Microsoft

Exam Questions DP-203

Data Engineering on Microsoft Azure

NEW QUESTION 1
- (Exam Topic 1)
You need to design a data storage structure for the product sales transactions. The solution must meet 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:

NEW QUESTION 2
- (Exam Topic 3)
You need to collect application metrics, streaming query events, and application log messages for an Azure Databrick cluster.
Which type of library and workspace should you implement? 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:
You can send application logs and metrics from Azure Databricks to a Log Analytics workspace. It uses the Azure Databricks Monitoring Library, which is available on GitHub.
References:
https://docs.microsoft.com/en-us/azure/architecture/databricks-monitoring/application-logs

NEW QUESTION 3
- (Exam Topic 3)
You have an on-premises data warehouse that includes the following fact tables. Both tables have the following columns: DateKey, ProductKey, RegionKey. There are 120 unique product keys and 65 unique region keys.

Table	Comments
Sales	The table is 600 GB in size. DateKey is used extensively in the WHERE clause in queries. ProductKey is used extensively in join operations. RegionKey is used for grouping. Severity-five percent of records relate to one of 40 regions.
Invoice	The table is 6 GB in size. DateKey and ProductKey are used extensively in the WHERE clause in queries. RegionKey is used for grouping.

Queries that use the data warehouse take a long time to complete.
You plan to migrate the solution to use Azure Synapse Analytics. You need to ensure that the Azure-based solution optimizes query performance and minimizes processing skew.
What should you recommend? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point

Table   **Distribution type**   **Distribution column**

Sales:

| Hash-distributed |
| Round-robin |

| DateKey |
| ProductKey |
| RegionKey |

Invoices:

| Hash-distributed |
| Round-robin |

| DateKey |
| ProductKey |
| RegionKey |

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Box 1: Hash-distributed
Box 2: ProductKey
ProductKey is used extensively in joins.
Hash-distributed tables improve query performance on large fact tables.
Box 3: Round-robin
Box 4: RegionKey
Round-robin tables are useful for improving loading speed.
Consider using the round-robin distribution for your table in the following scenarios:

- When getting started as a simple starting point since it is the default
- If there is no obvious joining key
- If there is not good candidate column for hash distributing the table
- If the table does not share a common join key with other tables
- If the join is less significant than other joins in the query
- When the table is a temporary staging table

Note: A distributed table appears as a single table, but the rows are actually stored across 60 distributions. The rows are distributed with a hash or round-robin algorithm.
Reference:
https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-tables-distribute

NEW QUESTION 4
- (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.
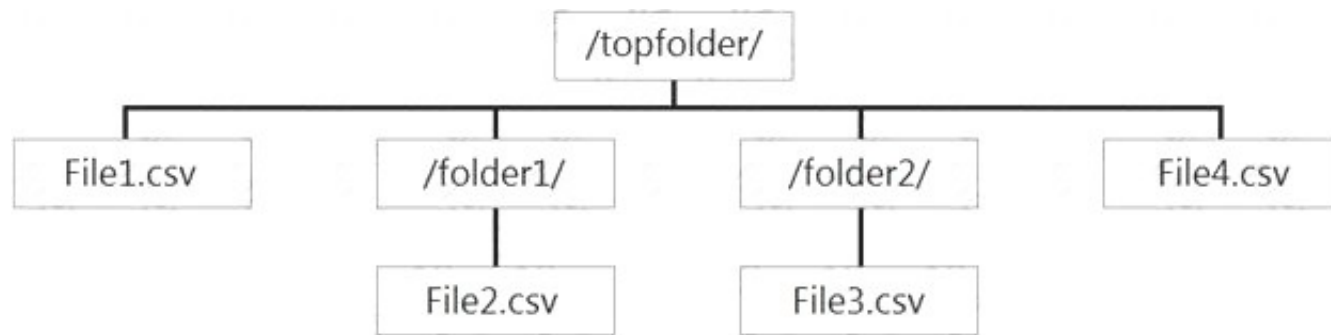
You create an external table named ExtTable that has LOCATION='/topfolder/'.
When you query ExtTable by using an Azure Synapse Analytics serverless SQL pool, which files are returned?

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 5
- (Exam Topic 3)
You need to create an Azure Data Factory pipeline to process data for the following three departments at your company: Ecommerce, retail, and wholesale. The solution must ensure that data can also be processed for the entire company.
How should you complete the Data Factory data flow script? 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:
The conditional split transformation routes data rows to different streams based on matching conditions. The conditional split transformation is similar to a CASE decision structure in a programming language. The transformation evaluates expressions, and based on the results, directs the data row to the specified stream.
Box 1: dept=='ecommerce', dept=='retail', dept=='wholesale'
First we put the condition. The order must match the stream labeling we define in Box 3. Syntax:
<incomingStream> split(
<conditionalExpression1>
<conditionalExpression2>
disjoint: {true | false}
) ~> <splitTx>@(stream1, stream2, ..., <defaultStream>)
Box 2: discount : false
disjoint is false because the data goes to the first matching condition. All remaining rows matching the third condition go to output stream all.
Box 3: ecommerce, retail, wholesale, all Label the streams
Reference:
https://docs.microsoft.com/en-us/azure/data-factory/data-flow-conditional-split

NEW QUESTION 6
- (Exam Topic 3)
You are building an Azure Stream Analytics job to identify how much time a user spends interacting with a feature on a webpage.
The job receives events based on user actions on the webpage. Each row of data represents an event. Each event has a type of either 'start' or 'end'.
You need to calculate the duration between start and end events.
How should you complete the query? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

```
SELECT
    [user],
    feature,
    ┌──────────────┬─▼─┐
    │ DATEADD(          │
    │ DATEDIFF(         │
    │ DATEPART(         │
    └──────────────────┘
        second,
    ┌──────────────┬─▼─┐  (Time) OVER (PARTITION BY [user], feature LIMIT DURATION(hour, 1) WHEN Event = 'start'),
    │ ISFIRST           │
    │ LAST              │
    │ TOPONE            │
    └──────────────────┘
        Time) as duration
FROM input TIMESTAMP BY Time
WHERE
    Event = 'end'
```

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Box 1: DATEDIFF
DATEDIFF function returns the count (as a signed integer value) of the specified datepart boundaries crossed between the specified startdate and enddate.
Syntax: DATEDIFF (datepart , startdate, enddate) Box 2: LAST
The LAST function can be used to retrieve the last event within a specific condition. In this example, the condition is an event of type Start, partitioning the search by PARTITION BY user and feature. This way, every user and feature is treated independently when searching for the Start event. LIMIT DURATION limits the search back in time to 1 hour between the End and Start events.
Example: SELECT
[user], feature, DATEDIFF(
second,
LAST(Time) OVER (PARTITION BY [user], feature LIMIT DURATION(hour,
1) WHEN Event = 'start'), Time) as duration
FROM input TIMESTAMP BY Time
WHERE
Event = 'end' Reference:
https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-stream-analytics-query-patterns

NEW QUESTION 7
- (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.

If the X-M node becomes unavailable, all executed pipelines will:

fail until the node comes back online
switch to another integration runtime
exceed the CPU limit

The number of concurrent jobs and the CPU usage indicate that the Concurrent Jobs (Running/Limit) value should be:

raised
lowered
left as is

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 8
- (Exam Topic 3)
You have an Apache Spark DataFrame named temperatures. A sample of the data is shown in the following table.

Date	Temp
...	...
18-01-2021	3
19-01-2021	4
20-01-2021	2
21-01-2021	2
...	...

You need to produce the following table by using a Spark SQL query.

Year	JAN	FEB	MAR	APR	MAY
2019	2.3	4.1	5.2	7.6	9.2
2020	2.4	4.2	4.9	7.8	9.1
2021	2.6	5.3	3.4	7.9	9.5

How should you complete the query? 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.

Values

- CAST
- COLLATE
- CONVERT
- FLATTEN
- PIVOT
- UNPIVOT

Answer Area

```
SELECT * FROM (
    SELECT YEAR(Date) Year, MONTH(Date)
Month FROM Temperatures
    WHERE date BETWEEN DATE '2019-01-01' AND DATE
)2021-08-31'
    Value   (
                Value   (Temp AS DECIMAL(4, 1)))
AVG  (
    FOR Month in (
        1 JAN, 2 FEB, 3 MAR, 4 APR, 5 MAY, 6
JUN, 7 JUL, 8 AUG, 9 SEP, 10 OCT, 11 NOV,
12 DEC
        )
    )
)
ORDER BY Year ASC
```

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Values

- CAST
- COLLATE
- CONVERT
- FLATTEN
- PIVOT
- UNPIVOT

Answer Area

```
SELECT * FROM (
    SELECT YEAR(Date) Year, MONTH(Date)
Month FROM Temperatures
    WHERE date BETWEEN DATE '2019-01-01' AND DATE
)2021-08-31'
    CONVERT      (
            COLLATE     (Temp AS DECIMAL(4, 1)))
AVG  (
    FOR Month in (
        1 JAN, 2 FEB, 3 MAR, 4 APR, 5 MAY, 6
JUN, 7 JUL, 8 AUG, 9 SEP, 10 OCT, 11 NOV,
12 DEC
        )
    )
)
ORDER BY Year ASC
```

NEW QUESTION 9
- (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 10
- (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.

Architecture requirement	Technology
Data storage	▼
	Azure SQL Database
	Azure Blob Storage
	Azure Cosmos DB
	Azure Data Lake Store
Batch processing	▼
	HDInsight Spark
	HDInsight Hadoop
	Azure Databricks
	HDInsight Interactive Query
Analytical data store	▼
	HDInsight HBase
	Azure SQL Data Warehouse
	Azure Analysis Services
	Azure Cosmos DB

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 10
- (Exam Topic 3)
You have an Azure SQL database named Database1 and two Azure event hubs named HubA and HubB. The data consumed from each source is shown in the following table.

Source	Data
Database1	Driver's name Driver's license number
HubA	Ride route Ride distance Ride duration
HubB	Ride fare Ride payment

You need to implement Azure Stream Analytics to calculate the average fare per mile by driver.
How should you configure the Stream Analytics input for each source? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

HubA: ▼
  Stream
  Reference

HubB: ▼
  Stream
  Reference

Database1: ▼
  Stream
  Reference

A. Mastered
B. Not Mastered

Answer: A

Explanation:
HubA: Stream HubB: Stream
Database1: Reference
Reference data (also known as a lookup table) is a finite data set that is static or slowly changing in nature, used to perform a lookup or to augment your data streams. For example, in an IoT scenario, you could store metadata about sensors (which don't change often) in reference data and join it with real time IoT data streams. Azure Stream Analytics loads reference data in memory to achieve low latency stream processing

NEW QUESTION 13
- (Exam Topic 3)
You have an Azure Databricks workspace named workspace1 in the Standard pricing tier.
You need to configure workspace1 to support autoscaling all-purpose clusters. The solution must meet the following requirements:

≫ Automatically scale down workers when the cluster is underutilized for three minutes.

≫ Minimize the time it takes to scale to the maximum number of workers.

≫ Minimize costs.
What should you do first?

A. Enable container services for workspace1.
B. Upgrade workspace1 to the Premium pricing tier.
C. Set Cluster Mode to High Concurrency.
D. Create a cluster policy in workspace1.

Answer: B

Explanation:
For clusters running Databricks Runtime 6.4 and above, optimized autoscaling is used by all-purpose clusters in the Premium plan
Optimized autoscaling:
Scales up from min to max in 2 steps.
Can scale down even if the cluster is not idle by looking at shuffle file state. Scales down based on a percentage of current nodes.
On job clusters, scales down if the cluster is underutilized over the last 40 seconds.
On all-purpose clusters, scales down if the cluster is underutilized over the last 150 seconds.
The spark.databricks.aggressiveWindowDownS Spark configuration property specifies in seconds how often a cluster makes down-scaling decisions. Increasing the value causes a cluster to scale down more slowly. The maximum value is 600.

Note: Standard autoscaling
Starts with adding 8 nodes. Thereafter, scales up exponentially, but can take many steps to reach the max. You can customize the first step by setting the spark.databricks.autoscaling.standardFirstStepUp Spark configuration property.
Scales down only when the cluster is completely idle and it has been underutilized for the last 10 minutes. Scales down exponentially, starting with 1 node.
Reference:

NEW QUESTION 17
- (Exam Topic 3)
You are designing an Azure Databricks table. The table will ingest an average of 20 million streaming events per day.
You need to persist the events in the table for use in incremental load pipeline jobs in Azure Databricks. The solution must minimize storage costs and incremental load times.
What should you include in the solution?

A. Partition by DateTime fields.
B. Sink to Azure Queue storage.
C. Include a watermark column.
D. Use a JSON format for physical data storage.

Answer: B

Explanation:
The Databricks ABS-AQS connector uses Azure Queue Storage (AQS) to provide an optimized file source that lets you find new files written to an Azure Blob storage (ABS) container without repeatedly listing all of the files.
This provides two major advantages:

> Lower costs: no more costly LIST API requests made to ABS.
Reference:
https://docs.microsoft.com/en-us/azure/databricks/spark/latest/structured-streaming/aqs

NEW QUESTION 21
- (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 24
- (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 26
- (Exam Topic 3)
You are designing an inventory updates table in an Azure Synapse Analytics dedicated SQL pool. The table will have a clustered columnstore index and will include the following columns:
• EventDate: 1 million per day
• EventTypeID: 10 million per event type
• WarehouseID: 100 million per warehouse
• ProductCategoryTypeiD: 25 million per product category type You identify the following usage patterns:
Analyst will most commonly analyze transactions for a warehouse.
Queries will summarize by product category type, date, and/or inventory event type. You need to recommend a partition strategy for the table to minimize query times. On which column should you recommend partitioning the table?

A. ProductCategoryTypeID
B. EventDate
C. WarehouseID
D. EventTypeID

Answer: D

NEW QUESTION 31
- (Exam Topic 3)
You are creating dimensions for a data warehouse in an Azure Synapse Analytics dedicated SQL pool. You create a table by using the Transact-SQL statement shown in the following exhibit.

```
CREATE TABLE [DBO].[DimProduct](
        [ProductKey] [int] IDENTITY(1,1) NOT NULL,
        [ProductSourceID] [int] NOT NULL,
        [ProductName] [nvarchar](100) NOT NULL,
        [ProductNumber] [nvarchar](25) NOT NULL,
        [Color] [nvarchar](15) NULL,
        [Size] [nvarchar](5) NULL,
        [Weight] [decimal](8, 2) NULL,
        [ProductCategory] [nvarchar](100) NULL,
        [SellStartDate] [date] NOT NULL,
        [SellEndDate] [date] NULL,
        [RowInsertedDateTime] [datetime] NOT NULL,
        [RowUpdatedDateTime] [datetime] NOT NULL,
        [ETLAuditID] [int] NOT NULL
)
```

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.

DimProduct is a **[answer choice]** slowly changing dimension (SCD).

| Type 0 |
| Type 1 |
| Type 2 |

The ProductKey column is **[answer choice]**.

| a surrogate key |
| a business key |
| an audit column |

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Box 1: Type 2
A Type 2 SCD supports versioning of dimension members. Often the source system doesn't store versions, so the data warehouse load process detects and manages changes in a dimension table. In this case, the dimension table must use a surrogate key to provide a unique reference to a version of the dimension member. It also includes columns that define the date range validity of the version (for example, StartDate and EndDate) and possibly a flag column (for example, IsCurrent) to easily filter by current dimension members.
Reference:
https://docs.microsoft.com/en-us/learn/modules/populate-slowly-changing-dimensions-azure-synapse-analytics

NEW QUESTION 34
- (Exam Topic 3)
You have an Azure Stream Analytics query. The query returns a result set that contains 10,000 distinct values for a column named clusterID.
You monitor the Stream Analytics job and discover high latency. You need to reduce the latency.
Which two actions should you perform? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

A. Add a pass-through query.
B. Add a temporal analytic function.
C. Scale out the query by using PARTITION BY.
D. Convert the query to a reference query.
E. Increase the number of streaming units.

Answer: CE

Explanation:
C: Scaling a Stream Analytics job takes advantage of partitions in the input or output. Partitioning lets you
divide data into subsets based on a partition key. A process that consumes the data (such as a Streaming Analytics job) can consume and write different partitions in parallel, which increases throughput.
E: Streaming Units (SUs) represents the computing resources that are allocated to execute a Stream Analytics job. The higher the number of SUs, the more CPU and memory resources are allocated for your job. This capacity lets you focus on the query logic and abstracts the need to manage the hardware to run your Stream Analytics job in a timely manner.
References:
https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-parallelization https://docs.microsoft.com/en-us/azure/stream-analytics-streaming-unit-consumption

NEW QUESTION 38
- (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 42
- (Exam Topic 3)
You have an Azure Data Lake Storage Gen2 container that contains 100 TB of data.
You need to ensure that the data in the container is available for read workloads in a secondary region if an outage occurs in the primary region. The solution must minimize costs.
Which type of data redundancy should you use?

A. zone-redundant storage (ZRS)
B. read-access geo-redundant storage (RA-GRS)
C. locally-redundant storage (LRS)
D. geo-redundant storage (GRS)

Answer: C

NEW QUESTION 44
- (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 45
- (Exam Topic 3)
You have an Azure Synapse workspace named MyWorkspace that contains an Apache Spark database named mytestdb.
You run the following command in an Azure Synapse Analytics Spark pool in MyWorkspace. CREATE TABLE mytestdb.myParquetTable(
EmployeeID int, EmployeeName string, EmployeeStartDate date) USING Parquet
You then use Spark to insert a row into mytestdb.myParquetTable. The row contains the following data.

EmployeeName	EmployeeID	EmployeeStartDate
Alice	24	2020-01-25

One minute later, you execute the following query from a serverless SQL pool in MyWorkspace. SELECT EmployeeID
FROM mytestdb.dbo.myParquetTable WHERE name = 'Alice';
What will be returned by the query?

A. 24
B. an error
C. a null value

Answer: A

Explanation:
Once a database has been created by a Spark job, you can create tables in it with Spark that use Parquet as the storage format. Table names will be converted to
lower case and need to be queried using the lower case name. These tables will immediately become available for querying by any of the Azure Synapse
workspace Spark pools. They can also be used from any of the Spark jobs subject to permissions.
Note: For external tables, since they are synchronized to serverless SQL pool asynchronously, there will be a delay until they appear.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/metadata/table

NEW QUESTION 48
- (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 49
- (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 52
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