Box 3: Composite

A composite entity is made up of other entities, such as prebuilt entities, simple, regular expression, and list entities. The separate entities form a whole entity.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/luis-reference-prebuilt-entities>

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/reference-entity-composite>

QUESTION 53

Your company uses several bots. The bots use Azure Bot Service.

Several users report that some of the bots fail to return the expected results.

You plan to view the service health of the bot service.

You need to request the appropriate role to access the service health of the bot service. The solution must use the principle of least privilege.

Which role should you request?

- A. The Contributor role on the Azure subscription
- B. The Reader role on the bot service
- C. The Owner role on the bot service
- D. The Reader role on the Azure subscription

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Use the Reader role on the bot service to limit access and scope.

Note: Access management for cloud resources is a critical function for any organization that is using the cloud. Azure role-based access control (Azure RBAC) helps you manage who has access to Azure resources, what they can do with those resources, and what areas they have access to.

Azure includes several built-in roles that you can use. The Reader Role can view existing Azure resources.

Scope is the set of resources that the access applies to. When you assign a role, you can further limit the actions allowed by defining a scope. In Azure, you can specify a scope at multiple levels: management group, subscription, resource group, or resource.

Reference:

<https://docs.microsoft.com/en-us/azure/role-based-access-control/overview>

QUESTION 54

You build an internal application that uses the Computer Vision API.

You need to ensure that only specific employees can access the application.

What should you include in the solution?

- A. a single-service subscription key
- B. user principals in Azure Active Directory (Azure AD)
- C. service principals in Azure Active Directory (Azure AD)
- D. a multi-service subscription key

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The app requires an Azure service principal account to deploy services to your Azure subscription. A service principal lets you delegate specific permissions to an app using role-based access control.

Reference:

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

Design solutions

Testlet 2

Overview

Contoso, Ltd. has an office in New York to serve its North American customers and an office in Paris to serve its European customers.

Existing Environment

Infrastructure

Each office has a small data center that hosts Active Directory services and a few off-the-shelf software solutions used by internal users.

The network contains a single Active Directory forest that contains a single domain named contoso.com. Azure Active Directory (Azure AD) Connect is used to extend identity management to Azure.

The company has an Azure subscription. Each office has an Azure ExpressRoute connection to the subscription. The New York office connects to a virtual network hosted in the US East 2 Azure region. The Paris office connects to a virtual network hosted in the West Europe Azure region.

The New York office has an Azure Stack Development Kit (ASDK) deployment that is used for development and testing.

Current Business Model

Contoso has a web app named Bookings hosted in an App Service Environment (ASE). The ASE is in the virtual network in the East US 2 region. Contoso employees and customers use Bookings to reserve hotel rooms.

Data Environment

Bookings connects to a Microsoft SQL Server database named hotelDB in the New York office. The database has a view named vwAvailability that consolidates columns from the tables named Hotels, Rooms, and RoomAvailability. The database contains data that was collected during the last 20 years.

Problem Statements

Contoso identifies the following issues with its current business model:

- European users report that access to Booking is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Requirements

Contoso identifies the following issues with its current business model:

- European users report that access to Bookings is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Business Goals

Contoso wants to provide a new version of the Bookings app that will provide a highly available, reliable service for booking travel packages by interacting with a chatbot named Butler.

Contoso plans to move all production workloads to the cloud.

Technical requirements

Contoso identifies the following technical requirements:

- Data scientists must test Butler by using ASDK.
- Whenever possible, solutions must minimize costs.
- Butler must greet users by name when they first connect.
- Butler must be able to handle up to 10,000 messages a day.
- Butler must recognize the users' intent based on basic utterances.
- All configurations to the Azure Bot Service must be logged centrally.
- Whenever possible, solutions must use the principle of least privilege.
- Internal users must be able to access Butler by using Microsoft Skype for Business.
- The new Bookings app must provide a user interface where users can interact with Butler.
- Users in an Azure AD group named KeyManagers must be able to manage keys for all Azure Cognitive Services.
- Butler must provide users with the ability to reserve a room, cancel a reservation, and view existing reservations.
- The new Bookings app must be available to users in North America and Europe if a single data center or Azure region fails.
- For continuous improvement, you must be able to test Butler by sending sample utterances and comparing the chatbot's responses to the actual intent.
- You must maintain relationships between data after migration.

QUESTION 1

You need to design the Butler chatbot solution to meet the technical requirements.

What is the best channel and pricing tier to use? More than one answer choice may achieve the goal. Select the **BEST** answer.

- A. Standard channels that use the S1 pricing tier
- B. Standard channels that use the Free pricing tier
- C. Premium channels that use the Free pricing tier
- D. Premium channels that use the S1 pricing tier

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

References:

<https://azure.microsoft.com/en-in/pricing/details/bot-service/>

QUESTION 2

You need to meet the testing requirements for the data scientists.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Deploy an Azure Kubernetes Service (AKS) cluster to the East US 2 region
- B. Get the docker image from mcr.microsoft.com/azure-cognitive-services/sentiment:latest
- C. Deploy an Azure Container Service cluster to the West Europe region
- D. Export the production version of the Language Understanding (LUIS) app
- E. Deploy a Kubernetes cluster to Azure Stack
- F. Get the docker image from mcr.microsoft.com/azure-cognitive-services/luis:latest
- G. Export the staging version of the Language and Understanding (LUIS) app

Correct Answer: EFG

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: Data scientists must test Butler by using ASDK.

Note: Contoso wants to provide a new version of the Bookings app that will provide a highly available, reliable service for booking travel packages by interacting with a chatbot named Butler.

E: The ASDK (Azure Stack Development Kit) is meant to provide an environment in which you can evaluate Azure Stack and develop modern applications using APIs and tooling consistent with Azure in a non-production environment.

Microsoft Azure Stack integrated systems range in size from 4-16 nodes, and are jointly supported by a hardware partner and Microsoft.

F: The Language Understanding (LUIS) container loads your trained or published Language Understanding model, also known as a LUIS app, into a docker container and provides access to the query predictions from the container's API endpoints.

Use the docker pull command to download a container image from the mcr.microsoft.com/azure-cognitive-services/luis repository:

```
docker pull mcr.microsoft.com/azure-cognitive-services/luis:latest
```

G: You can test using the endpoint with a maximum of two versions of your app. With your main or live version of your app set as the production endpoint, add a second version to the staging endpoint.

Reference:

<https://docs.microsoft.com/en-us/azure-stack/asdk/asdk-what-is>

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/luis-container-howto>

<https://docs.microsoft.com/en-us/azure/cognitive-services/luis/luis-concept-test>

Integrate AI models into solutions

Question Set 1

QUESTION 1

You need to configure versioning and logging for Azure Machine Learning models.

Which Machine Learning service application should you use?

- A. Models
- B. Activities
- C. Experiments
- D. Pipelines
- E. Deployments

Correct Answer: E

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-logging#logging-for-deployed-models>

QUESTION 2

DRAG DROP

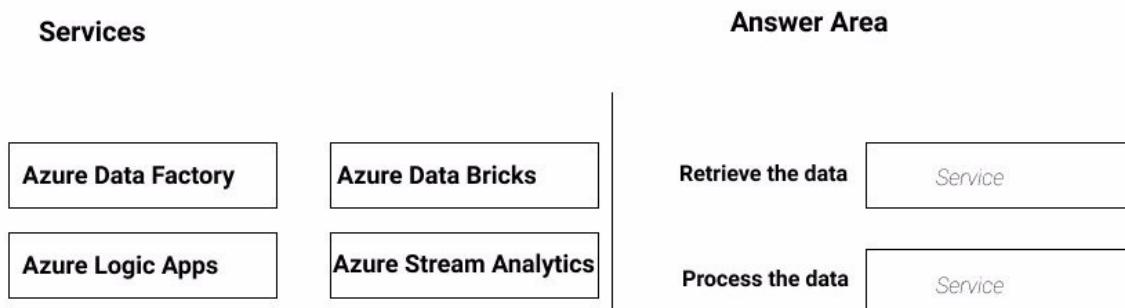
You need to design the workflow for an Azure Machine Learning solution. The solution must meet the following requirements:

- Retrieve data from file shares, Microsoft SQL Server databases, and Oracle databases that are in an on-premises network.
- Use an Apache Spark job to process data stored in an Azure SQL Data Warehouse database.

Which service should you use to meet each requirement? To answer, drag the appropriate services to the correct requirements. Each service 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.

Select and Place:



Correct Answer:

Services

Azure Data Factory

Azure Logic Apps

Azure Data Bricks

Azure Stream Analytics

Answer Area

Retrieve the data

Azure Data Factory

Process the data

Azure Data Bricks

Section: (none)**Explanation****Explanation/Reference:**

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio/use-data-from-an-on-premises-sql-server><https://docs.microsoft.com/en-in/azure/azure-databricks/what-is-azure-databricks>**QUESTION 3**

DRAG DROP

You need to build a pipeline for an Azure Machine Learning experiment.

In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:**Actions****Answer Area**

Score the model.

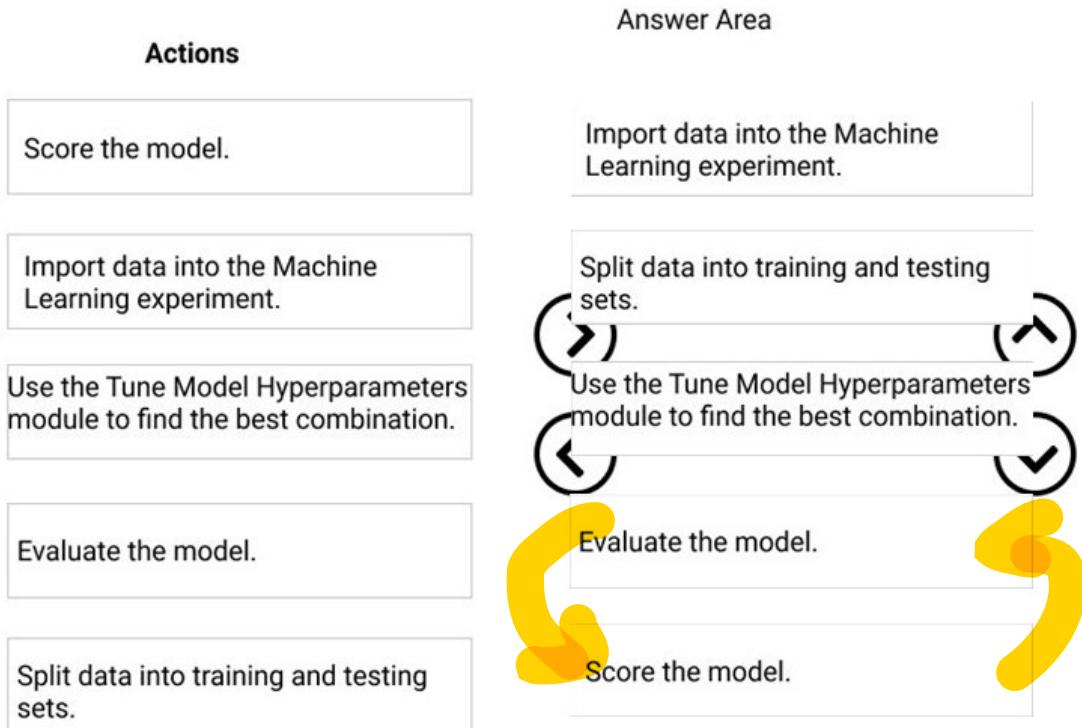
Import data into the Machine Learning experiment.

Use the Tune Model Hyperparameters module to find the best combination.

Evaluate the model.

Split data into training and testing sets.

**Correct Answer:**



Section: (none)

Explanation

Explanation/Reference:

References:

<https://azure.microsoft.com/en-in/blog/experimentation-using-azure-machine-learning/>

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

QUESTION 4

You have an app that records meetings by using speech-to-text capabilities from the Speech Services API.

You discover that when action items are listed at the end of each meeting, the app transcribes the text inaccurately.

You need to improve the accuracy of the meeting records.

What should you do?

- A. Add a phrase list
- B. Create a custom wake word
- C. Parse the text by using the Language Understanding (LUIS) API
- D. Train a custom model by using Custom Translator

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Speech Services API with subscription to the Microsoft Text Translation API enables you to use Custom Translator to use your own data for more accurate translations.

References:

<https://www.microsoft.com/en-us/translator/business/customization/>

QUESTION 5

DRAG DROP

You have a real-time scoring pattern that uses deep learning models in Azure.

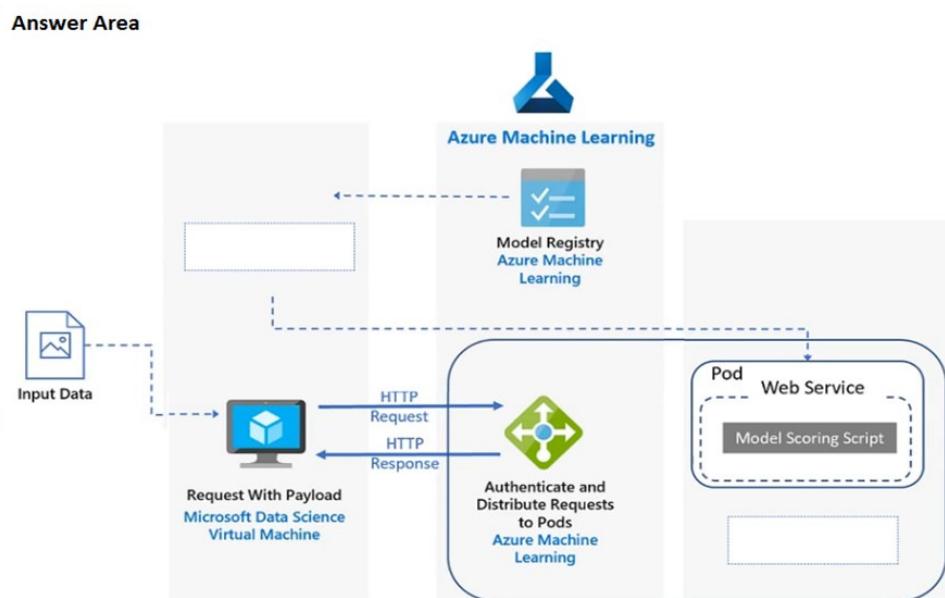
You need to complete the scoring pattern.

What should you use? To answer, drag the appropriate Azure services to the correct locations in the scoring pattern. Each service 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.

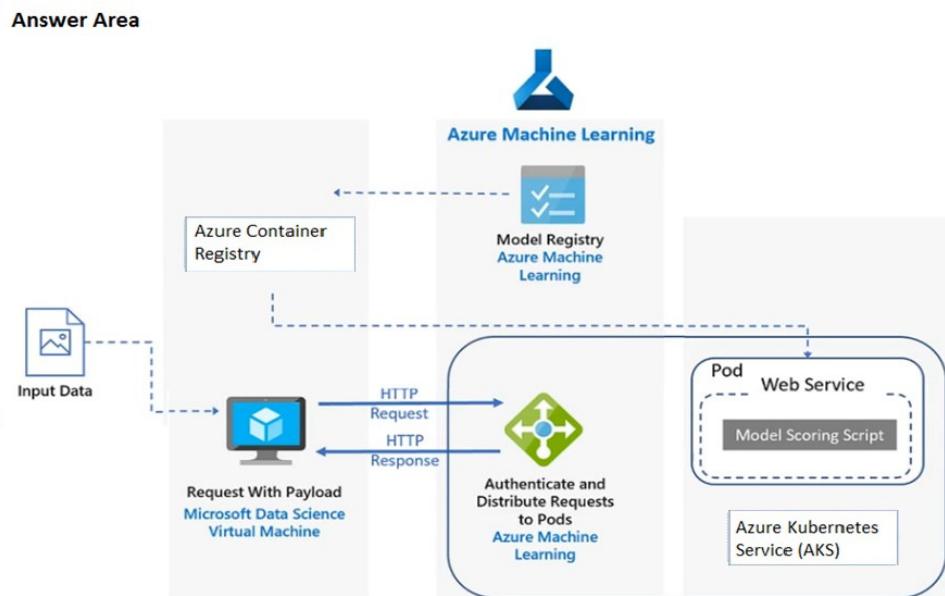
Select and Place:

- Azure Container Registry
- Azure Kubernetes Service (AKS)
- Azure Container Instances
- Azure Machine Learning Studio



Correct Answer:

- Azure Container Registry
- Azure Kubernetes Service (AKS)
- Azure Container Instances
- Azure Machine Learning Studio



Section: (none)
Explanation

Explanation/Reference:

Explanation:

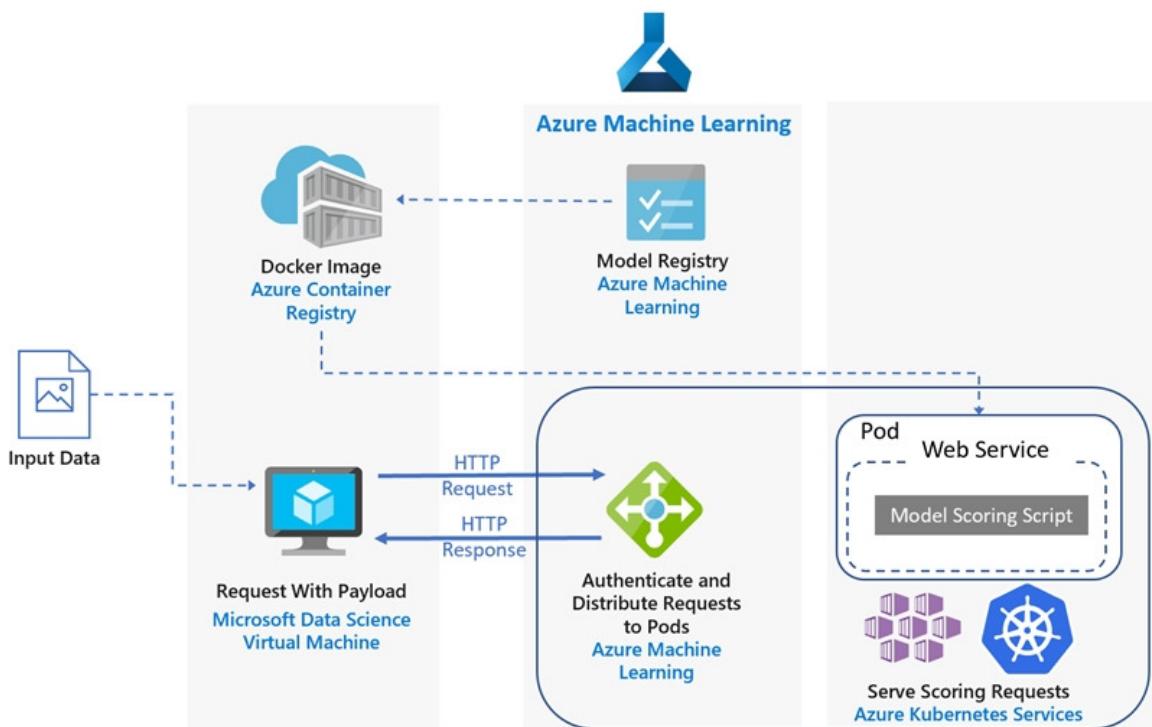
Box 1: Azure Container Registry

Azure Container Registry enables storage of images for all types of Docker container deployments including DC/OS, Docker Swarm and Kubernetes. The scoring images are deployed as containers on Azure Kubernetes Service and used to run the scoring script. The image used here is created by Machine Learning from the trained model and scoring script, and then is pushed to the Azure Container Registry.

Box 2: Azure Kubernetes Services

Azure Kubernetes Service (AKS) is used to deploy the application on a Kubernetes cluster. AKS simplifies the deployment and operations of Kubernetes. The cluster can be configured using CPU-only VMs for regular Python models or GPU-enabled VMs for deep learning models.

This reference architecture shows how to deploy Python models as web services to make real-time predictions using the Azure Machine Learning.



References:

<https://docs.microsoft.com/sv-se/azure/architecture/reference-architectures/ai/realtime-scoring-python>

QUESTION 6

DRAG DROP

You plan to use the Microsoft Bot Framework to develop bots that will be deployed by using the Azure Bot Service.

You need to configure the Azure Bot Service to support the following types of bots:

- Bots that use Azure Functions
- Bots that set a timer-based

Which template should you use for each bot type? To answer drag the appropriate templates to the correct bot type. Each template 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.

Select and Place:

Answer Area	
Templates	
Basic	Bots that use Azure Functions: <i>Template</i>
Form	Bots that set a timer: <i>Template</i>
Language Understanding	
Proactive	
Question and Answer	

Correct Answer:

Answer Area	
Templates	
Basic	Bots that use Azure Functions: Proactive
Form	Bots that set a timer: Proactive
Language Understanding	
Proactive	
Question and Answer	

Section: (none)
Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-service-concept-templates?view=azure-bot-service-3.0>

QUESTION 7

You have Azure IoT Edge devices that collect measurements every 30 seconds.

You plan to send the measurements to an Azure IoT hub.

You need to ensure that every event is processed as quickly as possible.

What should you use?

- A. Apache Kafka
- B. Azure Stream Analytics record functions
- C. Azure Stream Analytics windowing functions
- D. Azure Machine Learning on the IoT Edge devices

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Use Azure Notebooks to develop a machine learning module and deploy it to a Linux device running Azure IoT Edge.

You can use IoT Edge modules to deploy code that implements your business logic directly to your IoT Edge devices.

References:

<https://docs.microsoft.com/en-us/azure/iot-edge/tutorial-deploy-machine-learning>

QUESTION 8

HOTSPOT

You need to build a real-time media bot for Microsoft Skype on an Azure virtual machine. The bot will use the Azure Bot Service. The solution must minimize custom code.

Which environment and language should you use to develop the bot? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Virtual machine environment:

<input type="checkbox"/>
Linux Ubuntu
Red Hat Enterprise Linux (RHEL)
Windows 10
Windows Server

Language:

<input type="checkbox"/>
C#
C++
Node.js
R

Correct Answer:

Answer Area

Virtual machine environment:

Linux Ubuntu
Red Hat Enterprise Linux (RHEL)
Windows 10
Windows Server

Language:

C#
C++
Node.js
R

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/microsoftteams/platform/concepts/calls-and-meetings/requirements-considerations-application-hosted-media-bots>

QUESTION 9

Your company recently purchased several hundred hardware devices that contain sensors.

You need to recommend a solution to process the sensor data. The solution must provide the ability to write back configuration changes to the devices.

What should you include in the recommendation?

- A. Microsoft Azure IoT Hub
- B. API apps in Microsoft Azure App Service
- C. Microsoft Azure Event Hubs
- D. Microsoft Azure Notification Hubs

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://azure.microsoft.com/en-us/resources/samples/functions-js-iot-hub-processing/>

QUESTION 10

You have thousands of images that contain text.

You need to process the text from the images to a machine-readable character stream.

Which Azure Cognitive Services service should you use?

- A. the Image Moderation API

- B. Text Analytics
- C. Translator Text
- D. Computer Vision

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

With Computer Vision you can detect text in an image using optical character recognition (OCR) and extract the recognized words into a machine-readable character stream.

Incorrect Answers:

A: Use Content Moderator's machine-assisted image moderation and human-in-the-loop Review tool to moderate images for adult and racy content. Scan images for text content and extract that text, and detect faces. You can match images against custom lists, and take further action.

Reference:

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

<https://docs.microsoft.com/en-us/azure/cognitive-services/content-moderator/image-moderation-api>

QUESTION 11

You have Azure IoT Edge devices that collect measurements every 30 seconds.

You plan to send the measurements to an Azure IoT hub.

You need to process events in the cloud and account for missing data.

What should you use?

- A. Apache Kafka
- B. Azure Stream Analytics record functions
- C. Azure Stream Analytics windowing functions
- D. Azure Machine Learning on the IoT Edge devices

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Use Azure Notebooks to develop a machine learning module and deploy it to a Linux device running Azure IoT Edge.

You can use IoT Edge modules to deploy code that implements your business logic directly to your IoT Edge devices.

Use Clean Missing Data module in Azure Machine Learning to remove, replace, or infer missing values.

Reference:

<https://docs.microsoft.com/en-us/azure/iot-edge/tutorial-deploy-machine-learning>

QUESTION 12

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

You are deploying an Azure Machine Learning model to an Azure Kubernetes Service (AKS) container.

You need to monitor the scoring accuracy of each run of the model.

Solution: You modify the Config.json file.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead update the manifest file.

Reference:

https://azure.github.io/learnAnalytics-UsingAzureMachineLearningforAIWorkloads/lab07-deploying-a-scoring-service-to-aks/0_README.html

QUESTION 13

You need to build an API pipeline that analyzes streaming data. The pipeline will perform the following:

- Visual text recognition
- Audio transcription
- Sentiment analysis
- Face detection

Which Azure Cognitive Services should you use in the pipeline?

- A. Custom Speech Service
- B. Face API
- C. Text Analytics
- D. Video Indexer

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Video Indexer is a cloud application built on Azure Media Analytics, Azure Search, Cognitive Services (such as the Face API, Microsoft Translator, the Computer Vision API, and Custom Speech Service). It enables you to extract the insights from your videos using Video Indexer video and audio models described below:

- Visual text recognition (OCR): Extracts text that is visually displayed in the video.
- Audio transcription: Converts speech to text in 12 languages and allows extensions.
- Sentiment analysis: Identifies positive, negative, and neutral sentiments from speech and visual text.
- Face detection: Detects and groups faces appearing in the video.

References:

<https://docs.microsoft.com/en-us/azure/media-services/video-indexer/video-indexer-overview>

QUESTION 14

You design an AI solution that uses an Azure Stream Analytics job to process data from an Azure IoT hub. The IoT hub receives time series data from thousands of IoT devices at a factory.

The job outputs millions of messages per second. Different applications consume the messages as they are available. The messages must be purged.

You need to choose an output type for the job.

What is the best output type to achieve the goal? More than one answer choice may achieve the goal.

- A. Azure Event Hubs
- B. Azure SQL Database
- C. Azure Blob storage
- D. Azure Cosmos DB

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Stream Analytics can target Azure Cosmos DB for JSON output, enabling data archiving and low-latency queries on unstructured JSON data.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-documentdb-output>

QUESTION 15

HOTSPOT

You are designing an AI solution that must meet the following processing requirements:

- Use a parallel processing framework that supports the in-memory processing of high volumes of data.
- Use in-memory caching and a columnar storage engine for Apache Hive queries.

What should you use to meet each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Use a parallel processing framework that supports the in-memory processing of high volumes of data:

Apache Kafka
Apache Spark
Hive
Microsoft Machine
Learning Server

Use in-memory caching and a columnar storage engine for Hive queries:

Apache Kafka
Apache Spark
Interactive Query
Microsoft Machine
Learning Server

Correct Answer:

Answer Area

Use a parallel processing framework that supports the in-memory processing of high volumes of data:

Apache Kafka
Apache Spark
Hive
Microsoft Machine
Learning Server

Use in-memory caching and a columnar storage engine for Hive queries:

Apache Kafka
Apache Spark
Interactive Query
Microsoft Machine
Learning Server

Section: (none)**Explanation****Explanation/Reference:**

Explanation:

Box 1: Apache Spark

Apache Spark is a parallel processing framework that supports in-memory processing to boost the performance of big-data analytic applications. Apache Spark in Azure HDInsight is the Microsoft implementation of Apache Spark in the cloud.

Box 2: Interactive Query

Interactive Query provides In-memory caching and improved columnar storage engine for Hive queries.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/spark/apache-spark-overview>

<https://docs.microsoft.com/bs-latn-ba/azure/hdinsight/interactive-query/apache-interactive-query-get-started>

QUESTION 16

You need to deploy cognitive search.

You provision an Azure Search service.

What should you do next?

- A. Search by using the .NET SDK.
- B. Load data.
- C. Search by using the REST API.
- D. Create an index.

Correct Answer: D**Section: (none)****Explanation****Explanation/Reference:**

Explanation:

You create a data source, a skillset, and an index. These three components become part of an indexer that pulls each piece together into a single multi-phased operation.

Note: At the start of the pipeline, you have unstructured text or non-text content (such as image and scanned document JPEG files). Data must exist in an Azure data storage service that can be accessed by an indexer. Indexers can "crack" source documents to extract text from source data.

References:

<https://docs.microsoft.com/en-us/azure/search/cognitive-search-tutorial-blob>

QUESTION 17

You need to design an application that will analyze real-time data from financial feeds.

The data will be ingested into Azure IoT Hub. The data must be processed as quickly as possible in the order in which it is ingested.

Which service should you include in the design?

- A. Azure Data Factory
- B. Azure Queue storage
- C. Azure Stream Analytics
- D. Azure Notification Hubs
- E. Apache Kafka
- F. Azure Event Hubs

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Stream processing can be handled by Azure Stream Analytics. Azure Stream Analytics can run perpetual queries against an unbounded stream of data. These queries consume streams of data from storage or message brokers, filter and aggregate the data based on temporal windows, and write the results to sinks such as storage, databases, or directly to reports in Power BI. Stream Analytics uses a SQL-based query language that supports temporal and geospatial constructs, and can be extended using JavaScript.

Incorrect Answers:

E: Apache Kafka is used for ingestion, not for stream processing.

F: Azure Event Hubs is used for ingestion, not for stream processing.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/big-data/real-time-processing>

QUESTION 18

You are designing an AI solution that will provide feedback to teachers who train students over the Internet. The students will be in classrooms located in remote areas. The solution will capture video and audio data of the students in the classrooms.

You need to recommend Azure Cognitive Services for the AI solution to meet the following requirements:

- Alert teachers if a student seems angry or distracted.
- Identify each student in the classrooms for attendance purposes.
- Allow the teachers to log the text of conversations between themselves and the students.

Which Cognitive Services should you recommend?

- A. Computer Vision, Text Analytics, and Face API
- B. Video Indexer, Face API, and Text Analytics
- C. Computer Vision, Speech to Text, and Text Analytics
- D. Text Analytics, QnA Maker, and Computer Vision

E. Video Indexer, Speech to Text, and Face API

Correct Answer: E

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Video Indexer is a cloud application built on Azure Media Analytics, Azure Search, Cognitive Services (such as the Face API, Microsoft Translator, the Computer Vision API, and Custom Speech Service). It enables you to extract the insights from your videos using Video Indexer video and audio models.

Face API enables you to search, identify, and match faces in your private repository of up to 1 million people.

The Face API now integrates emotion recognition, returning the confidence across a set of emotions for each face in the image such as anger, contempt, disgust, fear, happiness, neutral, sadness, and surprise. These emotions are understood to be cross-culturally and universally communicated with particular facial expressions.

Speech-to-text from Azure Speech Services, also known as speech-to-text, enables real-time transcription of audio streams into text that your applications, tools, or devices can consume, display, and take action on as command input. This service is powered by the same recognition technology that Microsoft uses for Cortana and Office products, and works seamlessly with the translation and text-to-speech.

Incorrect Answers:

Computer Vision or the QnA is not required.

References:

<https://docs.microsoft.com/en-us/azure/media-services/video-indexer/video-indexer-overview>

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

<https://docs.microsoft.com/en-us/azure/cognitive-services/speech-service/speech-to-text>

QUESTION 19

You create an Azure Cognitive Services resource.

A developer needs to be able to retrieve the keys used by the resource. The solution must use the principle of least privilege.

What is the best role to assign to the developer? More than one answer choice may achieve the goal.

- A. Security Manager
- B. Security Reader
- C. Cognitive Services Contributor
- D. Cognitive Services User

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The Cognitive Services User lets you read and list keys of Cognitive Services.

References:

<https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles>

QUESTION 20

Your company plans to deploy an AI solution that processes IoT data in real-time.

You need to recommend a solution for the planned deployment that meets the following requirements:

- Sustain up to 50 Mbps of events without throttling.
- Retain data for 60 days.

What should you recommend?

- A. Apache Kafka
- B. Microsoft Azure IoT Hub
- C. Microsoft Azure Data Factory
- D. Microsoft Azure Machine Learning

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Apache Kafka is an open-source distributed streaming platform that can be used to build real-time streaming data pipelines and applications.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/kafka/apache-kafka-introduction>

QUESTION 21

You are designing a solution that will use the Azure Content Moderator service to moderate user-generated content.

You need to moderate custom predefined content without repeatedly scanning the collected content.

Which two APIs should you use? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.)

- A. Term List API
- B. Text Moderation API
- C. Image Moderation API
- D. Workflow API

Correct Answer: AC

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The default global list of terms in Azure Content Moderator is sufficient for most content moderation needs. However, you might need to screen for terms that are specific to your organization. For example, you might want to tag competitor names for further review.

Use the List Management API to create custom lists of terms to use with the Text Moderation API. The Text - Screen operation scans your text for profanity, and also compares text against custom and shared blacklists.

C: Use Content Moderator's machine-assisted image moderation and human-in-the-loop Review tool to moderate images for adult and racy content.

Instead of moderating the same image multiple times, you add the offensive images to your custom list of blocked content. That way, your content moderation system compares incoming images against your custom lists and stops any further processing.

Incorrect Answers:

B: Use the Text Moderation API in Azure Content Moderator to scan your text content. The operation scans your content for profanity, and compares the content against custom and shared blacklists.

References:

- <https://docs.microsoft.com/en-us/azure/cognitive-services/content-moderator/try-terms-list-api>
- <https://docs.microsoft.com/en-us/azure/cognitive-services/content-moderator/image-moderation-api>

Integrate AI models into solutions

Testlet 2

Overview

Contoso, Ltd. has an office in New York to serve its North American customers and an office in Paris to serve its European customers.

Existing Environment

Infrastructure

Each office has a small data center that hosts Active Directory services and a few off-the-shelf software solutions used by internal users.

The network contains a single Active Directory forest that contains a single domain named contoso.com. Azure Active Directory (Azure AD) Connect is used to extend identity management to Azure.

The company has an Azure subscription. Each office has an Azure ExpressRoute connection to the subscription. The New York office connects to a virtual network hosted in the US East 2 Azure region. The Paris office connects to a virtual network hosted in the West Europe Azure region.

The New York office has an Azure Stack Development Kit (ASDK) deployment that is used for development and testing.

Current Business Model

Contoso has a web app named Bookings hosted in an App Service Environment (ASE). The ASE is in the virtual network in the East US 2 region. Contoso employees and customers use Bookings to reserve hotel rooms.

Data Environment

Bookings connects to a Microsoft SQL Server database named hotelDB in the New York office. The database has a view named vwAvailability that consolidates columns from the tables named Hotels, Rooms, and RoomAvailability. The database contains data that was collected during the last 20 years.

Problem Statements

Contoso identifies the following issues with its current business model:

- European users report that access to Booking is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Requirements

Contoso identifies the following issues with its current business model:

- European users report that access to Bookings is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Business Goals

Contoso wants to provide a new version of the Bookings app that will provide a highly available, reliable service for booking travel packages by interacting with a chatbot named Butler.

Contoso plans to move all production workloads to the cloud.

Technical requirements

Contoso identifies the following technical requirements:

- Data scientists must test Butler by using ASDK.
- Whenever possible, solutions must minimize costs.
- Butler must greet users by name when they first connect.
- Butler must be able to handle up to 10,000 messages a day.
- Butler must recognize the users' intent based on basic utterances.
- All configurations to the Azure Bot Service must be logged centrally.
- Whenever possible, solutions must use the principle of least privilege.
- Internal users must be able to access Butler by using Microsoft Skype for Business.
- The new Bookings app must provide a user interface where users can interact with Butler.
- Users in an Azure AD group named KeyManagers must be able to manage keys for all Azure Cognitive Services.
- Butler must provide users with the ability to reserve a room, cancel a reservation, and view existing reservations.
- The new Bookings app must be available to users in North America and Europe if a single data center or Azure region fails.
- For continuous improvement, you must be able to test Butler by sending sample utterances and comparing the chatbot's responses to the actual intent.
- You must maintain relationships between data after migration.

QUESTION 1

Which two services should be implemented so that Butler can find available rooms on the technical requirements? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. QnA Maker
- B. Bing Entity Search
- C. Language Understanding (LUIS)
- D. Azure Search
- E. Content Moderator

Correct Answer: AC

Section: (none)

Explanation

Explanation/Reference:

References:

<https://azure.microsoft.com/en-in/services/cognitive-services/language-understanding-intelligent-service/>

QUESTION 2

DRAG DROP

You need to integrate the new Bookings app and the Butler chabot.

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.

Select and Place:

Answer Area

Actions

On the page where you want Butler to be used, paste the embed code of the new Bookings app.



From the Channels settings of Butler, copy the secret key and embed code for the Skype for Business channel.

Exchange the secret for a token by connecting to <https://directline.botframework.com/api/tokens>.

From the Channels settings of Butler, retrieve the secret key and embed code for the Web Chat channel.

Replace s=YOUR_SECRET_HERE with t= followed by the token.

Exchange the secret for a token by connecting to <https://webchat.botframework.com/api/tokens>.

Correct Answer:

Actions	Answer Area
On the page where you want Butler to be used, paste the embed code of the new Bookings app.	From the Channels settings of Butler, retrieve the secret key and embed code for the Web Chat channel.
From the Channels settings of Butler, copy the secret key and embed code for the Skype for Business channel.	On the page where you want Butler to be used, paste the embed code of the new Bookings app
Exchange the secret for a token by connecting to https://directline.botframework.com/api/tokens .	 Exchange the secret for a token by connecting to https://webchat.botframework.com/api/tokens .
From the Channels settings of Butler, retrieve the secret key and embed code for the Web Chat channel.	 Replace s=YOUR_SECRET_HERE with t= followed by the token.
Replace s=YOUR_SECRET_HERE with t= followed by the token.	
Exchange the secret for a token by connecting to https://webchat.botframework.com/api/tokens .	

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-service-channel-connect-webchat?view=azure-bot-service-4.0>

QUESTION 3

You need to meet the greeting requirements for Butler.

Which type of authentication should you use?

- A. AdaptiveCard
- B. SigninCard
- C. CardCarousel
- D. HeroCard

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: Butler must greet users by name when they first connect.

HeroCard defines a card with a large image, title, text, and action buttons.

Incorrect Answers:

B: SigninCard defines a card that lets a user sign in to a service.

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-send-welcome-message>

Deploy and manage solutions

Question Set 1

QUESTION 1

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

You create several AI models in Azure Machine Learning Studio.

You deploy the models to a production environment.

You need to monitor the compute performance of the models.

Solution: You enable Model data collection.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You need to enable Model data collection.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-data-collection>

QUESTION 2

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

You create several AI models in Azure Machine Learning Studio.

You deploy the models to a production environment.

You need to monitor the compute performance of the models.

Solution: You enable AppInsights diagnostics.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:
You need to enable Model data collection.

References:
<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-data-collection>

QUESTION 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, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create several AI models in Azure Machine Learning Studio.

You deploy the models to a production environment.

You need to monitor the compute performance of the models.

Solution: You write a custom scoring script.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You need to enable Model data collection.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-data-collection>

QUESTION 4

Your company has recently purchased and deployed 25,000 IoT devices.

You need to recommend a data analysis solution for the devices that meets the following requirements:

- Each device must use its own credentials for identity.
- Each device must be able to route data to multiple endpoints.
- The solution must require the minimum amount of customized code.

What should you include in the recommendation?

- A. Microsoft Azure Notification Hubs
- B. Microsoft Azure Event Hubs
- C. Microsoft Azure IoT Hub
- D. Microsoft Azure Service Bus

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

An IoT hub has a default built-in endpoint. You can create custom endpoints to route messages to by linking other services in your subscription to the hub.

Individual devices connect using credentials stored in the IoT hub's identity registry.

References:

<https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-devguide-security>

QUESTION 5

You create an Azure Machine Learning Studio experiment.

You plan to publish the experiment as a Machine Learning Web service.

You need to ensure that you can consume the web service from Microsoft Excel spreadsheets.

What should you use?

- A. a Batch Execution Service (BES) and an API key
- B. a Batch Execution Service (BES) and an Azure managed identity
- C. a Request-Response Service (RRS) and an Azure managed identity
- D. a Request-Response Service (RRS) and an API key

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Steps to Add a New web service

1. Deploy a web service or use an existing Web service.
2. Click Consume.
3. Look for the Basic consumption info section. Copy and save the Primary Key and the Request-Response URL.
4. In Excel, go to the Web Services section (if you are in the Predict section, click the back arrow to go to the list of web services).
5. Click Add Web Service.
6. Paste the URL into the Excel add-in text box labeled URL.
7. Paste the API/Primary key into the text box labeled API key.
8. Click Add.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio/excel-add-in-for-web-services>

QUESTION 6

DRAG DROP

You create an image classification model in Azure Machine Learning Studio.

You need to deploy the model as a containerized web service.

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.

Select and Place:

Actions

- Start the container
- Create a container image
- Create an Azure Batch AI account
- Get the http endpoint of the web service
- Register the container image
- Train the model

Answer Area



Correct Answer:

Actions

- Start the container
- Create an Azure Batch AI account

Answer Area

- Train the model
- Create a container image
- Register the container image
- Get the http endpoint of the web service



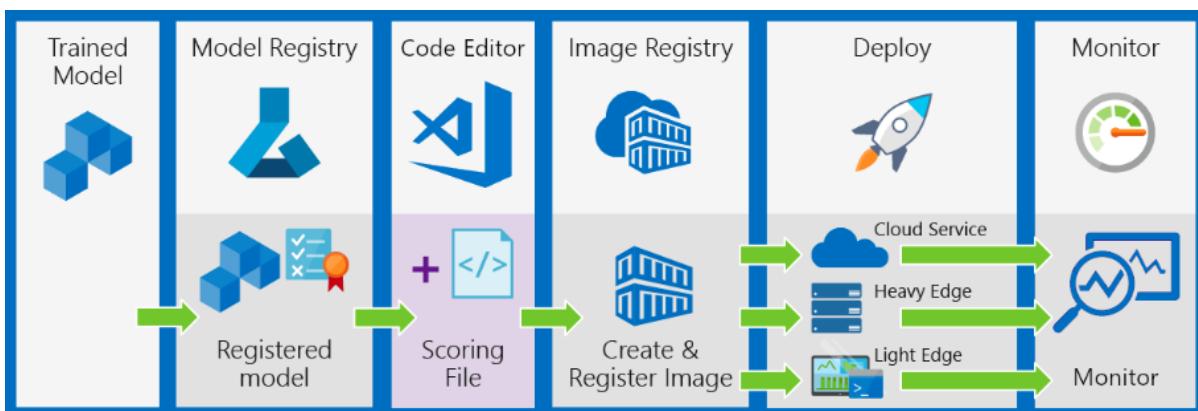
Section: (none)

Explanation

Explanation/Reference:

Explanation:

The following diagram illustrates the complete deployment workflow:



The deployment workflow includes the following steps:

1. Register the model in a registry hosted in your Azure Machine Learning Service workspace
2. Register an image that pairs a model with a scoring script and dependencies in a portable container
3. Deploy the image as a web service in the cloud or to edge devices
4. Monitor and collect data
5. Update a deployment to use a new image.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/concept-model-management-and-deployment#step-3-deploy-image>

QUESTION 7

You are building an Azure Analysis Services cube for your AI deployment.

The source data for the cube is located in an on-premises network in a Microsoft SQL Server database.

You need to ensure that the Azure Analysis Services service can access the source data.

What should you deploy to your Azure subscription?

- A. a site-to-site VPN
- B. a data gateway
- C. Azure Data Factory
- D. a network gateway

Correct Answer: B

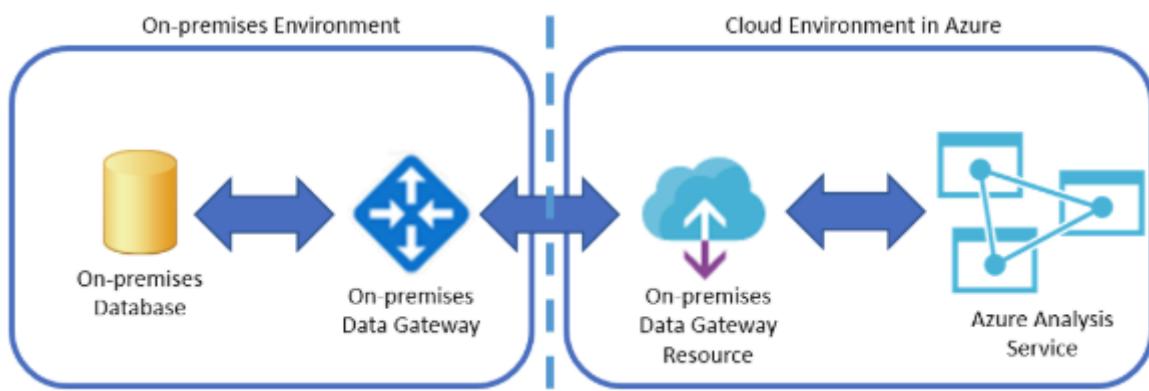
Section: (none)

Explanation

Explanation/Reference:

Explanation:

From April 2017 onward we can use On-premises Data Gateway for Azure Analysis Services. This means you can connect your Tabular Models hosted in Azure Analysis Services to your on-premises data sources through On-premises Data Gateway.



References:

<https://biinsight.com/on-premises-data-gateway-for-azure-analysis-services/>

QUESTION 8

DRAG DROP

You develop a custom application that uses a token to connect to Azure Cognitive Services resources.

A new security policy requires that all access keys are changed every 30 days.

You need to recommend a solution to implement the security policy.

Which three actions should you recommend be performed every 30 days? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions

- Retrieve a token from the Cognitive Services endpoint
- Generate new keys in the Cognitive Services resources
- Generate new keys in Azure Key Vault
- Update the custom application to use the new authorization
- Retrieve a token from the Azure Key Vault endpoint

Answer Area



Correct Answer:

Actions

Generate new keys in Azure Key Vault

Retrieve a token from the Azure Key Vault endpoint

Answer Area

Generate new keys in the Cognitive Services resources

Retrieve a token from the Cognitive Services endpoint

Update the custom application to use the new authorization



Section: (none)

Explanation

Explanation/Reference:

Explanation:

Step 1: Generate new keys in the Cognitive Service resources

A screenshot of the Azure portal showing the "Keys" page for a Cognitive Services resource named "SampleTextAnalyticsWestUS". The page includes a search bar, navigation links for Overview, Activity log, Access control (IAM), Tags, and Diagnose and solve problems; a "Regenerate Key1" and "Regenerate Key2" button; a notice about key regeneration time; and fields for NAME, KEY 1, and KEY 2, each containing a redacted key value.

Home > SampleTextAnalyticsWestUS - Keys

SampleTextAnalyticsWestUS - Keys

Cognitive Services

Search (Ctrl+ /)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Regenerate Key1

Regenerate Key2

Notice: It may take up to 10 minutes for the newly generated keys to become active.

NAME: SampleTextAnalyticsWestUS

KEY 1: [REDACTED]

KEY 2: [REDACTED]

Step 2: Retrieve a token from the Cognitive Services endpoint

Step 3: Update the custom application to use the new authorization

Each request to an Azure Cognitive Service must include an authentication header. This header passes along a subscription key or access token, which is used to validate your subscription for a service or group of services.

References:

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

QUESTION 9

DRAG DROP

You use an Azure key vault to store credentials for several Azure Machine Learning applications.

You need to configure the key vault to meet the following requirements:

- Ensure that the IT security team can add new passwords and periodically change the passwords.
- Ensure that the applications can securely retrieve the passwords for the applications.
- Use the principle of least privilege.

Which permissions should you grant? To answer, drag the appropriate permissions to the correct targets. Each permission 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.

Select and Place:

Actions	Answer Area
Keys: create	IT security team: <input type="text"/>
Keys: get	Applications: <input type="text"/>
Keys: list	
Secrets: all	
Secrets: get	
Secrets: list	

Correct Answer:

Actions

Keys: create

Keys: get

Keys: list

Secrets: list

Answer Area

IT security team: Secrets: all

Applications: Secrets: get

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Incorrect Answers:

Not Keys as they are used for encryption only.

References:

<https://docs.microsoft.com/en-us/azure/key-vault/key-vault-secure-your-key-vault>

QUESTION 10

A data scientist deploys a deep learning model on an Fsv2 virtual machine.

Data analysis is slow.

You need to recommend which virtual machine series the data scientist must use to ensure that data analysis occurs as quickly as possible.

Which series should you recommend?

- A. ND
- B. B
- C. DC
- D. Ev3

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The N-series is a family of Azure Virtual Machines with GPU capabilities. GPUs are ideal for compute and

graphics-intensive workloads, helping customers to fuel innovation through scenarios like high-end remote visualisation, deep learning and predictive analytics.

The ND-series is focused on training and inference scenarios for deep learning. It uses the NVIDIA Tesla P40 GPUs. The latest version - NDv2 - features the NVIDIA Tesla V100 GPUs.

References:

<https://azure.microsoft.com/en-in/pricing/details/virtual-machines/series/>

QUESTION 11

DRAG DROP

You are designing a solution that uses drones to monitor remote locations for anomalies. The drones have Azure IoT Edge devices. The solution must meet the following requirements:

- Email a user the picture and location of an anomaly when an anomaly is detected.
- Use a video stream to detect anomalies at the location.
- Send the pictures and location information to Azure.
- Use the latest amount of code possible.

You develop a custom vision Azure Machine Learning module to detect the anomalies.

Which service should you use for each requirement? To answer, drag the appropriate services to the correct requirements. Each service 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.

Select and Place:

Services	Answer Area
Azure Functions	Use a video stream to detect anomalies at the location:
Azure IoT Hub	Send the pictures and location information to Azure:
Azure IoT Edge	Email a user the picture and location of an anomaly when an anomaly is detected:
Azure Logic Apps	

Correct Answer:

Services

Azure IoT Hub

Answer Area

Use a video stream to detect anomalies at the location:

Azure IoT Edge

Send the pictures and location information to Azure:

Azure Functions

Email a user the picture and location of an anomaly when an anomaly is detected:

Azure Logic Apps

Section: (none)

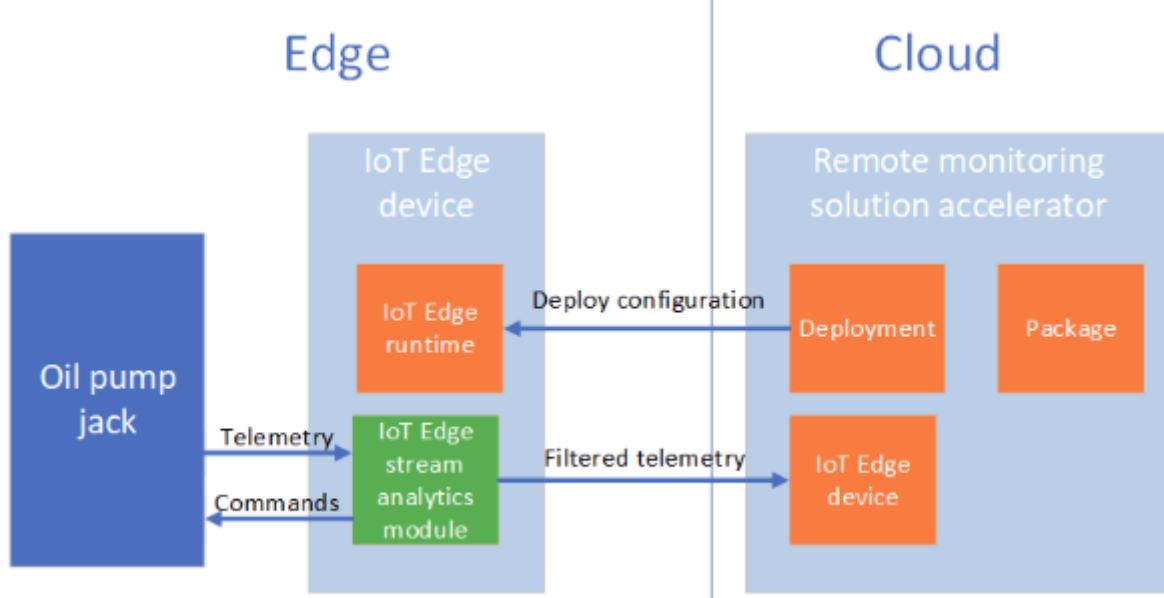
Explanation

Explanation/Reference:

Explanation:

Box 1: Azure IOT Edge

Example:



You configure the Remote Monitoring solution to respond to anomalies detected by an IoT Edge device. IoT Edge devices let you process telemetry at the edge to reduce the volume of telemetry sent to the solution and to enable faster responses to events on devices.

Box 2: Azure Functions

Box 3: Azure Logic Apps

References:

<https://docs.microsoft.com/en-us/azure/iot-accelerators/iot-accelerators-remote-monitoring-edge>

QUESTION 12

You have Azure IoT Edge devices that generate measurement data from temperature sensors. The data changes very slowly.

You need to analyze the data in a temporal two-minute window. If the temperature rises five degrees above a limit, an alert must be raised. The solution must minimize the development of custom code.

What should you use?

- A. A Machine Learning model as a web service
- B. an Azure Machine Learning model as an IoT Edge module
- C. Azure Stream Analytics as an IoT Edge module
- D. Azure Functions as an IoT Edge module

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/iot-edge/tutorial-deploy-stream-analytics>

QUESTION 13

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

You are deploying an Azure Machine Learning model to an Azure Kubernetes Service (AKS) container.

You need to monitor the scoring accuracy of each run of the model.

Solution: You modify the scoring file.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 14

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

You are deploying an Azure Machine Learning model to an Azure Kubernetes Service (AKS) container.

You need to monitor the scoring accuracy of each run of the model.

Solution: You configure Azure Monitor for containers.

Does this meet the goal?

- A. Yes

B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 15

You need to create a new app that will consume resources from the following Azure Cognitive Services APIs:

- Face API
- Bing Search
- Text Analytics
- Translator Text
- Language Understanding (LUIS)

The solution must prepare the development environment as quickly as possible.

What should you create first from the Azure portal?

- A. an Azure Key Vault resource
- B. a Cognitive Services resource
- C. an Azure Kubernetes Service (AKS) resource
- D. Face and Language Understanding (LUIS) resources

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

After creating a Cognitive Service resource in the Azure portal, you'll get an endpoint and a key for authenticating your applications.

Create a new Azure Cognitive Services resource

1. Create a resource.

Multi-service resource

Single-service resource

The multi-service resource is named **Cognitive Services** in the portal. [Create a Cognitive Services resource.](#)

At this time, the multi-service resource enables access to the following Cognitive Services:

Computer Vision	Content Moderator	Face	Language Understanding (LUIS)	Text Analytics
Translator Text	Bing Search v7 (Web, Image, News, Video, Visual)	Bing Custom Search	Bing Entity Search	Bing Autosuggest
Bing Spell Check				

References:

<https://docs.microsoft.com/en-us/azure/cognitive-services/cognitive-services-apis-create-account>

QUESTION 16

The development team at your company builds a bot by using C# and .NET.

You need to deploy the bot to Azure.

Which tool should you use?

- A. the .NET Core CLI
- B. the Azure CLI
- C. the Git CLI
- D. the AzCopy toll

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The deployment process documented here uses one of the ARM templates to provision required resources for the bot in Azure by using the Azure CLI.

Note: When you create a bot using the Visual Studio template, Yeoman template, or Cookiecutter template the source code generated includes a deploymentTemplates folder that contains ARM templates.

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-deploy-az-cli>

QUESTION 17

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

You are deploying an Azure Machine Learning model to an Azure Kubernetes Service (AKS) container.

You need to monitor the scoring accuracy of each run of the model.

Solution: You configure Azure Application Insights.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-data-collection>

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-app-insights>

QUESTION 18

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

You create several API models in Azure Machine Learning Studio.

You deploy the models to a production environment.

You need to monitor the compute performance of the models.

Solution: You create environment files.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You need to enable Model data collection.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-data-collection>

QUESTION 19

You deploy an Azure bot.

You need to collect Key Performance Indicator (KPI) data from the bot. The type of data includes:

- The number of users interacting with the bot
- The number of messages interacting with the bot
- The number of messages on different channels received by the bot
- The number of users and messages continuously interacting with the bot

What should you configure?

- A. Bot analytics
- B. Azure Monitor
- C. Azure Analysis Services
- D. Azure Application Insights

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/bot-service/bot-service-manage-analytics?view=azure-bot-service-4.0>

QUESTION 20

Your company develops an API application that is orchestrated by using Kubernetes.
You need to deploy the application.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Create a Kubernetes cluster.
- B. Create an Azure Container Registry instance.
- C. Create a container image file.
- D. Create a Web App for Containers.
- E. Create an Azure container instance.

Correct Answer: ABC

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/aks/tutorial-kubernetes-prepare-app>

QUESTION 21

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

You have Azure IoT Edge devices that generate streaming data.

On the devices, you need to detect anomalies in the data by using Azure Machine Learning models. Once an anomaly is detected, the devices must add information about the anomaly to the Azure IoT Hub stream.

Solution: You deploy an Azure Machine Learning model as an IoT Edge module.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You can use IoT Edge modules to deploy code that implements your business logic directly to your IoT Edge devices. For example, you can deploy an Azure Machine Learning module that predicts when a device fails based on simulated machine temperature data.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/iot-edge/tutorial-deploy-machine-learning>

QUESTION 22

You plan to deploy a global healthcare app named App1 to Azure.

App1 will use Azure Cognitive Services APIs. Users in Germany, Canada, and the United States will connect to App1.

You need to recommend an app deployment solution to ensure that all the personal data of the users remain in their country or origin only.

Which three Azure services should you recommend deploying to each Azure region? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Azure Key Vault
- B. Azure Traffic Manager
- C. Azure Kubernetes Service (AKS)
- D. App1
- E. the Cognitive Services resources
- F. an Azure Storage resource

Correct Answer: DEF

Section: (none)

Explanation

Explanation/Reference:

References:

[https://github.com/microsoft/computerscience/blob/master/Labs/Azure%20Services/Azure%20Storage/Azure%20Storage%20and%20Cognitive%20Services%20\(MVC\).md](https://github.com/microsoft/computerscience/blob/master/Labs/Azure%20Services/Azure%20Storage/Azure%20Storage%20and%20Cognitive%20Services%20(MVC).md)

QUESTION 23

DRAG DROP

You are designing an AI solution that will use IoT devices to gather data from conference attendees and then analyze the data. The IoT device will connect to an Azure IoT hub.

You need to ensure that data contains no personally identifiable information before it is sent to the IoT hub.

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

Select and Place:

Actions	Answer Area
Create an Azure Stream Analytics Edge job to process data.	
Create a storage container on the device.	
Create an Azure Stream Analytics Cloud job.	
Add the job to the IoT devices in IoT hub.	
Create a storage queue on the device.	

Correct Answer:

Actions	Answer Area
	Create a storage container on the device.
	Create an Azure Stream Analytics Edge job to process data.
Create an Azure Stream Analytics Cloud job.	Add the job to the IoT devices in IoT hub.
Create a storage queue on the device.	

Section: (none)

Explanation

Explanation/Reference:

Note:

ASA Edge jobs run in containers deployed to Azure IoT Edge devices. They are composed of two parts:

1. A cloud part that is responsible for job definition: users define inputs, output, query, and other settings (out of order events, etc.) in the cloud.
2. A module running on your IoT devices. It contains the ASA engine and receives the job definition from the cloud.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-edge>

QUESTION 24

You have an Azure Machine Learning experiment that must comply with GDPR regulations.

You need to track compliance of the experiment and store documentation about the experiment.

What should you use?

- A. Azure Table storage
- B. Azure Security Center
- C. An Azure Log Analytics workspace

D. Compliance Manager

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

References:

<https://azure.microsoft.com/en-us/blog/new-capabilities-to-enable-robust-gdpr-compliance/>

QUESTION 25

You are developing an application that will perform optical character recognition of photos of medical logbooks.

You need to recommend a solution to validate the data against a validated set of records.

Which service should you include in the recommendation?

- A. Azure Data Catalog
- B. Text Analytics
- C. Bing Autosuggest
- D. Master Data Services (MDS) in Microsoft SQL Server

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/sql/master-data-services/validation-master-data-services?view=sql-server-2017>

QUESTION 26

You are designing an AI application that will perform real-time processing by using Microsoft Azure Stream Analytics.

You need to identify the valid outputs of a Stream Analytics job.

What are three possible outputs? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. A Hive table in Azure HDInsight
- B. Azure SQL Database
- C. Azure Cosmos DB
- D. Azure Blob storage
- E. Azure Redis Cache

Correct Answer: BCD

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-define-outputs>

QUESTION 27

Your company has an Azure subscription that contains an Azure Active Directory (Azure AD) tenant.

Azure AD contains 500 user accounts for your company's employees. Some temporary employees do NOT have user accounts in Azure AD.

You are designing a storage solution for video files and metadata files.

You plan to deploy an application to perform analysis of the metadata files.

You need to recommend an authentication solution to provide links to the video files. The solution must provide access to each file for only five minutes.

What should you include in the recommendation?

- A. Secondary Storage Key
- B. Primary Storage Key
- C. Shared Access Signature
- D. Azure Active Directory

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-dotnet-shared-access-signature-part-1>

QUESTION 28

DRAG DROP

You have a container image that contains an AI solution. The solution will be used on demand and will only be needed a few hours each month.

You plan to use Azure Functions to deploy the environment on-demand.

You need to recommend the deployment process. The solution must minimize costs.

Which four actions should you recommend Azure Functions 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.

Select and Place:

Answer Area

Actions

Shut down the virtual machine.

Create an Azure Kubernetes Service (AKS) cluster.

Pull the container image from the registry.

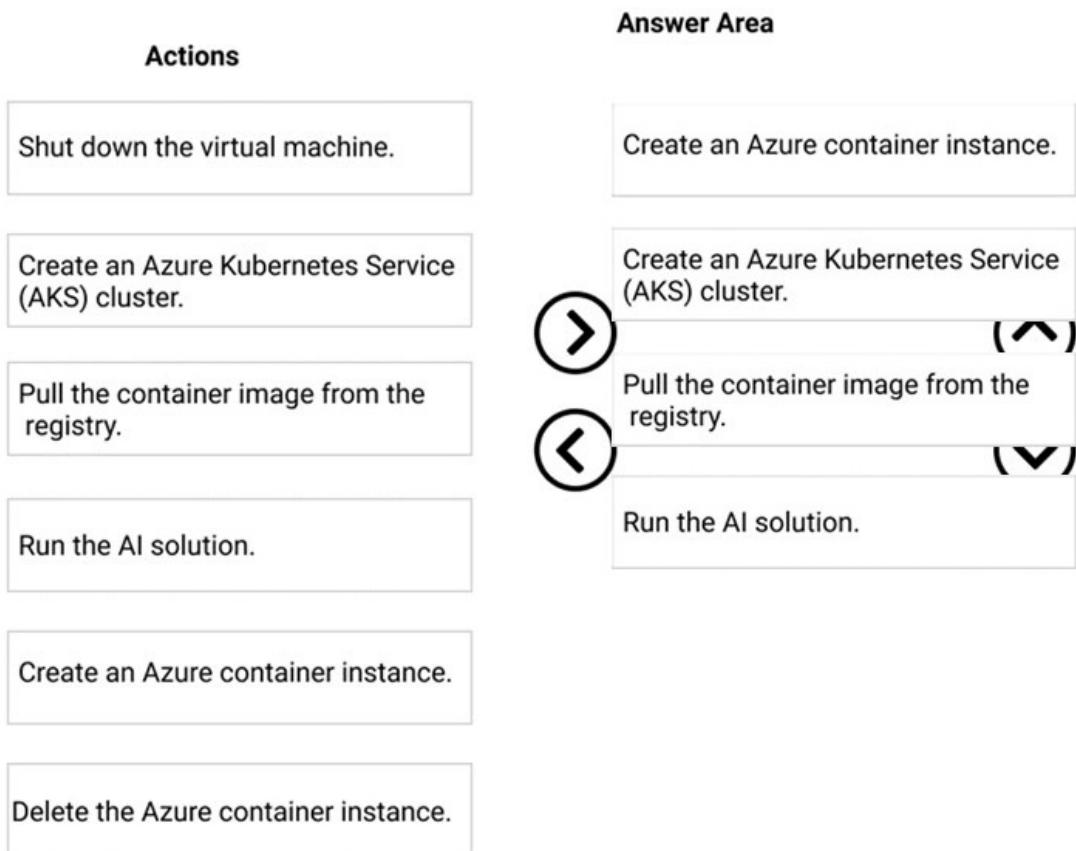
Run the AI solution.

Create an Azure container instance.

Delete the Azure container instance.



Correct Answer:



Section: (none)

Explanation

Explanation/Reference:

QUESTION 29

Your company plans to implement an AI solution that will analyze data from IoT devices. Data from the devices will be analyzed in real time. The results of the analysis will be stored in a SQL database.

You need to recommend a data processing solution that uses the Transact-SQL language.

Which data processing solution should you recommend?

- A. Azure Stream Analytics
- B. SQL Server Integration Services (SSIS)
- C. Azure Event Hubs
- D. Azure Machine Learning

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://www.linkedin.com/pulse/getting-started-azure-iot-services-stream-analytics-rob-tiffany>

QUESTION 30

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

You have Azure IoT Edge devices that generate streaming data.

On the devices, you need to detect anomalies in the data by using Azure Machine Learning models. Once an anomaly is detected, the devices must add information about the anomaly to the Azure IoT Hub stream.

Solution: You deploy Azure Functions as an IoT Edge module.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead use Azure Stream Analytics and REST API.

Note. Available in both the cloud and Azure IoT Edge, Azure Stream Analytics offers built-in machine learning based anomaly detection capabilities that can be used to monitor the two most commonly occurring anomalies: temporary and persistent.

Stream Analytics supports user-defined functions, via REST API, that call out to Azure Machine Learning endpoints.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-machine-learning-anomaly-detection>

QUESTION 31

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

You have Azure IoT Edge devices that generate streaming data.

On the devices, you need to detect anomalies in the data by using Azure Machine Learning models. Once an anomaly is detected, the devices must add information about the anomaly to the Azure IoT Hub stream.

Solution: You deploy Azure Stream Analytics as an IoT Edge module.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Available in both the cloud and Azure IoT Edge, Azure Stream Analytics offers built-in machine learning based anomaly detection capabilities that can be used to monitor the two most commonly occurring anomalies: temporary and persistent.

Stream Analytics supports user-defined functions, via REST API, that call out to Azure Machine Learning endpoints.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-machine-learning-anomaly-detection>

QUESTION 32

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

You have Azure IoT Edge devices that generate streaming data.

On the devices, you need to detect anomalies in the data by using Azure Machine Learning models. Once an anomaly is detected, the devices must add information about the anomaly to the Azure IoT Hub stream.

Solution: You expose a Machine Learning model as an Azure web service.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:**Explanation:**

Instead use Azure Stream Analytics and REST API.

Note. Available in both the cloud and Azure IoT Edge, Azure Stream Analytics offers built-in machine learning based anomaly detection capabilities that can be used to monitor the two most commonly occurring anomalies: temporary and persistent.

Stream Analytics supports user-defined functions, via REST API, that call out to Azure Machine Learning endpoints.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-machine-learning-anomaly-detection>

Deploy and manage solutions

Testlet 2

Overview

Contoso, Ltd. has an office in New York to serve its North American customers and an office in Paris to serve its European customers.

Existing Environment

Infrastructure

Each office has a small data center that hosts Active Directory services and a few off-the-shelf software solutions used by internal users.

The network contains a single Active Directory forest that contains a single domain named contoso.com. Azure Active Directory (Azure AD) Connect is used to extend identity management to Azure.

The company has an Azure subscription. Each office has an Azure ExpressRoute connection to the subscription. The New York office connects to a virtual network hosted in the US East 2 Azure region. The Paris office connects to a virtual network hosted in the West Europe Azure region.

The New York office has an Azure Stack Development Kit (ASDK) deployment that is used for development and testing.

Current Business Model

Contoso has a web app named Bookings hosted in an App Service Environment (ASE). The ASE is in the virtual network in the East US 2 region. Contoso employees and customers use Bookings to reserve hotel rooms.

Data Environment

Bookings connects to a Microsoft SQL Server database named hotelDB in the New York office. The database has a view named vwAvailability that consolidates columns from the tables named Hotels, Rooms, and RoomAvailability. The database contains data that was collected during the last 20 years.

Problem Statements

Contoso identifies the following issues with its current business model:

European users report that access to Bookings is slow, and they lose customers who must wait on the phone while they search for available rooms.

Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Requirements

Contoso identifies the following issues with its current business model:

- European users report that access to Bookings is slow, and they lose customers who must wait on the phone while they search for available rooms.
- Users report that Bookings was unavailable during an outage in the New York data center for more than 24 hours.

Business Goals

Contoso wants to provide a new version of the Bookings app that will provide a highly available, reliable service for booking travel packages by interacting with a chatbot named Butler.

Contoso plans to move all production workloads to the cloud.

Technical requirements

Contoso identifies the following technical requirements:

- Data scientists must test Butler by using ASDK.
- Whenever possible, solutions must minimize costs.
- Butler must greet users by name when they first connect.
- Butler must be able to handle up to 10,000 messages a day.
- Butler must recognize the users' intent based on basic utterances.
- All configurations to the Azure Bot Service must be logged centrally.
- Whenever possible, solutions must use the principle of least privilege.
- Internal users must be able to access Butler by using Microsoft Skype for Business.
- The new Bookings app must provide a user interface where users can interact with Butler.
- Users in an Azure AD group named KeyManagers must be able to manage keys for all Azure Cognitive Services.
- Butler must provide users with the ability to reserve a room, cancel a reservation, and view existing reservations.
- The new Bookings app must be available to users in North America and Europe if a single data center or Azure region fails.
- For continuous improvement, you must be able to test Butler by sending sample utterances and comparing the chatbot's responses to the actual intent.
- You must maintain relationships between data after migration.

QUESTION 1

Which RBAC role should you assign to the KeyManagers group?

- A. Cognitive Services Contributor
- B. Security Manager
- C. Cognitive Services User
- D. Security Administrator

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles>