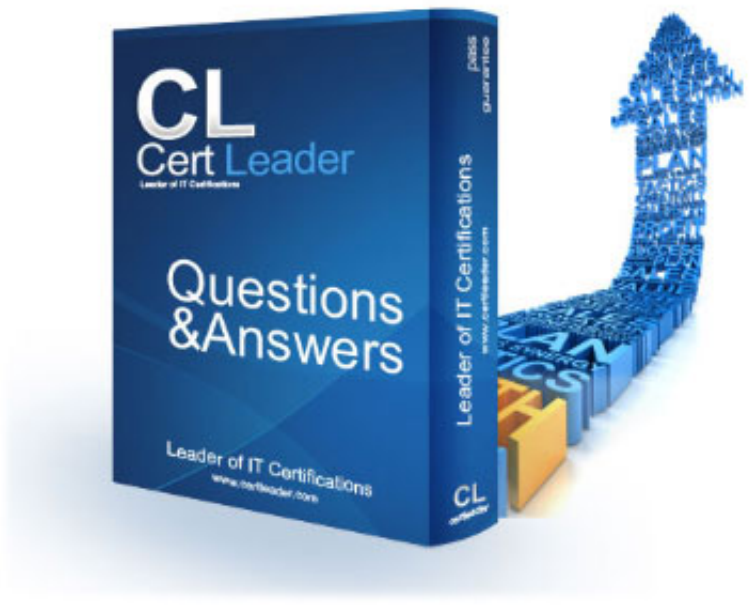
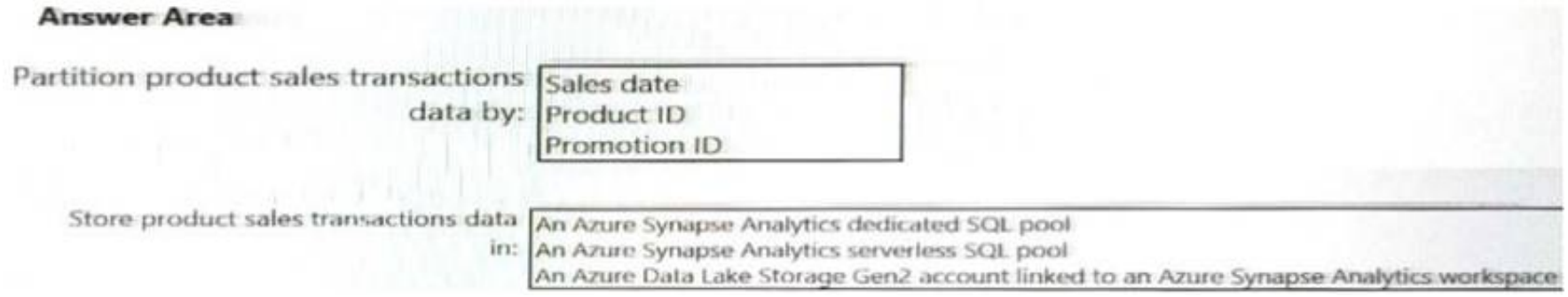
# DP-203 Dumps

# Data Engineering on Microsoft Azure

**https://www.certleader.com/DP-203-dumps.html**



**NEW QUESTION 1**
- (Exam Topic 1)
You need to design the partitions for the product sales transactions. The solution must mee the sales transaction dataset requirements.
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.




A. Mastered
B. Not Mastered

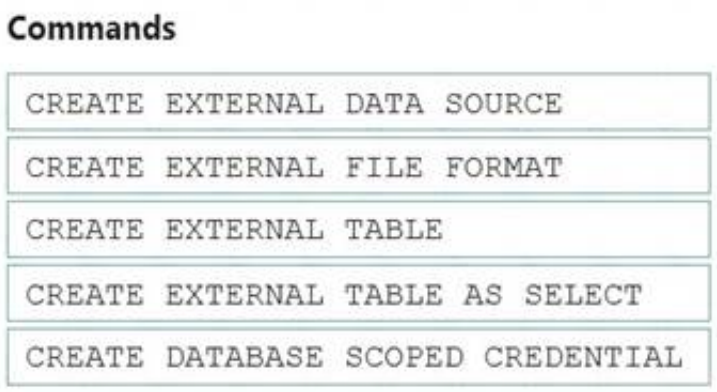
**Answer:** A

**Explanation:**
Box 1: Sales date
Scenario: Contoso requirements for data integration include:
- Partition data that contains sales transaction records. Partitions must be designed to provide efficient loads by month. Boundary values must belong to the partition on the right.

Box 2: An Azure Synapse Analytics Dedicated SQL pool Scenario: Contoso requirements for data integration include:
- Ensure that data storage costs and performance are predictable.

The size of a dedicated SQL pool (formerly SQL DW) is determined by Data Warehousing Units (DWU). Dedicated SQL pool (formerly SQL DW) stores data in relational tables with columnar storage. This format
significantly reduces the data storage costs, and improves query performance.
Synapse analytics dedicated sql pool Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-overview-wha

**NEW QUESTION 2**
- (Exam Topic 1)
You need to ensure that the Twitter feed data can be analyzed in the dedicated SQL pool. The solution must meet the customer sentiment analytics requirements.
Which three Transaction-SQL DDL commands should you run in sequence? To answer, move the appropriate commands from the list of commands 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.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Scenario: Allow Contoso users to use PolyBase in an Azure Synapse Analytics dedicated SQL pool to query the content of the data records that host the Twitter feeds. Data must be protected by using row-level security (RLS). The users must be authenticated by using their own Azure AD credentials.
Box 1: CREATE EXTERNAL DATA SOURCE
External data sources are used to connect to storage accounts. Box 2: CREATE EXTERNAL FILE FORMAT
CREATE EXTERNAL FILE FORMAT creates an external file format object that defines external data stored in Azure Blob Storage or Azure Data Lake Storage. Creating an external file format is a prerequisite for creating an external table.
Box 3: CREATE EXTERNAL TABLE AS SELECT
When used in conjunction with the CREATE TABLE AS SELECT statement, selecting from an external table imports data into a table within the SQL pool. In addition to the COPY statement, external tables are useful for loading data.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables

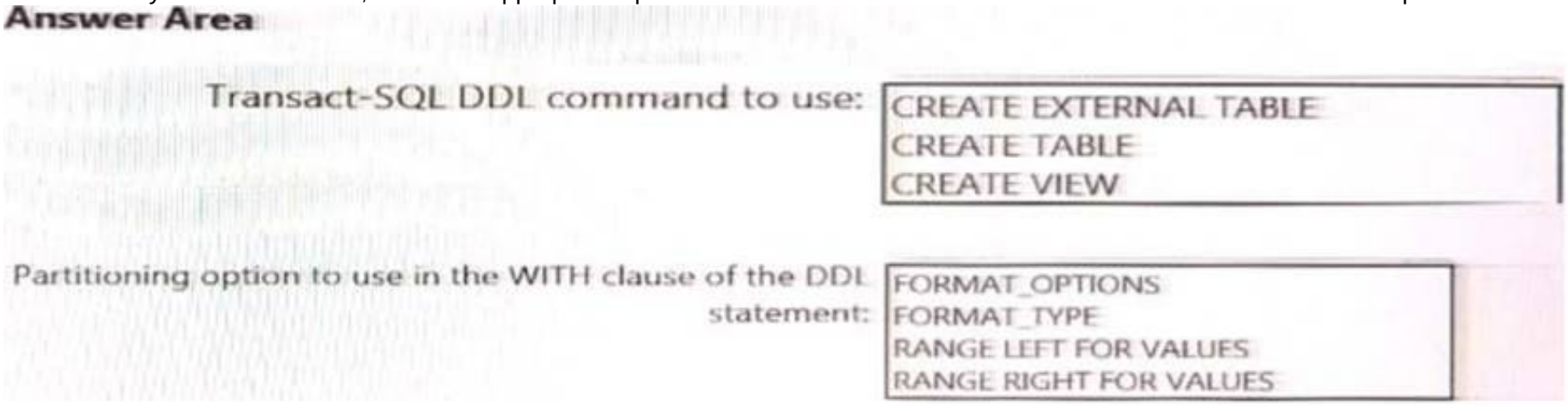
**NEW QUESTION 3**
- (Exam Topic 1)
You need to integrate the on-premises data sources and Azure Synapse Analytics. The solution must meet the data integration requirements.
Which type of integration runtime should you use?

A. Azure-SSIS integration runtime
B. self-hosted integration runtime

C. Azure integration runtime

**Answer:** C

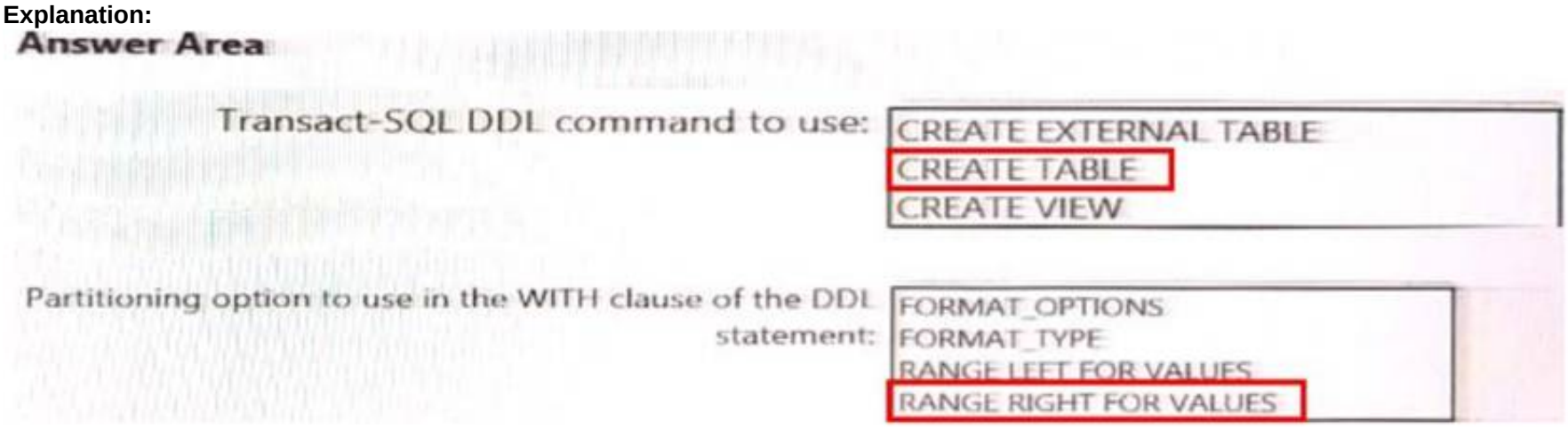
**NEW QUESTION 4**
- (Exam Topic 1)
You need to implement an Azure Synapse Analytics database object for storing the sales transactions data. The solution must meet the sales transaction dataset requirements.
What solution must meet the sales transaction dataset requirements.
What should you do? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**




**NEW QUESTION 5**
- (Exam Topic 3)
You are designing a slowly changing dimension (SCD) for supplier data in an Azure Synapse Analytics dedicated SQL pool.
You plan to keep a record of changes to the available fields. The supplier data contains the following columns.

| Name | Description |
|---|---|
| SupplierSystemID | Unique supplier ID in an enterprise resource planning (ERP) system |
| SupplierName | Name of the supplier company |
| SupplierAddress1 | Address of the supplier company |
| SupplierAddress2 | Second address line of the supplier company |
| SupplierCity | City of the supplier company |
| SupplierStateProvince | State or province of the supplier company |
| SupplierCountry | Country of the supplier company |
| SupplierPostalCode | Postal code of the supplier company |
| SupplierDescription | Free-text description of the supplier company |
| SupplierCategory | Category of goods provided by the supplier company |

Which three additional columns should you add to the data to create a Type 2 SCD? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. surrogate primary key
B. foreign key
C. effective start date

D. effective end date
E. last modified date
F. business key

**Answer:** BCF

**NEW QUESTION 6**
- (Exam Topic 3)
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You plan to create an Azure Databricks workspace that has a tiered structure. The workspace will contain the following three workloads:

- A workload for data engineers who will use Python and SQL.
- A workload for jobs that will run notebooks that use Python, Scala, and SOL.
- A workload that data scientists will use to perform ad hoc analysis in Scala and R.

The enterprise architecture team at your company identifies the following standards for Databricks environments:

- The data engineers must share a cluster.
- The job cluster will be managed by using a request process whereby data scientists and data engineers provide packaged notebooks for deployment to the cluster.
- All the data scientists must be assigned their own cluster that terminates automatically after 120 minutes of inactivity. Currently, there are three data scientists.

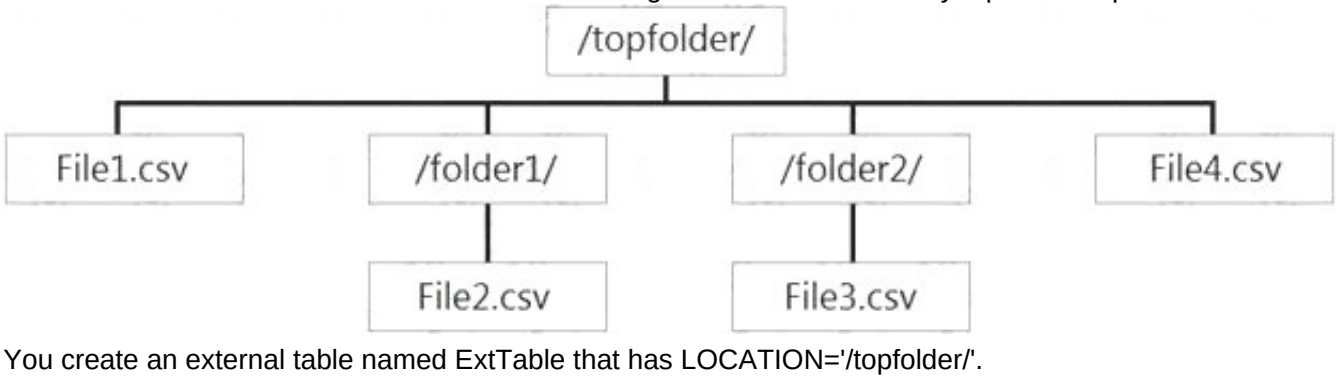
You need to create the Databricks clusters for the workloads.
Solution: You create a High Concurrency cluster for each data scientist, a High Concurrency cluster for the data engineers, and a Standard cluster for the jobs.
Does this meet the goal?

A. Yes
B. No

**Answer:** B

**Explanation:**
Need a High Concurrency cluster for the jobs.
Standard clusters are recommended for a single user. Standard can run workloads developed in any language: Python, R, Scala, and SQL.
A high concurrency cluster is a managed cloud resource. The key benefits of high concurrency clusters are that they provide Apache Spark-native fine-grained sharing for maximum resource utilization and minimum query latencies.
Reference:
https://docs.azuredatabricks.net/clusters/configure.html

**NEW QUESTION 7**
- (Exam Topic 3)
You have files and folders in Azure Data Lake Storage Gen2 for an Azure Synapse workspace as shown in the following exhibit.




You create an external table named ExtTable that has LOCATION='/topfolder/'.
When you query ExtTable by using an Azure Synapse Analytics serverless SQL pool, which files are returned?

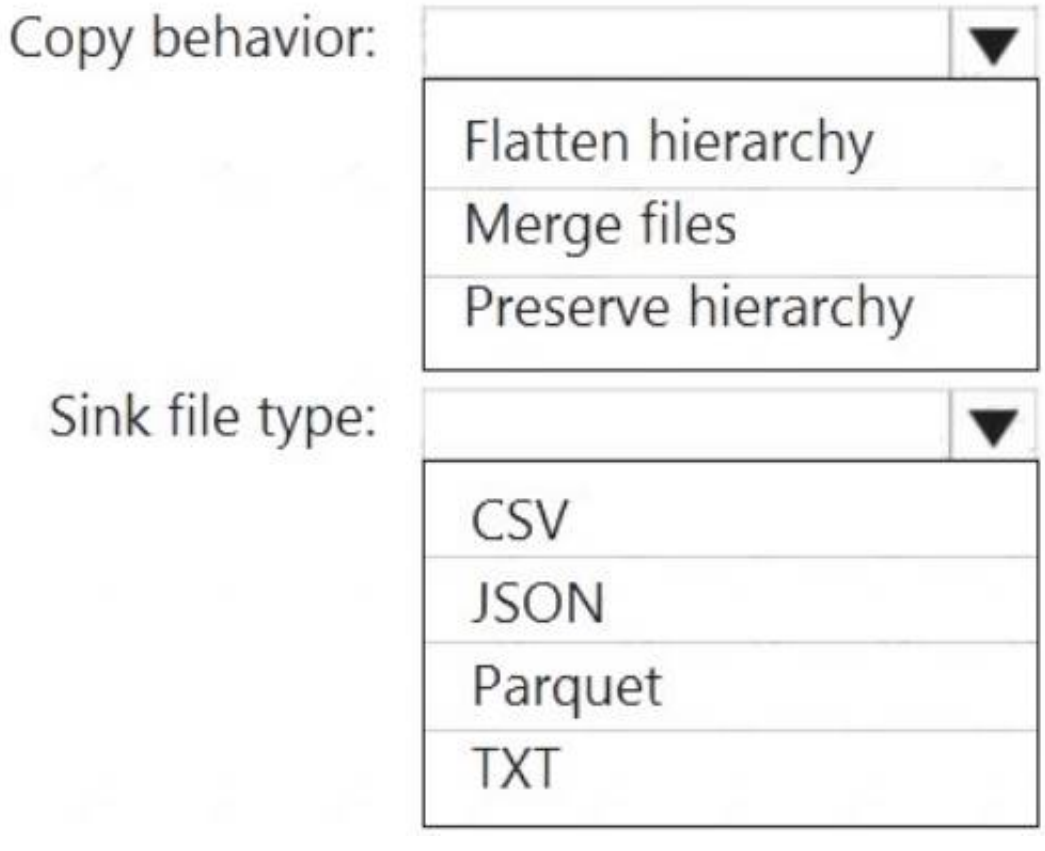
A. File2.csv and File3.csv only
B. File1.csv and File4.csv only
C. File1.csv, File2.csv, File3.csv, and File4.csv
D. File1.csv only

**Answer:** C

**Explanation:**
To run a T-SQL query over a set of files within a folder or set of folders while treating them as a single entity or rowset, provide a path to a folder or a pattern (using wildcards) over a set of files or folders. Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/query-data-storage#query-multiple-files-or-folders

**NEW QUESTION 8**
- (Exam Topic 3)
You use Azure Data Factory to prepare data to be queried by Azure Synapse Analytics serverless SQL pools. Files are initially ingested into an Azure Data Lake Storage Gen2 account as 10 small JSON files. Each file contains the same data attributes and data from a subsidiary of your company.
You need to move the files to a different folder and transform the data to meet the following requirements:
- Provide the fastest possible query times.
- Automatically infer the schema from the underlying files.

How should you configure the Data Factory copy activity? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Box 1: Preserver herarchy
Compared to the flat namespace on Blob storage, the hierarchical namespace greatly improves the performance of directory management operations, which improves overall job performance.
Box 2: Parquet
Azure Data Factory parquet format is supported for Azure Data Lake Storage Gen2. Parquet supports the schema property.
Reference:
https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-introduction https://docs.microsoft.com/en-us/azure/data-factory/format-parquet

**NEW QUESTION 9**
- (Exam Topic 3)
You need to schedule an Azure Data Factory pipeline to execute when a new file arrives in an Azure Data Lake Storage Gen2 container.
Which type of trigger should you use?

A. on-demand
B. tumbling window
C. schedule
D. event

**Answer:** D

**Explanation:**
Event-driven architecture (EDA) is a common data integration pattern that involves production, detection, consumption, and reaction to events. Data integration scenarios often require Data Factory customers to trigger pipelines based on events happening in storage account, such as the arrival or deletion of a file in Azure Blob Storage account.
Reference:
https://docs.microsoft.com/en-us/azure/data-factory/how-to-create-event-trigger

**NEW QUESTION 10**
- (Exam Topic 3)
What should you recommend using to secure sensitive customer contact information?

A. data labels
B. column-level security
C. row-level security
D. Transparent Data Encryption (TDE)

**Answer:** B

**Explanation:**
Scenario: All cloud data must be encrypted at rest and in transit.
Always Encrypted is a feature designed to protect sensitive data stored in specific database columns from access (for example, credit card numbers, national identification numbers, or data on a need to know basis). This includes database administrators or other privileged users who are authorized to access the database to perform management tasks, but have no business need to access the particular data in the encrypted columns. The data is always encrypted, which means the encrypted data is decrypted only for processing by client applications with access to the encryption key.
References:
https://docs.microsoft.com/en-us/azure/sql-database/sql-database-security-overview

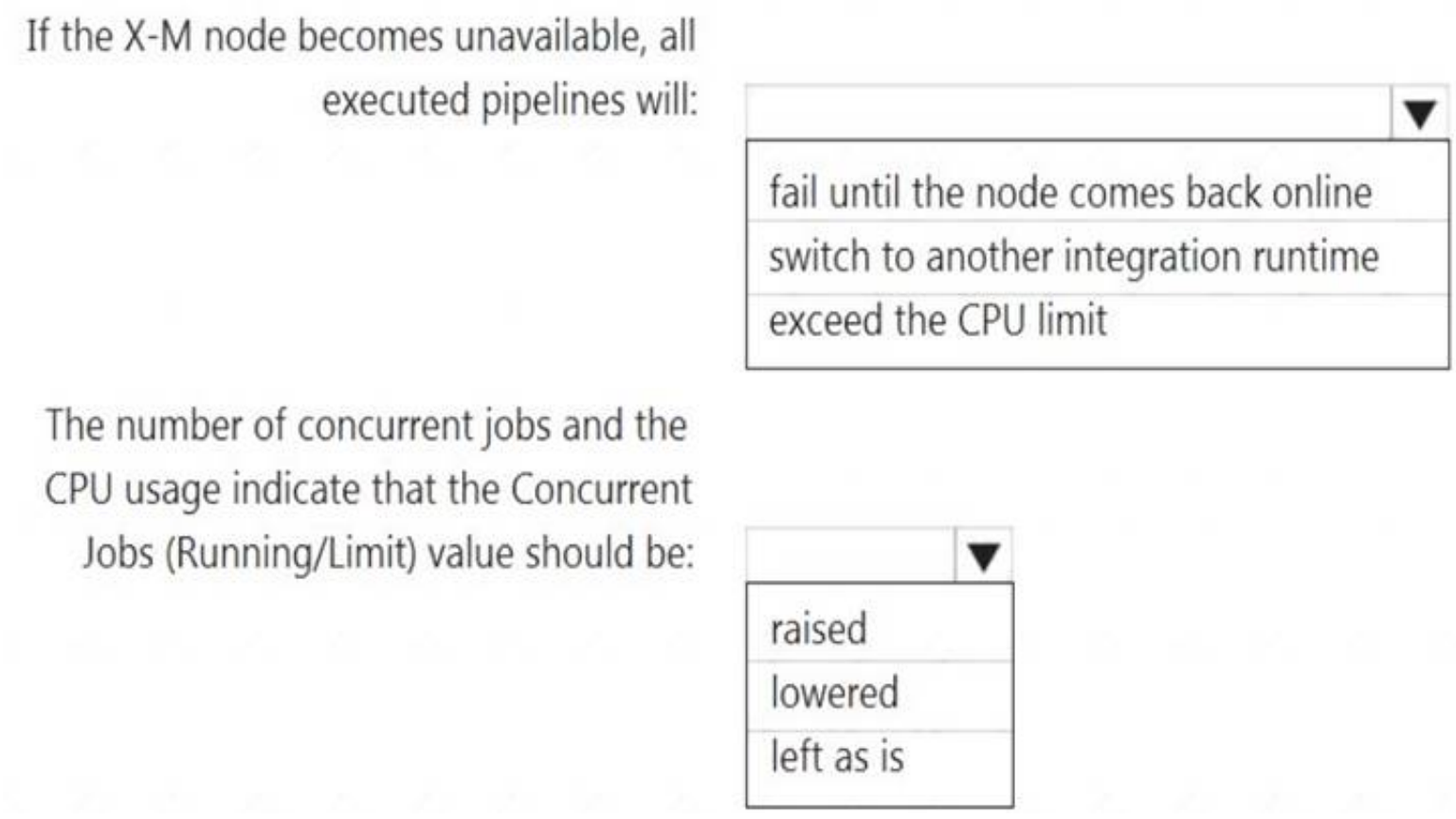
**NEW QUESTION 10**
- (Exam Topic 3)
You have a self-hosted integration runtime in Azure Data Factory.
The current status of the integration runtime has the following configurations:

- Status: Running
- Type: Self-Hosted
- Version: 4.4.7292.1
- Running / Registered Node(s): 1/1
- High Availability Enabled: False
- Linked Count: 0
- Queue Length: 0
- Average Queue Duration. 0.00s

The integration runtime has the following node details:

- Name: X-M
- Status: Running
- Version: 4.4.7292.1
- Available Memory: 7697MB
- CPU Utilization: 6%
- Network (In/Out): 1.21KBps/0.83KBps
- Concurrent Jobs (Running/Limit): 2/14
- Role: Dispatcher/Worker
- Credential Status: In Sync

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




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Box 1: fail until the node comes back online We see: High Availability Enabled: False
Note: Higher availability of the self-hosted integration runtime so that it's no longer the single point of failure in your big data solution or cloud data integration with Data Factory.
Box 2: lowered We see:
Concurrent Jobs (Running/Limit): 2/14 CPU Utilization: 6%
Note: When the processor and available RAM aren't well utilized, but the execution of concurrent jobs reaches a node's limits, scale up by increasing the number of concurrent jobs that a node can run
Reference:
https://docs.microsoft.com/en-us/azure/data-factory/create-self-hosted-integration-runtime

**NEW QUESTION 11**
- (Exam Topic 3)
You are designing a statistical analysis solution that will use custom proprietary1 Python functions on near real-time data from Azure Event Hubs.
You need to recommend which Azure service to use to perform the statistical analysis. The solution must minimize latency.
What should you recommend?

A. Azure Stream Analytics
B. Azure SQL Database
C. Azure Databricks
D. Azure Synapse Analytics

**Answer:** A

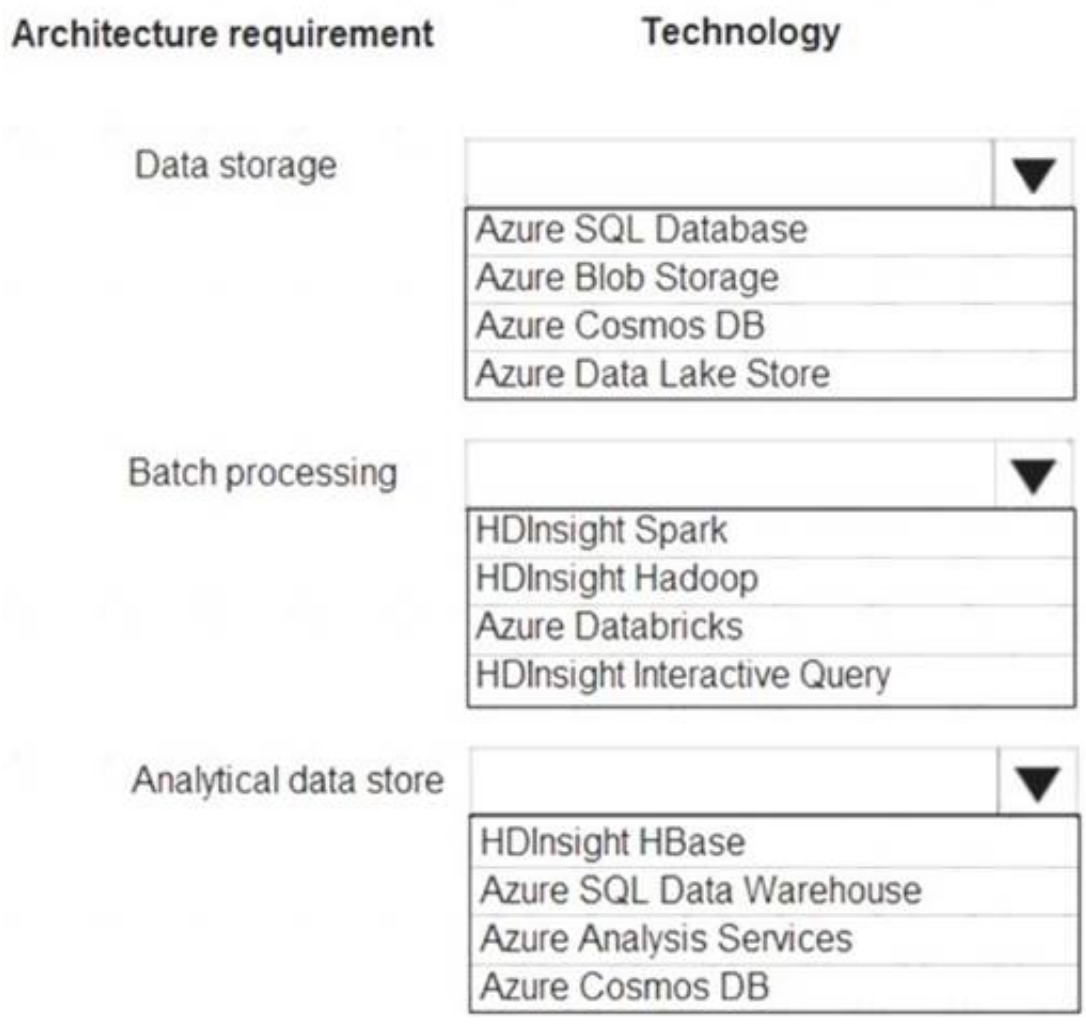
**NEW QUESTION 14**
- (Exam Topic 3)
You have a C# application that process data from an Azure IoT hub and performs complex transformations. You need to replace the application with a real-time solution. The solution must reuse as much code as possible from the existing application.

A. Azure Databricks
B. Azure Event Grid
C. Azure Stream Analytics
D. Azure Data Factory

**Answer:** C

**Explanation:**
Azure Stream Analytics 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. UDF are available in C# for IoT Edge jobs
Azure Stream Analytics on IoT Edge runs within the Azure IoT Edge framework. Once the job is created in Stream Analytics, you can deploy and manage it using IoT Hub.
References:
https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-edge

**NEW QUESTION 16**
- (Exam Topic 3)
You are developing a solution using a Lambda architecture on Microsoft Azure. The data at test layer must meet the following requirements:
Data storage:
•Serve as a repository (or high volumes of large files in various formats.
•Implement optimized storage for big data analytics workloads.
•Ensure that data can be organized using a hierarchical structure. Batch processing:
•Use a managed solution for in-memory computation processing.
•Natively support Scala, Python, and R programming languages.
•Provide the ability to resize and terminate the cluster automatically. Analytical data store:
•Support parallel processing.
•Use columnar storage.
•Support SQL-based languages.
You need to identify the correct technologies to build the Lambda architecture.
Which technologies should you use? To answer, select the appropriate options in the answer area NOTE: Each correct selection is worth one point.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Data storage: Azure Data Lake Store
A key mechanism that allows Azure Data Lake Storage Gen2 to provide file system performance at object storage scale and prices is the addition of a hierarchical namespace. This allows the collection of objects/files within an account to be organized into a hierarchy of directories and nested subdirectories in the same way that the file system on your computer is organized. With the hierarchical namespace enabled, a storage account becomes capable of providing the scalability and cost-effectiveness of object storage, with file system semantics that are familiar to analytics engines and frameworks.
Batch processing: HD Insight Spark

Aparch Spark is an open-source, parallel-processing framework that supports in-memory processing to boost the performance of big-data analysis applications. HDInsight is a managed Hadoop service. Use it deploy and manage Hadoop clusters in Azure. For batch processing, you can use Spark, Hive, Hive LLAP, MapReduce.
Languages: R, Python, Java, Scala, SQL Analytic data store: SQL Data Warehouse
SQL Data Warehouse is a cloud-based Enterprise Data Warehouse (EDW) that uses Massively Parallel Processing (MPP).
SQL Data Warehouse stores data into relational tables with columnar storage. References:
https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-namespace https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/batch-processing https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-overview-what-is

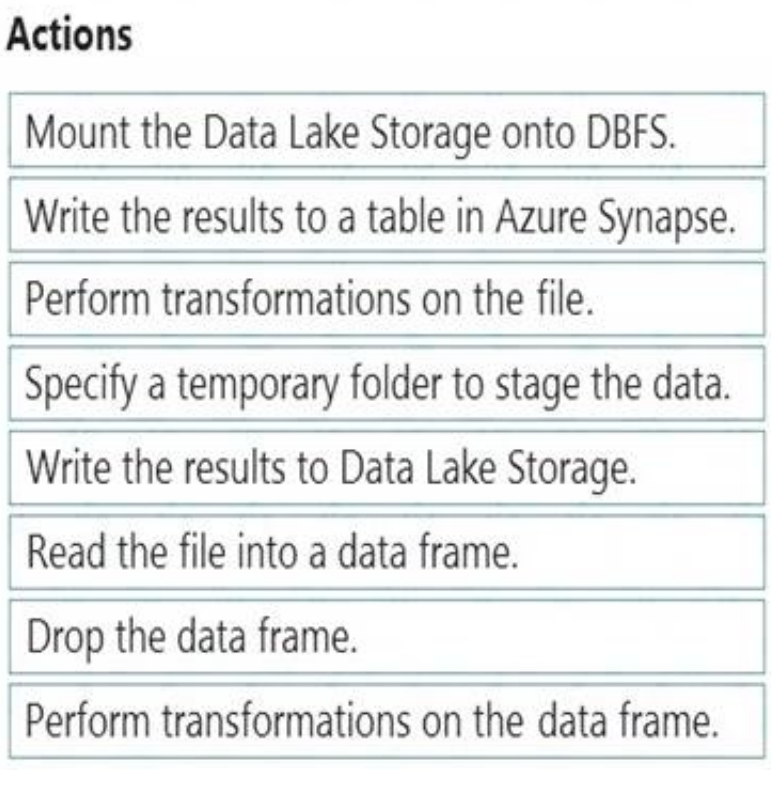
**NEW QUESTION 21**
- (Exam Topic 3)
You are designing an Azure Synapse Analytics dedicated SQL pool.
You need to ensure that you can audit access to Personally Identifiable information (PII). What should you include in the solution?

A. dynamic data masking
B. row-level security (RLS)
C. sensitivity classifications
D. column-level security

**Answer:** D

**NEW QUESTION 22**
- (Exam Topic 3)
You have an Azure Data Lake Storage Gen2 account that contains a JSON file for customers. The file contains two attributes named FirstName and LastName.
You need to copy the data from the JSON file to an Azure Synapse Analytics table by using Azure Databricks. A new column must be created that concatenates the FirstName and LastName values.
You create the following components:
- A destination table in Azure Synapse
- An Azure Blob storage container
- A service principal

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



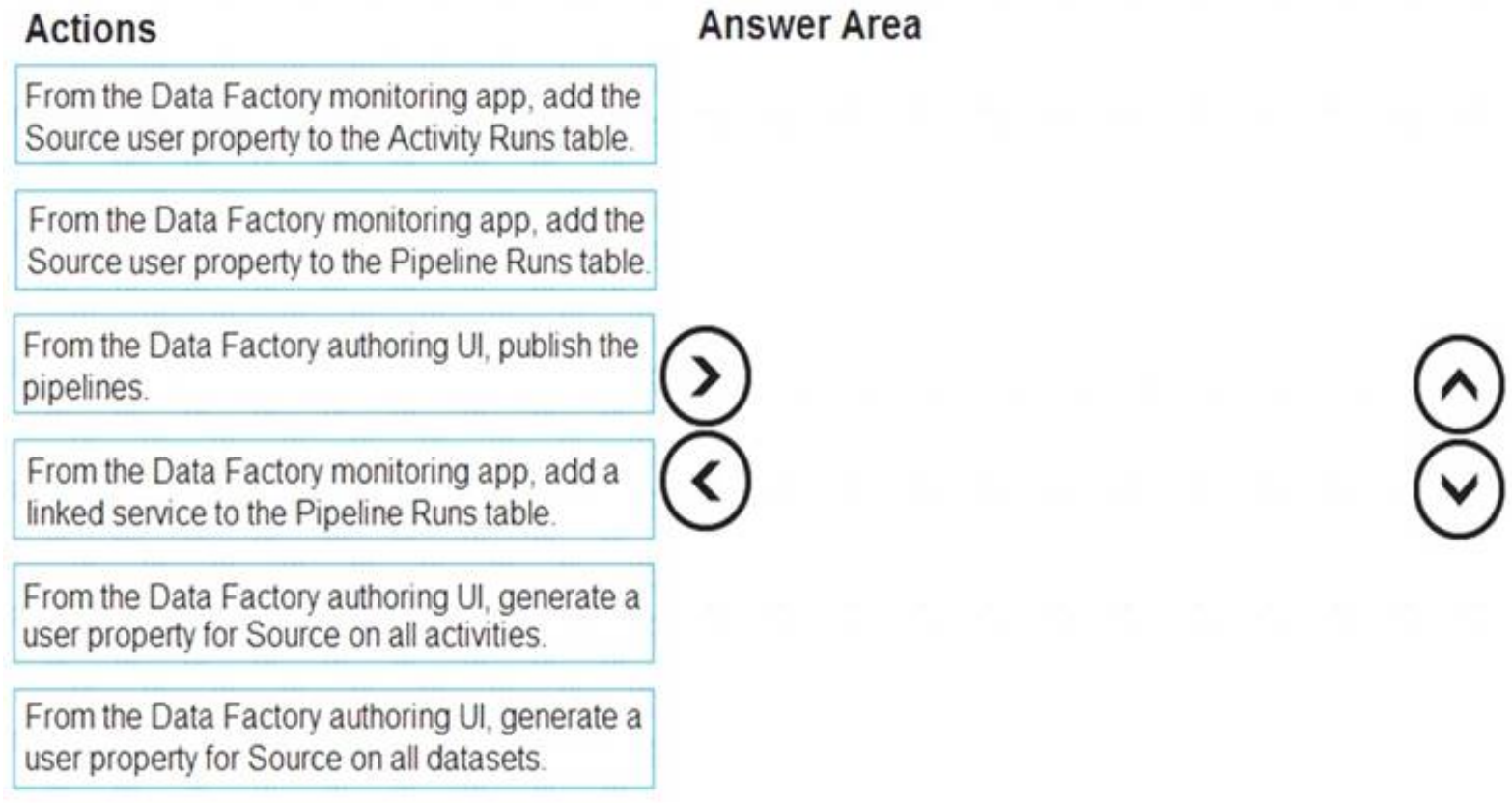

A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Step 1: Read the file into a data frame.
You can load the json files as a data frame in Azure Databricks. Step 2: Perform transformations on the data frame.
Step 3:Specify a temporary folder to stage the data
Specify a temporary folder to use while moving data between Azure Databricks and Azure Synapse. Step 4: Write the results to a table in Azure Synapse.
You upload the transformed data frame into Azure Synapse. You use the Azure Synapse connector for Azure Databricks to directly upload a dataframe as a table in a Azure Synapse.
Step 5: Drop the data frame
Clean up resources. You can terminate the cluster. From the Azure Databricks workspace, select Clusters on the left. For the cluster to terminate, under Actions, point to the ellipsis (...) and select the Terminate icon.
Reference:
https://docs.microsoft.com/en-us/azure/azure-databricks/databricks-extract-load-sql-data-warehouse

**NEW QUESTION 23**
- (Exam Topic 3)
You plan to monitor an Azure data factory by using the Monitor & Manage app.
You need to identify the status and duration of activities that reference a table in a source database.

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




A. Mastered
B. Not Mastered

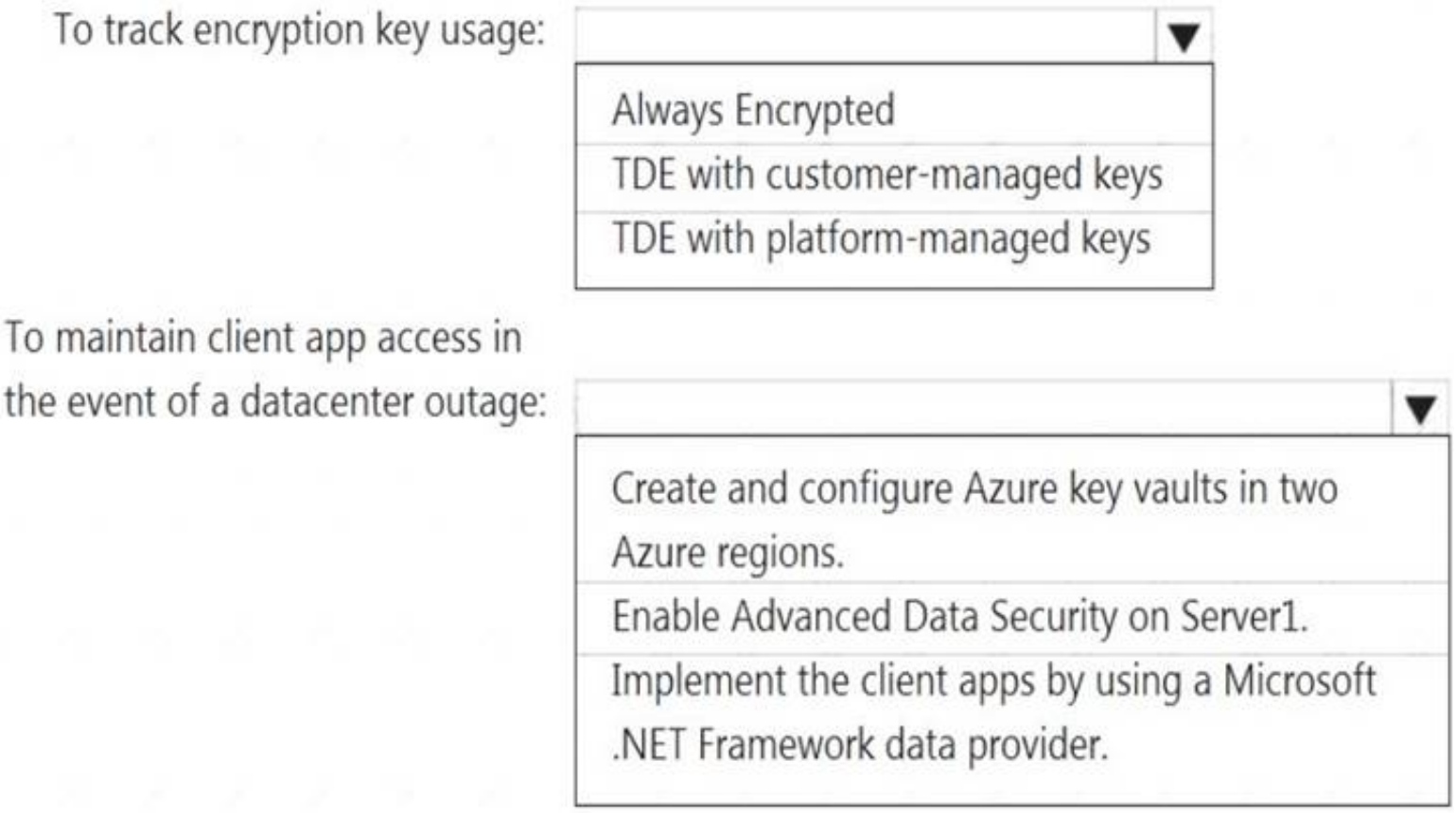
**Answer:** A

**Explanation:**
Step 1: From the Data Factory authoring UI, generate a user property for Source on all activities. Step 2: From the Data Factory monitoring app, add the Source user property to Activity Runs table.
You can promote any pipeline activity property as a user property so that it becomes an entity that you can
monitor. For example, you can promote the Source and Destination properties of the copy activity in your pipeline as user properties. You can also select Auto Generate to generate the Source and Destination user properties for a copy activity.
Step 3: From the Data Factory authoring UI, publish the pipelines
Publish output data to data stores such as Azure SQL Data Warehouse for business intelligence (BI) applications to consume.
References:
https://docs.microsoft.com/en-us/azure/data-factory/monitor-visually

**NEW QUESTION 27**
- (Exam Topic 3)
You have an Azure subscription that contains a logical Microsoft SQL server named Server1. Server1 hosts an Azure Synapse Analytics SQL dedicated pool named Pool1.
You need to recommend a Transparent Data Encryption (TDE) solution for Server1. The solution must meet the following requirements:

- Track the usage of encryption keys.
- Maintain the access of client apps to Pool1 in the event of an Azure datacenter outage that affects the availability of the encryption keys.

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.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Box 1: TDE with customer-managed keys
Customer-managed keys are stored in the Azure Key Vault. You can monitor how and when your key vaults are accessed, and by whom. You can do this by enabling logging for Azure Key Vault, which saves information in an Azure storage account that you provide.
Box 2: Create and configure Azure key vaults in two Azure regions
The contents of your key vault are replicated within the region and to a secondary region at least 150 miles away, but within the same geography to maintain high durability of your keys and secrets.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/security/workspaces-encryption https://docs.microsoft.com/en-us/azure/key-vault/general/logging

**NEW QUESTION 30**
- (Exam Topic 3)
You have an Azure Synapse Analytics serverless SQL pool named Pool1 and an Azure Data Lake Storage Gen2 account named storage1. The AllowedBlobpublicAccess porperty is disabled for storage1.
You need to create an external data source that can be used by Azure Active Directory (Azure AD) users to access storage1 from Pool1.
What should you create first?

A. an external resource pool
B. a remote service binding
C. database scoped credentials
D. an external library

**Answer:** C

**NEW QUESTION 32**
- (Exam Topic 3)
You have an Azure Synapse Analytics dedicated SQL pool that contains a large fact table. The table contains 50 columns and 5 billion rows and is a heap.
Most queries against the table aggregate values from approximately 100 million rows and return only two columns.
You discover that the queries against the fact table are very slow. Which type of index should you add to provide the fastest query times?

A. nonclustered columnstore
B. clustered columnstore
C. nonclustered
D. clustered

**Answer:** B

**Explanation:**
Clustered columnstore indexes are one of the most efficient ways you can store your data in dedicated SQL pool.
Columnstore tables won't benefit a query unless the table has more than 60 million rows. Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/best-practices-dedicated-sql-pool

**NEW QUESTION 35**
- (Exam Topic 3)
You have an Azure data factory.
You need to examine the pipeline failures from the last 60 days. What should you use?

A. the Activity log blade for the Data Factory resource
B. the Monitor & Manage app in Data Factory
C. the Resource health blade for the Data Factory resource
D. Azure Monitor

**Answer:** D

**Explanation:**
Data Factory stores pipeline-run data for only 45 days. Use Azure Monitor if you want to keep that data for a longer time.
Reference:
https://docs.microsoft.com/en-us/azure/data-factory/monitor-using-azure-monitor

**NEW QUESTION 40**
- (Exam Topic 3)
You implement an enterprise data warehouse in Azure Synapse Analytics. You have a large fact table that is 10 terabytes (TB) in size.
Incoming queries use the primary key SaleKey column to retrieve data as displayed in the following table:

| SaleKey | CityKey | CustomerKey | StockItemKey | InvoiceDateKey | Quantity | UnitPrice | TotalExcludingTax |
|---|---|---|---|---|---|---|---|
| 49309 | 90858 | 70 | 69 | 10/22/13 | 8 | 16 | 128 |
| 49313 | 55710 | 126 | 69 | 10/22/13 | 2 | 16 | 32 |
| 49343 | 44710 | 234 | 68 | 10/22/13 | 10 | 16 | 160 |
| 49352 | 66109 | 163 | 70 | 10/22/13 | 4 | 16 | 64 |
| 49488 | 65312 | 230 | 70 | 10/22/13 | 8 | 16 | 128 |
| 49646 | 85877 | 271 | 70 | 10/24/13 | 1 | 16 | 16 |
| 49798 | 41238 | 288 | 69 | 10/24/13 | 1 | 16 | 16 |

You need to distribute the large fact table across multiple nodes to optimize performance of the table. Which technology should you use?

A. hash distributed table with clustered index
B. hash distributed table with clustered Columnstore index
C. round robin distributed table with clustered index
D. round robin distributed table with clustered Columnstore index
E. heap table with distribution replicate

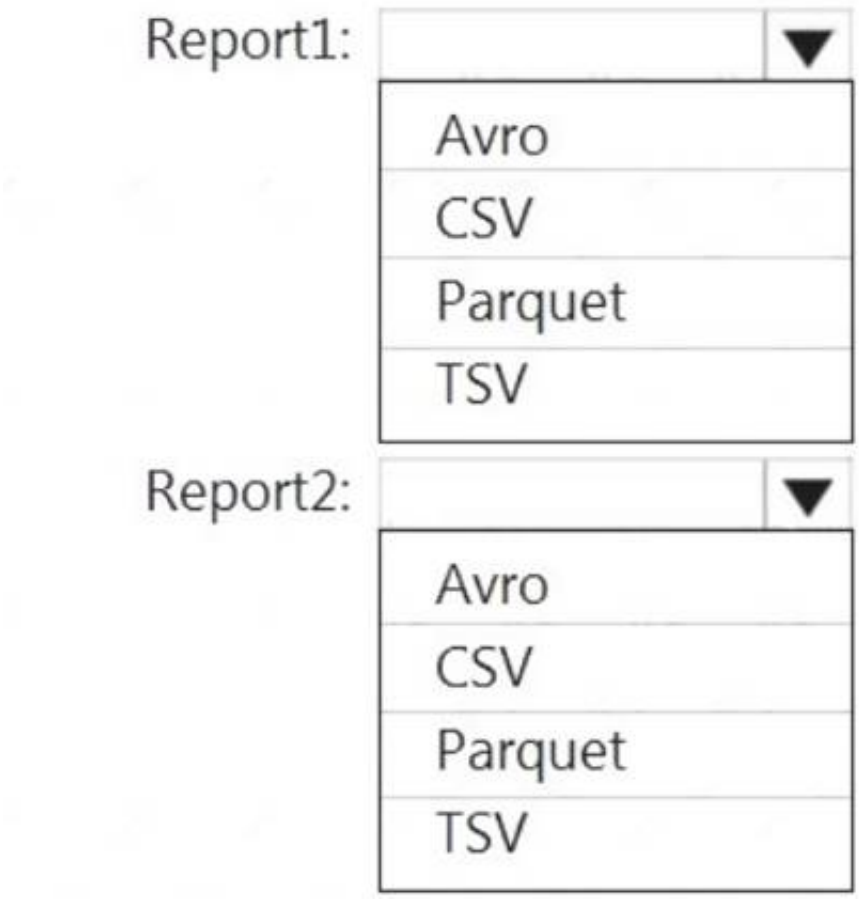
**Answer:** B

**Explanation:**
Hash-distributed tables improve query performance on large fact tables.
Columnstore indexes can achieve up to 100x better performance on analytics and data warehousing workloads and up to 10x better data compression than traditional rowstore indexes.
Reference:
https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-tables-distribute https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-query-performance

**NEW QUESTION 43**
- (Exam Topic 3)
You are planning the deployment of Azure Data Lake Storage Gen2. You have the following two reports that will access the data lake:

- Report1: Reads three columns from a file that contains 50 columns.
- Report2: Queries a single record based on a timestamp.

You need to recommend in which format to store the data in the data lake to support the reports. The solution must minimize read times.
What should you recommend for each report? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Report1: CSV
CSV: The destination writes records as delimited data. Report2: AVRO
AVRO supports timestamps.
Not Parquet, TSV: Not options for Azure Data Lake Storage Gen2. Reference:
https://streamsets.com/documentation/datacollector/latest/help/datacollector/UserGuide/Destinations/ADLS-G2

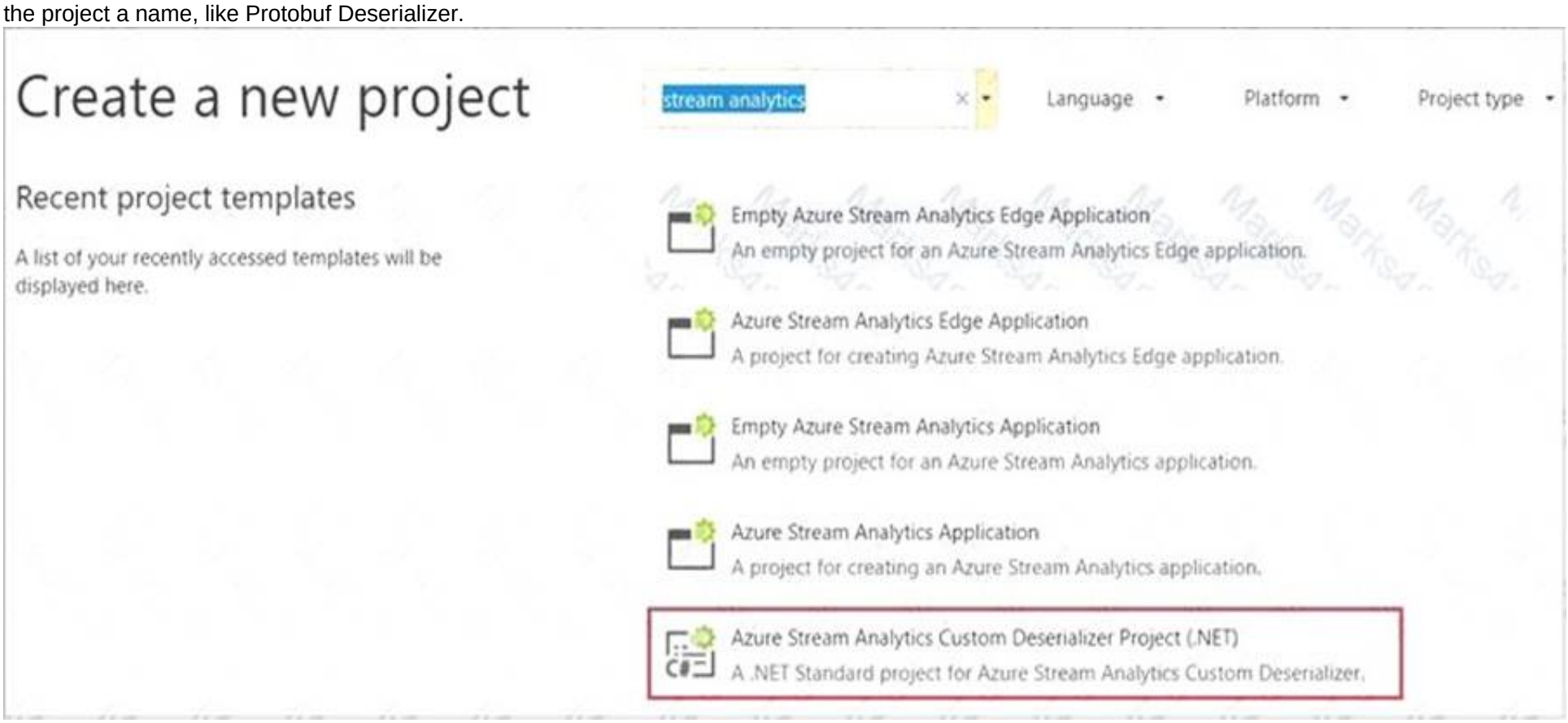
**NEW QUESTION 46**
- (Exam Topic 3)
You have an Azure Stream Analytics job that is a Stream Analytics project solution in Microsoft Visual Studio. The job accepts data generated by IoT devices in the JSON format.
You need to modify the job to accept data generated by the IoT devices in the Protobuf format.
Which three actions should you perform from Visual Studio on sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

| Actions | Answer Area |
|---|---|
| Change the Event Serialization Format to Protobuf in the input.json file of the job and reference the DLL. | |
| Add an Azure Stream Analytics Custom Deserializer Project (.NET) project to the solution. | |
| Add .NET deserializer code for Protobuf to the custom deserializer project. | |
| Add .NET deserializer code for Protobuf to the Stream Analytics project. | |
| Add an Azure Stream Analytics Application project to the solution. | |

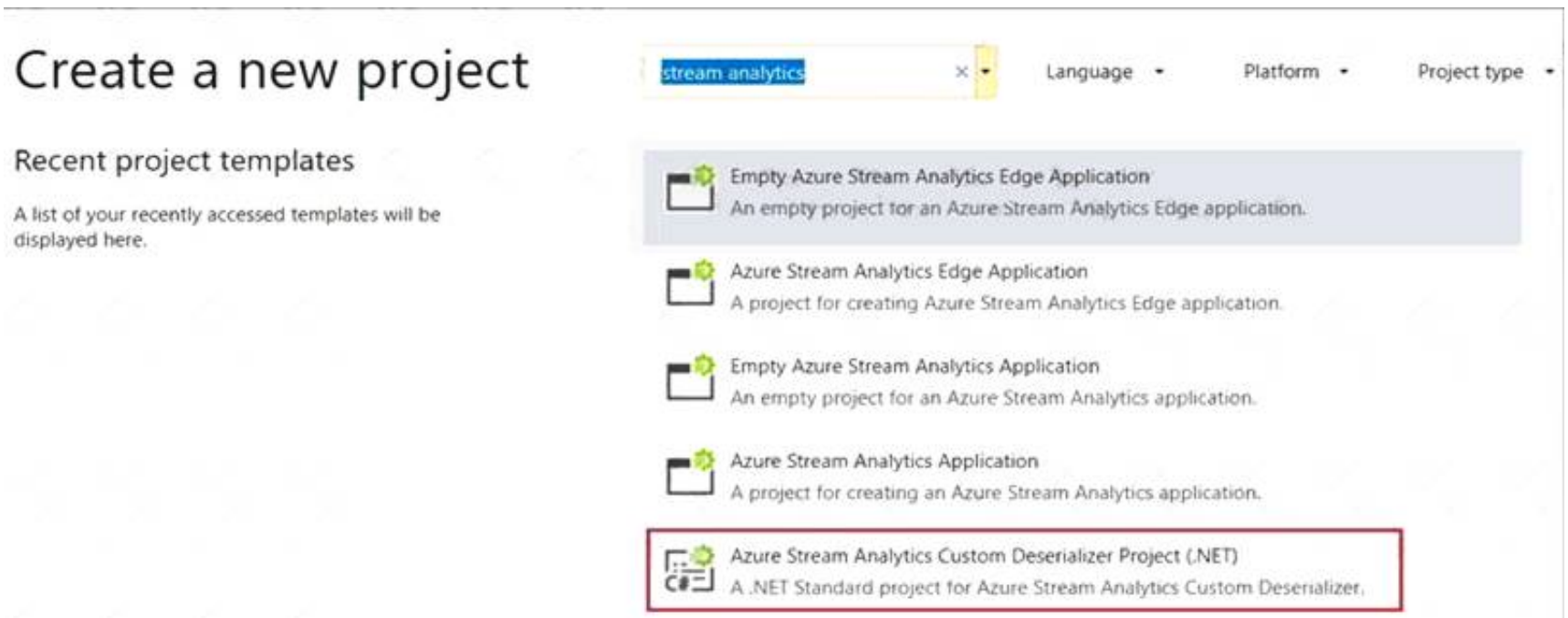
A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Step 1: Add an Azure Stream Analytics Custom Deserializer Project (.NET) project to the solution. Create a custom deserializer
* 1. Open Visual Studio and select File > New > Project. Search for Stream Analytics and select Azure Stream Analytics Custom Deserializer Project (.NET). Give the project a name, like Protobuf Deserializer.




* 2. In Solution Explorer, right-click your Protobuf Deserializer project and select Manage NuGet Packages from the menu. Then install the Microsoft.Azure.StreamAnalytics and Google.Protobuf NuGet packages.
* 3. Add the MessageBodyProto class and the MessageBodyDeserializer class to your project.
* 4. Build the Protobuf Deserializer project.
Step 2: Add .NET deserializer code for Protobuf to the custom deserializer project
Azure Stream Analytics has built-in support for three data formats: JSON, CSV, and Avro. With custom .NET deserializers, you can read data from other formats such as Protocol Buffer, Bond and other user defined formats for both cloud and edge jobs.
Step 3: Add an Azure Stream Analytics Application project to the solution Add an Azure Stream Analytics project
- In Solution Explorer, right-click the Protobuf Deserializer solution and select Add > New Project. Under Azure Stream Analytics > Stream Analytics, choose Azure Stream Analytics Application. Name it ProtobufCloudDeserializer and select OK.
- Right-click References under the ProtobufCloudDeserializer Azure Stream Analytics project. Under Projects, add Protobuf Deserializer. It should be automatically populated for you.
Reference:
https://docs.microsoft.com/en-us/azure/stream-analytics/custom-deserializer




**NEW QUESTION 48**
- (Exam Topic 3)
You have an Azure data factory.
You need to ensure that pipeline-run data is retained for 120 days. The solution must ensure that you can query the data by using the Kusto query language.
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.

| Actions | Answer Area |
|---|---|
| Select the PipelineRuns category. | |
| Create a Log Analytics workspace that has Data Retention set to 120 days. | |
| Stream to an Azure event hub. | |
| Create an Azure Storage account that has a lifecycle policy. | |
| From the Azure portal, add a diagnostic setting. | |
| Send the data to a Log Analytics workspace. | |
| Select the TriggerRuns category. | |

A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Step 1: Create an Azure Storage account that has a lifecycle policy
To automate common data management tasks, Microsoft created a solution based on Azure Data Factory. The service, Data Lifecycle Management, makes frequently accessed data available and archives or purges other data according to retention policies. Teams across the company use the service to reduce storage costs, improve app performance, and comply with data retention policies.
Step 2: Create a Log Analytics workspace that has Data Retention set to 120 days.
Data Factory stores pipeline-run data for only 45 days. Use Azure Monitor if you want to keep that data for a longer time. With Monitor, you can route diagnostic logs for analysis to multiple different targets, such as a Storage Account: Save your diagnostic logs to a storage account for auditing or manual inspection. You can use the diagnostic settings to specify the retention time in days.
Step 3: From Azure Portal, add a diagnostic setting. Step 4: Send the data to a log Analytics workspace,
Event Hub: A pipeline that transfers events from services to Azure Data Explorer. Keeping Azure Data Factory metrics and pipeline-run data.
Configure diagnostic settings and workspace.
Create or add diagnostic settings for your data factory.
- In the portal, go to Monitor. Select Settings > Diagnostic settings.
- Select the data factory for which you want to set a diagnostic setting.
- If no settings exist on the selected data factory, you're prompted to create a setting. Select Turn on diagnostics.
- Give your setting a name, select Send to Log Analytics, and then select a workspace from Log Analytics Workspace.
- Select Save. Reference:

https://docs.microsoft.com/en-us/azure/data-factory/monitor-using-azure-monitor

**NEW QUESTION 51**
- (Exam Topic 3)
You have an Azure Factory instance named DF1 that contains a pipeline named PL1.PL1 includes a tumbling window trigger.
You create five clones of PL1. You configure each clone pipeline to use a different data source.
You need to ensure that the execution schedules of the clone pipeline match the execution schedule of PL1. What should you do?

A. Add a new trigger to each cloned pipeline
B. Associate each cloned pipeline to an existing trigger.
C. Create a tumbling window trigger dependency for the trigger of PL1.
D. Modify the Concurrency setting of each pipeline.

**Answer:** B

**NEW QUESTION 52**
- (Exam Topic 3)
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You have an Azure Storage account that contains 100 GB of files. The files contain text and numerical values. 75% of the rows contain description data that has an average length of 1.1 MB.
You plan to copy the data from the storage account to an Azure SQL data warehouse. You need to prepare the files to ensure that the data copies quickly.
Solution: You modify the files to ensure that each row is less than 1 MB. Does this meet the goal?

A. Yes
B. No

**Answer:** A

**Explanation:**
When exporting data into an ORC File Format, you might get Java out-of-memory errors when there are large text columns. To work around this limitation, export only a subset of the columns.
References:
https://docs.microsoft.com/en-us/azure/sql-data-warehouse/guidance-for-loading-data

**NEW QUESTION 53**
- (Exam Topic 3)
You have a SQL pool in Azure Synapse.
A user reports that queries against the pool take longer than expected to complete. You need to add monitoring to the underlying storage to help diagnose the issue.
Which two metrics should you monitor? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

A. Cache used percentage
B. DWU Limit
C. Snapshot Storage Size
D. Active queries
E. Cache hit percentage

**Answer:** AE

**Explanation:**
A: Cache used is the sum of all bytes in the local SSD cache across all nodes and cache capacity is the sum of the storage capacity of the local SSD cache across all nodes.
E: Cache hits is the sum of all columnstore segments hits in the local SSD cache and cache miss is the columnstore segments misses in the local SSD cache summed across all nodes
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-concept-resou

**NEW QUESTION 54**
- (Exam Topic 3)
You have the following table named Employees.

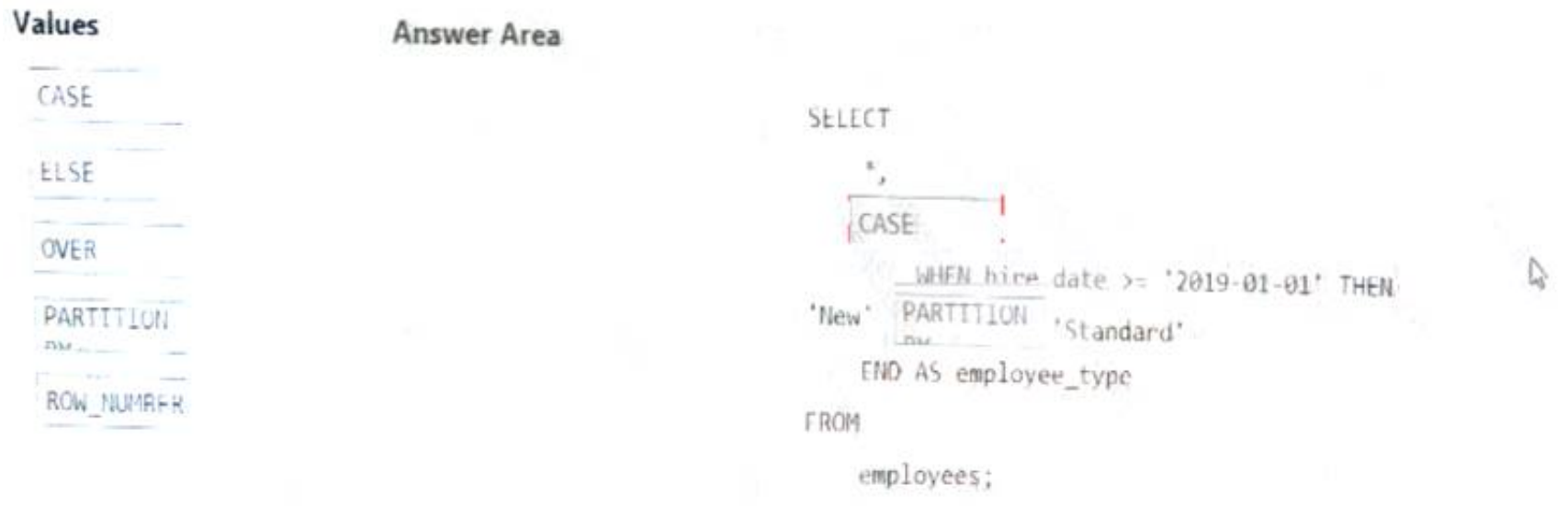
| first_name | last_name | hire_date | employee_type |
|---|---|---|---|
| Jane | Doe | 2019-08-23 | new |
| Ben | Smith | 2017-12-15 | Standard |

You need to calculate the employee _type value based on the hire date value.
How should you complete the Transact-SQL statement? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content
NOTE: Each correct selection is worth one point.


A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**



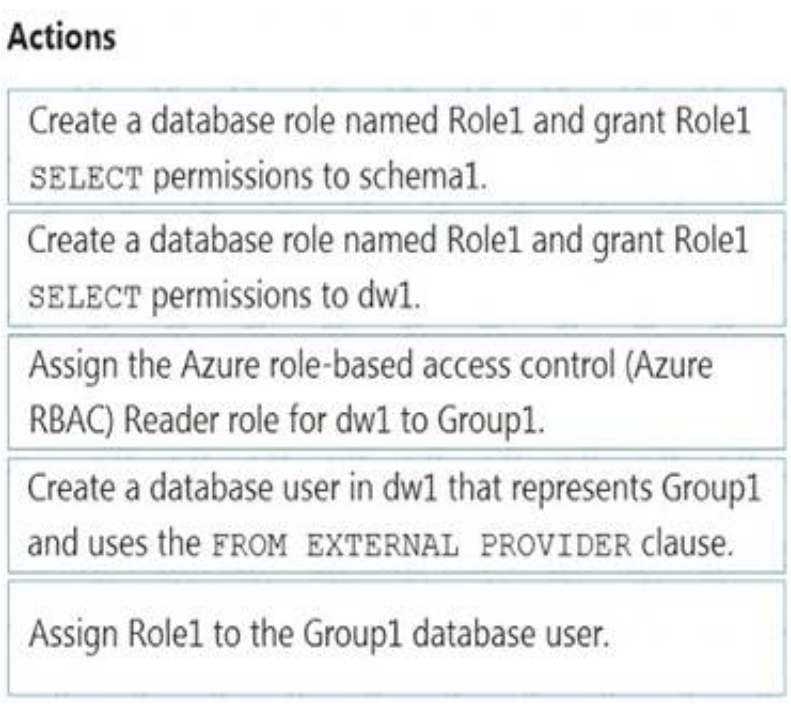

**NEW QUESTION 57**
- (Exam Topic 3)
You are designing a sales transactions table in an Azure Synapse Analytics dedicated SQL pool. The table will contains approximately 60 million rows per month and will be partitioned by month. The table will use a clustered column store index and round-robin distribution.
Approximately how many rows will there be for each combination of distribution and partition?

A. 1 million
B. 5 million
C. 20 million
D. 60 million

**Answer:** D

**Explanation:**
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-partitio

**NEW QUESTION 59**
- (Exam Topic 3)
You have an Azure Active Directory (Azure AD) tenant that contains a security group named Group1. You have an Azure Synapse Analytics dedicated SQL pool named dw1 that contains a schema named schema1.
You need to grant Group1 read-only permissions to all the tables and views in schema1. The solution must use the principle of least privilege.
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.
NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

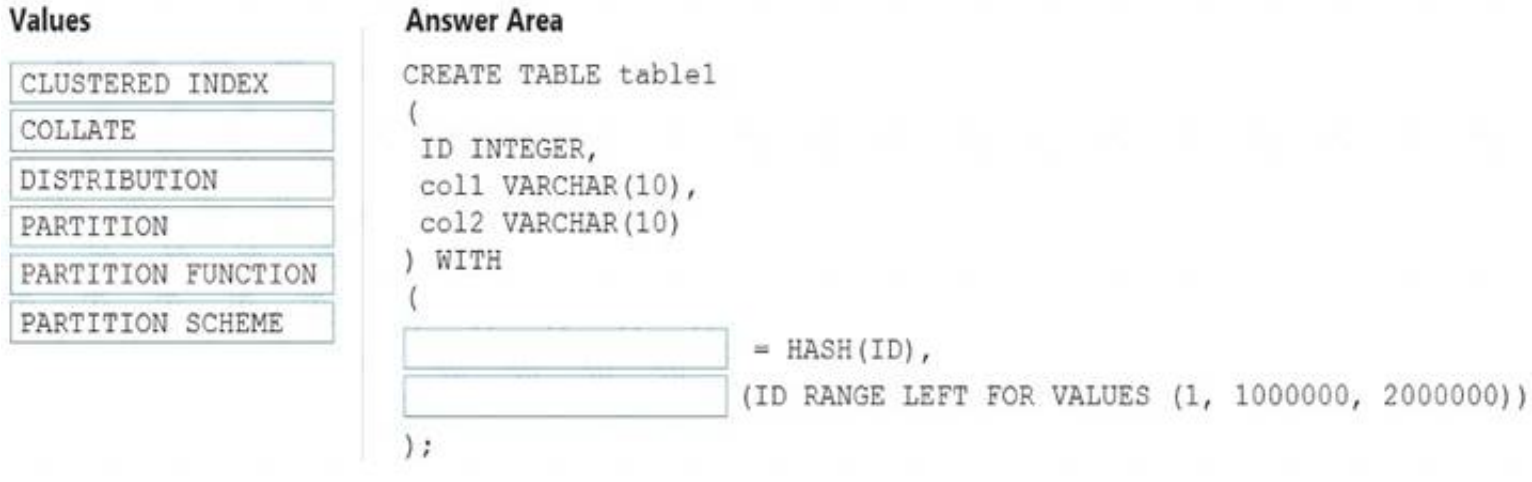



A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Step 1: Create a database role named Role1 and grant Role1 SELECT permissions to schema You need to grant Group1 read-only permissions to all the tables and views in schema1.
Place one or more database users into a database role and then assign permissions to the database role. Step 2: Assign Rol1 to the Group database user
Step 3: Assign the Azure role-based access control (Azure RBAC) Reader role for dw1 to Group1 Reference:
https://docs.microsoft.com/en-us/azure/data-share/how-to-share-from-sql

**NEW QUESTION 63**
- (Exam Topic 3)
You need to create a partitioned table in an Azure Synapse Analytics dedicated SQL pool.
How should you complete the Transact-SQL statement? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Box 1: DISTRIBUTION
Table distribution options include DISTRIBUTION = HASH ( distribution_column_name ), assigns each row to one distribution by hashing the value stored in distribution_column_name. Box 2: PARTITION
Table partition options. Syntax:
PARTITION ( partition_column_name RANGE [ LEFT | RIGHT ] FOR VALUES ( [ boundary_value [,...n] ]
))
Reference:
https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-azure-sql-data-warehouse?

**NEW QUESTION 67**
- (Exam Topic 3)
You have an Azure Storage account and a data warehouse in Azure Synapse Analytics in the UK South region. You need to copy blob data from the storage account to the data warehouse by using Azure Data Factory. The solution must meet the following requirements:

- Ensure that the data remains in the UK South region at all times.
- Minimize administrative effort.

Which type of integration runtime should you use?

A. Azure integration runtime

B. Azure-SSIS integration runtime
C. Self-hosted integration runtime

**Answer:** A

**Explanation:**

| IR type | Public network | Private network |
|---|---|---|
| Azure | Data Flow<br>Data movement<br>Activity dispatch | |
| Self-hosted | Data movement<br>Activity dispatch | Data movement<br>Activity dispatch |
| Azure-SSIS | SSIS package execution | SSIS package execution |

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

**NEW QUESTION 69**
- (Exam Topic 3)
You have an Azure Stream Analytics job that receives clickstream data from an Azure event hub.
You need to define a query in the Stream Analytics job. The query must meet the following requirements: Count the number of clicks within each 10-second window based on the country of a visitor.
Ensure that each click is NOT counted more than once. How should you define the Query?

A. SELECT Country, Avg(*) AS AverageFROM ClickStream TIMESTAMP BY CreatedAt GROUP BY Country, SlidingWindow(second, 10)
B. SELECT Country, Count(*) AS CountFROM ClickStream TIMESTAMP BY CreatedAt GROUP BY Country, TumblingWindow(second, 10)
C. SELECT Country, Avg(*) AS AverageFROM ClickStream TIMESTAMP BY CreatedAt GROUP BY Country, HoppingWindow(second, 10, 2)
D. SELECT Country, Count(*) AS CountFROM ClickStream TIMESTAMP BY CreatedAt GROUP BY Country, SessionWindow(second, 5, 10)

**Answer:** B

**Explanation:**
Tumbling window functions are used to segment a data stream into distinct time segments and perform a function against them, such as the example below. The key differentiators of a Tumbling window are that they repeat, do not overlap, and an event cannot belong to more than one tumbling window.
Example: Reference:
https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-window-functions

**NEW QUESTION 73**
- (Exam Topic 3)
You have an Azure Synapse Analytics dedicated SQL Pool1. Pool1 contains a partitioned fact table named dbo.Sales and a staging table named stg.Sales that has the matching table and partition definitions.
You need to overwrite the content of the first partition in dbo.Sales with the content of the same partition in stg.Sales. The solution must minimize load times.
What should you do?

A. Switch the first partition from dbo.Sales to stg.Sales.
B. Switch the first partition from stg.Sales to db
C. Sales.
D. Update dbo.Sales from stg.Sales.
E. Insert the data from stg.Sales into dbo.Sales.

**Answer:** D

**NEW QUESTION 76**
- (Exam Topic 3)
You are designing the folder structure for an Azure Data Lake Storage Gen2 container.
Users will query data by using a variety of services including Azure Databricks and Azure Synapse Analytics serverless SQL pools. The data will be secured by subject area. Most queries will include data from the current year or current month.
Which folder structure should you recommend to support fast queries and simplified folder security?

A. /{SubjectArea}/{DataSource}/{DD}/{MM}/{YYYY}/{FileData}_{YYYY}_{MM}_{DD}.csv
B. /{DD}/{MM}/{YYYY}/{SubjectArea}/{DataSource}/{FileData}_{YYYY}_{MM}_{DD}.csv
C. /{YYYY}/{MM}/{DD}/{SubjectArea}/{DataSource}/{FileData}_{YYYY}_{MM}_{DD}.csv
D. /{SubjectArea}/{DataSource}/{YYYY}/{MM}/{DD}/{FileData}_{YYYY}_{MM}_{DD}.csv

**Answer:** D

**Explanation:**
There's an important reason to put the date at the end of the directory structure. If you want to lock down certain regions or subject matters to users/groups, then you can easily do so with the POSIX permissions. Otherwise, if there was a need to restrict a certain security group to viewing just the UK data or certain planes, with the date structure in front a separate permission would be required for numerous directories under every hour directory. Additionally, having the date structure in front would exponentially increase the number of directories as time went on.
Note: In IoT workloads, there can be a great deal of data being landed in the data store that spans across numerous products, devices, organizations, and

customers. It's important to pre-plan the directory layout for organization, security, and efficient processing of the data for down-stream consumers. A general template to consider might be the following layout:
{Region}/{SubjectMatter(s)}/{yyyy}/{mm}/{dd}/{hh}/

**NEW QUESTION 77**
- (Exam Topic 3)
You have the following Azure Stream Analytics query.

```
WITH

step1 AS (SELECT *
      FROM input1
      PARTITION BY StateID
      INTO 10),
step1 AS (SELECT *
      FROM input2
      PARTITION BY StateID
      INTO 10)

SELECT *
INTO output
FROM step1
PARTITION BY StateID
UNION step2
  BY StateID
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.
NOTE: Each correct selection is worth one point.

| Statements | Yes | No |
|---|---|---|
| The query joins two streams of partitioned data. | ○ | ○ |
| The stream scheme key and count must match the output scheme. | ○ | ○ |
| Providing 60 streaming units will optimize the performance of the query. | ○ | ○ |

A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Box 1: Yes
You can now use a new extension of Azure Stream Analytics SQL to specify the number of partitions of a stream when reshuffling the data.
The outcome is a stream that has the same partition scheme. Please see below for an example: WITH step1 AS (SELECT * FROM [input1] PARTITION BY DeviceID INTO 10),
step2 AS (SELECT * FROM [input2] PARTITION BY DeviceID INTO 10)
SELECT * INTO [output] FROM step1 PARTITION BY DeviceID UNION step2 PARTITION BY DeviceID Note: The new extension of Azure Stream Analytics SQL includes a keyword INTO that allows you to specify
the number of partitions for a stream when performing reshuffling using a PARTITION BY statement.
Box 2: Yes
When joining two streams of data explicitly repartitioned, these streams must have the same partition key and partition count.
Box 3: Yes
10 partitions x six SUs = 60 SUs is fine.
Note: Remember, Streaming Unit (SU) count, which is the unit of scale for Azure Stream Analytics, must be adjusted so the number of physical resources available to the job can fit the partitioned flow. In general, six SUs is a good number to assign to each partition. In case there are insufficient resources assigned to the job, the system will only apply the repartition if it benefits the job.
Reference:
https://azure.microsoft.com/en-in/blog/maximize-throughput-with-repartitioning-in-azure-stream-analytics/

**NEW QUESTION 82**
- (Exam Topic 3)
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You are designing an Azure Stream Analytics solution that will analyze Twitter data.
You need to count the tweets in each 10-second window. The solution must ensure that each tweet is counted only once.

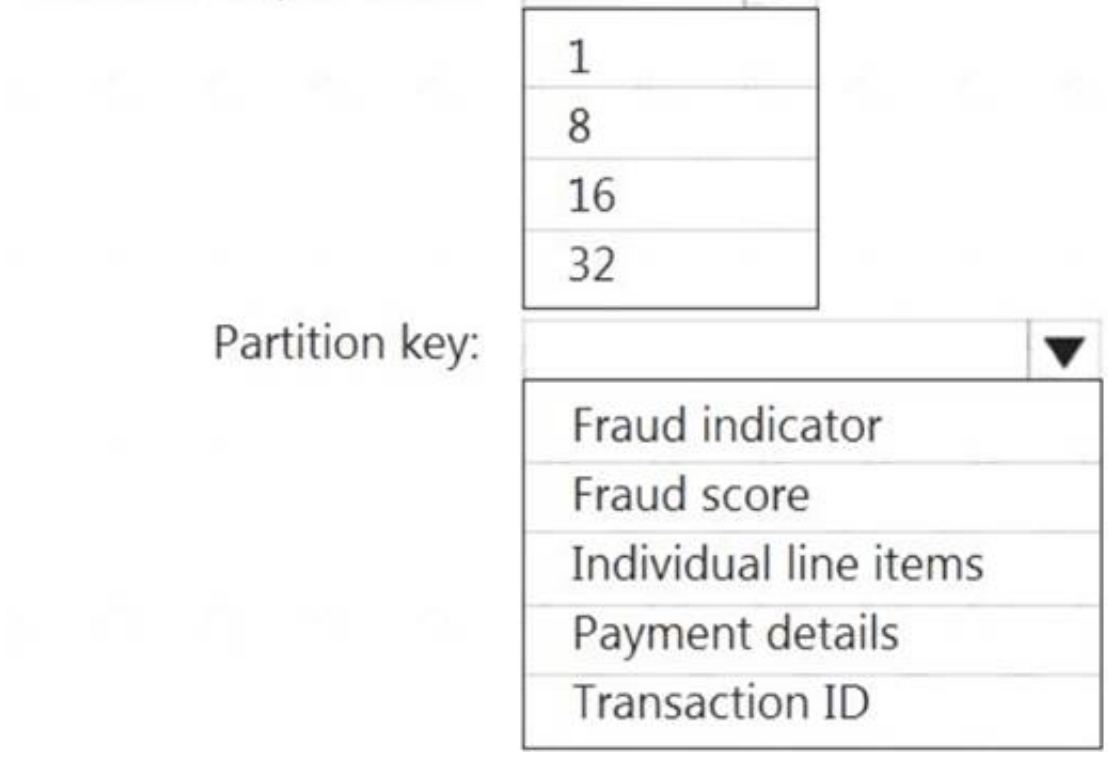
Solution: You use a session window that uses a timeout size of 10 seconds. Does this meet the goal?

A. Yes
B. No

**Answer:** B

**Explanation:**
Instead use a tumbling window. Tumbling windows are a series of fixed-sized, non-overlapping and contiguous time intervals. Reference:
https://docs.microsoft.com/en-us/stream-analytics-query/tumbling-window-azure-stream-analytics

**NEW QUESTION 83**
- (Exam Topic 3)
You have an Azure event hub named retailhub that has 16 partitions. Transactions are posted to retailhub. Each transaction includes the transaction ID, the individual line items, and the payment details. The transaction ID is used as the partition key.
You are designing an Azure Stream Analytics job to identify potentially fraudulent transactions at a retail store. The job will use retailhub as the input. The job will output the transaction ID, the individual line items, the payment details, a fraud score, and a fraud indicator.
You plan to send the output to an Azure event hub named fraudhub.
You need to ensure that the fraud detection solution is highly scalable and processes transactions as quickly as possible.
How should you structure the output of the Stream Analytics job? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Box 1: 16
For Event Hubs you need to set the partition key explicitly.
An embarrassingly parallel job is the most scalable scenario in Azure Stream Analytics. It connects one partition of the input to one instance of the query to one partition of the output.
Box 2: Transaction ID Reference:
https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-features#partitions

**NEW QUESTION 88**
- (Exam Topic 3)
You are designing a dimension table for a data warehouse. The table will track the value of the dimension attributes over time and preserve the history of the data by adding new rows as the data changes.
Which type of slowly changing dimension (SCD) should use?

A. Type 0
B. Type 1
C. Type 2
D. Type 3

**Answer:** C

**Explanation:**
Type 2 - Creating a new additional record. In this methodology all history of dimension changes is kept in the database. You capture attribute change by adding a new row with a new surrogate key to the dimension table. Both the prior and new rows contain as attributes the natural key(or other durable identifier). Also 'effective date' and 'current indicator' columns are used in this method. There could be only one record with current indicator set to 'Y'. For 'effective date' columns, i.e. start_date and end_date, the end_date for current record usually is set to value 9999-12-31. Introducing changes to the dimensional model in type 2 could be very expensive database operation so it is not recommended to use it in dimensions where a new attribute could be added in the future.
https://www.datawarehouse4u.info/SCD-Slowly-Changing-Dimensions.html

**NEW QUESTION 91**
- (Exam Topic 3)
You use Azure Stream Analytics to receive Twitter data from Azure Event Hubs and to output the data to an Azure Blob storage account.
You need to output the count of tweets during the last five minutes every five minutes. Each tweet must only be counted once.
Which windowing function should you use?

A. a five-minute Session window
B. a five-minute Sliding window
C. a five-minute Tumbling window
D. a five-minute Hopping window that has one-minute hop

**Answer:** C

**Explanation:**
Tumbling window functions are used to segment a data stream into distinct time segments and perform a function against them, such as the example below. The key differentiators of a Tumbling window are that they repeat, do not overlap, and an event cannot belong to more than one tumbling window.
References:
https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-window-functions

**NEW QUESTION 96**
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