

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 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.

Answer Area

Table type to store the product sales transactions:

Hash
Round-robin
Replicated

When creating the table for sales transactions:

Configure a clustered index.
Set the distribution column to product ID.
Set the distribution column to the sales date.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

Table type to store the product sales transactions:

Hash
Round-robin
Replicated

When creating the table for sales transactions:

Configure a clustered index.
Set the distribution column to product ID.
Set the distribution column to the sales date.

NEW QUESTION 2

- (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.

Answer Area

Transact-SQL DDL command to use:

CREATE EXTERNAL TABLE
CREATE TABLE
CREATE VIEW

Partitioning option to use in the WITH clause of the DDL statement:

FORMAT_OPTIONS
FORMAT_TYPE
RANGE LEFT FOR VALUES
RANGE RIGHT FOR VALUES

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

Transact-SQL DDL command to use:

CREATE EXTERNAL TABLE
CREATE TABLE
CREATE VIEW

Partitioning option to use in the WITH clause of the DDL statement:

FORMAT_OPTIONS
FORMAT_TYPE
RANGE LEFT FOR VALUES
RANGE RIGHT FOR VALUES

NEW QUESTION 3

- (Exam Topic 2)

Which Azure Data Factory components should you recommend using together to import the daily inventory data from the SQL server to Azure Data Lake Storage?

To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Integration runtime type:	<div><div></div><div>Azure integration runtime</div><div>Azure-SSIS integration runtime</div><div>Self-hosted integration runtime</div></div>
Trigger type:	<div><div></div><div>Event-based trigger</div><div>Schedule trigger</div><div>Tumbling window trigger</div></div>
Activity type:	<div><div></div><div>Copy activity</div><div>Lookup activity</div><div>Stored procedure activity</div></div>

- A. Mastered
- B. Not Mastered

Answer: A

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.

Box 2: Schedule trigger

Schedule every 8 hours Box 3: Copy activity Scenario:

➤ Customer data, including name, contact information, and loyalty number, comes from Salesforce and can be imported into Azure once every eight hours. Row modified dates are not trusted in the source table.

➤ Product data, including product ID, name, and category, comes from Salesforce and can be imported into Azure once every eight hours. Row modified dates are not trusted in the source table.

NEW QUESTION 4

- (Exam Topic 2)

What should you do to improve high availability of the real-time data processing solution?

- A. Deploy identical Azure Stream Analytics jobs to paired regions in Azure.
- B. Deploy a High Concurrency Databricks cluster.
- C. Deploy an Azure Stream Analytics job and use an Azure Automation runbook to check the status of the job and to start the job if it stops.
- D. Set Data Lake Storage to use geo-redundant storage (GRS).

Answer: A

Explanation:

Guarantee Stream Analytics job reliability during service updates

Part of being a fully managed service is the capability to introduce new service functionality and improvements at a rapid pace. As a result, Stream Analytics can have a service update deploy on a weekly (or more frequent) basis. No matter how much testing is done there is still a risk that an existing, running job may break due to the introduction of a bug. If you are running mission critical jobs, these risks need to be avoided. You can reduce this risk by following Azure's paired region model.

Scenario: The application development team will create an Azure event hub to receive real-time sales data, including store number, date, time, product ID, customer loyalty number, price, and discount amount, from the point of sale (POS) system and output the data to data storage in Azure

Reference:

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

NEW QUESTION 5

- (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.

Library:

Workspace:

- 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 6

- (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 7

- (Exam Topic 3)

You are monitoring an Azure Stream Analytics job.

The Backlogged Input Events count has been 20 for the last hour. You need to reduce the Backlogged Input Events count. What should you do?

- A. Drop late arriving events from the job.
- B. Add an Azure Storage account to the job.
- C. Increase the streaming units for the job.

D. Stop the job.

Answer: C

Explanation:

General symptoms of the job hitting system resource limits include:

➤ If the backlog event metric keeps increasing, it's an indicator that the system resource is constrained (either because of output sink throttling, or high CPU).
Note: Backlogged Input Events: Number of input events that are backlogged. A non-zero value for this metric implies that your job isn't able to keep up with the number of incoming events. If this value is slowly increasing or consistently non-zero, you should scale out your job: adjust Streaming Units.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-scale-jobs> <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-monitoring>

NEW QUESTION 8

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1.

You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: You use a dedicated SQL pool to create an external table that has a additional DateTime column. Does this meet the goal?

A. Yes

B. No

Answer: A

NEW QUESTION 9

- (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)
    FROM temperatures
    WHERE date BETWEEN DATE '2019-01-01' AND DATE
    '2021-08-31'
    )
    Value (
        AVG (
            Value (Temp AS DECIMAL(4, 1)))
        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)
    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 10

- (Exam Topic 3)

You are designing a real-time dashboard solution that will visualize streaming data from remote sensors that connect to the internet. The streaming data must be aggregated to show the average value of each 10-second interval. The data will be discarded after being displayed in the dashboard.

The solution will use Azure Stream Analytics and must meet the following requirements:

- Minimize latency from an Azure Event hub to the dashboard.
- Minimize the required storage.
- Minimize development effort.

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

Azure Stream Analytics input type:

	▼
Azure Event Hub	
Azure SQL Database	
Azure Stream Analytics	
Microsoft Power BI	

Azure Stream Analytics output type:

	▼
Azure Event Hub	
Azure SQL Database	
Azure Stream Analytics	
Microsoft Power BI	

Aggregation query location:

	▼
Azure Event Hub	
Azure SQL Database	
Azure Stream Analytics	
Microsoft Power BI	

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Reference:
<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-power-bi-dashboard>

NEW QUESTION 10

- (Exam Topic 3)

What should you recommend to prevent users outside the Litware on-premises network from accessing the analytical data store?

- A. a server-level virtual network rule
- B. a database-level virtual network rule
- C. a database-level firewall IP rule
- D. a server-level firewall IP rule

Answer: A

Explanation:

Virtual network rules are one firewall security feature that controls whether the database server for your single databases and elastic pool in Azure SQL Database or for your databases in SQL Data Warehouse accepts communications that are sent from particular subnets in virtual networks.

Server-level, not database-level: Each virtual network rule applies to your whole Azure SQL Database server, not just to one particular database on the server. In other words, virtual network rule applies at the serverlevel, not at the database-level.

References:
<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-vnet-service-endpoint-rule-overview>

NEW QUESTION 15

- (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.

Does this meet the goal?

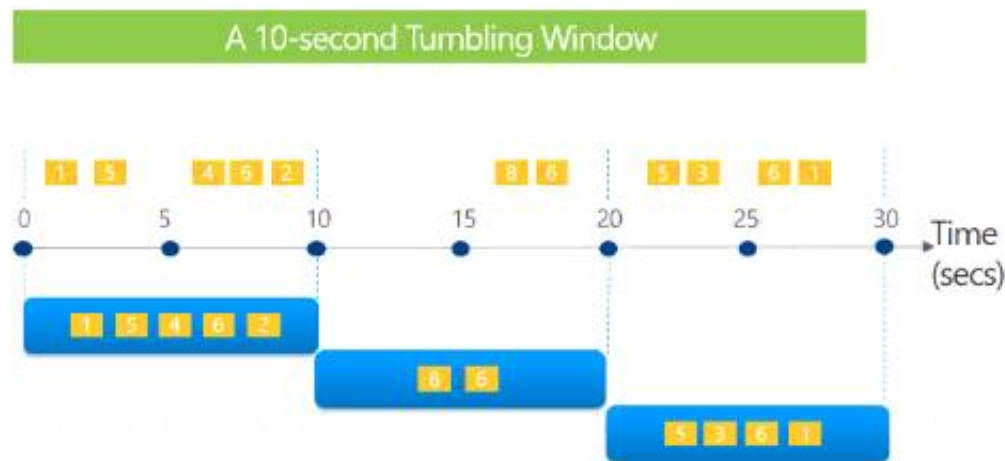
- A. Yes
- B. No

Answer: A

Explanation:

Tumbling windows are a series of fixed-sized, non-overlapping and contiguous time intervals. The following diagram illustrates a stream with a series of events and how they are mapped into 10-second tumbling windows.

Tell me the count of tweets per time zone every 10 seconds



```
SELECT TimeZone, COUNT(*) AS Count
FROM TwitterStream TIMESTAMP BY CreatedAt
GROUP BY TimeZone, TumblingWindow(second,10)
```

Reference:

<https://docs.microsoft.com/en-us/stream-analytics-query/tumbling-window-azure-stream-analytics>

NEW QUESTION 20

- (Exam Topic 3)

You have an Azure subscription that contains the following resources:

* An Azure Active Directory (Azure AD) tenant that contains a security group named Group1.

* An Azure Synapse Analytics SQL pool named Pool1.

You need to control the access of Group1 to specific columns and rows in a table in Pool1

Which Transact-SQL commands should you use? To answer, select the appropriate options in the answer area. NOTE: Each appropriate options in the answer area.

Answer Area

To control access to the columns:

CREATE CRYPTOGRAPHIC PROVIDER
CREATE PARTITION FUNCTION
CREATE SECURITY POLICY
GRANT

To control access to the rows:

CREATE CRYPTOGRAPHIC PROVIDER
CREATE PARTITION FUNCTION
CREATE SECURITY POLICY
GRANT

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

To control access to the columns:

CREATE CRYPTOGRAPHIC PROVIDER
CREATE PARTITION FUNCTION
CREATE SECURITY POLICY
GRANT

To control access to the rows:

CREATE CRYPTOGRAPHIC PROVIDER
CREATE PARTITION FUNCTION
CREATE SECURITY POLICY
GRANT

NEW QUESTION 23

- (Exam Topic 3)

You plan to implement an Azure Data Lake Gen2 storage account.

You need to ensure that the data lake will remain available if a data center fails in the primary Azure region. The solution must minimize costs.

Which type of replication should you use for the storage account?

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

Answer: A

Explanation:

Geo-redundant storage (GRS) copies your data synchronously three times within a single physical location in the primary region using LRS. It then copies your data asynchronously to a single physical location in the secondary region.

Reference:

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

NEW QUESTION 26

- (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 27

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL pool that contains the users shown in the following table.

Name	Role
User1	Server admin
User2	db_datareader

User1 executes a query on the database, and the query returns the results shown in the following exhibit.

```

1  SELECT c.name,
2      tbl.name as table_name,
3      typ.name as datatype,
4      c.is_masked,
5      c.masking_function
6  FROM sys.masked_columns AS c
7  INNER JOIN sys.tables AS tbl ON c.[object_id] = tbl.[object_id]
8  INNER JOIN sys.types typ ON c.user_type_id = typ.user_type_id
9  WHERE is_masked = 1;
10

```

Results		Messages			
	name	table_name	datatype	is_masked	masking_function
1	BirthDate	DimCustomer	date	1	default()
2	Gender	DimCustomer	nvarchar	1	default()
3	EmailAddress	DimCustomer	nvarchar	1	email()
4	YearlyIncome	DimCustomer	money	1	default()

User1 is the only user who has access to the unmasked data.

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

Answer Area

When User2 queries the YearlyIncome column, the values returned will be

[answer choice]

a random number
the values stored in the database
XXXX
0

When User1 queries the BirthDate column, the values returned will be

[answer choice]

a random date
the values stored in the database
XXXX
1900-01-01

- A. Mastered
B. Not Mastered

Answer: A

Explanation:

Answer Area

When User2 queries the YearlyIncome column, the values returned will be [answer choice].

a random number
the values stored in the database
XXXX
0

When User1 queries the BirthDate column, the values returned will be [answer choice].

a random date
the values stored in the database
XXXX
1900-01-01

NEW QUESTION 31

- (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.

To track encryption key usage:

Always Encrypted
TDE with customer-managed keys
TDE with platform-managed keys

To maintain client app access in the event of a datacenter outage:

Create and configure Azure key vaults in two Azure regions.
Enable Advanced Data Security on Server1.
Implement the client apps by using a Microsoft .NET Framework data provider.

- 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 32

- (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 property 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 37

- (Exam Topic 3)

You are designing an application that will store petabytes of medical imaging data

When the data is first created, the data will be accessed frequently during the first week. After one month, the data must be accessible within 30 seconds, but files will be accessed infrequently. After one year, the data will be accessed infrequently but must be accessible within five minutes.

You need to select a storage strategy for the data. The solution must minimize costs.

Which storage tier should you use for each time frame? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

First week:	<div><div>▼</div><div>Archive</div><div>Cool</div><div>Hot</div></div>
After one month:	<div><div>▼</div><div>Archive</div><div>Cool</div><div>Hot</div></div>
After one year:	<div><div>▼</div><div>Archive</div><div>Cool</div><div>Hot</div></div>

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

First week: Hot

Hot - Optimized for storing data that is accessed frequently. After one month: Cool

Cool - Optimized for storing data that is infrequently accessed and stored for at least 30 days.

After one year: Cool

NEW QUESTION 38

- (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 39

- (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 41

- (Exam Topic 3)

You are designing an enterprise data warehouse in Azure Synapse Analytics that will contain a table named Customers. Customers will contain credit card information.

You need to recommend a solution to provide salespeople with the ability to view all the entries in Customers. The solution must prevent all the salespeople from viewing or inferring the credit card information.

What should you include in the recommendation?

- A. data masking
B. Always Encrypted
C. column-level security
D. row-level security

Answer: A

Explanation:

SQL Database dynamic data masking limits sensitive data exposure by masking it to non-privileged users. The Credit card masking method exposes the last four digits of the designated fields and adds a constant string as a prefix in the form of a credit card.

Example: XXXX-XXXX-XXXX-1234

Reference:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-dynamic-data-masking-get-started>

NEW QUESTION 42

- (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 47

- (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.

Values

Answer Area

CASE
ELSE
OVER
PARTITION
ROW_NUMBER

```
SELECT
    *,
    Value
    WHEN hire_date >= '2019-01-01' THEN
    'New' Value 'Standard'
    END AS employee_type
FROM
    employees;
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Values

Answer Area

CASE
ELSE
OVER
PARTITION
ROW_NUMBER

```
SELECT
    *,
    CASE
    WHEN hire_date >= '2019-01-01' THEN
    'New' PARTITION 'Standard'
    END AS employee_type
FROM
    employees;
```

NEW QUESTION 48

- (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/stream-analytics-streaming-unit-consumption>

NEW QUESTION 52

- (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.

Values	Answer Area
CLUSTERED INDEX	CREATE TABLE table1
COLLATE	(
DISTRIBUTION	ID INTEGER,
PARTITION	col1 VARCHAR(10),
PARTITION FUNCTION	col2 VARCHAR(10)
PARTITION SCHEME) WITH
	(
	= HASH(ID),
	(ID RANGE LEFT FOR VALUES (1, 1000000, 2000000))
);

- 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 57

- (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 59

- (Exam Topic 3)

You develop data engineering solutions for a company.

A project requires the deployment of data to Azure Data Lake Storage.

You need to implement role-based access control (RBAC) so that project members can manage the Azure Data Lake Storage resources.

Which three actions should you perform? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

- A. Assign Azure AD security groups to Azure Data Lake Storage.
- B. Configure end-user authentication for the Azure Data Lake Storage account.
- C. Configure service-to-service authentication for the Azure Data Lake Storage account.
- D. Create security groups in Azure Active Directory (Azure AD) and add project members.
- E. Configure access control lists (ACL) for the Azure Data Lake Storage account.

Answer: ADE

Explanation:

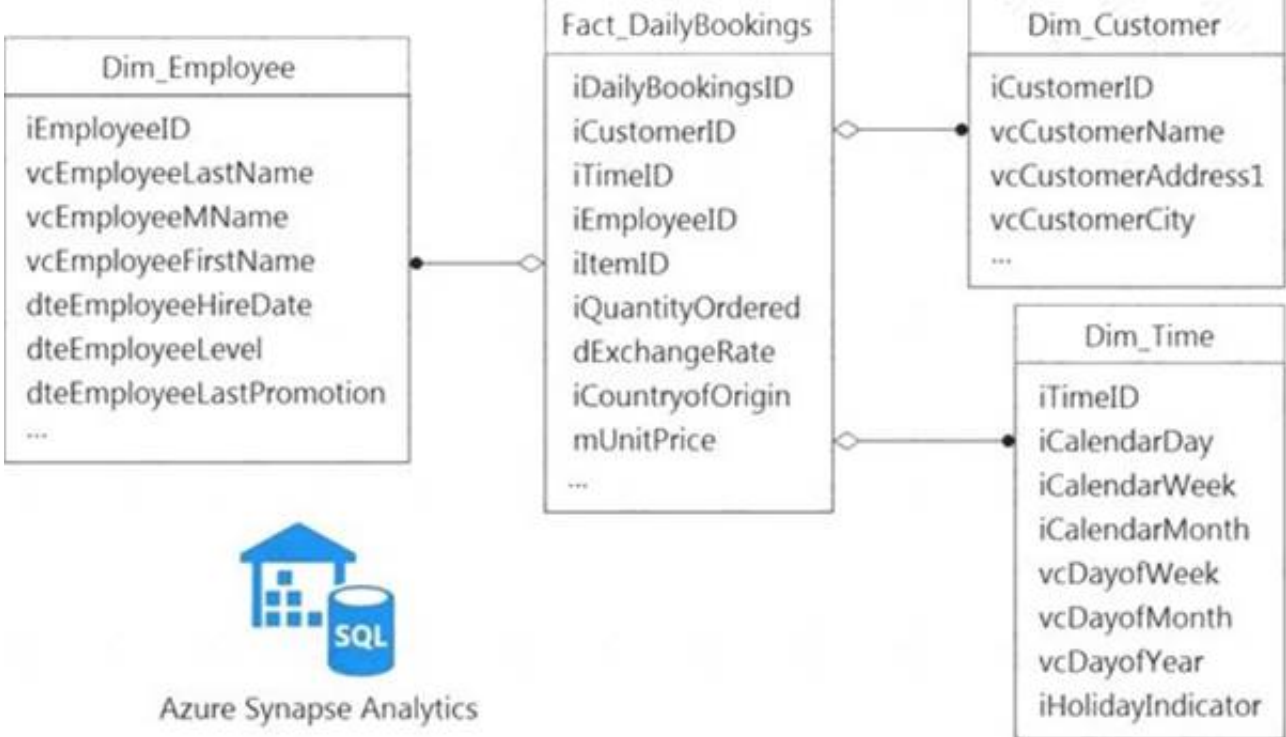
References:

<https://docs.microsoft.com/en-us/azure/data-lake-store/data-lake-store-secure-data>

NEW QUESTION 64

- (Exam Topic 3)

You have a data model that you plan to implement in a data warehouse in Azure Synapse Analytics as shown in the following exhibit.



All the dimension tables will be less than 2 GB after compression, and the fact table will be approximately 6 TB. Which type of table should you use for each table? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Answer Area

Dim_Customer:

Dim_Employee:

Dim_Time:

Fact_DailyBookings:

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

Dim_Customer:	<div><div>▼</div><div>Hash distributed Round-robin Replicated</div></div>
Dim_Employee:	<div><div>▼</div><div>Hash distributed Round-robin Replicated</div></div>
Dim_Time:	<div><div>▼</div><div>Hash distributed Round-robin Replicated</div></div>
Fact_DailyBookings:	<div><div>▼</div><div>Hash distributed Round-robin Replicated</div></div>

NEW QUESTION 69

- (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 74

- (Exam Topic 3)

You plan to implement an Azure Data Lake Storage Gen2 container that will contain CSV files. The size of the files will vary based on the number of events that occur per hour.

File sizes range from 4.KB to 5 GB.

You need to ensure that the files stored in the container are optimized for batch processing. What should you do?

- A. Compress the files.
- B. Merge the files.
- C. Convert the files to JSON
- D. Convert the files to Avro.

Answer: D

NEW QUESTION 75

- (Exam Topic 3)

You need to design an Azure Synapse Analytics dedicated SQL pool that meets the following requirements:

- Can return an employee record from a given point in time.
- Maintains the latest employee information.
- Minimizes query complexity.

How should you model the employee data?

- A. as a temporal table
- B. as a SQL graph table
- C. as a degenerate dimension table
- D. as a Type 2 slowly changing dimension (SCD) table

Answer: D

Explanation:

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 78

- (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 80

- (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 84

- (Exam Topic 3)

You are creating an Azure Data Factory data flow that will ingest data from a CSV file, cast columns to specified types of data, and insert the data into a table in an Azure Synapse Analytic dedicated SQL pool. The CSV file contains three columns named username, comment, and date.

The data flow already contains the following:

- A source transformation.
- A Derived Column transformation to set the appropriate types of data.
- A sink transformation to land the data in the pool.

You need to ensure that the data flow meets the following requirements:

- All valid rows must be written to the destination table.
- Truncation errors in the comment column must be avoided proactively.
- Any rows containing comment values that will cause truncation errors upon insert must be written to a file in blob storage.

Which two actions should you perform? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

- A. To the data flow, add a sink transformation to write the rows to a file in blob storage.
- B. To the data flow, add a Conditional Split transformation to separate the rows that will cause truncation errors.
- C. To the data flow, add a filter transformation to filter out rows that will cause truncation errors.
- D. Add a select transformation to select only the rows that will cause truncation errors.

Answer: AB

Explanation:

B: Example:

* 1. This conditional split transformation defines the maximum length of "title" to be five. Any row that is less than or equal to five will go into the GoodRows stream.

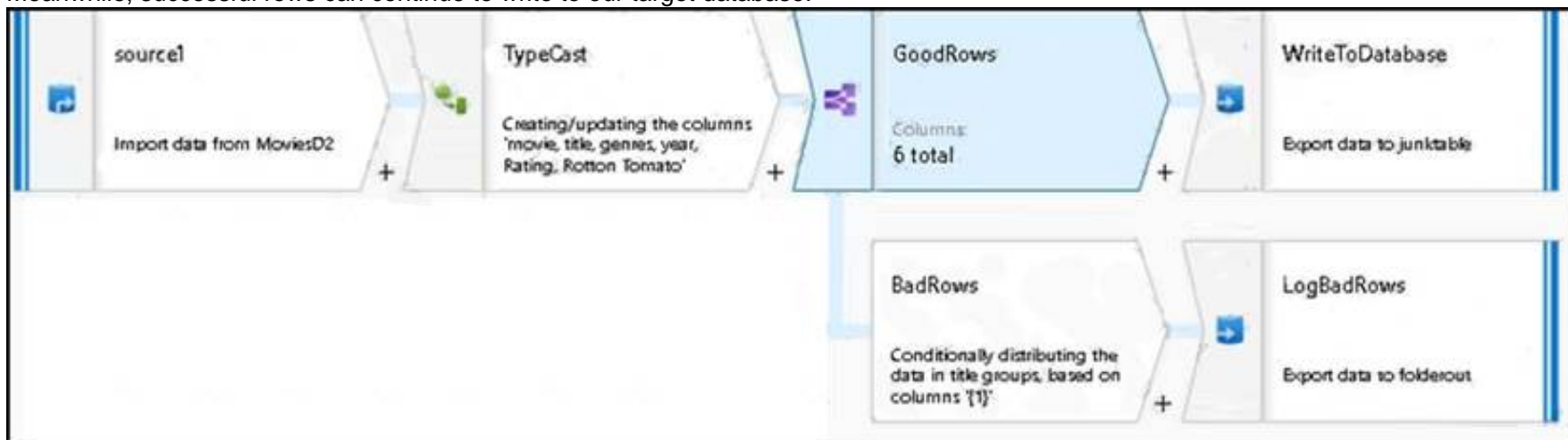
Any row that is larger than five will go into the BadRows stream.

* 2. This conditional split transformation defines the maximum length of "title" to be five. Any row that is less than or equal to five will go into the GoodRows stream. Any row that is larger than five will go into the BadRows stream.

A:

* 3. Now we need to log the rows that failed. Add a sink transformation to the BadRows stream for logging. Here, we'll "auto-map" all of the fields so that we have logging of the complete transaction record. This is a text-delimited CSV file output to a single file in Blob Storage. We'll call the log file "badrows.csv".

* 4. The completed data flow is shown below. We are now able to split off error rows to avoid the SQL truncation errors and put those entries into a log file. Meanwhile, successful rows can continue to write to our target database.



Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/how-to-data-flow-error-rows>

NEW QUESTION 86

- (Exam Topic 3)

You are designing an Azure Stream Analytics solution that receives instant messaging data from an Azure event hub. You need to ensure that the output from the Stream Analytics job counts the number of messages per time zone every 15 seconds.

How should you complete the Stream Analytics query? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```

Select TimeZone, count(*) AS MessageCount
FROM
    (
        LAST
        OVER
        SYSTEM.TIMESTAMP()
        TIMESTAMP BY
        CreatedAt
    )
    HOPPINGWINDOW
    SESSIONWINDOW
    SLIDINGWINDOW
    TUMBLINGWINDOW
    (second,15)
    MessageStream
    TimeZone,
    
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

```

Select TimeZone, count(*) AS MessageCount
FROM
    (
        LAST
        OVER
        SYSTEM.TIMESTAMP()
        TIMESTAMP BY
        CreatedAt
    )
    HOPPINGWINDOW
    SESSIONWINDOW
    SLIDINGWINDOW
    TUMBLINGWINDOW
    (second,15)
    MessageStream
    TimeZone,
    
```

NEW QUESTION 88

- (Exam Topic 3)

You plan to ingest streaming social media data by using Azure Stream Analytics. The data will be stored in files in Azure Data Lake Storage, and then consumed by using Azure Databricks and PolyBase in Azure Synapse Analytics.

You need to recommend a Stream Analytics data output format to ensure that the queries from Databricks and PolyBase against the files encounter the fewest possible errors. The solution must ensure that the files can be queried quickly and that the data type information is retained.

What should you recommend?

- A. Parquet
- B. Avro
- C. CSV
- D. JSON

Answer: B

Explanation:

The Avro format is great for data and message preservation. Avro schema with its support for evolution is essential for making the data robust for streaming architectures like Kafka, and with the metadata that schema provides, you can reason on the data. Having a schema provides robustness in providing meta-data about the data stored in Avro records which are self- documenting the data. References: <http://cloudurable.com/blog/avro/index.html>

NEW QUESTION 92

- (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 94

- (Exam Topic 3)

You have a table in an Azure Synapse Analytics dedicated SQL pool. The table was created by using the following Transact-SQL statement.

```
CREATE TABLE [dbo].[DimEmployee] (
    [EmployeeKey] [int] IDENTITY(1,1) NOT NULL,
    [EmployeeID] [int] NOT NULL,
    [FirstName] [varchar](100) NOT NULL,
    [LastName] [varchar](100) NOT NULL,
    [JobTitle] [varchar](100) NULL,
    [LastHireDate] [date] NULL,
    [StreetAddress] [varchar](500) NOT NULL,
    [City] [varchar](200) NOT NULL,
    [StateProvince] [varchar](50) NOT NULL,
    [Postalcode] [varchar](10) NOT NULL
)
```

You need to alter the table to meet the following requirements:

- Ensure that users can identify the current manager of employees.
- Support creating an employee reporting hierarchy for your entire company.
- Provide fast lookup of the managers' attributes such as name and job title.

Which column should you add to the table?

- A. [ManagerEmployeeID] [int] NULL
- B. [ManagerEmployeeID] [smallint] NULL
- C. [ManagerEmployeeKey] [int] NULL
- D. [ManagerName] [varchar](200) NULL

Answer: A

Explanation:

Use the same definition as the EmployeeID column. Reference:

<https://docs.microsoft.com/en-us/analysis-services/tabular-models/hierarchies-ssas-tabular>

NEW QUESTION 98

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