Custom View Settings

Topic 1 - Question Set 1

Question #1 *Topic 1*

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,
   [Portalcode] [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] [smallint] NULL

B. [ManagerEmployeeKey] [smallint] NULL

C. [ManagerEmployeeKey] [int] NULL Most Voted

D. [ManagerName] [varchar](200) NULL

Correct Answer: *C*

We need an extra column to identify the Manager. Use the data type as the EmployeeKey column, an int column.

Reference:

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

Community vote distribution

C (100%)

Question #2 *Topic 1*

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 EmployeeName = 'Alice';

What will be returned by the query?

A. 24

B. an error Most Voted

C. a null value

Correct Answer: *A*

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

Community vote distribution

B (71%) A (29%)

Question #3 *Topic 1*

DRAG DROP -

You have a table named SalesFact in an enterprise data warehouse in Azure Synapse Analytics. SalesFact contains sales data from the past 36 months and has the following characteristics:

- ☞ Is partitioned by month
- ☞ Contains one billion rows
- ☞ Has clustered columnstore index

At the beginning of each month, you need to remove data from SalesFact that is older than 36 months as quickly as possible.

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

Select and Place:

Actions	Answer Area
Switch the partition containing the stale data from SalesFact to SalesFact_Work.	
Truncate the partition containing the stale data.	
Drop the SalesFact_Work table.	
Create an empty table named SalesFact_Work that has the same schema as SalesFact.	
Execute a DELETE statement where the value in the Date column is more than 36 months ago.	
Copy the data to a new table by using CREATE TABLE AS SELECT (CTAS).	

Correct Answer:

Actions	Answer Area
Switch the partition containing the stale data from SalesFact to SalesFact_Work.	Create an empty table named SalesFact_Work that has the same schema as SalesFact.
Truncate the partition containing the stale data.	Switch the partition containing the stale data from SalesFact to SalesFact_Work.
Drop the SalesFact_Work table.	Drop the SalesFact_Work table.
Create an empty table named SalesFact_Work that has the same schema as SalesFact.	
Execute a DELETE statement where the value in the Date column is more than 36 months ago.	
Copy the data to a new table by using CREATE TABLE AS SELECT (CTAS).	

Step 1: Create an empty table named SalesFact_work that has the same schema as SalesFact.

Step 2: Switch the partition containing the stale data from SalesFact to SalesFact_Work.

SQL Data Warehouse supports partition splitting, merging, and switching. To switch partitions between two tables, you must ensure that the partitions align on their respective boundaries and that the table definitions match.

Loading data into partitions with partition switching is a convenient way stage new data in a table that is not visible to users the switch in the new data.

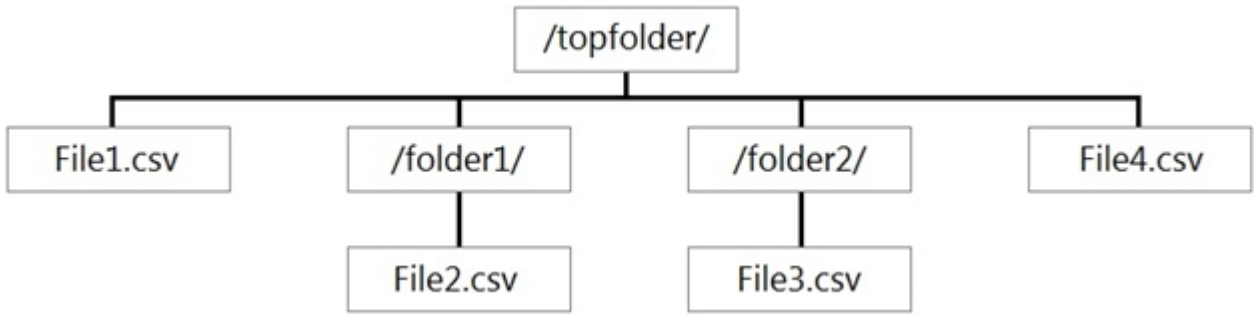
Step 3: Drop the SalesFact_Work table.

Reference:

https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-tables-partition

Question #4 *Topic 1*

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 Most Voted

C. File1.csv, File2.csv, File3.csv, and File4.csv

D. File1.csv only

Correct Answer: *C*

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

Community vote distribution

B (70%) C (28%)

Question #5 *Topic 1*

HOTSPOT -

You are planning the deployment of Azure Data Lake Storage Gen2.

You have the following two reports that will access the data lake:

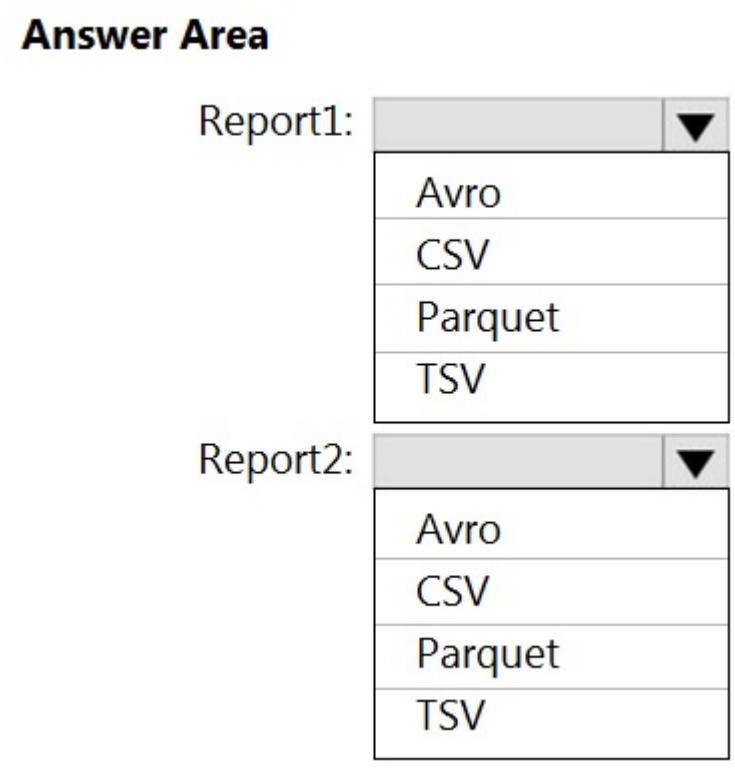
- Report1: Reads three columns from a file that contains 50 columns.
- Report2: Queries a single record based on a timestamp.

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.

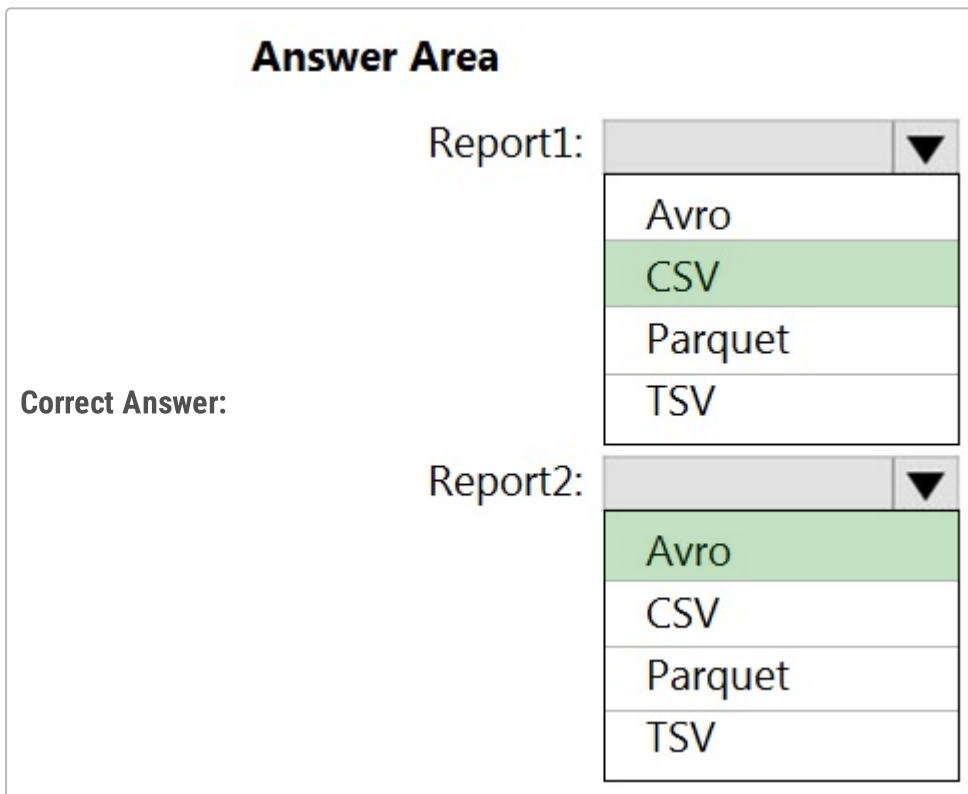
What should you recommend for each report? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



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-D.html

Question #6 *Topic 1*

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 Most Voted

Correct Answer: *D*
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}/

Community vote distribution

D (100%)

Question #7 *Topic 1*

HOTSPOT -

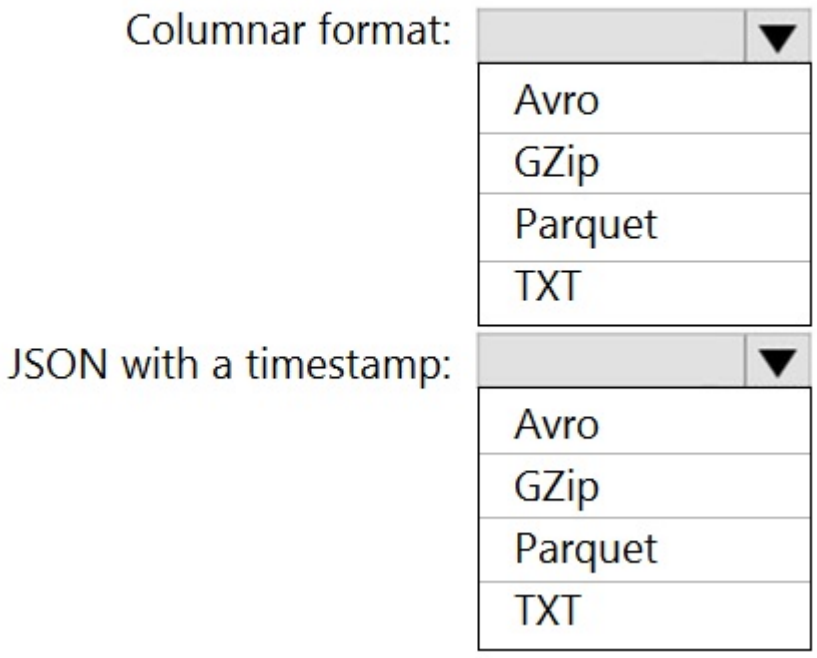
You need to output files from Azure Data Factory.

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

NOTE: Each correct selection is worth one point.

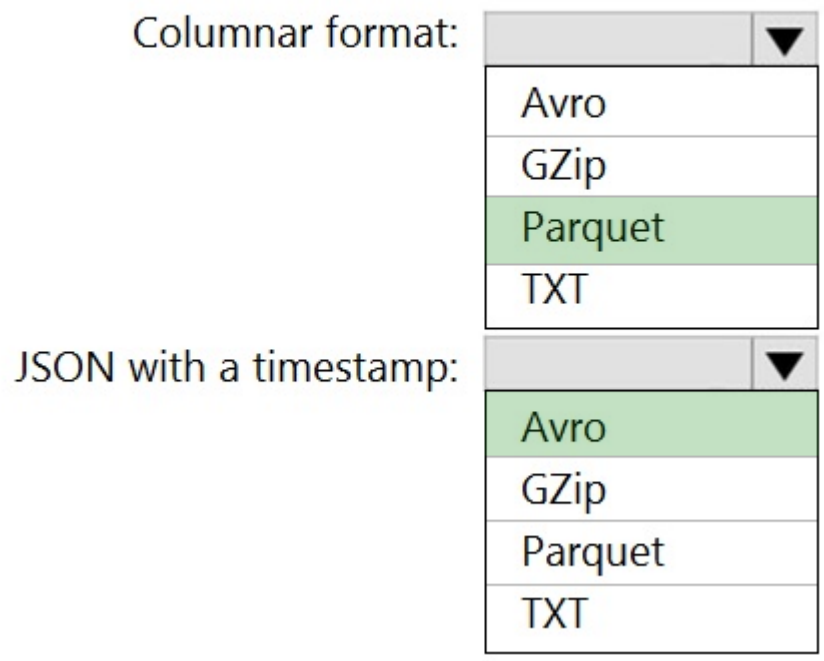
Hot Area:

Answer Area



Answer Area

Correct Answer:



Box 1: Parquet -

Parquet stores data in columns, while Avro stores data in a row-based format. By their very nature, column-oriented data stores are optimized for read-heavy analytical workloads, while row-based databases are best for write-heavy transactional workloads.

Box 2: Avro -

An Avro schema is created using JSON format.

AVRO supports timestamps.

Note: Azure Data Factory supports the following file formats (not GZip or TXT).

Avro format -

- ☞ Binary format
- ☞ Delimited text format
- ☞ Excel format
- ☞ JSON format
- ☞ ORC format
- ☞ Parquet format

☞ XML format

Reference:

https://www.datanami.com/2018/05/16/big-data-file-formats-demystified

Question #8 *Topic 1*

HOTSPOT -

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:

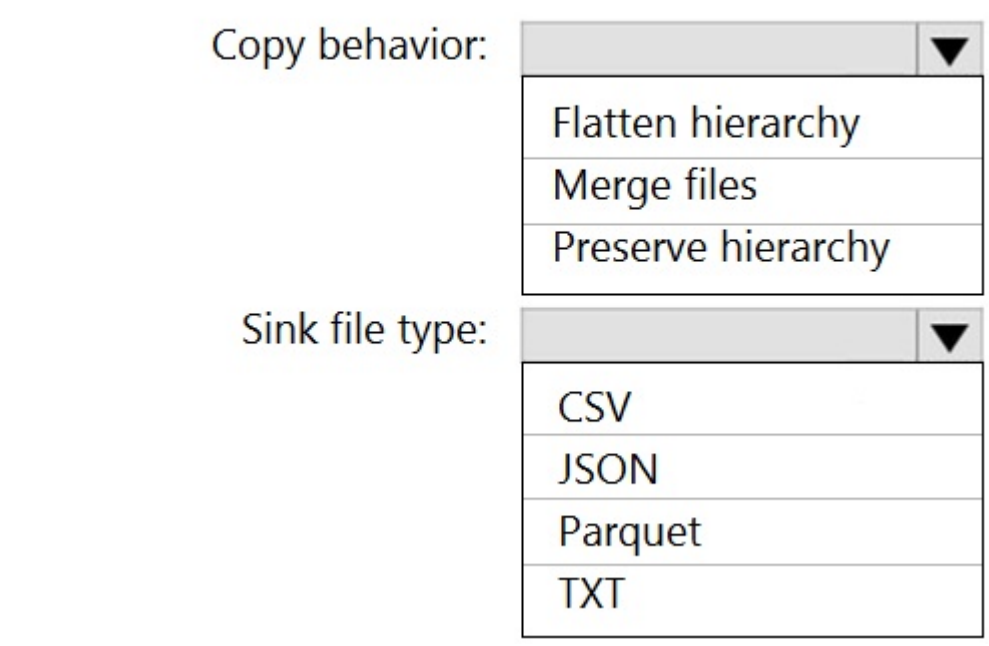
☞ Provide the fastest possible query times.

☞ Automatically infer the schema from the underlying files.

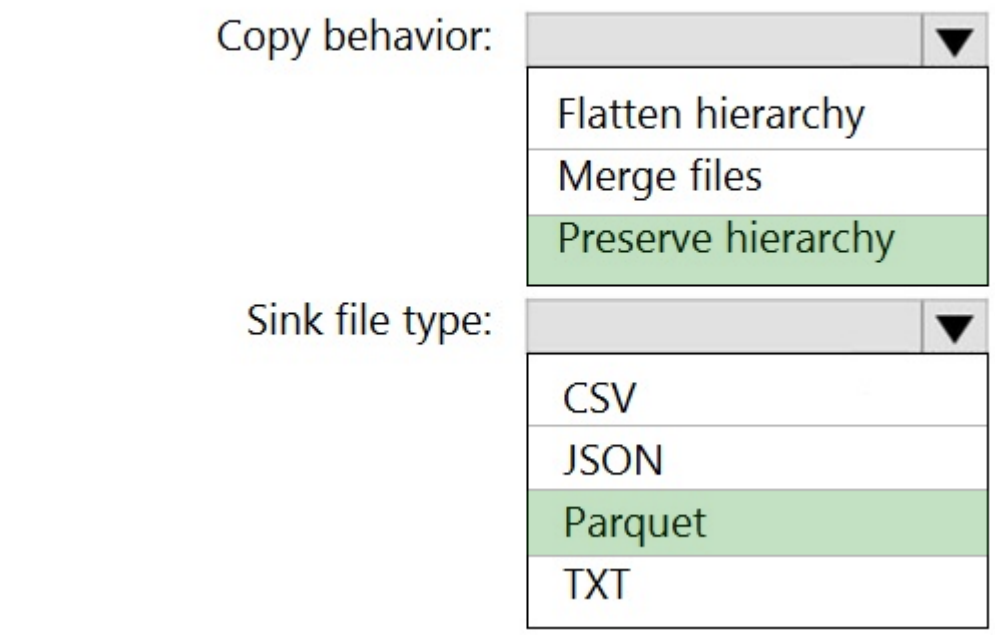
How should you configure the Data Factory copy activity? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



Box 1: Preserver hierarchy -

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.

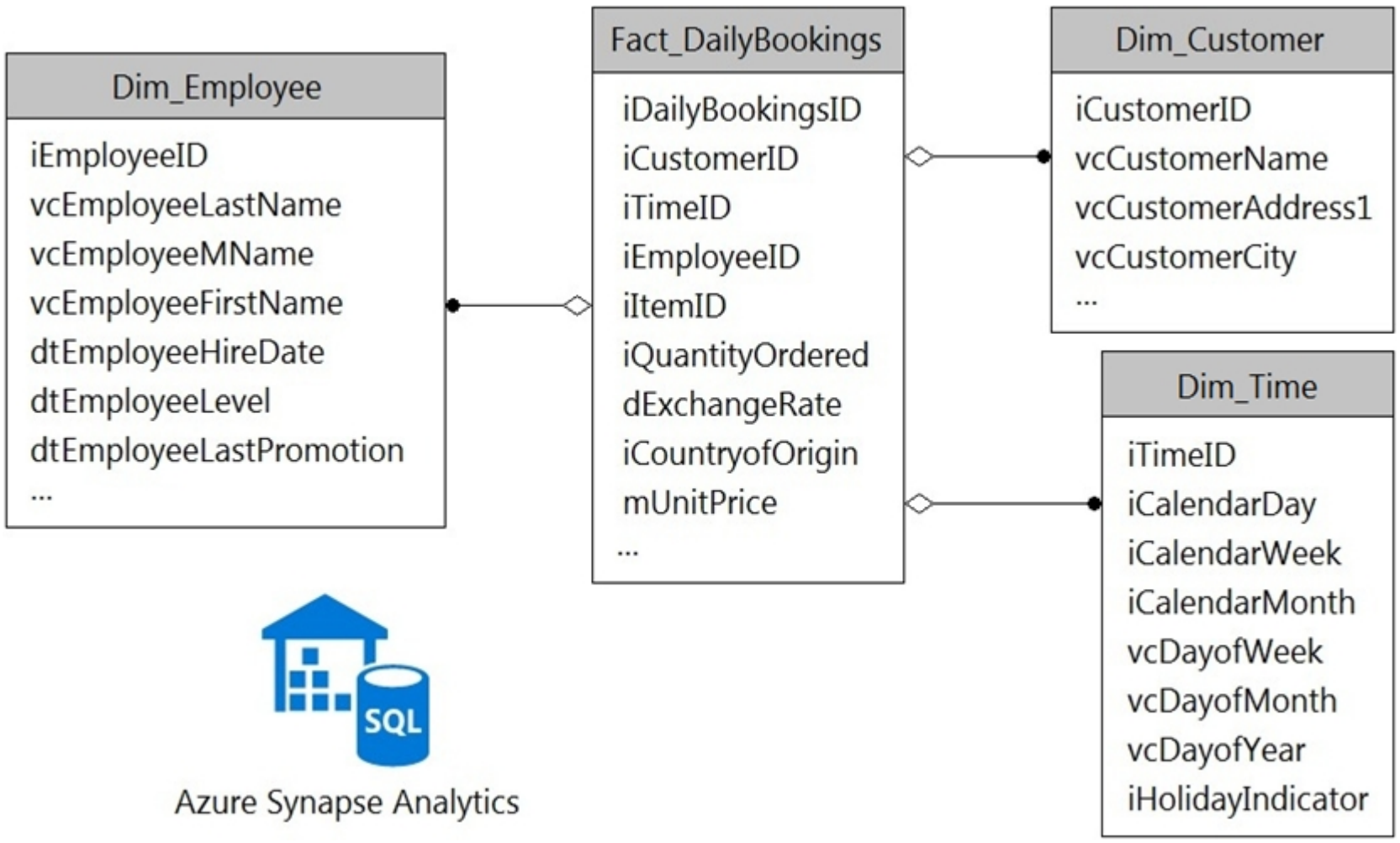
Reference:

https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-introduction https://docs.microsoft.com/en-us/azure/data-factory/format-parquet

Question #9 *Topic 1*

HOTSPOT -

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. The dimension tables will be relatively static with very few data inserts and updates.

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.

Hot Area:

Answer Area

Dim_Customer: [Hash distributed / Round-robin / Replicated]

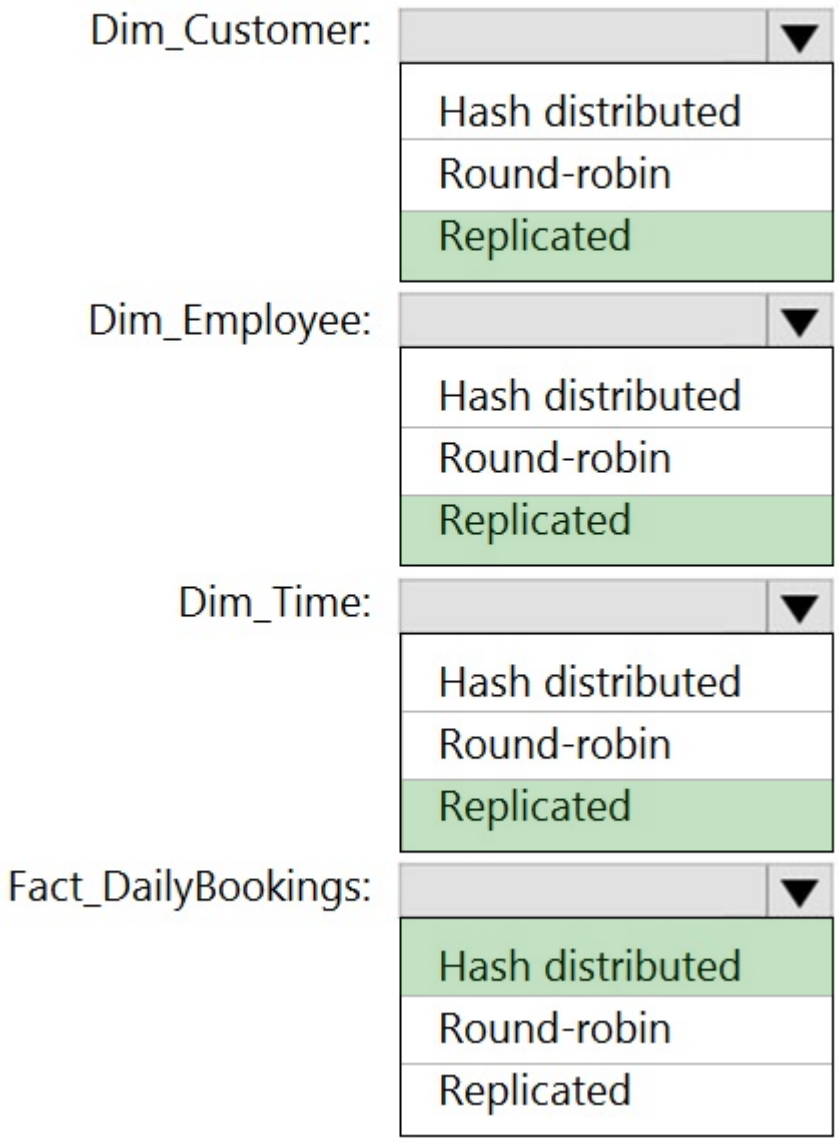
Dim_Employee: [Hash distributed / Round-robin / Replicated]

Dim_Time: [Hash distributed / Round-robin / Replicated]

Fact_DailyBookings: [Hash distributed / Round-robin / Replicated]

Correct Answer:

Answer Area



Box 1: Replicated -
Replicated tables are ideal for small star-schema dimension tables, because the fact table is often distributed on a column that is not compatible with the connected dimension tables. If this case applies to your schema, consider changing small dimension tables currently implemented as round-robin to replicated.

Box 2: Replicated -

Box 3: Replicated -

Box 4: Hash-distributed -
For Fact tables use hash-distribution with clustered columnstore index. Performance improves when two hash tables are joined on the same distribution column.
Reference:
https://azure.microsoft.com/en-us/updates/reduce-data-movement-and-make-your-queries-more-efficient-with-the-general-availability-of-replicated-tables/ https://azure.microsoft.com/en-us/blog/replicated-tables-now-generally-available-in-azure-sql-data-warehouse/

Question #10 *Topic 1*

HOTSPOT -

You have an Azure Data Lake Storage Gen2 container.

Data is ingested into the container, and then transformed by a data integration application. The data is NOT modified after that. Users can read files in the container but cannot modify the files.

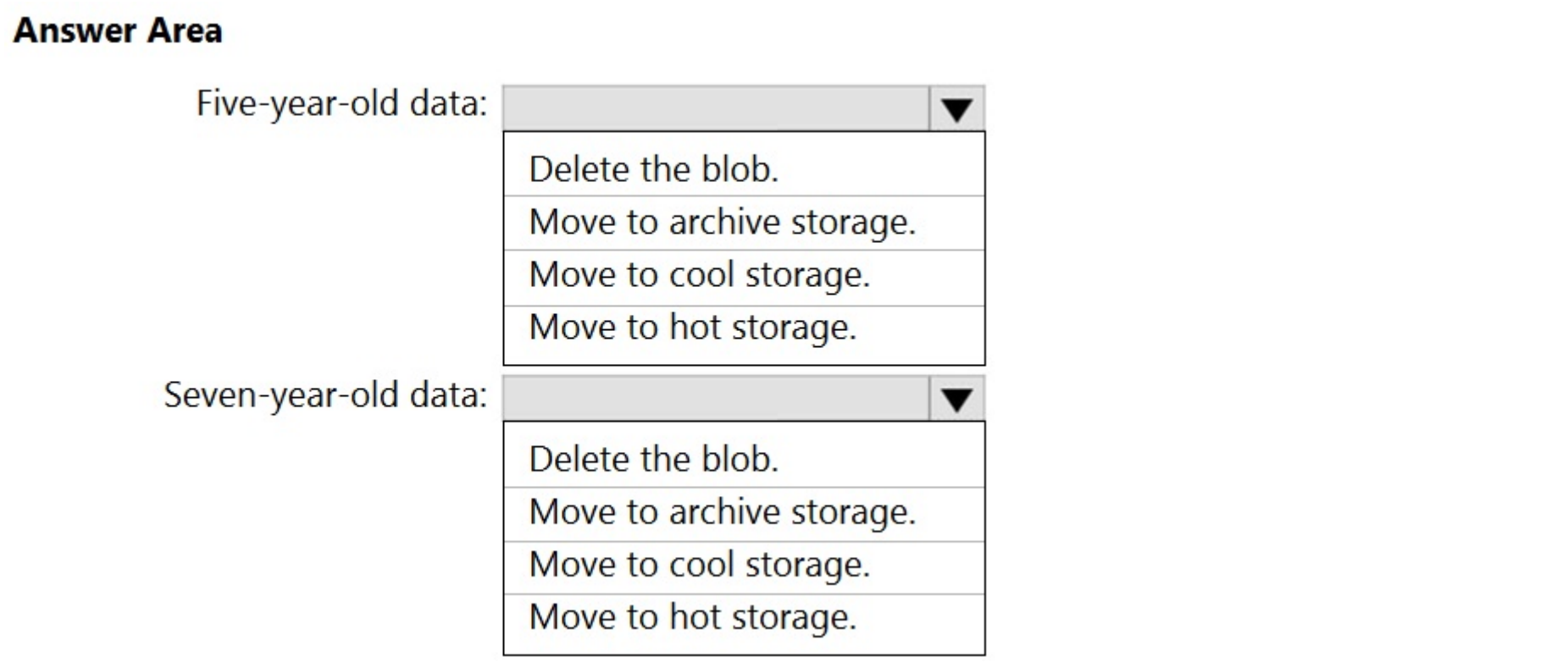
You need to design a data archiving solution that meets the following requirements:

- New data is accessed frequently and must be available as quickly as possible.
- Data that is older than five years is accessed infrequently but must be available within one second when requested.
- Data that is older than seven years is NOT accessed. After seven years, the data must be persisted at the lowest cost possible.
- Costs must be minimized while maintaining the required availability.

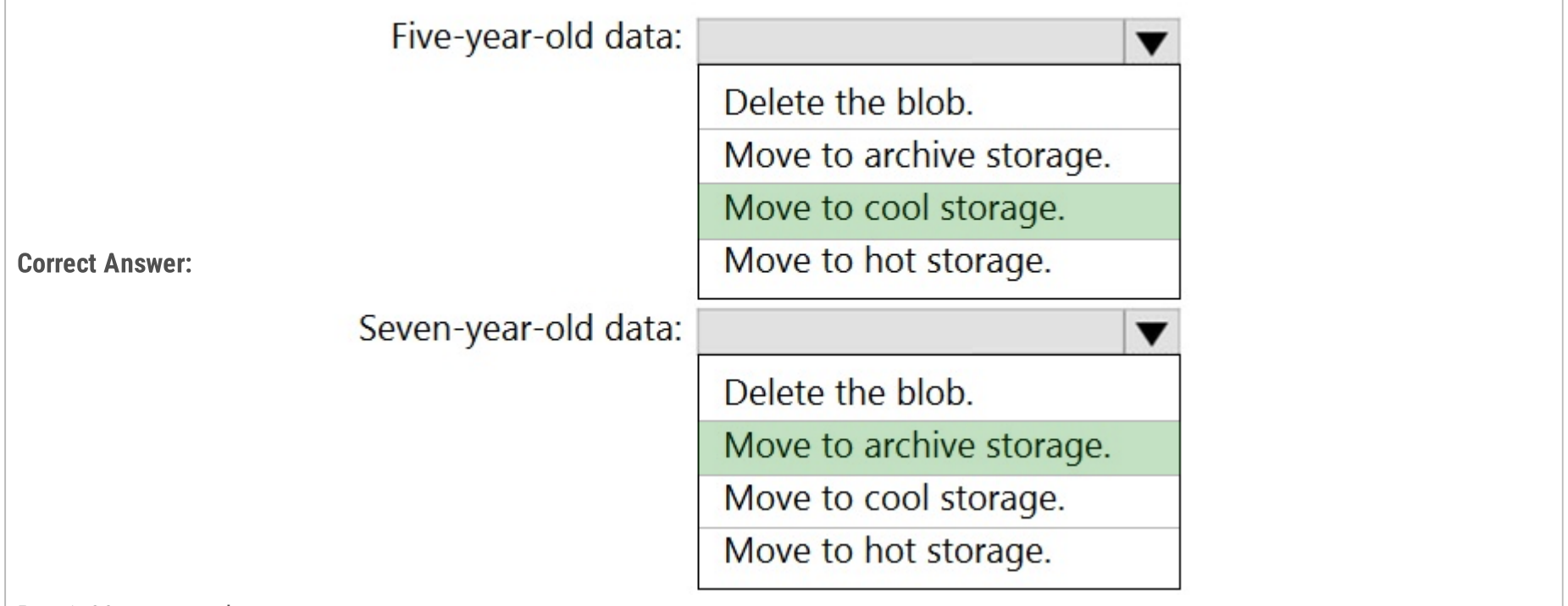
How should you manage the data? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point

Hot Area:



Correct Answer:



Box 1: Move to cool storage -

Box 2: Move to archive storage -

Archive - Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements, on the order of hours.

The following table shows a comparison of premium performance block blob storage, and the hot, cool, and archive access tiers.

	Premium performance	Hot tier	Cool tier	Archive tier
Availability	99.9%	99.9%	99%	Offline
Availability (RA-GRS reads)	N/A	99.99%	99.9%	Offline
Usage charges	Higher storage costs, lower access, and transaction cost	Higher storage costs, lower access, and transaction costs	Lower storage costs, higher access, and transaction costs	Lowest storage costs, highest access, and transaction costs
Minimum storage duration	N/A	N/A	30 days[1]	180 days
Latency (Time to first byte)	Single-digit milliseconds	milliseconds	milliseconds	hours[2]

Reference:
https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers

Next Questions →

Custom View Settings

Question #11 *Topic 1*

DRAG DROP -
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.
Select and Place:

Values

- CLUSTERED INDEX
- COLLATE
- DISTRIBUTION
- PARTITION
- PARTITION FUNCTION
- PARTITION SCHEME

Answer Area

```
CREATE TABLE table1
(
 ID INTEGER,
 col1 VARCHAR(10),
 col2 VARCHAR(10)
) WITH
(
                          = HASH(ID),
                          (ID RANGE LEFT FOR VALUES (1, 1000000, 2000000))
);
```

Correct Answer:

Values

- CLUSTERED INDEX
- COLLATE
- DISTRIBUTION
- PARTITION
- PARTITION FUNCTION
- PARTITION SCHEME

Answer Area

```
CREATE TABLE table1
(
 ID INTEGER,
 col1 VARCHAR(10),
 col2 VARCHAR(10)
) WITH
(
DISTRIBUTION              = HASH(ID),
PARTITION                 (ID RANGE LEFT FOR VALUES (1, 1000000, 2000000))
);
```

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
?

Question #12 *Topic 1*

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 Most Voted

Correct Answer: *D*

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-pipelines/3-choose-between-dimension-types

Community vote distribution

D (100%)

Question #13 *Topic 1*

You have an enterprise-wide Azure Data Lake Storage Gen2 account. The data lake is accessible only through an Azure virtual network named VNET1.

You are building a SQL pool in Azure Synapse that will use data from the data lake.

Your company has a sales team. All the members of the sales team are in an Azure Active Directory group named Sales. POSIX controls are used to assign the

Sales group access to the files in the data lake.

You plan to load data to the SQL pool every hour.

You need to ensure that the SQL pool can load the sales data from the data lake.

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

NOTE: Each area selection is worth one point.

A. Add the managed identity to the Sales group. Most Voted

B. Use the managed identity as the credentials for the data load process. Most Voted

C. Create a shared access signature (SAS).

D. Add your Azure Active Directory (Azure AD) account to the Sales group.

E. Use the shared access signature (SAS) as the credentials for the data load process.

F. Create a managed identity. Most Voted

Correct Answer: *ABF*

The managed identity grants permissions to the dedicated SQL pools in the workspace.

Note: Managed identity for Azure resources is a feature of Azure Active Directory. The feature provides Azure services with an automatically managed identity in

Azure AD -

Reference:

https://docs.microsoft.com/en-us/azure/synapse-analytics/security/synapse-workspace-managed-identity

Community vote distribution

ABF (100%)

Question #14 *Topic 1*

HOTSPOT -

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_datereader

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

```
SELECT c.name,
    tbl.name as table_name,
    typ.name as datatype,
    c.is_masked,
    c.masking_function
FROM sys.masked_columns AS c
INNER JOIN sys.tables AS tbl ON c.[object_id] = tbl.[object_id]
INNER JOIN sys.types typ ON c.user_type_id = typ.user_type_id
WHERE is_masked = 1;
```

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.

NOTE: Each correct selection is worth one point.

Hot Area:

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

Correct Answer:

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

Box 1: 0 -

The YearlyIncome column is of the money data type.

The Default masking function: Full masking according to the data types of the designated fields

☞ Use a zero value for numeric data types (bigint, bit, decimal, int, money, numeric, smallint, smallmoney, tinyint, float, real).

Box 2: the values stored in the database

Users with administrator privileges are always excluded from masking, and see the original data without any mask.

Reference:

https://docs.microsoft.com/en-us/azure/azure-sql/database/dynamic-data-masking-overview

Question #15 *Topic 1*

You have an enterprise data warehouse in Azure Synapse Analytics.

Using PolyBase, you create an external table named [Ext].[Items] to query Parquet files stored in Azure Data Lake Storage Gen2 without importing the data to the data warehouse.

The external table has three columns.

You discover that the Parquet files have a fourth column named ItemID.

Which command should you run to add the ItemID column to the external table?

A.

```
ALTER EXTERNAL TABLE [Ext].[Items]
  ADD [ItemID] int;
```

B.

```
DROP EXTERNAL FILE FORMAT parquetfile1;
CREATE EXTERNAL FILE FORMAT parquetfile1
WITH (
     FORMAT_TYPE = PARQUET,
     DATA_COMPRESSION = 'org.apache.hadoop.io.compress.SnappyCodec'
);
```

C.

```
DROP EXTERNAL TABLE [Ext].[Items]
CREATE EXTERNAL TABLE [Ext].[Items]
([ItemID] [int] NULL,
 [ItemName] nvarchar(50) NULL,
 [ItemType] nvarchar(20) NULL,
 [ItemDescription] nvarchar(250))
WITH
(
     LOCATION= '/Items/',
          DATA_SOURCE = AzureDataLakeStore,
          FILE_FORMAT = PARQUET,
          REJECT_TYPE = VALUE,
          REJECT_VALUE = 0
);
```

D.

```
ALTER TABLE [Ext].[Items]
ADD [ItemID] int;
```

Correct Answer: *C*

Incorrect Answers:

A, D: Only these Data Definition Language (DDL) statements are allowed on external tables:

- CREATE TABLE and DROP TABLE
- CREATE STATISTICS and DROP STATISTICS
- CREATE VIEW and DROP VIEW

Reference:

https://docs.microsoft.com/en-us/sql/t-sql/statements/create-external-table-transact-sql

Question #16 *Topic 1*

HOTSPOT -

You have two Azure Storage accounts named Storage1 and Storage2. Each account holds one container and has the hierarchical namespace enabled. The system has files that contain data stored in the Apache Parquet format.

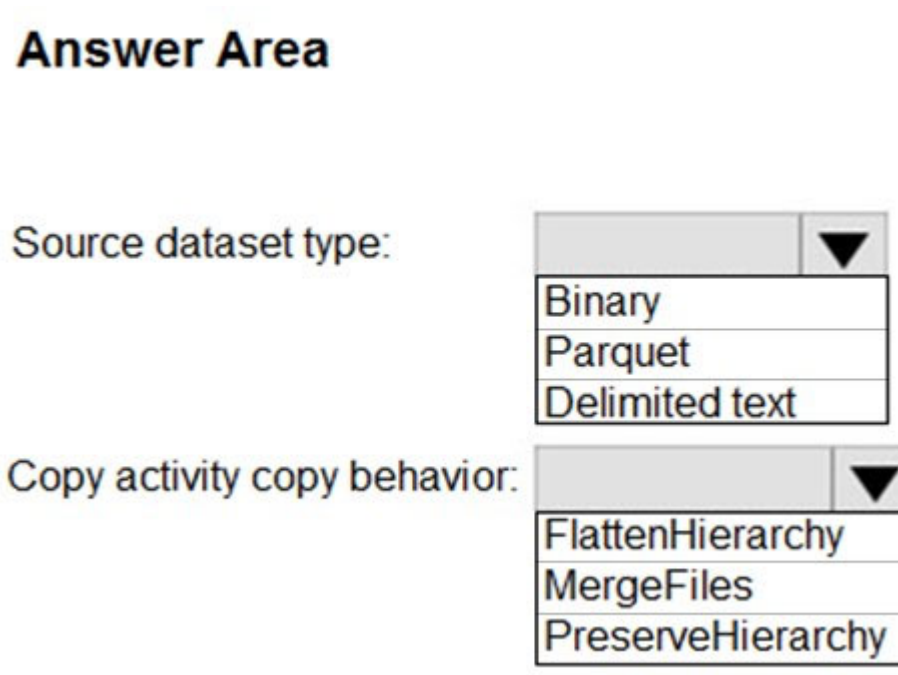
You need to copy folders and files from Storage1 to Storage2 by using a Data Factory copy activity. The solution must meet the following requirements:

- No transformations must be performed.
- The original folder structure must be retained.
- Minimize time required to perform the copy activity.

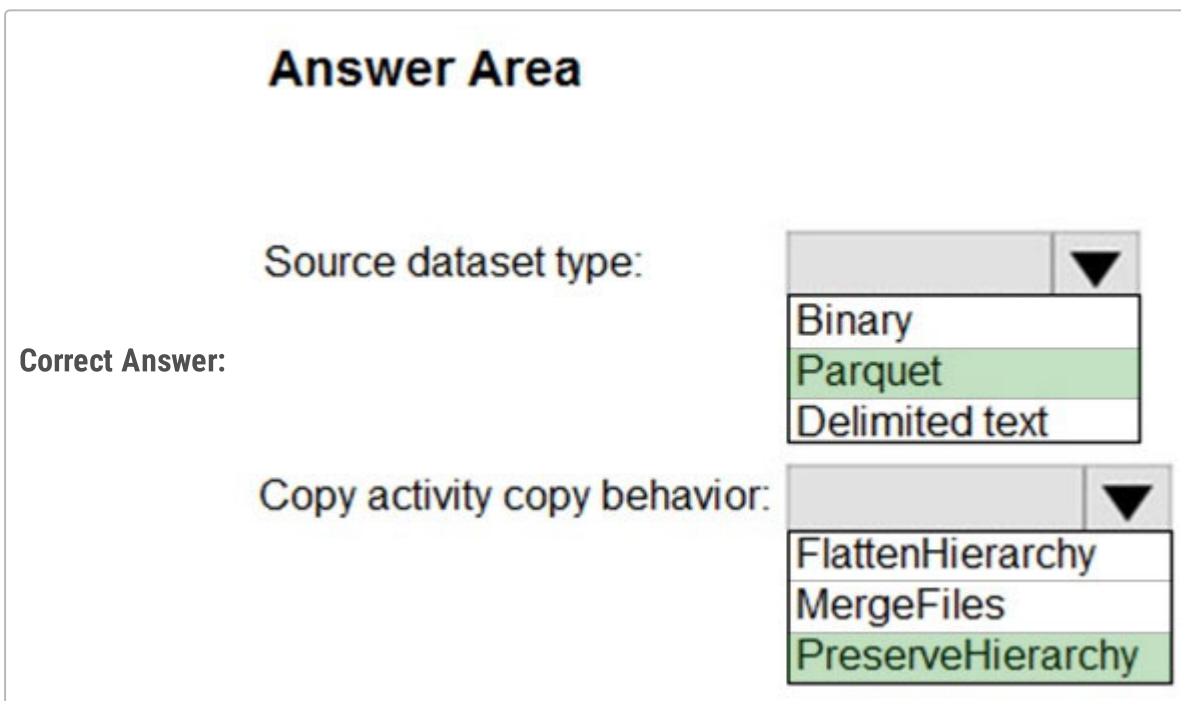
How should you configure the copy activity? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



Box 1: Parquet -

For Parquet datasets, the type property of the copy activity source must be set to ParquetSource.

Box 2: PreserveHierarchy -

PreserveHierarchy (default): Preserves the file hierarchy in the target folder. The relative path of the source file to the source folder is identical to the relative path of the target file to the target folder.

Incorrect Answers:

- FlattenHierarchy: All files from the source folder are in the first level of the target folder. The target files have autogenerated names.
- MergeFiles: Merges all files from the source folder to one file. If the file name is specified, the merged file name is the specified name. Otherwise, it's an autogenerated file name.

Reference:

https://docs.microsoft.com/en-us/azure/data-factory/format-parquet https://docs.microsoft.com/en-us/azure/data-factory/connector-azure-data-lake-storage

Question #17 *Topic 1*

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. geo-redundant storage (GRS) Most Voted

B. read-access geo-redundant storage (RA-GRS) Most Voted

C. zone-redundant storage (ZRS)

D. locally-redundant storage (LRS)

Correct Answer: *B*
Geo-redundant storage (with GRS or GZRS) replicates your data to another physical location in the secondary region to protect against regional outages.
However, that data is available to be read only if the customer or Microsoft initiates a failover from the primary to secondary region. When you enable read access to the secondary region, your data is available to be read at all times, including in a situation where the primary region becomes unavailable.
Incorrect Answers:
A: While Geo-redundant storage (GRS) is cheaper than Read-Access Geo-Redundant Storage (RA-GRS), GRS does NOT initiate automatic failover.
C, D: Locally redundant storage (LRS) and Zone-redundant storage (ZRS) provides redundancy within a single region.
Reference:
https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy

Community vote distribution
A (73%) B (27%)

Question #18 *Topic 1*

You plan to implement an Azure Data Lake Gen 2 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. geo-zone-redundant storage (GZRS)

C. locally-redundant storage (LRS)

D. zone-redundant storage (ZRS) Most Voted

Correct Answer: *D*
Zone-redundant storage (ZRS) copies your data synchronously across three Azure availability zones in the primary region.
Incorrect Answers:
C: Locally redundant storage (LRS) copies your data synchronously three times within a single physical location in the primary region. LRS is the least expensive replication option, but is not recommended for applications requiring high availability or durability
Reference:
https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy

Community vote distribution
D (99%)

Question #19 *Topic 1*

HOTSPOT -

You have a SQL pool in Azure Synapse.

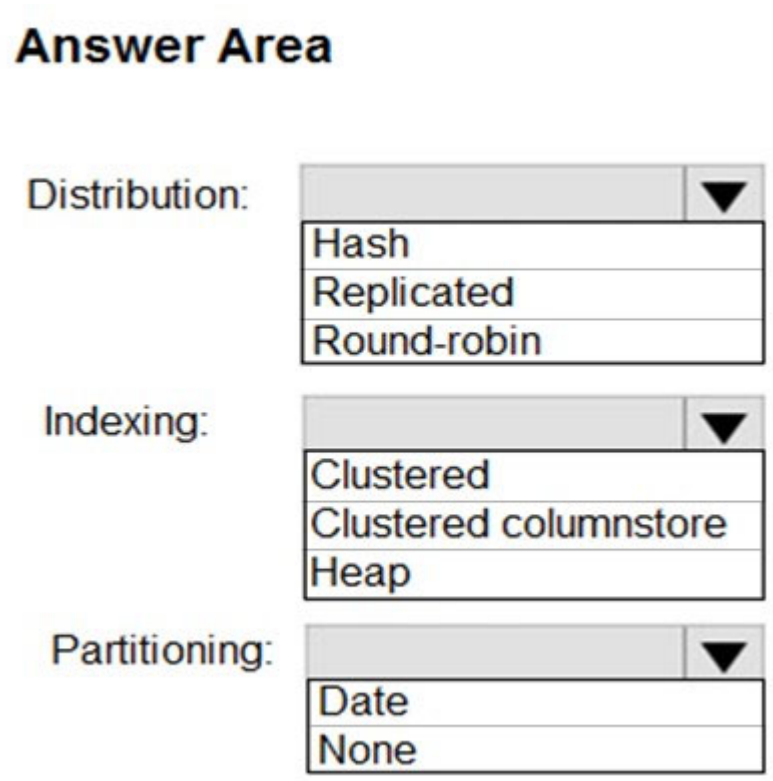
You plan to load data from Azure Blob storage to a staging table. Approximately 1 million rows of data will be loaded daily. The table will be truncated before each daily load.

You need to create the staging table. The solution must minimize how long it takes to load the data to the staging table.

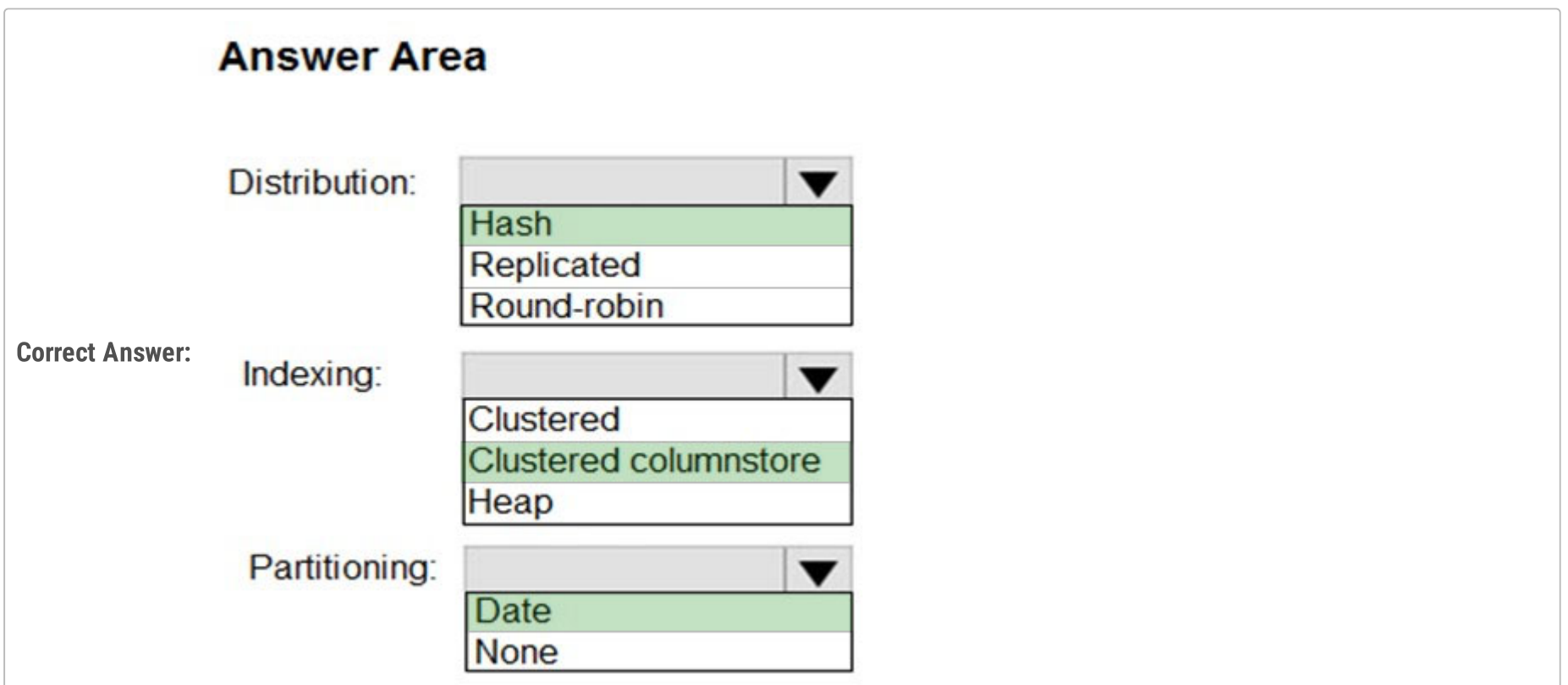
How should you configure the table? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



Box 1: Hash -

Hash-distributed tables improve query performance on large fact tables. They can have very large numbers of rows and still achieve high performance.

Incorrect Answers:

Round-robin tables are useful for improving loading speed.

Box 2: Clustered columnstore -

When creating partitions on clustered columnstore tables, it is important to consider how many rows belong to each partition. For optimal compression and performance of clustered columnstore tables, a minimum of 1 million rows per distribution and partition is needed.

Box 3: Date -

Table partitions enable you to divide your data into smaller groups of data. In most cases, table partitions are created on a date column. Partition switching can be used to quickly remove or replace a section of a table.

Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-partition
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute

Question #20 *Topic 1*

You are designing a fact table named FactPurchase in an Azure Synapse Analytics dedicated SQL pool. The table contains purchases from suppliers for a retail store. FactPurchase will contain the following columns.

Name	Data type	Nullable
PurchaseKey	Bigint	No
DateKey	Int	No
SupplierKey	Int	No
StockItemKey	Int	No
PurchaseOrderID	Int	Yes
OrderedQuantity	Int	No
OrderedOuters	Int	No
ReceivedOuters	Int	No
Package	Nvarchar(50)	No
IsOrderFinalized	Bit	No
LineageKey	Int	No

FactPurchase will have 1 million rows of data added daily and will contain three years of data.
Transact-SQL queries similar to the following query will be executed daily.

```
SELECT -
SupplierKey, StockItemKey, IsOrderFinalized, COUNT(*)

FROM FactPurchase -

WHERE DateKey >= 20210101 -

AND DateKey <= 20210131 -
GROUP By SupplierKey, StockItemKey, IsOrderFinalized
```

Which table distribution will minimize query times?

A. replicated

B. hash-distributed on PurchaseKey Most Voted

C. round-robin

D. hash-distributed on IsOrderFinalized

Correct Answer: *B*
Hash-distributed tables improve query performance on large fact tables.
To balance the parallel processing, select a distribution column that:
☞ Has many unique values. The column can have duplicate values. All rows with the same value are assigned to the same distribution.
Since there are 60 distributions, some distributions can have > 1 unique values while others may end with zero values.
☞ Does not have NULLs, or has only a few NULLs.
☞ Is not a date column.
Incorrect Answers:
C: Round-robin tables are useful for improving loading speed.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute

Community vote distribution
B (87%) 10%

Previous Questions Next Questions

Question #21 *Topic 1*

HOTSPOT -

From a website analytics system, you receive data extracts about user interactions such as downloads, link clicks, form submissions, and video plays.

The data contains the following columns.

Name	Sample value
Date	15 Jan 2021
EventCategory	Videos
EventAction	Play
EventLabel	Contoso Promotional
ChannelGrouping	Social
TotalEvents	150
UniqueEvents	120
SessionWithEvents	99

You need to design a star schema to support analytical queries of the data. The star schema will contain four tables including a date dimension.

To which table should you add each column? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

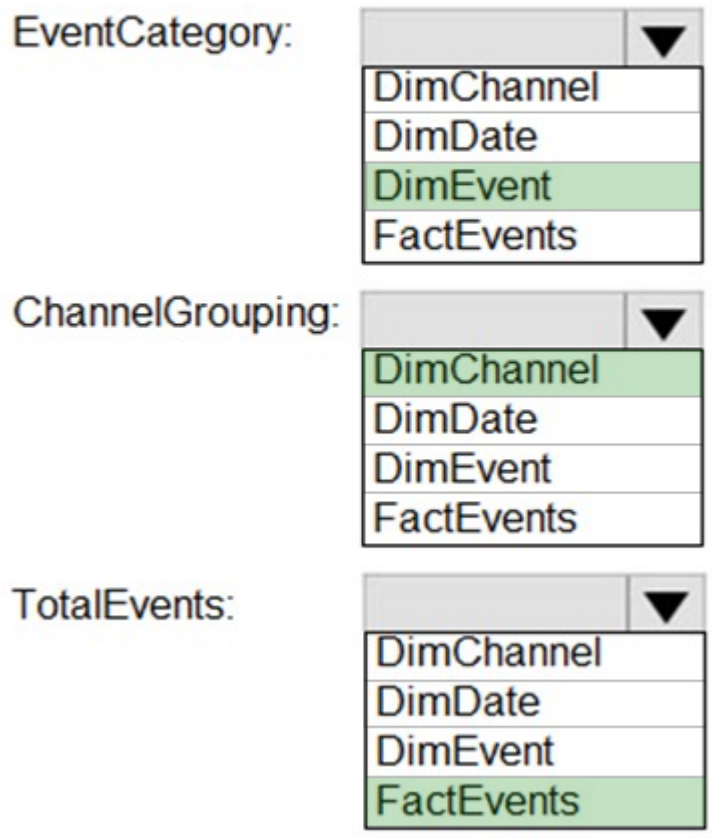
EventCategory: DimChannel / DimDate / DimEvent / FactEvents

ChannelGrouping: DimChannel / DimDate / DimEvent / FactEvents

TotalEvents: DimChannel / DimDate / DimEvent / FactEvents

Answer Area

Correct Answer:



Box 1: DimEvent -

Box 2: DimChannel -

Box 3: FactEvents -
Fact tables store observations or events, and can be sales orders, stock balances, exchange rates, temperatures, etc
Reference:
https://docs.microsoft.com/en-us/power-bi/guidance/star-schema

Question #22 *Topic 1*

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question 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 have an Azure Storage account that contains 100 GB of files. The files contain rows of 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 enterprise data warehouse in Azure Synapse Analytics.
You need to prepare the files to ensure that the data copies quickly.
Solution: You convert the files to compressed delimited text files.
Does this meet the goal?

A. Yes Most Voted

B. No

Correct Answer: *A*
All file formats have different performance characteristics. For the fastest load, use compressed delimited text files.
Reference:
https://docs.microsoft.com/en-us/azure/sql-data-warehouse/guidance-for-loading-data

Community vote distribution
A (86%) 14%

Question #23 *Topic 1*

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question 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 have an Azure Storage account that contains 100 GB of files. The files contain rows of 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 enterprise data warehouse in Azure Synapse Analytics.
You need to prepare the files to ensure that the data copies quickly.
Solution: You copy the files to a table that has a columnstore index.
Does this meet the goal?

A. Yes

B. No Most Voted

Correct Answer: *B*
Instead convert the files to compressed delimited text files.
Reference:
https://docs.microsoft.com/en-us/azure/sql-data-warehouse/guidance-for-loading-data

Community vote distribution
B (100%)

Question #24 *Topic 1*

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question 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 have an Azure Storage account that contains 100 GB of files. The files contain rows of 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 enterprise data warehouse in Azure Synapse Analytics.
You need to prepare the files to ensure that the data copies quickly.
Solution: You modify the files to ensure that each row is more than 1 MB.
Does this meet the goal?

A. Yes

B. No Most Voted

Correct Answer: *B*
Instead convert the files to compressed delimited text files.
Reference:
https://docs.microsoft.com/en-us/azure/sql-data-warehouse/guidance-for-loading-data

Community vote distribution
B (100%)

Question #25 *Topic 1*

You build a data warehouse in an Azure Synapse Analytics dedicated SQL pool.
Analysts write a complex SELECT query that contains multiple JOIN and CASE statements to transform data for use in inventory reports. The inventory reports will use the data and additional WHERE parameters depending on the report. The reports will be produced once daily.
You need to implement a solution to make the dataset available for the reports. The solution must minimize query times.
What should you implement?

A. an ordered clustered columnstore index

B. a materialized view Most Voted

C. result set caching

D. a replicated table

Correct Answer: *B*
Materialized views for dedicated SQL pools in Azure Synapse provide a low maintenance method for complex analytical queries to get fast performance without any query change.
Incorrect Answers:
C: One daily execution does not make use of result cache caching.
Note: When result set caching is enabled, dedicated SQL pool automatically caches query results in the user database for repetitive use. This allows subsequent query executions to get results directly from the persisted cache so recomputation is not needed. Result set caching improves query performance and reduces compute resource usage. In addition, queries using cached results set do not use any concurrency slots and thus do not count against existing concurrency limits.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/performance-tuning-materialized-views
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/performance-tuning-result-set-caching

Community vote distribution
B (100%)

Question #26 *Topic 1*

You have an Azure Synapse Analytics workspace named WS1 that contains an Apache Spark pool named Pool1.
You plan to create a database named DB1 in Pool1.
You need to ensure that when tables are created in DB1, the tables are available automatically as external tables to the built-in serverless SQL pool.
Which format should you use for the tables in DB1?

A. CSV

B. ORC

C. JSON

D. Parquet Most Voted

Correct Answer: *D*
Serverless SQL pool can automatically synchronize metadata from Apache Spark. A serverless SQL pool database will be created for each database existing in serverless Apache Spark pools.
For each Spark external table based on Parquet or CSV and located in Azure Storage, an external table is created in a serverless SQL pool database.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-storage-files-spark-tables

Community vote distribution
D (100%)

Question #27 *Topic 1*

You are planning a solution to aggregate streaming data that originates in Apache Kafka and is output to Azure Data Lake Storage Gen2. The developers who will implement the stream processing solution use Java.
Which service should you recommend using to process the streaming data?

A. Azure Event Hubs

B. Azure Data Factory

C. Azure Stream Analytics

D. Azure Databricks Most Voted

Correct Answer: *D*
The following tables summarize the key differences in capabilities for stream processing technologies in Azure.

General capabilities -

Capability	Azure Stream Analytics	HDInsight with Spark Streaming	Apache Spark in Azure Databricks	HDInsight with Storm
Programmability	Stream analytics query language, JavaScript	C#/F#, Java, Python, Scala	C#/F#, Java, Python, R, Scala	C#, Java

Integration capabilities -

Capability	Azure Stream Analytics	HDInsight with Spark Streaming	Apache Spark in Azure Databricks	HDInsight with Storm
Inputs	Azure Event Hubs, Azure IoT Hub, Azure Blob storage	Event Hubs, IoT Hub, Kafka, HDFS, Storage Blobs, Azure Data Lake Store	Event Hubs, IoT Hub, Kafka, HDFS, Storage Blobs, Azure Data Lake Store	Event Hubs, IoT Hub, Storage Blobs, Azure Data Lake Store
Sinks	Azure Data Lake Store, Azure SQL Database, Storage Blobs, Event	HDFS, Kafka, Storage Blobs, Azure Data Lake Store, Cosmos DB	HDFS, Kafka, Storage Blobs, Azure Data Lake Store, Cosmos DB	Event Hubs, Service Bus, Kafka

Reference:
https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/stream-processing

Community vote distribution

D (100%)

Question #28 *Topic 1*

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. Convert the files to JSON

B. Convert the files to Avro

C. Compress the files

D. Merge the files Most Voted

Correct Answer: *B*
Avro supports batch and is very relevant for streaming.
Note: Avro is framework developed within Apache's Hadoop project. It is a row-based storage format which is widely used as a serialization process. AVRO stores its schema in JSON format making it easy to read and interpret by any program. The data itself is stored in binary format by doing it compact and efficient.
Reference:
https://www.adaltas.com/en/2020/07/23/benchmark-study-of-different-file-format/

Community vote distribution

D (83%) Other

Question #29 *Topic 1*

HOTSPOT -

You store files in an Azure Data Lake Storage Gen2 container. The container has the storage policy shown in the following exhibit.

```
{
   "rules": [
     {
       "enabled": true,
       "name": "contosorule",
       "type": "Lifecycle",
       "definition": {
         "actions": {
           "version": {
             "delete": {
               "daysAfterCreationGreaterThan": 60
             }
           },
           "baseBlob": {
             "tierToCool": {
               "daysAfterModificationGreaterThan":
30
             },
             },
           }
         },
         "filters": {
           "blobTypes": [
             "blockBlob"
           ],
           "prefixMatch": [
             "container1/contoso"
           ]
         }
       }
     }
   ]
}
```

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

The files are **[answer choice]** after 30 days:

▼
deleted from the container
moved to archive storage
moved to cool storage
moved to hot storage

The storage policy applies to **[answer choice]**:

▼
container1/contoso.csv
container1/docs/contoso.json
container1/mycontoso/contoso.csv

Correct Answer:

Answer Area

The files are **[answer choice]** after 30 days:

- deleted from the container
- moved to archive storage
- **moved to cool storage**
- moved to hot storage

The storage policy applies to **[answer choice]**:

- **container1/contoso.csv**
- container1/docs/contoso.json
- container1/mycontoso/contoso.csv

Box 1: moved to cool storage -
The ManagementPolicyBaseBlob.TierToCool property gets or sets the function to tier blobs to cool storage. Support blobs currently at Hot tier.

Box 2: container1/contoso.csv -
As defined by prefixMatch.
prefixMatch: An array of strings for prefixes to be matched. Each rule can define up to 10 case-senstive prefixes. A prefix string must start with a container name.
Reference:
https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.management.storage.fluent.models.managementpolicybaseblob.tiertocool

Question #30 *Topic 1*

You are designing a financial transactions table in an Azure Synapse Analytics dedicated SQL pool. The table will have a clustered columnstore index and will include the following columns:

- TransactionType: 40 million rows per transaction type
- CustomerSegment: 4 million per customer segment
- TransactionMonth: 65 million rows per month

AccountType: 500 million per account type

▪

You have the following query requirements:

- Analysts will most commonly analyze transactions for a given month.
- Transactions analysis will typically summarize transactions by transaction type, customer segment, and/or account 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. CustomerSegment

B. AccountType

C. TransactionType

D. TransactionMonth Most Voted

Correct Answer: *D*

For optimal compression and performance of clustered columnstore tables, a minimum of 1 million rows per distribution and partition is needed. Before partitions are created, dedicated SQL pool already divides each table into 60 distributed databases.

Example: Any partitioning added to a table is in addition to the distributions created behind the scenes. Using this example, if the sales fact table contained 36 monthly partitions, and given that a dedicated SQL pool has 60 distributions, then the sales fact table should contain 60 million rows per month, or 2.1 billion rows when all months are populated. If a table contains fewer than the recommended minimum number of rows per partition, consider using fewer partitions in order to increase the number of rows per partition.

Community vote distribution

D (96%) 4%

Previous Questions Next Questions

Question #31 *Topic 1*

HOTSPOT -

You have an Azure Data Lake Storage Gen2 account named account1 that stores logs as shown in the following table.

Type	Designated retention period
Application	360 days
Infrastructure	60 days

You do not expect that the logs will be accessed during the retention periods.

You need to recommend a solution for account1 that meets the following requirements:

- Automatically deletes the logs at the end of each retention period
- Minimizes storage costs

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

To minimize storage costs:

- Store the infrastructure logs and the application logs in the Archive access tier
- Store the infrastructure logs and the application logs in the Cool access tier
- Store the infrastructure logs in the Cool access tier and the application logs in the Archive access tier

To delete logs automatically:

- Azure Data Factory pipelines
- Azure Blob storage lifecycle management rules
- Immutable Azure Blob storage time-based retention policies

Correct Answer:

Answer Area

To minimize storage costs:

- Store the infrastructure logs and the application logs in the Archive access tier
- Store the infrastructure logs and the application logs in the Cool access tier
- Store the infrastructure logs in the Cool access tier and the application logs in the Archive access tier

To delete logs automatically:

- Azure Data Factory pipelines
- Azure Blob storage lifecycle management rules
- Immutable Azure Blob storage time-based retention policies

Box 1: Store the infrastructure logs in the Cool access tier and the application logs in the Archive access tier

For infrastructure logs: Cool tier - An online tier optimized for storing data that is infrequently accessed or modified. Data in the cool tier should be stored for a minimum of 30 days. The cool tier has lower storage costs and higher access costs compared to the hot tier.

For application logs: Archive tier - An offline tier optimized for storing data that is rarely accessed, and that has flexible latency requirements, on the order of hours.

Data in the archive tier should be stored for a minimum of 180 days.

Box 2: Azure Blob storage lifecycle management rules

Blob storage lifecycle management offers a rule-based policy that you can use to transition your data to the desired access tier when your specified conditions are met. You can also use lifecycle management to expire data at the end of its life.

Reference:

https://docs.microsoft.com/en-us/azure/storage/blobs/access-tiers-overview

Question #32 *Topic 1*

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. JSON

B. Parquet Most Voted

C. CSV

D. Avro

Correct Answer: *B*
Need Parquet to support both Databricks and PolyBase.
Reference:
https://docs.microsoft.com/en-us/sql/t-sql/statements/create-external-file-format-transact-sql

Community vote distribution

B (100%)

Question #33 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool named 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. Insert the data from stg.Sales into dbo.Sales.

B. Switch the first partition from dbo.Sales to stg.Sales.

C. Switch the first partition from stg.Sales to dbo.Sales. Most Voted

D. Update dbo.Sales from stg.Sales.

Correct Answer: *B*
A way to eliminate rollbacks is to use Metadata Only operations like partition switching for data management. For example, rather than execute a DELETE statement to delete all rows in a table where the order_date was in October of 2001, you could partition your data monthly. Then you can switch out the partition with data for an empty partition from another table
Note: Syntax:
SWITCH [PARTITION source_partition_number_expression] TO [schema_name.] target_table [PARTITION target_partition_number_expression]
Switches a block of data in one of the following ways:
☞ Reassigns all data of a table as a partition to an already-existing partitioned table.
☞ Switches a partition from one partitioned table to another.
☞ Reassigns all data in one partition of a partitioned table to an existing non-partitioned table.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/best-practices-dedicated-sql-pool

Community vote distribution

C (93%) 8%

Question #34 *Topic 1*

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 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-test 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 Most Voted

B. effective start date Most Voted

C. business key

D. last modified date

E. effective end date Most Voted

F. foreign key

Correct Answer: *BCE*

C: The Slowly Changing Dimension transformation requires at least one business key column.

BE: Historical attribute changes create new records instead of updating existing ones. The only change that is permitted in an existing record is an update to a column that indicates whether the record is current or expired. This kind of change is equivalent to a Type 2 change. The Slowly Changing Dimension transformation directs these rows to two outputs: Historical Attribute Inserts Output and New Output.

Reference:

https://docs.microsoft.com/en-us/sql/integration-services/data-flow/transformations/slowly-changing-dimension-transformation

Community vote distribution

ABE (88%) 12%

Question #35 *Topic 1*

HOTSPOT -

You have a Microsoft SQL Server database that uses a third normal form schema.

You plan to migrate the data in the database to a star schema in an Azure Synapse Analytics dedicated SQL pool.

You need to design the dimension tables. The solution must optimize read operations.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Transform data for the dimension tables by:

- Maintaining to a third normal form
- Normalizing to a fourth normal form
- Denormalizing to a second normal form

For the primary key columns in the dimension tables, use:

- New IDENTITY columns
- A new computed column
- The business key column from the source sys

Correct Answer:

Answer Area

Transform data for the dimension tables by:

- Maintaining to a third normal form
- Normalizing to a fourth normal form
- Denormalizing to a second normal form

For the primary key columns in the dimension tables, use:

- New IDENTITY columns
- A new computed column
- The business key column from the source sys

Box 1: Denormalize to a second normal form

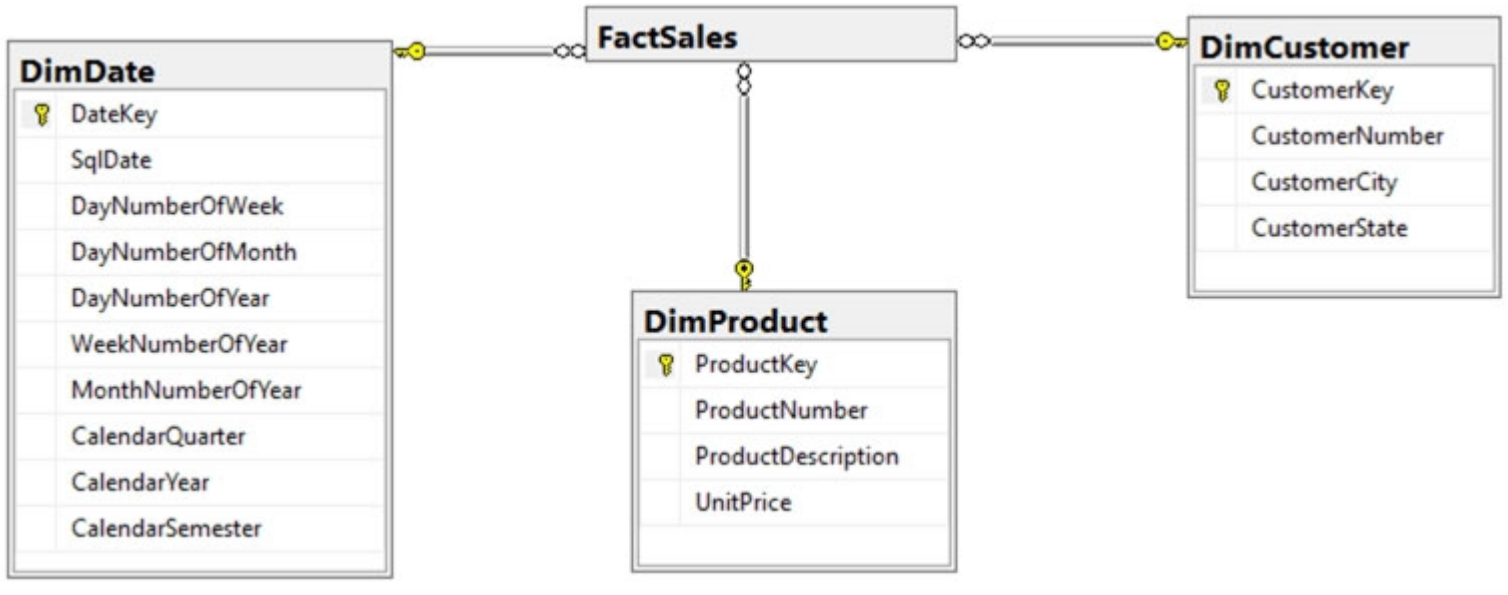
Denormalization is the process of transforming higher normal forms to lower normal forms via storing the join of higher normal form relations as a base relation.

Denormalization increases the performance in data retrieval at cost of bringing update anomalies to a database.

Box 2: New identity columns -

The collapsing relations strategy can be used in this step to collapse classification entities into component entities to obtain flat dimension tables with single-part keys that connect directly to the fact table. The single-part key is a surrogate key generated to ensure it remains unique over time.

Example:



Note: A surrogate key on a table is a column with a unique identifier for each row. The key is not generated from the table data. Data modelers like to create surrogate keys on their tables when they design data warehouse models. You can use the IDENTITY property to achieve this goal simply and effectively without affecting load performance.
Reference:
https://www.mssqltips.com/sqlservertip/5614/explore-the-role-of-normal-forms-in-dimensional-modeling/ https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-identity

Question #36 *Topic 1*

HOTSPOT -

You plan to develop a dataset named Purchases by using Azure Databricks. Purchases will contain the following columns:

- ProductID
- ItemPrice
- LineTotal
- Quantity
- StoreID
- Minute
- Month
- Hour

Year -

- Day

You need to store the data to support hourly incremental load pipelines that will vary for each Store ID. The solution must minimize storage costs.

How should you complete the code? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
df.write
[ ▼ ]                                  [ ▼ ]
.bucketBy                              ("*")
.partitionBy                           ("StoreID","Hour")
.range                                 ("StoreID","Year","Month","Day","Hour")
.sortBy

.mode("append")
[ ▼ ]
.csv("/Purchases")
.json("/Purchases")
.parquet("/Purchases")
.saveAsTable("/Purchases")
```

Correct Answer:

Answer Area

```
df.write
[ ▼ ]                                  [ ▼ ]
.bucketBy                              ("*")
.partitionBy                           ("StoreID","Hour")
.range                                 ("StoreID","Year","Month","Day","Hour")
.sortBy

.mode("append")
[ ▼ ]
.csv("/Purchases")
.json("/Purchases")
.parquet("/Purchases")
.saveAsTable("/Purchases")
```

Box 1: partitionBy -

We should overwrite at the partition level.

Example:

df.write.partitionBy("y","m","d")

.mode(SaveMode.Append)

.parquet("/data/hive/warehouse/db_name.db/" + tableName)

Box 2: ("StoreID", "Year", "Month", "Day", "Hour", "StoreID")
Box 3: parquet("/Purchases")
Reference:
https://intellipaat.com/community/11744/how-to-partition-and-write-dataframe-in-spark-without-deleting-partitions-with-no-new-data

Question #37 *Topic 1*

You are designing a partition strategy for a fact table in an Azure Synapse Analytics dedicated SQL pool. The table has the following specifications:
☞ Contain sales data for 20,000 products.
Use hash distribution on a column named ProductID.
▪
☞ Contain 2.4 billion records for the years 2019 and 2020.
Which number of partition ranges provides optimal compression and performance for the clustered columnstore index?

A. 40 Most Voted
B. 240
C. 400
D. 2,400

Correct Answer: *A*
Each partition should have around 1 millions records. Dedication SQL pools already have 60 partitions.
We have the formula: Records/(Partitions*60)= 1 million
Partitions= Records/(1 million * 60)
Partitions= 2.4 x 1,000,000,000/(1,000,000 * 60) = 40
Note: Having too many partitions can reduce the effectiveness of clustered columnstore indexes if each partition has fewer than 1 million rows. Dedicated SQL pools automatically partition your data into 60 databases. So, if you create a table with 100 partitions, the result will be 6000 partitions.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/best-practices-dedicated-sql-pool

Community vote distribution
A (87%) 13%

Question #38 *Topic 1*

HOTSPOT -

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.

Hot Area:

Answer Area

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

Answer Area

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

- Type 0
- Type 1
- Type 2

Correct Answer:

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

- a surrogate key
- a business key
- an audit column

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.

Incorrect Answers:

A Type 1 SCD always reflects the latest values, and when changes in source data are detected, the dimension table data is overwritten.

Box 2: a business key -

A business key or natural key is an index which identifies uniqueness of a row based on columns that exist naturally in a table according to business rules. For example business keys are customer code in a customer table, composite of sales order header number and sales order item line number within a sales order details table.

Reference:

https://docs.microsoft.com/en-us/learn/modules/populate-slowly-changing-dimensions-azure-synapse-analytics-pipelines/3-choose-between-dimension-types

Question #39 *Topic 1*

You are designing a fact table named FactPurchase in an Azure Synapse Analytics dedicated SQL pool. The table contains purchases from suppliers for a retail store. FactPurchase will contain the following columns.

Name	Data type	Nullable
PurchaseKey	Bigint	No
DateKey	Int	No
SupplierKey	Int	No
StockItemKey	Int	No
PurchaseOrderID	Int	Yes
OrderedQuantity	Int	No
OrderedOuters	Int	No
ReceivedOuters	Int	No
Package	Nvarchar(50)	No
IsOrderFinalized	Bit	No
LineageKey	Int	No

FactPurchase will have 1 million rows of data added daily and will contain three years of data.

Transact-SQL queries similar to the following query will be executed daily.

```
SELECT -
SupplierKey, StockItemKey, COUNT(*)

FROM FactPurchase -

WHERE DateKey >= 20210101 -

AND DateKey <= 20210131 -
GROUP By SupplierKey, StockItemKey
```

Which table distribution will minimize query times?

A. replicated

B. hash-distributed on PurchaseKey Most Voted

C. round-robin

D. hash-distributed on DateKey

Correct Answer: *B*

Hash-distributed tables improve query performance on large fact tables, and are the focus of this article. Round-robin tables are useful for improving loading speed.

Incorrect:

Not D: Do not use a date column. . All data for the same date lands in the same distribution. If several users are all filtering on the same date, then only 1 of the 60 distributions do all the processing work.

Reference:

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

Community vote distribution

B (75%) C (15%) 10%

Question #40 *Topic 1*

You are implementing a batch dataset in the Parquet format.

Data files will be produced be using Azure Data Factory and stored in Azure Data Lake Storage Gen2. The files will be consumed by an Azure Synapse Analytics serverless SQL pool.

You need to minimize storage costs for the solution.

What should you do?

A. Use Snappy compression for the files. Most Voted

B. Use OPENROWSET to query the Parquet files. Most Voted

C. Create an external table that contains a subset of columns from the Parquet files. Most Voted

D. Store all data as string in the Parquet files.

Correct Answer: *C*

An external table points to data located in Hadoop, Azure Storage blob, or Azure Data Lake Storage. External tables are used to read data from files or write data to files in Azure Storage. With Synapse SQL, you can use external tables to read external data using dedicated SQL pool or serverless SQL pool.

Reference:

https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables

Community vote distribution

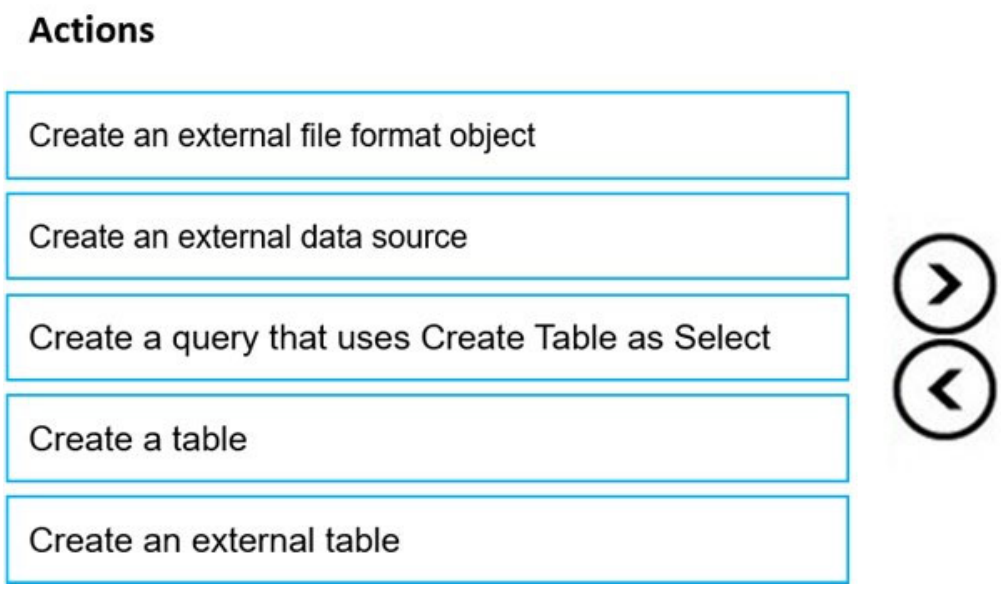
A (64%) C (24%) 11%

Previous Questions Next Questions

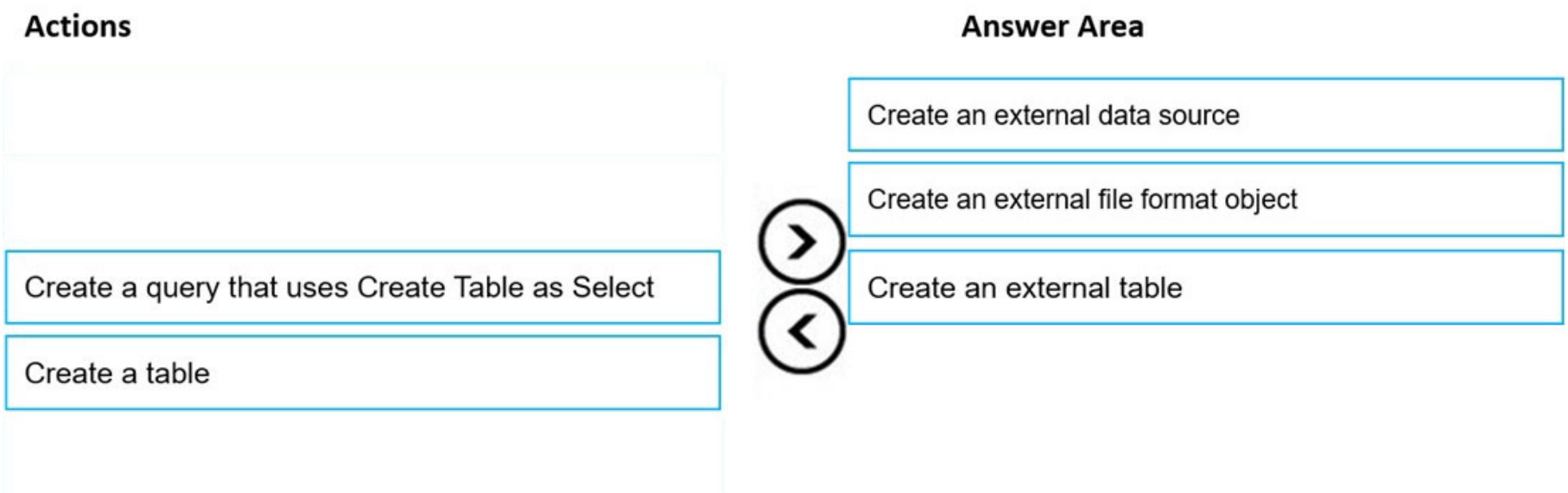
Custom View Settings

Question #41 *Topic 1*

DRAG DROP -
You need to build a solution to ensure that users can query specific files in an Azure Data Lake Storage Gen2 account from an Azure Synapse Analytics serverless SQL pool.
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.
Select and Place:



Correct Answer:



Step 1: Create an external data source
You can create external tables in Synapse SQL pools via the following steps:
1. CREATE EXTERNAL DATA SOURCE to reference an external Azure storage and specify the credential that should be used to access the storage.
2. CREATE EXTERNAL FILE FORMAT to describe format of CSV or Parquet files.
3. CREATE EXTERNAL TABLE on top of the files placed on the data source with the same file format.
Step 2: Create an external file format object
Creating an external file format is a prerequisite for creating an external table.
Step 3: Create an external table
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables

Question #42 *Topic 1*

You are designing a data mart for the human resources (HR) department at your company. The data mart will contain employee information and employee transactions.
From a source system, you have a flat extract that has the following fields:
- EmployeeID

FirstName -
-
- LastName
- Recipient
- GrossAmount
- TransactionID
- GovernmentID
- NetAmountPaid
- TransactionDate

You need to design a star schema data model in an Azure Synapse Analytics dedicated SQL pool for the data mart.
Which two tables should you create? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. a dimension table for Transaction

B. a dimension table for EmployeeTransaction

C. a dimension table for Employee Most Voted

D. a fact table for Employee

E. a fact table for Transaction Most Voted

Correct Answer: *CE*
C: Dimension tables contain attribute data that might change but usually changes infrequently. For example, a customer's name and address are stored in a dimension table and updated only when the customer's profile changes. To minimize the size of a large fact table, the customer's name and address don't need to be in every row of a fact table. Instead, the fact table and the dimension table can share a customer ID. A query can join the two tables to associate a customer's profile and transactions.
E: Fact tables contain quantitative data that are commonly generated in a transactional system, and then loaded into the dedicated SQL pool. For example, a retail business generates sales transactions every day, and then loads the data into a dedicated SQL pool fact table for analysis.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-overview

Community vote distribution
CE (100%)

Question #43 *Topic 1*

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 you use?

A. Type 0

B. Type 1

C. Type 2 Most Voted

D. Type 3

Correct Answer: *C*
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.
Incorrect Answers:
B: A Type 1 SCD always reflects the latest values, and when changes in source data are detected, the dimension table data is overwritten.
D: A Type 3 SCD supports storing two versions of a dimension member as separate columns. The table includes a column for the current value of a member plus either the original or previous value of the member. So Type 3 uses additional columns to track one key instance of history, rather than storing additional rows to track each change like in a Type 2 SCD.
Reference:
https://docs.microsoft.com/en-us/learn/modules/populate-slowly-changing-dimensions-azure-synapse-analytics-pipelines/3-choose-between-dimension-types

Community vote distribution

C (100%)

Question #44 *Topic 1*

DRAG DROP -

You have data stored in thousands of CSV files in Azure Data Lake Storage Gen2. Each file has a header row followed by a properly formatted carriage return (/ r) and line feed (/n).

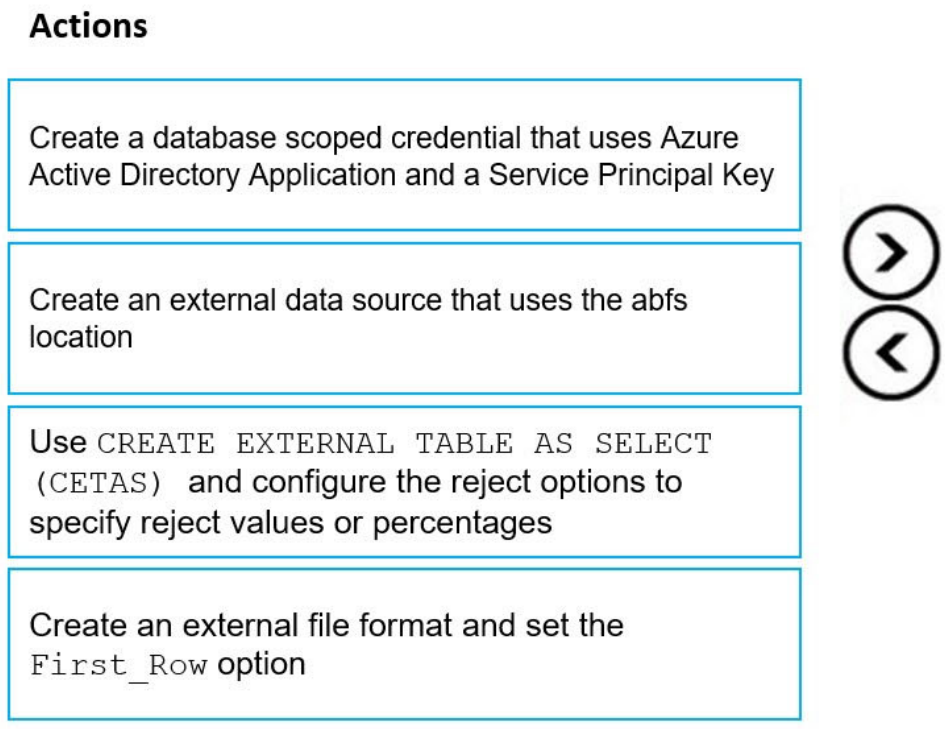
You are implementing a pattern that batch loads the files daily into a dedicated SQL pool in Azure Synapse Analytics by using PolyBase.

You need to skip the header row when you import the files into the data warehouse. Before building the loading pattern, you need to prepare the required database objects in Azure Synapse Analytics.

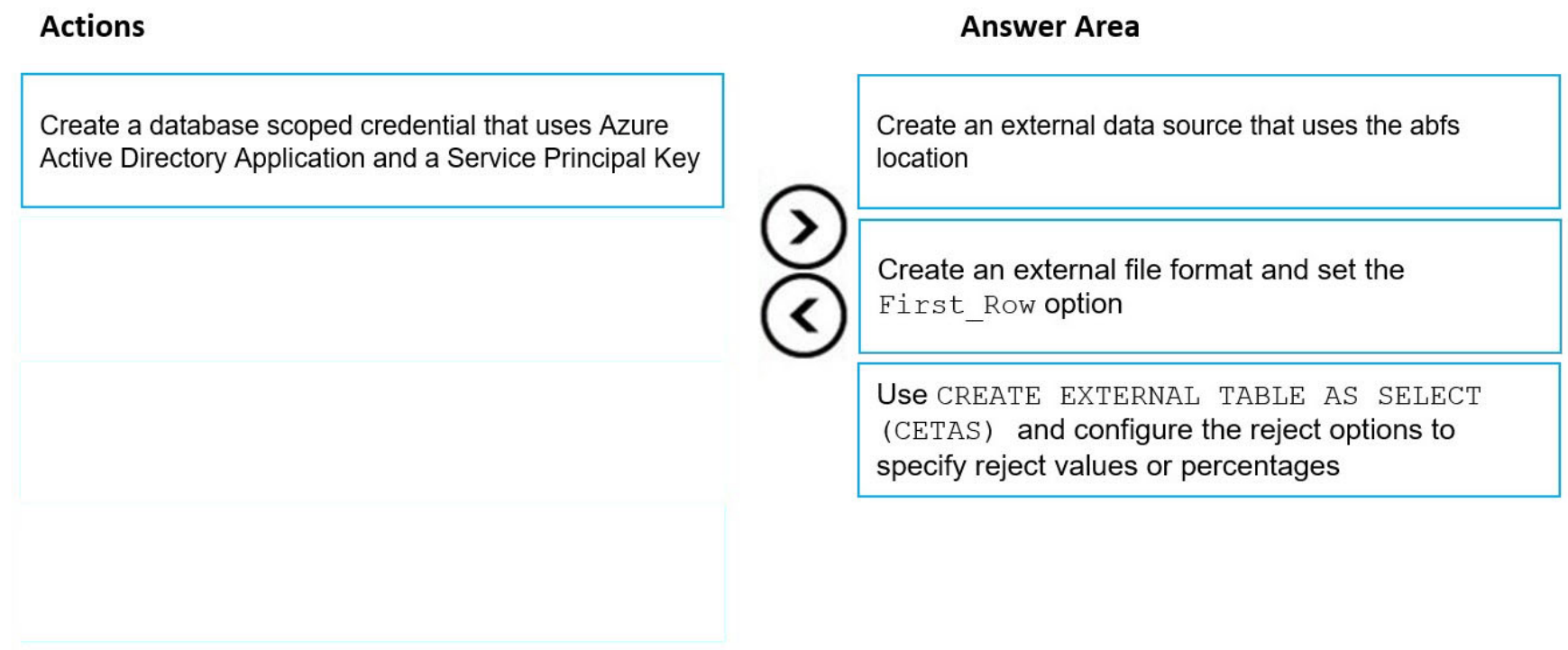
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

NOTE: Each correct selection is worth one point

Select and Place:



Correct Answer:



Step 1: Create an external data source that uses the abfs location

Create External Data Source to reference Azure Data Lake Store Gen 1 or 2

Step 2: Create an external file format and set the First_Row option.

Create External File Format.

Step 3: Use CREATE EXTERNAL TABLE AS SELECT (CETAS) and configure the reject options to specify reject values or percentages

To use PolyBase, you must create external tables to reference your external data.

Use reject options.

Note: REJECT options don't apply at the time this CREATE EXTERNAL TABLE AS SELECT statement is run. Instead, they're specified here so that the database can use them at a later time when it imports data from the external table. Later, when the CREATE TABLE AS SELECT statement selects data from the external table, the database will use the reject options to determine the number or percentage of rows that can fail to import before it stops the import.

Reference:
https://docs.microsoft.com/en-us/sql/relational-databases/polybase/polybase-t-sql-objects https://docs.microsoft.com/en-us/sql/t-sql/statements/create-external-table-as-select-transact-sql

Question #45 *Topic 1*

HOTSPOT -

You are building an Azure Synapse Analytics dedicated SQL pool that will contain a fact table for transactions from the first half of the year 2020.

You need to ensure that the table meets the following requirements:

- Minimizes the processing time to delete data that is older than 10 years
- Minimizes the I/O for queries that use year-to-date values

How should you complete the Transact-SQL statement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
CREATE TABLE [dbo].[FactTransaction]
(
     [TransactionTypeID]    int      NOT NULL
,    [TransactionDateID]    int      NOT NULL
,    [CustomerID]           int      NOT NULL
,    [RecipientID]          int      NOT NULL
,    [Amount]               money    NOT NU::
)
WITH
(  [                                          ▼ ]
     CLUSTERED COLUMNSTORE INDEX
     DISTRIBUTION
     PARTITION
     TRUNCATE_TARGET
     (  [                                     ▼ ]  RANGE RIGHT FOR VALUES
          [TransactionDateID]
          [TransactionDateID], [TransactionTypeID]
          HASH([TransactionTypeID])
          ROUND_ROBIN
        (20200101,20200201,20200301,20200401,20200501,20200601)
```

Correct Answer:

Answer Area

```
CREATE TABLE [dbo].[FactTransaction]
(
      [TransactionTypeID]    int      NOT NULL
,     [TransactionDateID]    int      NOT NULL
,     [CustomerID]           int      NOT NULL
,     [RecipientID]          int      NOT NULL
,     [Amount]               money    NOT NU::
)
WITH
(  [                                ▼]
     CLUSTERED COLUMNSTORE INDEX
     DISTRIBUTION
     PARTITION
     TRUNCATE_TARGET
(  [                                ▼]  RANGE RIGHT FOR VALUES
     [TransactionDateID]
     [TransactionDateID], [TransactionTypeID]
     HASH([TransactionTypeID])
     ROUND_ROBIN
(20200101,20200201,20200301,20200401,20200501,20200601)
```

Box 1: PARTITION -

RANGE RIGHT FOR VALUES is used with PARTITION.

Part 2: [TransactionDateID]

Partition on the date column.

Example: Creating a RANGE RIGHT partition function on a datetime column

The following partition function partitions a table or index into 12 partitions, one for each month of a year's worth of values in a datetime column.

CREATE PARTITION FUNCTION [myDateRangePF1] (datetime)

AS RANGE RIGHT FOR VALUES ('20030201', '20030301', '20030401',

'20030501', '20030601', '20030701', '20030801',

'20030901', '20031001', '20031101', '20031201');

Reference:

https://docs.microsoft.com/en-us/sql/t-sql/statements/create-partition-function-transact-sql

Question #46 *Topic 1*

You are performing exploratory analysis of the bus fare data in an Azure Data Lake Storage Gen2 account by using an Azure Synapse Analytics serverless SQL pool.

You execute the Transact-SQL query shown in the following exhibit.

```
SELECT
    payment_type,
    SUM(fare_amount) AS fare_total
FROM OPENROWSET (
        BULK 'csv/busfare/tripdata_2020*.csv',
        DATA_SOURCE = 'BusData',
        FORMAT = 'CSV', PARSER_VERSION = '2.0',
        FIRSTROW = 2
    )
    WITH (
        payment_type INT 10,
        fare_amount FLOAT 11
    ) AS nyc
GROUP BY payment_type
ORDER BY payment_type;
```

What do the query results include?

A. Only CSV files in the tripdata_2020 subfolder.

B. All files that have file names that beginning with "tripdata_2020".

C. All CSV files that have file names that contain "tripdata_2020".

D. Only CSV that have file names that beginning with "tripdata_2020". Most Voted

Correct Answer: *D*

Community vote distribution

D (100%)

Question #47 *Topic 1*

DRAG DROP -

You use PySpark in Azure Databricks to parse the following JSON input.

```
{
    "persons":[
        {
            "name":"Keith",
            "age":30,
            "dogs":["Fido", "Fluffy"]
        },
        {
            "name":"Donna",
            "age":46,
            "dogs":["Spot"]
        }
    ]
}
```

You need to output the data in the following tabular format.

owner	age	dog
Keith	30	Fido
Keith	30	Fluffy
Donna	46	Spot

How should you complete the PySpark code? 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 spit bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Values

alias | array_union | createDataFrame | explode | select | translate

Answer Area

```
dbutils.fs.put("/tmp/source.json", source_json, True)
source_df = spark.read.option("multiline", "true").json("/tmp/source.json")
persons = source_df. [Value] [Value] ("persons").alias("persons"))
persons_dogs = persons.select(col("persons.name").alias("owner"), col("persons.age").alias("age"),
explode [Value] ("dog"))
("persons-dogs").
display(persons_dogs)
```

Correct Answer:

Values

array_union | createDataFrame | translate

Answer Area

```
dbutils.fs.put("/tmp/source.json", source_json, True)
source_df = spark.read.option("multiline", "true").json("/tmp/source.json")
persons = source_df. select explode ("persons").alias("persons"))
persons_dogs = persons.select(col("persons.name").alias("owner"), col("persons.age").alias("age"),
explode alias ("dog"))
("persons-dogs").
display(persons_dogs)
```

Box 1: select -

Box 2: explode -

Bop 3: alias -
pyspark.sql.Column.alias returns this column aliased with a new name or names (in the case of expressions that return more than one column, such as explode).
Reference:
https://spark.apache.org/docs/latest/api/python/reference/api/pyspark.sql.Column.alias.html https://docs.microsoft.com/en-us/azure/databricks/sql/language-manual/functions/explode

Question #48 *Topic 1*

HOTSPOT -

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

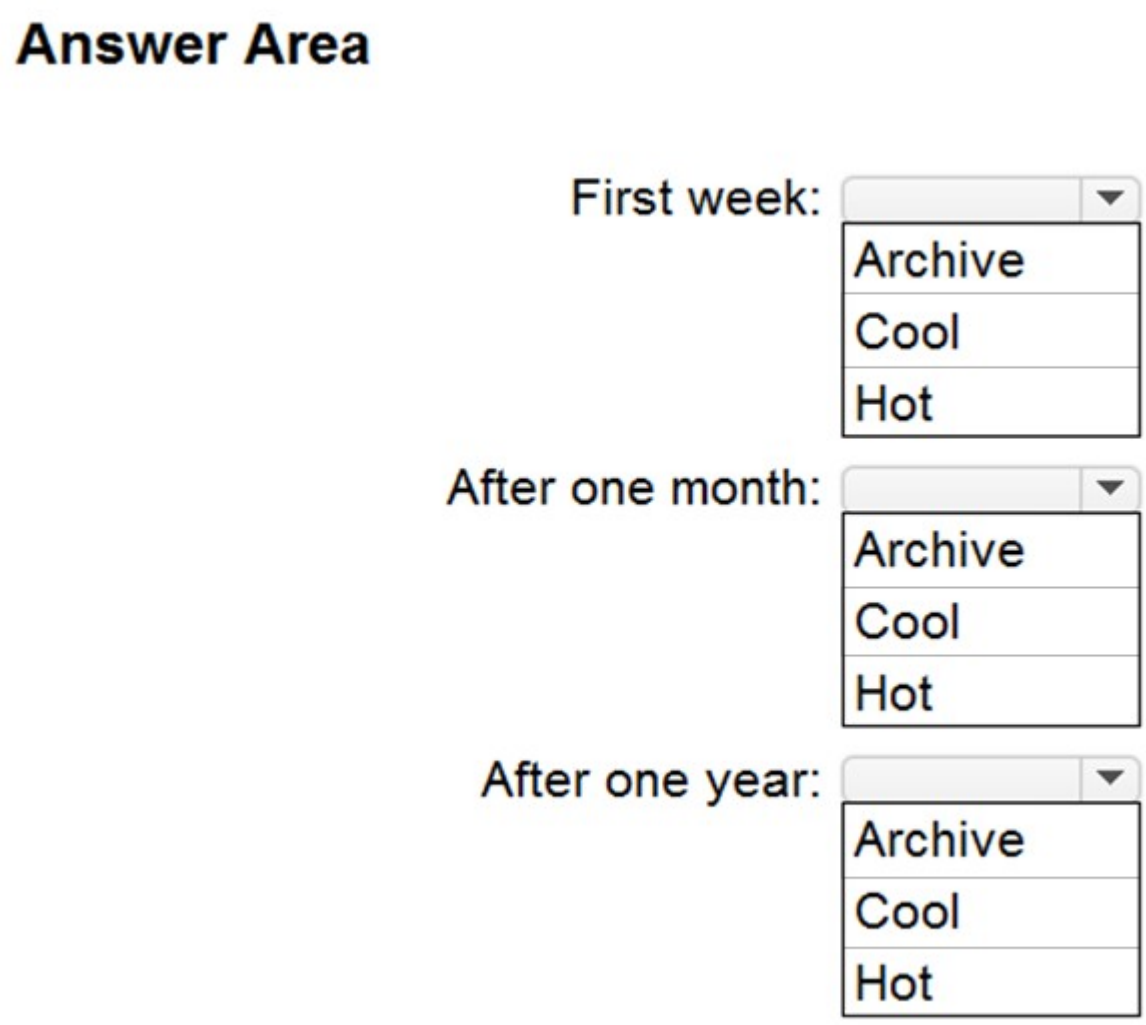
When the data is first created, the data will be accessed frequently during the first week. After one month, the data must be accessible within 30 seconds, but files will be accessed infrequently. After one year, the data will be accessed infrequently but must be accessible within five minutes.

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

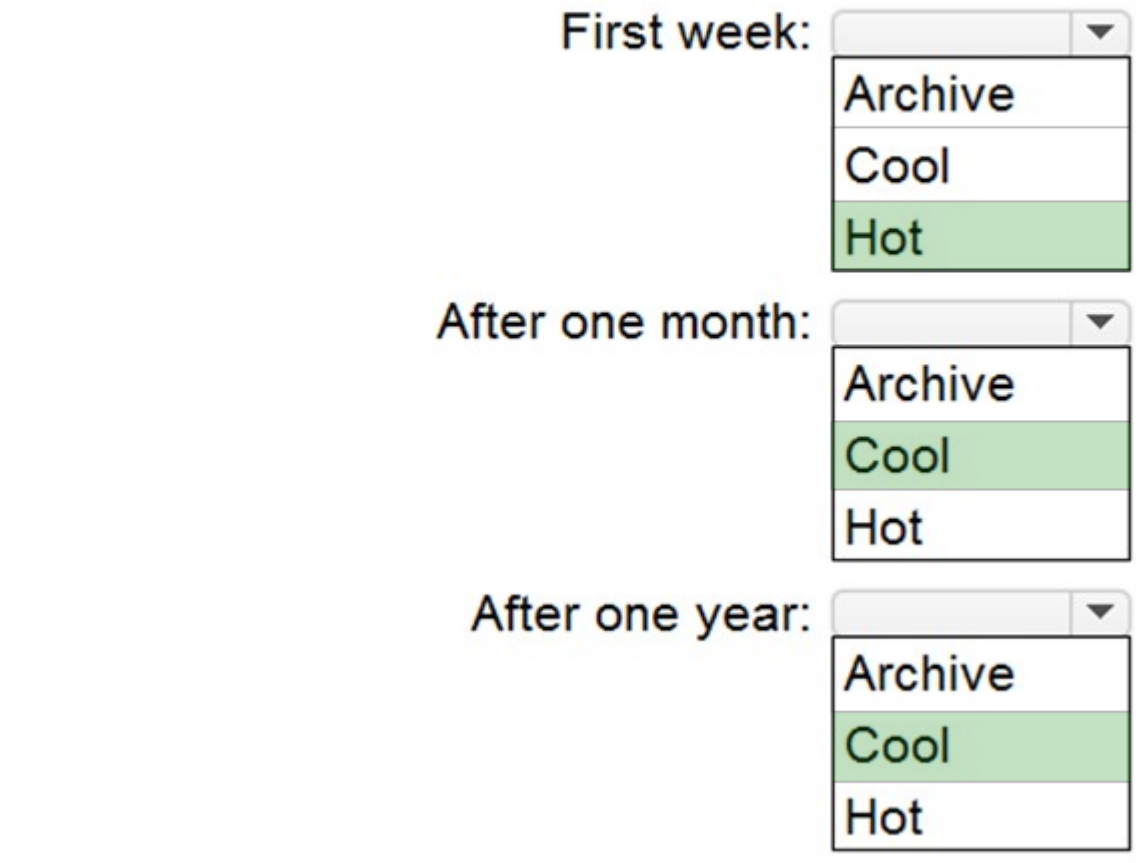
Which storage tier should you use for each time frame? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



Box 1: Hot -

Hot tier - An online tier optimized for storing data that is accessed or modified frequently. The Hot tier has the highest storage costs, but

the lowest access costs.

Box 2: Cool -
Cool tier - An online tier optimized for storing data that is infrequently accessed or modified. Data in the Cool tier should be stored for a minimum of 30 days. The
Cool tier has lower storage costs and higher access costs compared to the Hot tier.

Box 3: Cool -
Not Archive tier - An offline tier optimized for storing data that is rarely accessed, and that has flexible latency requirements, on the order of hours. Data in the
Archive tier should be stored for a minimum of 180 days.

	Premium performance	Hot tier	Cool tier	Archive tier
Availability	99.9%	99.9%	99%	Offline
Availability (RA-GRS reads)	N/A	99.99%	99.9%	Offline
Usage charges	Higher storage costs, lower access, and transaction cost	Higher storage costs, lower access, and transaction costs	Lower storage costs, higher access, and transaction costs	Lowest storage costs, highest access, and transaction costs
Minimum object size	N/A	N/A	N/A	N/A
Minimum storage duration	N/A	N/A	30 days[1]	180 days
Latency (Time to first byte)	Single-digit milliseconds	milliseconds	milliseconds	hours[2]

Reference:
https://docs.microsoft.com/en-us/azure/storage/blobs/access-tiers-overview https://www.altaro.com/hyper-v/azure-archive-storage/

Question #49 *Topic 1*

You have an Azure Synapse Analytics Apache Spark pool named Pool1.
You plan to load JSON files from an Azure Data Lake Storage Gen2 container into the tables in Pool1. The structure and data types vary by file.
You need to load the files into the tables. The solution must maintain the source data types.
What should you do?

A. Use a Conditional Split transformation in an Azure Synapse data flow.

B. Use a Get Metadata activity in Azure Data Factory.

C. Load the data by using the OPENROWSET Transact-SQL command in an Azure Synapse Analytics serverless SQL pool.

D. Load the data by using PySpark. Most Voted

Correct Answer: *C*
Serverless SQL pool can automatically synchronize metadata from Apache Spark. A serverless SQL pool database will be created for each database existing in serverless Apache Spark pools.
Serverless SQL pool enables you to query data in your data lake. It offers a T-SQL query surface area that accommodates semi-structured and unstructured data queries.
To support a smooth experience for in place querying of data that's located in Azure Storage files, serverless SQL pool uses the OPENROWSET function with additional capabilities.
The easiest way to see to the content of your JSON file is to provide the file URL to the OPENROWSET function, specify csv FORMAT.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/query-json-files https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/query-data-storage

Community vote distribution
D (89%) 11%

Question #50 *Topic 1*

You have an Azure Databricks workspace named workspace1 in the Standard pricing tier. Workspace1 contains an all-purpose cluster named cluster1.
You need to reduce the time it takes for cluster1 to start and scale up. The solution must minimize costs.
What should you do first?

A. Configure a global init script for workspace1.

B. Create a cluster policy in workspace1.

C. Upgrade workspace1 to the Premium pricing tier.

D. Create a pool in workspace1. Most Voted

Correct Answer: *D*
You can use Databricks Pools to Speed up your Data Pipelines and Scale Clusters Quickly.
Databricks Pools, a managed cache of virtual machine instances that enables clusters to start and scale 4 times faster.
Reference:
https://databricks.com/blog/2019/11/11/databricks-pools-speed-up-data-pipelines.html

Community vote distribution
D (71%) C (29%)

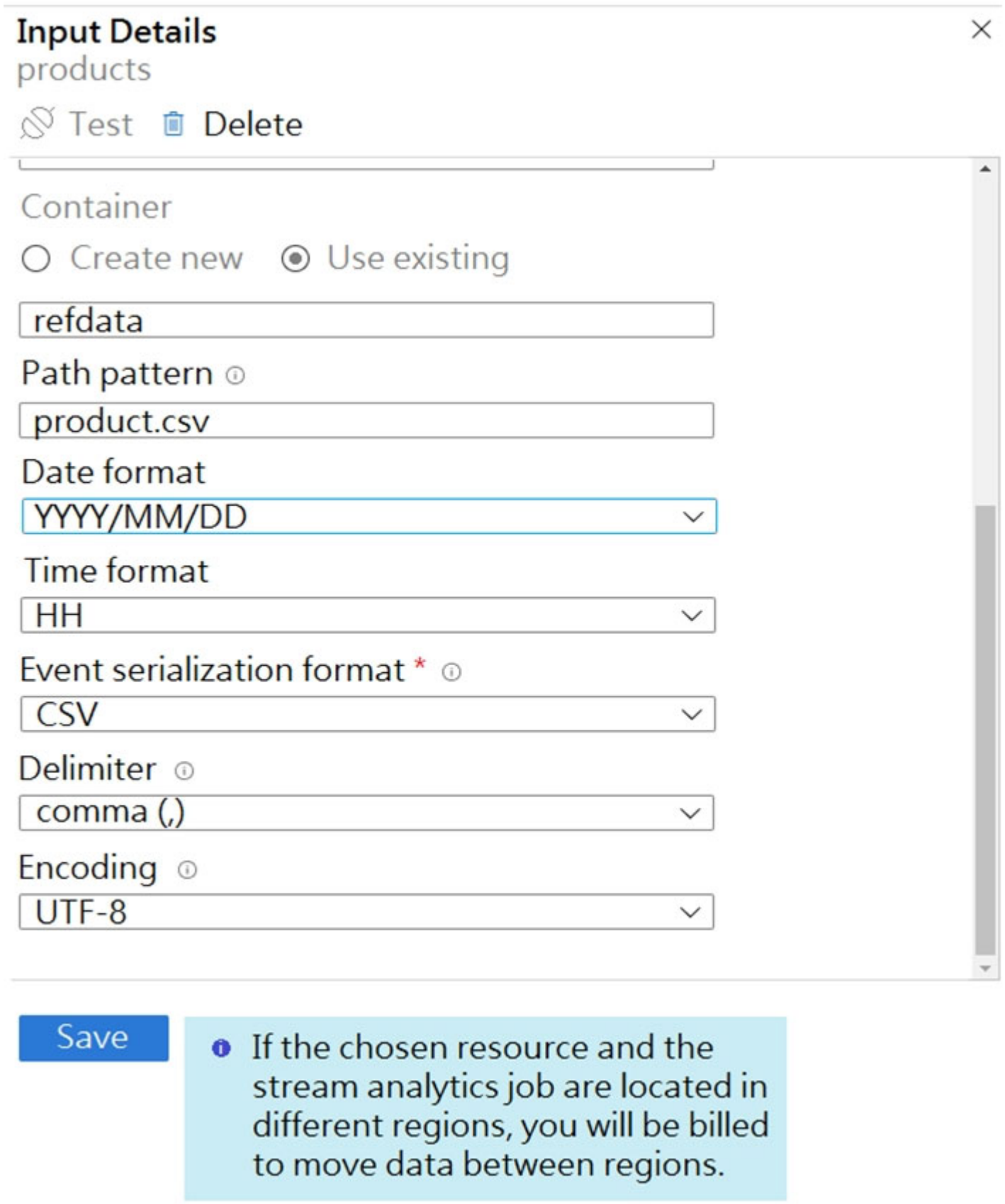
Previous Questions Next Questions

Question #51 *Topic 1*

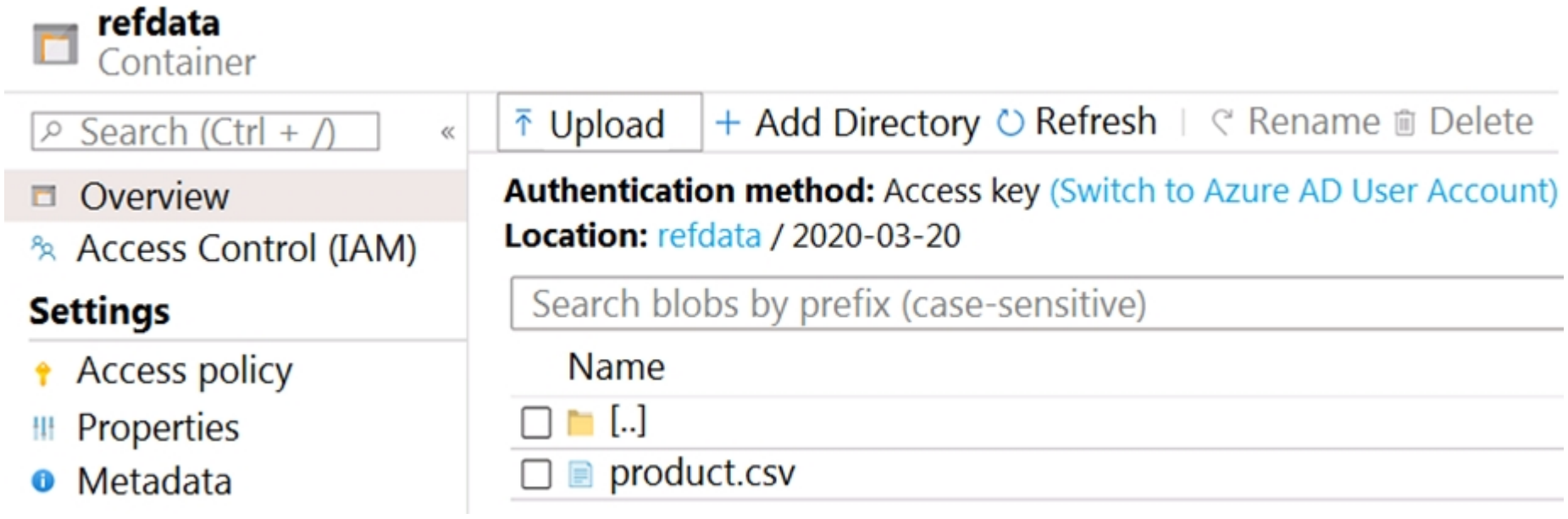
HOTSPOT -

You are building an Azure Stream Analytics job that queries reference data from a product catalog file. The file is updated daily.

The reference data input details for the file are shown in the Input exhibit. (Click the Input tab.)



The storage account container view is shown in the Refdata exhibit. (Click the Refdata tab.)



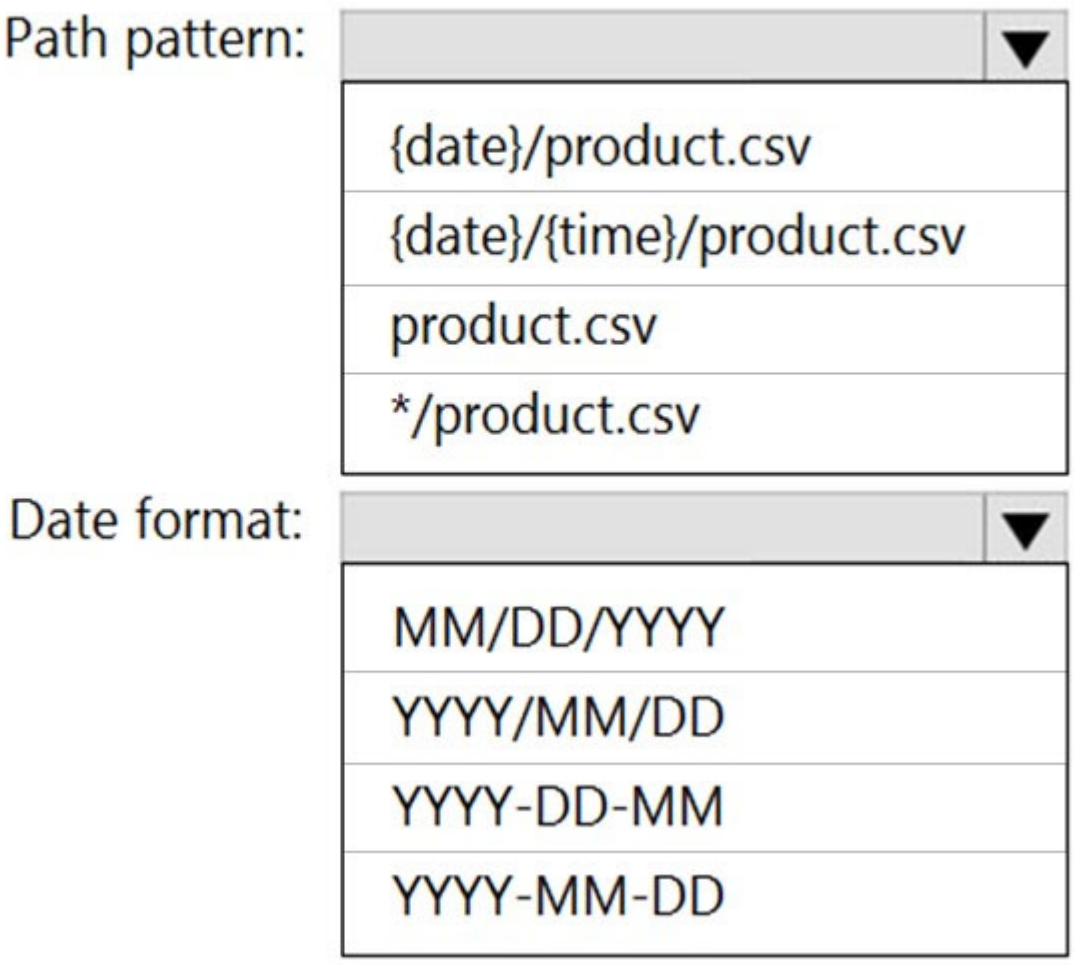
You need to configure the Stream Analytics job to pick up the new reference data.

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

NOTE: Each correct selection is worth one point.

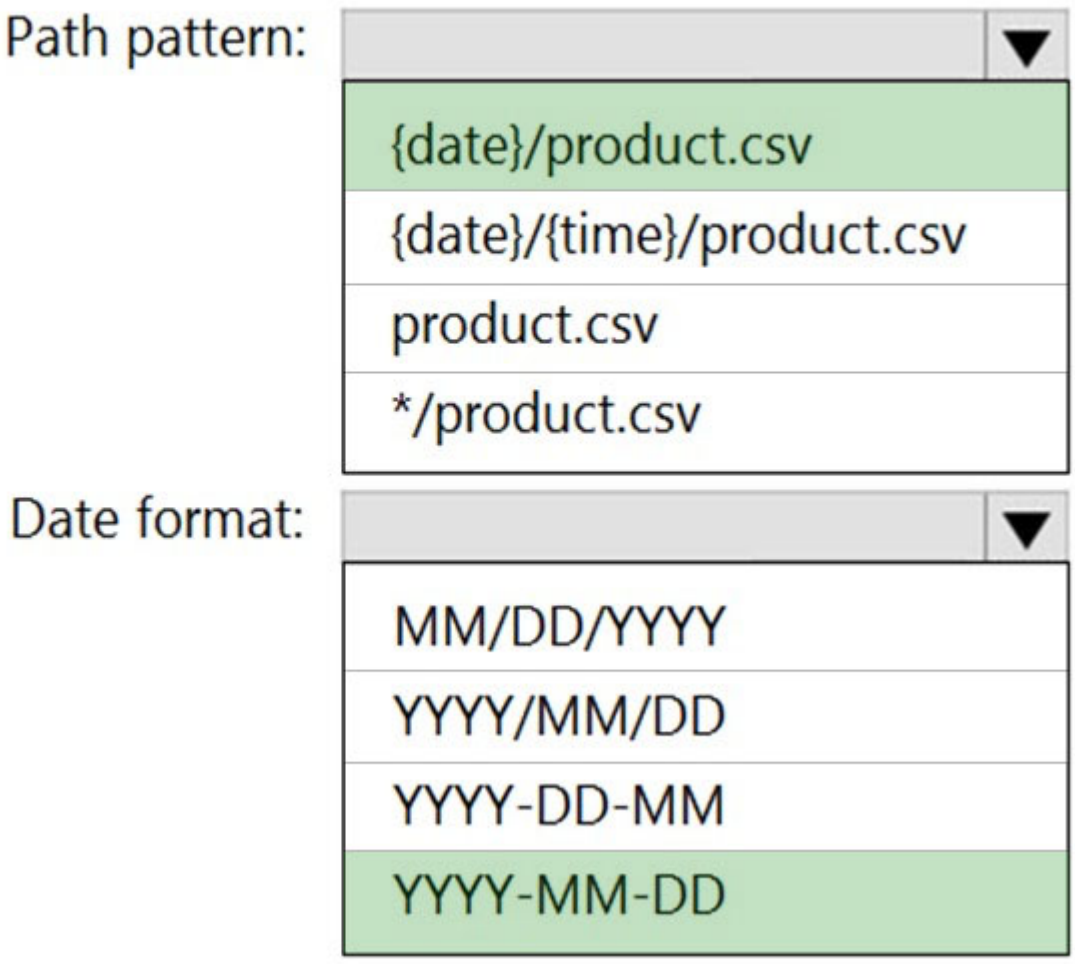
Hot Area:

Answer Area



Answer Area

Correct Answer:



Box 1: {date}/product.csv -

In the 2nd exhibit we see: Location: refdata / 2020-03-20

Note: Path Pattern: This is a required property that is used to locate your blobs within the specified container. Within the path, you may choose to specify one or more instances of the following 2 variables:

{date}, {time}

Example 1: products/{date}/{time}/product-list.csv

Example 2: products/{date}/product-list.csv

Example 3: product-list.csv -

Box 2: YYYY-MM-DD -

Note: Date Format [optional]: If you have used {date} within the Path Pattern that you specified, then you can select the date format in which your blobs are organized from the drop-down of supported formats.

Example: YYYY/MM/DD, MM/DD/YYYY, etc.

Reference:

https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-use-reference-data

Question #52 *Topic 1*

HOTSPOT -

You have the following Azure Stream Analytics query.

```
WITH

step1 AS (SELECT *
     FROM input1
     PARTITION BY StateID
     INTO 10),
step2 AS (SELECT *
     FROM input2
     PARTITION BY StateID
     INTO 10)

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

Hot Area:

Answer Area

Statements	Yes	No
The query combines 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.	○	○

Correct Answer:

Answer Area

Statements	Yes	No
The query combines 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.	○	○

Box 1: No -

Note: 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 -
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.
In general, the best practice is to start with 6 SUs for queries that don't use PARTITION BY.
Here there are 10 partitions, so 6x10 = 60 SUs is good.
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/ https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-streaming-unit-consumption

Question #53 *Topic 1*

HOTSPOT -
You are building a database in an Azure Synapse Analytics serverless SQL pool.
You have data stored in Parquet files in an Azure Data Lake Storege Gen2 container.
Records are structured as shown in the following sample.

```
{
"id": 123,
"address_housenumber": "19c",
"address_line": "Memory Lane",
"applicant1_name": "Jane",
"applicant2_name": "Dev"
}
```

The records contain two applicants at most.
You need to build a table that includes only the address fields.
How should you complete the Transact-SQL statement? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.
Hot Area:

Answer Area

```
[CREATE EXTERNAL TABLE | CREATE TABLE | CREATE VIEW] applications
WITH (
    LOCATION = 'applications/',
    DATA_SOURCE = applications_ds,
    FILE_FORMAT = applications_file_format
)
AS
SELECT id, [address_housenumber] as addresshousenumber, [address_line1] as addressline1
FROM
[CROSS APPLY | OPENJSON | OPENROWSET] (BULK 'https://contoso1.dfs.core.windows.net/applications/year=*/*.parquet',
FORMAT='PARQUET') AS [r]
GO
```

Correct Answer:

Answer Area

```
[CREATE EXTERNAL TABLE | CREATE TABLE | CREATE VIEW] applications
WITH (
    LOCATION = 'applications/',
    DATA_SOURCE = applications_ds,
    FILE_FORMAT = applications_file_format
)
AS
SELECT id, [address_housenumber] as addresshousenumber, [address_line1] as addressline1
FROM
[CROSS APPLY | OPENJSON | OPENROWSET] (BULK 'https://contoso1.dfs.core.windows.net/applications/year=*/*.parquet',
FORMAT='PARQUET') AS [r]
GO
```

Box 1: CREATE EXTERNAL TABLE -
An external table points to data located in Hadoop, Azure Storage blob, or Azure Data Lake Storage. External tables are used to read data from files or write data to files in Azure Storage. With Synapse SQL, you can use external tables to read external data using dedicated SQL

pool or serverless SQL pool.
Syntax:
CREATE EXTERNAL TABLE { database_name.schema_name.table_name | schema_name.table_name | table_name }
(<column_definition> [,...n])
WITH (
LOCATION = 'folder_or_filepath',
DATA_SOURCE = external_data_source_name,
FILE_FORMAT = external_file_format_name

Box 2. OPENROWSET -
When using serverless SQL pool, CETAS is used to create an external table and export query results to Azure Storage Blob or Azure Data Lake Storage Gen2.
Example:

AS -
SELECT decennialTime, stateName, SUM(population) AS population

FROM -
OPENROWSET(BULK
'https://azureopendatastorage.blob.core.windows.net/censusdatacontainer/release/us_population_county/year=*/*.parquet',
FORMAT='PARQUET') AS [r]
GROUP BY decennialTime, stateName

GO -
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables

Question #54 *Topic 1*

HOTSPOT -

You have an Azure Synapse Analytics dedicated SQL pool named Pool1 and an Azure Data Lake Storage Gen2 account named Account1.

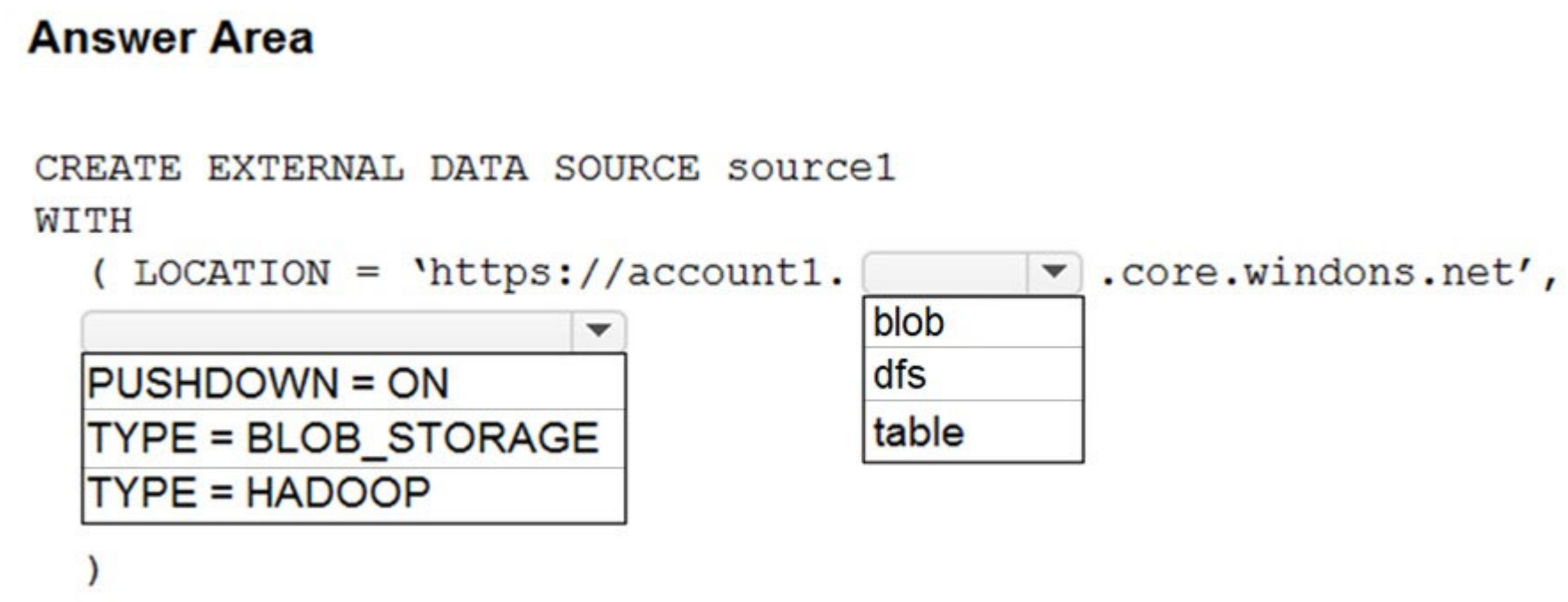
You plan to access the files in Account1 by using an external table.

You need to create a data source in Pool1 that you can reference when you create the external table.

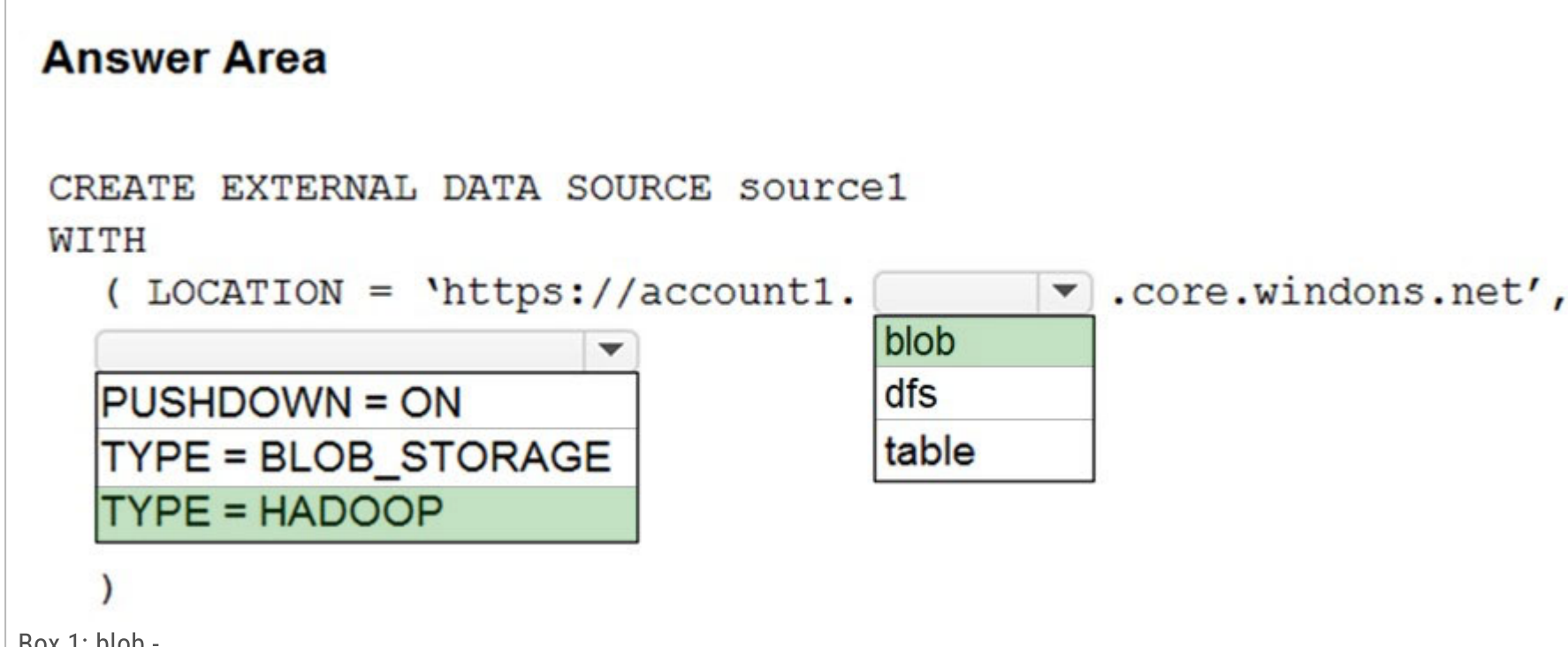
How should you complete the Transact-SQL statement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



Box 1: blob -

The following example creates an external data source for Azure Data Lake Gen2

CREATE EXTERNAL DATA SOURCE YellowTaxi

WITH (LOCATION = 'https://azureopendatastorage.blob.core.windows.net/nyctlc/yellow/',

TYPE = HADOOP)

Box 2: HADOOP -

Reference:

https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables

Question #55 *Topic 1*

You have an Azure subscription that contains an Azure Blob Storage account named storage1 and an Azure Synapse Analytics dedicated SQL pool named
Pool1.
You need to store data in storage1. The data will be read by Pool1. The solution must meet the following requirements:
Enable Pool1 to skip columns and rows that are unnecessary in a query.

- ☞ Automatically create column statistics.
- ☞ Minimize the size of files.

Which type of file should you use?

A. JSON

B. Parquet Most Voted

C. Avro

D. CSV

Correct Answer: *B*
Automatic creation of statistics is turned on for Parquet files. For CSV files, you need to create statistics manually until automatic creation of CSV files statistics is supported.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-statistics

Community vote distribution
B (100%)

Question #56 *Topic 1*

DRAG DROP -

You plan to create a table in an Azure Synapse Analytics dedicated SQL pool.

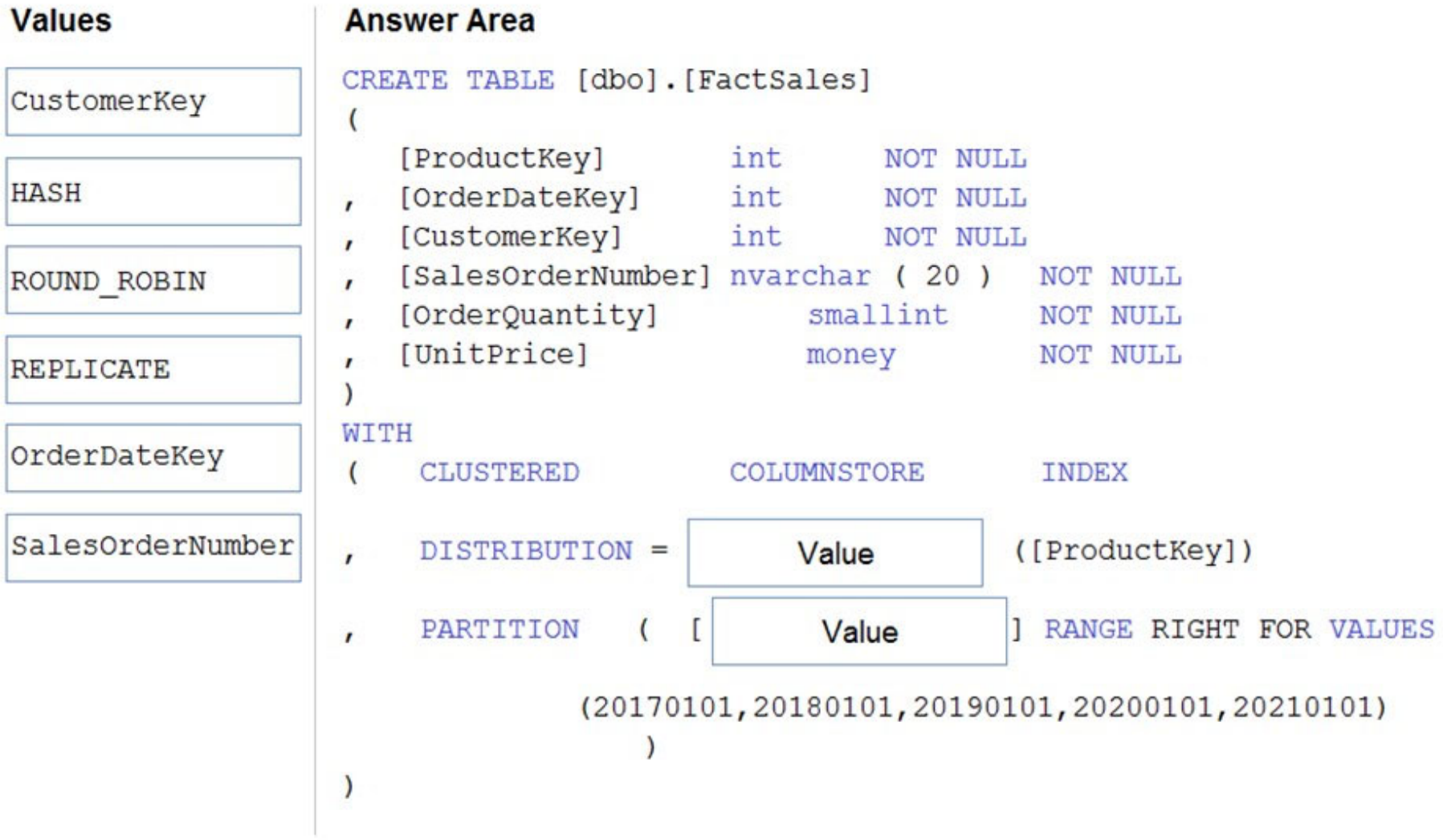
Data in the table will be retained for five years. Once a year, data that is older than five years will be deleted.

You need to ensure that the data is distributed evenly across partitions. The solution must minimize the amount of time required to delete old data.

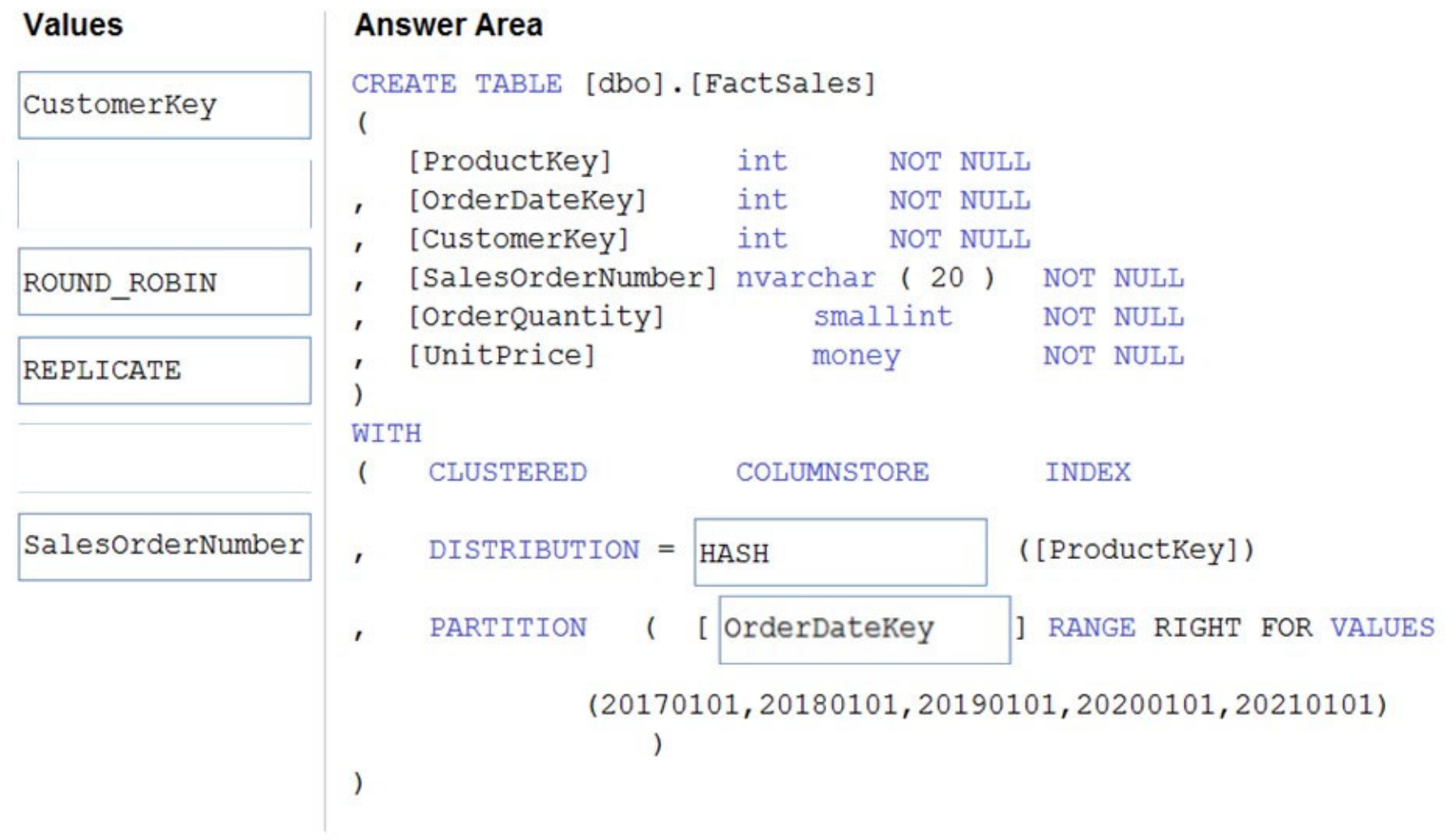
How should you complete the Transact-SQL statement? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



Box 1: HASH -

Box 2: OrderDateKey -

In most cases, table partitions are created on a date column.

A way to eliminate rollbacks is to use Metadata Only operations like partition switching for data management. For example, rather than execute a DELETE statement to delete all rows in a table where the order_date was in October of 2001, you could partition your data early. Then you can switch out the partition with data for an empty partition from another table.

Reference:

https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-azure-sql-data-warehouse https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/best-practices-dedicated-sql-pool

Question #57 *Topic 1*

HOTSPOT -

You have an Azure Data Lake Storage Gen2 service.

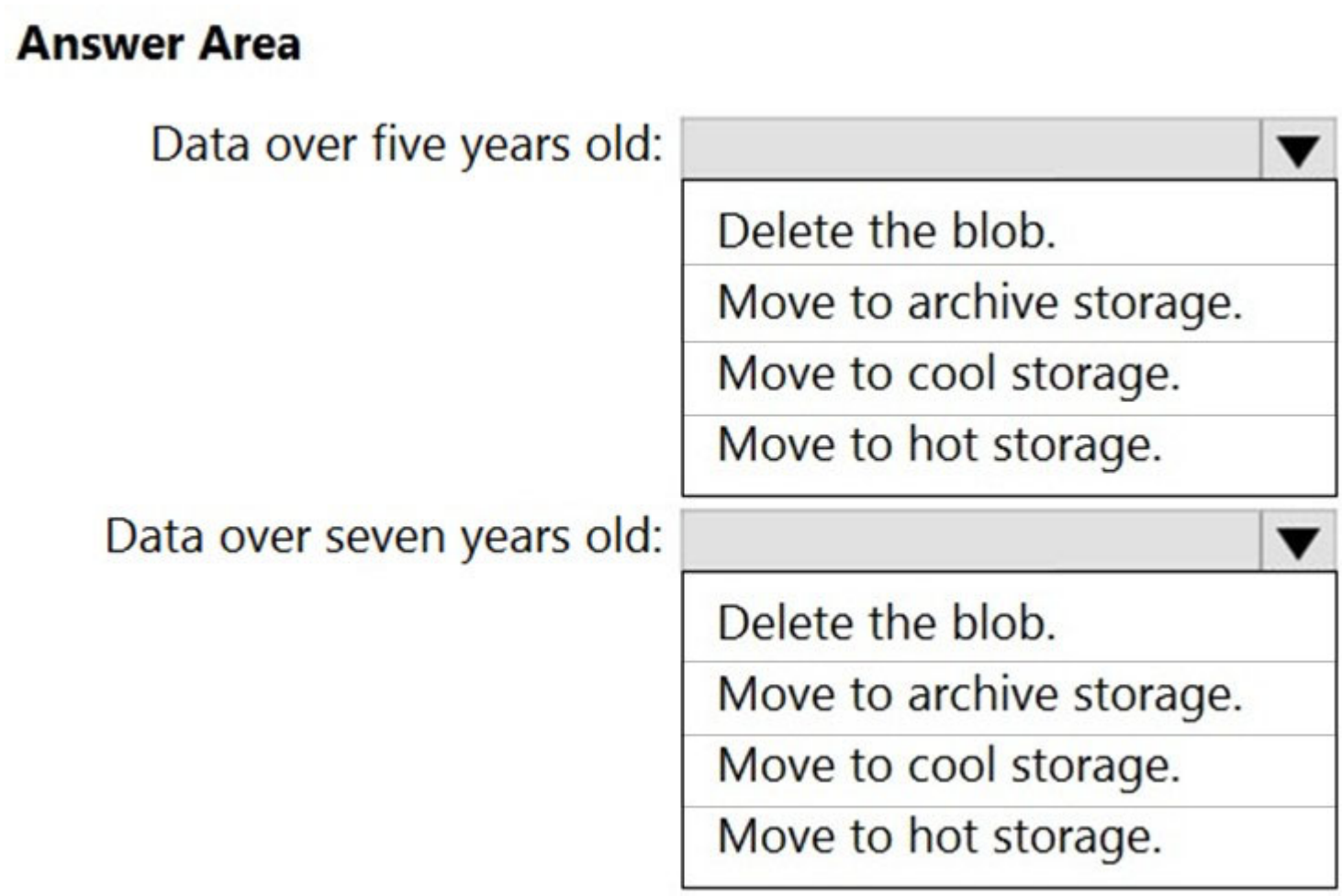
You need to design a data archiving solution that meets the following requirements:

- Data that is older than five years is accessed infrequently but must be available within one second when requested.
- Data that is older than seven years is NOT accessed.
- Costs must be minimized while maintaining the required availability.

How should you manage the data? To answer, select the appropriate options in the answer area.

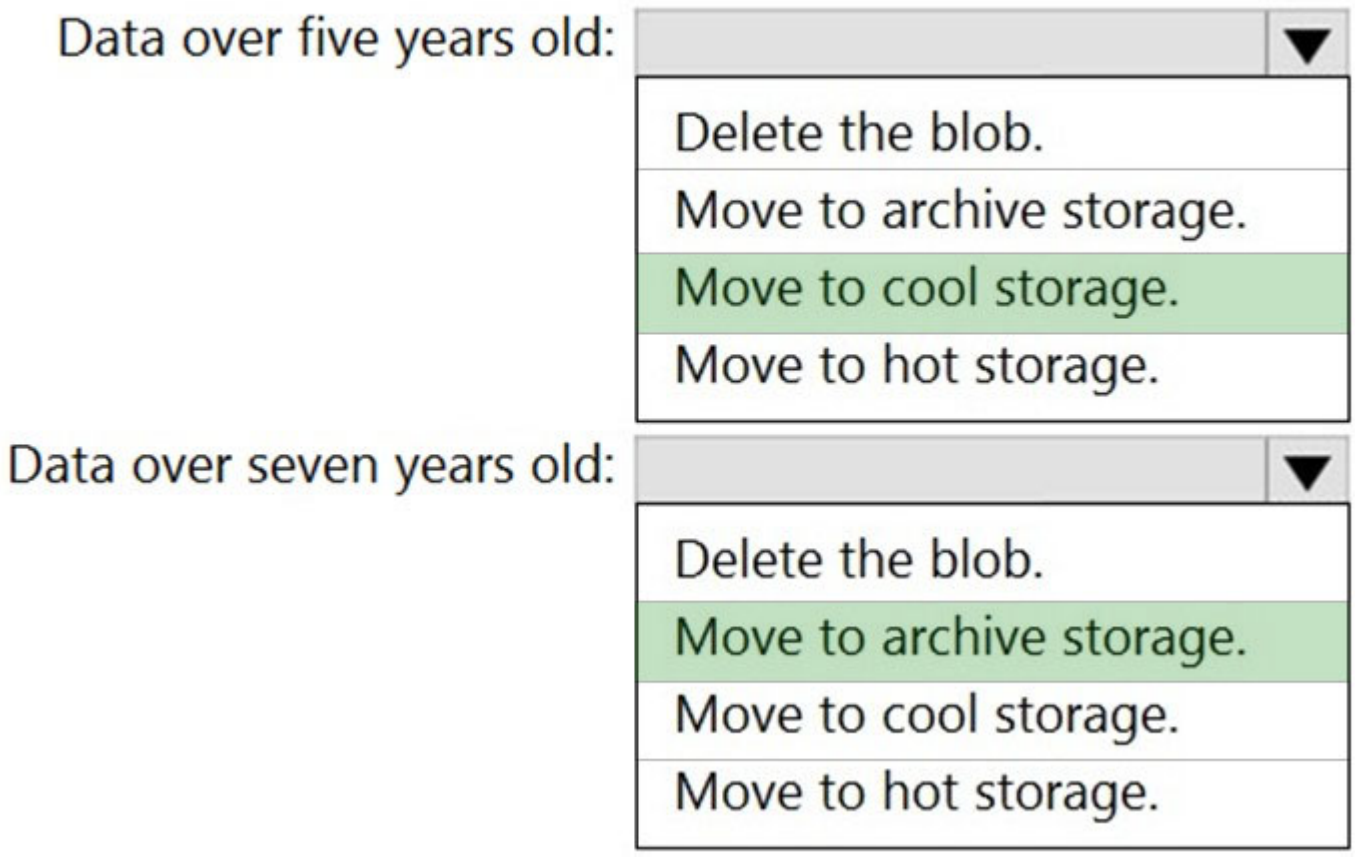
NOTE: Each correct selection is worth one point.

Hot Area:



Answer Area

Correct Answer:



Box 1: Move to cool storage -

Box 2: Move to archive storage -

Archive - Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements, on the order of hours.

The following table shows a comparison of premium performance block blob storage, and the hot, cool, and archive access tiers.

	Premium performance	Hot tier	Cool tier	Archive tier
Availability	99.9%	99.9%	99%	Offline
Availability (RA-GRS reads)	N/A	99.99%	99.9%	Offline
Usage charges	Higher storage costs, lower access, and transaction cost	Higher storage costs, lower access, and transaction costs	Lower storage costs, higher access, and transaction costs	Lowest storage costs, highest access, and transaction costs
Minimum storage duration	N/A	N/A	30 days[1]	180 days
Latency (Time to first byte)	Single-digit milliseconds	milliseconds	milliseconds	hours[2]

Reference:
https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers

Question #58 *Topic 1*

HOTSPOT -

You plan to create an Azure Data Lake Storage Gen2 account.

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

- Provides the highest degree of data resiliency
- Ensures that content remains available for writes if a primary data center fails

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Replication mechanism:

Change feed
Zone-redundant storage (ZRS)
Read-access geo-redundant storage (RA-GRS)
Read-access geo-zone-redundant storage (RA-GRS)

Failover process:

Failover initiated by Microsoft
Failover manually initiated by the customer
Failover automatically initiated by an Azure Automation job

Correct Answer:

Answer Area

Replication mechanism:

Change feed
Zone-redundant storage (ZRS)
Read-access geo-redundant storage (RA-GRS)
Read-access geo-zone-redundant storage (RA-GRS)

Failover process:

Failover initiated by Microsoft
Failover manually initiated by the customer
Failover automatically initiated by an Azure Automation job

Reference:

https://docs.microsoft.com/en-us/azure/storage/common/storage-disaster-recovery-guidance?toc=/azure/storage/blobs/toc.json

https://docs.microsoft.com/en-us/answers/questions/32583/azure-data-lake-gen2-disaster-recoverystorage-acco.html

Question #59 *Topic 1*

You need to implement a Type 3 slowly changing dimension (SCD) for product category data in an Azure Synapse Analytics dedicated SQL pool.

You have a table that was created by using the following Transact-SQL statement.

```
CREATE TABLE [DB0].[DimProduct](
[ProductKey] [int] IDENTITY(1,1) NOT NULL,
[ProductSourceID] [int] NOT NULL,
[ProductNane] [nvarchar](100) NOT NULL,
[Color] [nvarchar] (15) NULL,
[SellStartDate] [date] NOT NULL,
[SellEnd0ate] [date] NULL,
[RowInsertedDateTime] [datetime] NOT NULL,
[RowipdatedDateTine] [datetime] NOT NULL,
[ETLAuditID] [int] NOT NULL
)
```

Which two columns should you add to the table? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A.

```
[EffectiveEndDate] [datetime] NULL,
```

B.

```
[CurrentProductCategory] [nvarchar] (100) NOT NULL,
```

C.

```
[ProductCategory] [nvarchar](100) NOT NULL,
```

D.

```
[EffectiveStartDate] [datetime] NOT NULL,
```

E.

```
[OriginalProductCategory] [nvarchar] (100) NOT NULL,
```

Correct Answer: *BE*

A Type 3 SCD supports storing two versions of a dimension member as separate columns. The table includes a column for the current value of a member plus either the original or previous value of the member. So Type 3 uses additional columns to track one key instance of history, rather than storing additional rows to track each change like in a Type 2 SCD.

This type of tracking may be used for one or two columns in a dimension table. It is not common to use it for many members of the same table. It is often used in combination with Type 1 or Type 2 members.

CustomerID	FirstName	LastName	CurrentEmail	OriginalEmail	CompanyName	InsertedDate	ModifiedDate
2	Keith	Harris	keith0@aw.com	keith0@aw.com	Progressive Sports	2021-03-20	2021-03-20
3	Donna	Carreras	donna0@aw.com	donna0@aw.com	A Bike Store	2021-03-20	2021-03-20

CustomerID	FirstName	LastName	CurrentEmail	OriginalEmail	CompanyName	InsertedDate	ModifiedDate
2	Keith	Harris	keith0@aw.com	keith0@aw.com	Progressive Sports	2021-03-20	2021-03-20
3	Donna	Carreras	dc3@aw.com	donna0@aw.com	A Bike Store	2021-03-20	2021-03-22

Reference:

https://k21academy.com/microsoft-azure/azure-data-engineer-dp203-q-a-day-2-live-session-review/

Question #60 *Topic 1*

DRAG DROP -

You have an Azure subscription.

You plan to build a data warehouse in an Azure Synapse Analytics dedicated SQL pool named pool1 that will contain staging tables and a dimensional model.

Pool1 will contain the following tables.

Name	Number of rows	Update frequency	Description
Common. Date	7,300	New rows inserted yearly	• Contains one row per date for the last 20 years • Contains columns named Year, Month, Quarter, and IsWeekend
Marketing.WebSessions	1,500,500,000	Hourly inserts and updates	Fact table that contains counts of and updates sessions and page views, including foreign key values for date, channel, device, and medium
Staging.WebSessions	300,000	Hourly truncation and inserts	Staging table for web session data, truncation and including descriptive fields for inserts channel, device, and medium

You need to design the table storage for pool1. The solution must meet the following requirements:

☞ Maximize the performance of data loading operations to Staging.WebSessions.

☞ Minimize query times for reporting queries against the dimensional model.

Which type of table distribution should you use for each table? To answer, drag the appropriate table distribution types to the correct tables. Each table distribution type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Correct Answer:

Box 1: Replicated -
The best table storage option for a small table is to replicate it across all the Compute nodes.

Box 2: Hash -
Hash-distribution improves query performance on large fact tables.

Box 3: Round-robin -
Round-robin distribution is useful for improving loading speed.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute

Previous Questions Next Questions

Question #61 *Topic 1*

HOTSPOT -

You have an Azure Synapse Analytics dedicated SQL pool.

You need to create a table named FactInternetSales that will be a large fact table in a dimensional model. FactInternetSales will contain 100 million rows and two columns named SalesAmount and OrderQuantity. Queries executed on FactInternetSales will aggregate the values in SalesAmount and OrderQuantity from the last year for a specific product. The solution must minimize the data size and query execution time.

How should you complete the code? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
CREATE TABLE [dbo].[FactInternetSales]
( [ProductKey] int NOT NULL
, [OrderDateKey] int NOT NULL
, [CustomerKey] int NOT NULL
, [PromotionKey] int NOT NULL
, [SalesOrderNumber] nvarchar(20) NOT NULL
, [OrderQuantity] smallint NOT NULL
, [UnitPrice] money NOT NULL
, [SalesAmount] money NOT NULL
)
WITH
```

[▼]
- (CLUSTERED COLUMNSTORE INDEX
- (CLUSTERED INDEX ([OrderDateKey])
- (HEAP
- (INDEX on [ProductKey]

```
, DISTRIBUTION =
);
```

[▼]
- Hash([OrderDateKey])
- Hash([ProductKey])
- REPLICATE
- ROUND_ROBIN

Correct Answer:

Answer Area

```
CREATE TABLE [dbo].[FactInternetSales]
( [ProductKey] int NOT NULL
, [OrderDateKey] int NOT NULL
, [CustomerKey] int NOT NULL
, [PromotionKey] int NOT NULL
, [SalesOrderNumber] nvarchar(20) NOT NULL
, [OrderQuantity] smallint NOT NULL
, [UnitPrice] money NOT NULL
, [SalesAmount] money NOT NULL
)
WITH
```

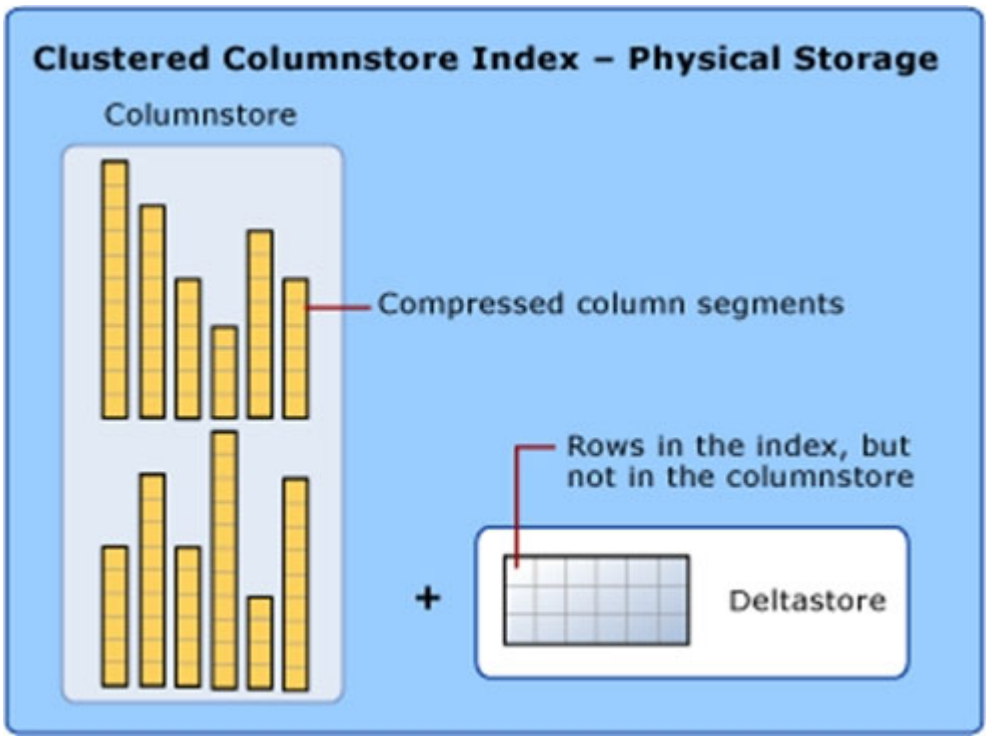
(CLUSTERED COLUMNSTORE INDEX
(CLUSTERED INDEX ([OrderDateKey])
(HEAP
(INDEX on [ProductKey]

```
, DISTRIBUTION =
);
```

Hash([OrderDateKey])
Hash([ProductKey])
REPLICATE
ROUND_ROBIN

Box 1: (CLUSTERED COLUMNSTORE INDEX

CLUSTERED COLUMNSTORE INDEX -
Columnstore indexes are the standard for storing and querying large data warehousing fact tables. This index uses column-based data storage and query processing to achieve gains up to 10 times the query performance in your data warehouse over traditional row-oriented storage. You can also achieve gains up to
10 times the data compression over the uncompressed data size. Beginning with SQL Server 2016 (13.x) SP1, columnstore indexes enable operational analytics: the ability to run performant real-time analytics on a transactional workload.
Note: Clustered columnstore index
A clustered columnstore index is the physical storage for the entire table.



To reduce fragmentation of the column segments and improve performance, the columnstore index might store some data temporarily into a clustered index called a deltastore and a B-tree list of IDs for deleted rows. The deltastore operations are handled behind the scenes. To return the correct query results, the clustered columnstore index combines query results from both the columnstore and the deltastore.
Box 2: HASH([ProductKey])
A hash distributed table distributes rows based on the value in the distribution column. A hash distributed table is designed to achieve high

performance for queries on large tables.
Choose a distribution column with data that distributes evenly
Incorrect:
* Not HASH([OrderDateKey]). Is not a date column. All data for the same date lands in the same distribution. If several users are all filtering on the same date, then only 1 of the 60 distributions do all the processing work
* A replicated table has a full copy of the table available on every Compute node. Queries run fast on replicated tables since joins on replicated tables don't require data movement. Replication requires extra storage, though, and isn't practical for large tables.
* A round-robin table distributes table rows evenly across all distributions. The rows are distributed randomly. Loading data into a round-robin table is fast. Keep in mind that queries can require more data movement than the other distribution methods.
Reference:
https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-overview https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-overview https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute

Question #62 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1. Table1 contains the following:
☞ One billion rows
☞ A clustered columnstore index
☞ A hash-distributed column named Product Key
☞ A column named Sales Date that is of the date data type and cannot be null
Thirty million rows will be added to Table1 each month.
You need to partition Table1 based on the Sales Date column. The solution must optimize query performance and data loading.
How often should you create a partition?

A. once per month Most Voted
B. once per year Most Voted
C. once per day
D. once per week

Correct Answer: *B*
Need a minimum 1 million rows per distribution. Each table is 60 distributions. 30 millions rows is added each month. Need 2 months to get a minimum of 1 million rows per distribution in a new partition.
Note: When creating partitions on clustered columnstore tables, it is important to consider how many rows belong to each partition. For optimal compression and performance of clustered columnstore tables, a minimum of 1 million rows per distribution and partition is needed. Before partitions are created, dedicated SQL pool already divides each table into 60 distributions.
Any partitioning added to a table is in addition to the distributions created behind the scenes. Using this example, if the sales fact table contained 36 monthly partitions, and given that a dedicated SQL pool has 60 distributions, then the sales fact table should contain 60 million rows per month, or 2.1 billion rows when all months are populated. If a table contains fewer than the recommended minimum number of rows per partition, consider using fewer partitions in order to increase the number of rows per partition.
Reference:
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-partition

Community vote distribution
B (53%) A (40%) 7%

Question #63 *Topic 1*

You have an Azure Databricks workspace that contains a Delta Lake dimension table named Table1.
Table1 is a Type 2 slowly changing dimension (SCD) table.
You need to apply updates from a source table to Table1.
Which Apache Spark SQL operation should you use?

A. CREATE

B. UPDATE

C. ALTER

D. MERGE Most Voted

Correct Answer: *D*
The Delta provides the ability to infer the schema for data input which further reduces the effort required in managing the schema changes.
The Slowly Changing
Data(SCD) Type 2 records all the changes made to each key in the dimensional table. These operations require updating the existing rows to mark the previous values of the keys as old and then inserting new rows as the latest values. Also, Given a source table with the updates and the target table with dimensional data,
SCD Type 2 can be expressed with the merge.
Example:

```
// Implementing SCD Type 2 operation using merge function
customersTable
.as("customers")
.merge(
stagedUpdates.as("staged_updates"),
"customers.customerId = mergeKey")
.whenMatched("customers.current = true AND customers.address <> staged_updates.address")
.updateExpr(Map(
"current" -> "false",
"endDate" -> "staged_updates.effectiveDate"))
.whenNotMatched()
.insertExpr(Map(
"customerid" -> "staged_updates.customerId",
"address" -> "staged_updates.address",
"current" -> "true",
"effectiveDate" -> "staged_updates.effectiveDate",
"endDate" -> "null"))
.execute()
}
```

Reference:
https://www.projectpro.io/recipes/what-is-slowly-changing-data-scd-type-2-operation-delta-table-databricks

Community vote distribution

D (100%)

Question #64 *Topic 1*

You are designing an Azure Data Lake Storage solution that will transform raw JSON files for use in an analytical workload.

You need to recommend a format for the transformed files. The solution must meet the following requirements:

- ☞ Contain information about the data types of each column in the files.
- ☞ Support querying a subset of columns in the files.
- ☞ Support read-heavy analytical workloads.
- ☞ Minimize the file size.

What should you recommend?

A. JSON

B. CSV

C. Apache Avro

D. Apache Parquet Most Voted

Correct Answer: *D*

Parquet, an open-source file format for Hadoop, stores nested data structures in a flat columnar format.

Compared to a traditional approach where data is stored in a row-oriented approach, Parquet file format is more efficient in terms of storage and performance.

It is especially good for queries that read particular columns from a ג€wideג€ (with many columns) table since only needed columns are read, and IO is minimized.

Incorrect:

Not C:

The Avro format is the ideal candidate for storing data in a data lake landing zone because:

1. Data from the landing zone is usually read as a whole for further processing by downstream systems (the row-based format is more efficient in this case).
2. Downstream systems can easily retrieve table schemas from Avro files (there is no need to store the schemas separately in an external meta store).
3. Any source schema change is easily handled (schema evolution).

Reference:

https://www.clairvoyant.ai/blog/big-data-file-formats

Community vote distribution

D (100%)

Question #65 *Topic 1*

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question 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 have an Azure Storage account that contains 100 GB of files. The files contain rows of 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 enterprise data warehouse in Azure Synapse Analytics.

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 Most Voted

B. No Most Voted

Correct Answer: *A*

Polybase loads rows that are smaller than 1 MB.

Note on Polybase Load: PolyBase is a technology that accesses external data stored in Azure Blob storage or Azure Data Lake Store via the T-SQL language.

Extract, Load, and Transform (ELT)

Extract, Load, and Transform (ELT) is a process by which data is extracted from a source system, loaded into a data warehouse, and then transformed.

The basic steps for implementing a PolyBase ELT for dedicated SQL pool are:

Extract the source data into text files.

Land the data into Azure Blob storage or Azure Data Lake Store.

Prepare the data for loading.

Load the data into dedicated SQL pool staging tables using PolyBase.

Transform the data.

Insert the data into production tables.

Reference:

https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-service-capacity-limits

https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/load-data-overview

Community vote distribution

A (74%) B (26%)

Question #66 *Topic 1*

You plan to create a dimension table in Azure Synapse Analytics that will be less than 1 GB.

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

- Provide the fastest query time.
- Minimize data movement during queries.

Which type of table should you use?

A. replicated Most Voted

B. hash distributed

C. heap

D. round-robin

Correct Answer: *A*

A replicated table has a full copy of the table accessible on each Compute node. Replicating a table removes the need to transfer data among Compute nodes before a join or aggregation. Since the table has multiple copies, replicated tables work best when the table size is less than 2 GB compressed. 2 GB is not a hard limit.

Reference:

https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/design-guidance-for-replicated-tables

Community vote distribution

A (100%)

Question #67 *Topic 1*

You are designing a dimension table in an Azure Synapse Analytics dedicated SQL pool.

You need to create a surrogate key for the table. The solution must provide the fastest query performance.

What should you use for the surrogate key?

A. a GUID column

B. a sequence object

C. an IDENTITY column Most Voted

Correct Answer: *C*

Use IDENTITY to create surrogate keys using dedicated SQL pool in AzureSynapse Analytics.

Note: A surrogate key on a table is a column with a unique identifier for each row. The key is not generated from the table data. Data modelers like to create surrogate keys on their tables when they design data warehouse models. You can use the IDENTITY property to achieve this goal simply and effectively without affecting load performance.

Reference:

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

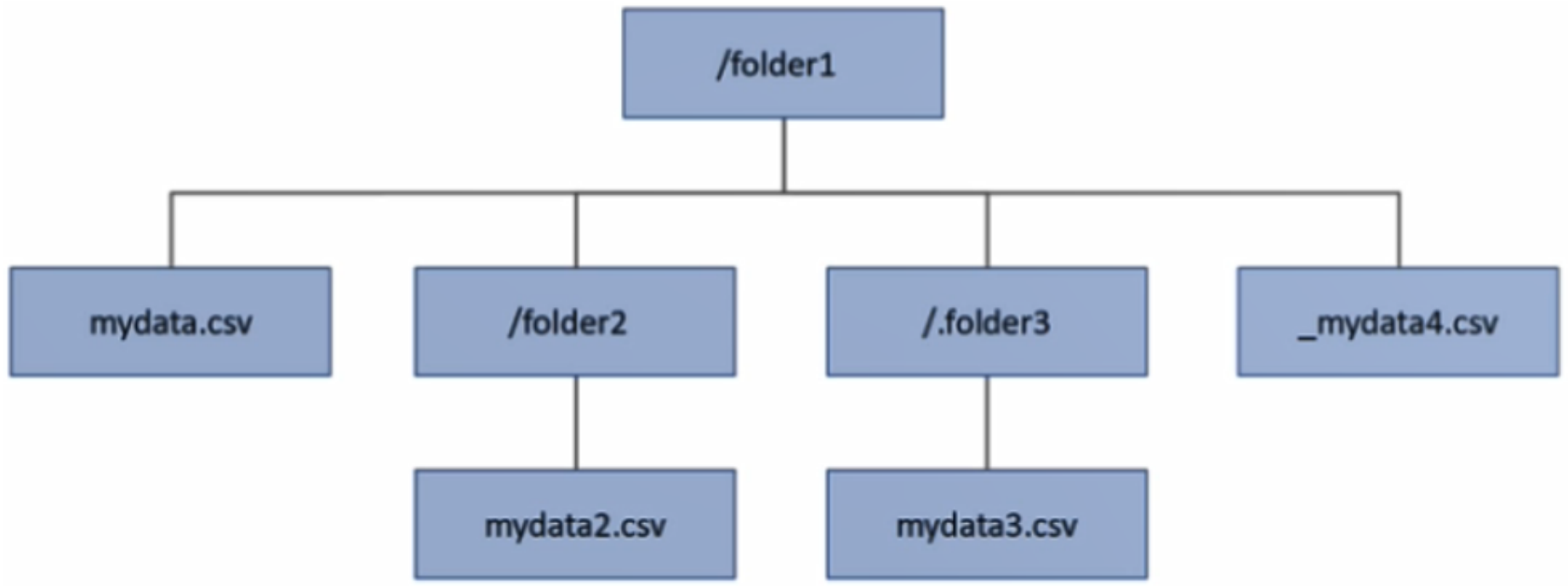
Community vote distribution

C (94%) 6%

Question #68 *Topic 1*

HOTSPOT
-

You have an Azure Data Lake Storage Gen2 account that contains a container named container1. You have an Azure Synapse Analytics serverless SQL pool that contains a native external table named dbo.Table1. The source data for dbo.Table1 is stored in container1. The folder structure of container1 is shown in the following exhibit.



The external data source is defined by using the following statement.

```
CREATE EXTERNAL DATA SOURCE DataLake
WITH
(    LOCATION         = 'https://mydatalake.dfs.core.windows.net/container1/folder1/**'
     , CREDENTIAL = DataLakeCred
);
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
When selecting all the rows in dbo.Table1, data from the mydata2.csv file will be returned.	○	○
When selecting all the rows in dbo.Table1, data from the mydata3.csv file will be returned.	○	○
When selecting all the rows in dbo.Table1, data from the _mydata4.csv file will be returned.	○	○

Correct Answer:

Answer Area

Statements	Yes	No
When selecting all the rows in dbo.Table1, data from the mydata2.csv file will be returned.	◉	○
When selecting all the rows in dbo.Table1, data from the mydata3.csv file will be returned.	◉	○
When selecting all the rows in dbo.Table1, data from the _mydata4.csv file will be returned.	○	◉

Question #69 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool.

You need to create a fact table named Table1 that will store sales data from the last three years. The solution must be optimized for the following query operations:

• Show order counts by week.
• Calculate sales totals by region.
• Calculate sales totals by product.
• Find all the orders from a given month.

Which data should you use to partition Table1?

A. product
B. month Most Voted
C. week
D. region

Correct Answer: *B*

Community vote distribution

B (100%)

Question #70 *Topic 1*

You are designing the folder structure for an Azure Data Lake Storage Gen2 account.

You identify the following usage patterns:

• Users will query data by using Azure Synapse Analytics serverless SQL pools and Azure Synapse Analytics serverless Apache Spark pools.
• Most queries will include a filter on the current year or week.
• Data will be secured by data source.

You need to recommend a folder structure that meets the following requirements:

• Supports the usage patterns
• Simplifies folder security
• Minimizes query times

Which folder structure should you recommend?

A. \DataSource\SubjectArea\YYYY\WW\FileData_YYYY_MM_DD.parquet Most Voted
B. \DataSource\SubjectArea\YYYY-WW\FileData_YYYY_MM_DD.parquet
C. DataSource\SubjectArea\WW\YYYY\FileData_YYYY_MM_DD.parquet
D. \YYYY\WW\DataSource\SubjectArea\FileData_YYYY_MM_DD.parquet
E. WW\YYYY\SubjectArea\DataSource\FileData_YYYY_MM_DD.parquet

Correct Answer: *A*

Community vote distribution

A (86%) 14%

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Custom View Settings

Question #71 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool named Pool1. Pool1 contains a table named table1.

You load 5 TB of data into table1.

You need to ensure that columnstore compression is maximized for table1.

Which statement should you execute?

A. DBCC INDEXDEFRAG (pool1, table1)

B. DBCC DBREINDEX (table1)

C. ALTER INDEX ALL on table1 REORGANIZE

D. ALTER INDEX ALL on table1 REBUILD Most Voted

Correct Answer: *D*

Community vote distribution

D (79%) C (21%)

Question #72 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool named pool1.

You plan to implement a star schema in pool and create a new table named DimCustomer by using the following code.

```
CREATE TABLE dbo.[DimCustomer](
    [CustomerKey] int NOT NULL,
    [CustomerSourceID] [int] NOT NULL,
    [Title] [nvarchar](8) NULL,
    [FirstName] [nvarchar](50) NOT NULL,
    [MiddleName] [nvarchar](50) NULL,
    [LastName] [nvarchar](50) NOT NULL,
    [Suffix] [nvarchar](10) NULL,
    [CompanyName] [nvarchar](128) NULL,
    [SalesPerson] [nvarchar](256) NULL,
    [EmailAddress] [nvarchar](50) NULL,
    [Phone] [nvarchar](25) NULL,
    [InsertedDate] [datetime] NOT NULL,
    [ModifiedDate] [datetime] NOT NULL,
    [HashKey] [varchar](100) NOT NULL,
    [IsCurrentRow] [bit] NOT NULL
)
WITH
(
    DISTRIBUTION = REPLICATE,
    CLUSTERED COLUMNSTORE INDEX
);
GO
```

You need to ensure that DimCustomer has the necessary columns to support a Type 2 slowly changing dimension (SCD).

Which two columns should you add? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. [HistoricalSalesPerson] [nvarchar] (256) NOT NULL

B. [EffectiveEndDate] [datetime] NOT NULL Most Voted

C. [PreviousModifiedDate] [datetime] NOT NULL

D. [RowID] [bigint] NOT NULL

E. [EffectiveStartDate] [datetime] NOT NULL Most Voted

Correct Answer: *BD*

Community vote distribution

BE (71%) BD (29%)

Question #73 *Topic 1*

HOTSPOT
-

You have an Azure subscription that contains an Azure Synapse Analytics dedicated SQL pool.
You plan to deploy a solution that will analyze sales data and include the following:

- A table named Country that will contain 195 rows
- A table named Sales that will contain 100 million rows
- A query to identify total sales by country and customer from the past 30 days

You need to create the tables. The solution must maximize query performance.

How should you complete the script? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
CREATE TABLE [dbo].[Sales]
(
      [OrderDate]         date          NOT NULL
,     [CustomerId] int NOT NULL
,     [CountryId] int NOT NULL
,     [Total] money NOT NULL
)
WITH
(
      DISTRIBUTION = [                    ▼ ]
                     HASH([CustomerId])
                     HASH([OrderDate])
                     REPLICATE
                     ROUND_ROBIN

      CLUSTERED COLUMNSTORE INDEX
)
CREATE TABLE [dbo].[Country]
(
      [CountryId] int NOT NULL
,     [CountryCode] varchar(10) NOT NULL
)
WITH
(
      DISTRIBUTION = [                    ▼ ]
                     HASH([CountryCode])
                     HASH([CountryId])
                     REPLICATE
                     ROUND_ROBIN
      CLUSTERED COLUMNSTORE INDEX
)
```

Answer Area

```
CREATE TABLE [dbo].[Sales]
(
      [OrderDate]         date          NOT NULL
,     [CustomerId] int NOT NULL
,     [CountryId] int NOT NULL
,     [Total] money NOT NULL
)
WITH
(
      DISTRIBUTION =
```

HASH([CustomerId])
HASH([OrderDate])
REPLICATE
ROUND_ROBIN

Correct Answer:

```
      CLUSTERED COLUMNSTORE INDEX
)
CREATE TABLE [dbo].[Country]
(
      [CountryId] int NOT NULL
,     [CountryCode] varchar(10) NOT NULL
)
WITH
(
      DISTRIBUTION =
```

HASH([CountryCode])
HASH([CountryId])
REPLICATE
ROUND_ROBIN

```
     CLUSTERED COLUMNSTORE INDEX
)
```

Question #74 *Topic 1*

You have an Azure subscription that contains an Azure Data Lake Storage Gen2 account named account1 and an Azure Synapse Analytics workspace named workspace1.

You need to create an external table in a serverless SQL pool in workspace1. The external table will reference CSV files stored in account1. The solution must maximize performance.

How should you configure the external table?

A. Use a native external table and authenticate by using a shared access signature (SAS). Most Voted

B. Use a native external table and authenticate by using a storage account key.

C. Use an Apache Hadoop external table and authenticate by using a shared access signature (SAS).

D. Use an Apache Hadoop external table and authenticate by using a service principal in Microsoft Azure Active Directory (Azure AD), part of Microsoft Entra.

Correct Answer: *A*

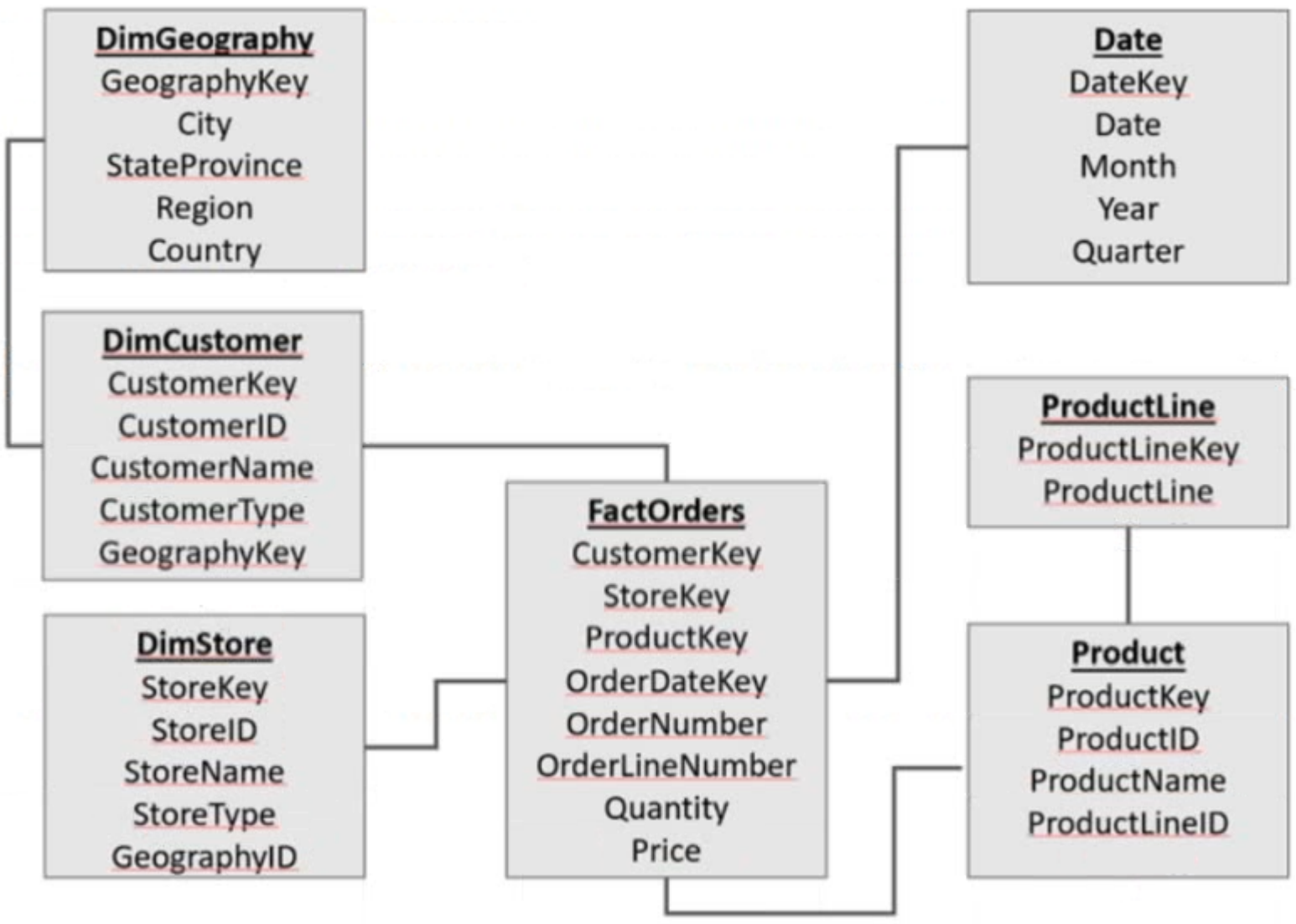
Community vote distribution

A (100%)

Question #75 *Topic 1*

HOTSPOT
-

You have an Azure Synapse Analytics serverless SQL pool that contains a database named db1. The data model for db1 is shown in the following exhibit.



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

NOTE: Each correct selection is worth one point.

Answer Area

To convert the data model to a star schema, **[answer choice]**.

- join DimGeography and DimCustomer
- join DimGeography and FactOrders
- union DimGeography and DimCustomer
- union DimGeography and FactOrders

Once the data model is converted into a star schema, there will be **[answer choice]** tables.

- 4
- 5
- 6
- 7

Correct Answer:

Answer Area

To convert the data model to a star schema, **[answer choice]**.

- join DimGeography and DimCustomer
- join DimGeography and FactOrders
- union DimGeography and DimCustomer
- union DimGeography and FactOrders

Once the data model is converted into a star schema, there will be **[answer choice]** tables.

- 4
- 5
- 6
- 7

Question #76 *Topic 1*

You have an Azure Databricks workspace and an Azure Data Lake Storage Gen2 account named storage1.

New files are uploaded daily to storage1.

You need to recommend a solution that configures storage1 as a structured streaming source. The solution must meet the following requirements:

• Incrementally process new files as they are uploaded to storage1.
• Minimize implementation and maintenance effort.
• Minimize the cost of processing millions of files.
• Support schema inference and schema drift.

Which should you include in the recommendation?

A. COPY INTO

B. Azure Data Factory

C. Auto Loader

D. Apache Spark FileStreamSource

Correct Answer: *C*

Community vote distribution

C (100%)

Question #77 *Topic 1*

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Description
storage1	Azure Blob storage account	Contains publicly accessible TSV files that do **NOT** have a header row
WS1	Azure Synapse Analytics workspace	Contains a serverless SQL pool

You need to read the TSV files by using ad-hoc queries and the OPENROWSET function. The solution must assign a name and override the inferred data type of each column.

What should you include in the OPENROWSET function?

A. the WITH clause Most Voted

B. the ROWSET_OPTIONS bulk option

C. the DATAFILETYPE bulk option

D. the DATA_SOURCE parameter

Correct Answer: *D*

Community vote distribution

A (72%) D (28%)

Question #78 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool.

You plan to create a fact table named Table1 that will contain a clustered columnstore index.

You need to optimize data compression and query performance for Table1.

What is the minimum number of rows that Table1 should contain before you create partitions?

A. 100,000

B. 600,000

C. 1 million

D. 60 million Most Voted

Correct Answer: *A*

Community vote distribution

D (83%) C (17%)

Question #79 *Topic 1*

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named DimSalesPerson. DimSalesPerson contains the following columns:

- RepSourceID
- SalesRepID
- FirstName
- LastName
- StartDate
- EndDate
- Region

You are developing an Azure Synapse Analytics pipeline that includes a mapping data flow named Dataflow1. Dataflow1 will read sales team data from an external source and use a Type 2 slowly changing dimension (SCD) when loading the data into DimSalesPerson.

You need to update the last name of a salesperson in DimSalesPerson.

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

NOTE: Each correct selection is worth one point.

A. Update three columns of an existing row.

B. Update two columns of an existing row.

C. Insert an extra row. Most Voted

D. Update one column of an existing row. Most Voted

Correct Answer: *CD*

Community vote distribution

CD (81%) BC (19%)

Question #80 *Topic 1*

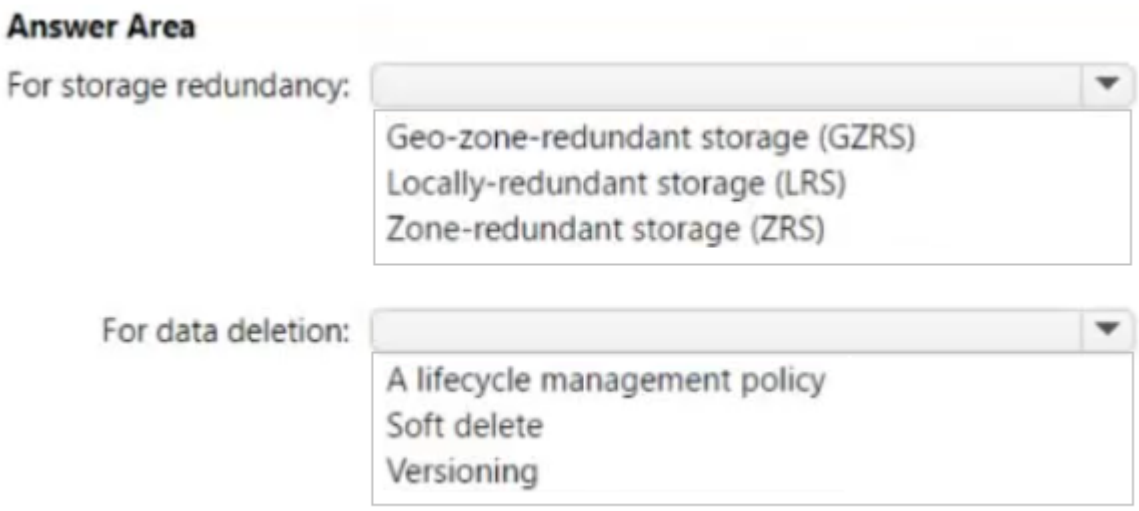
HOTSPOT
-

You plan to use an Azure Data Lake Storage Gen2 account to implement a Data Lake development environment that meets the following requirements:

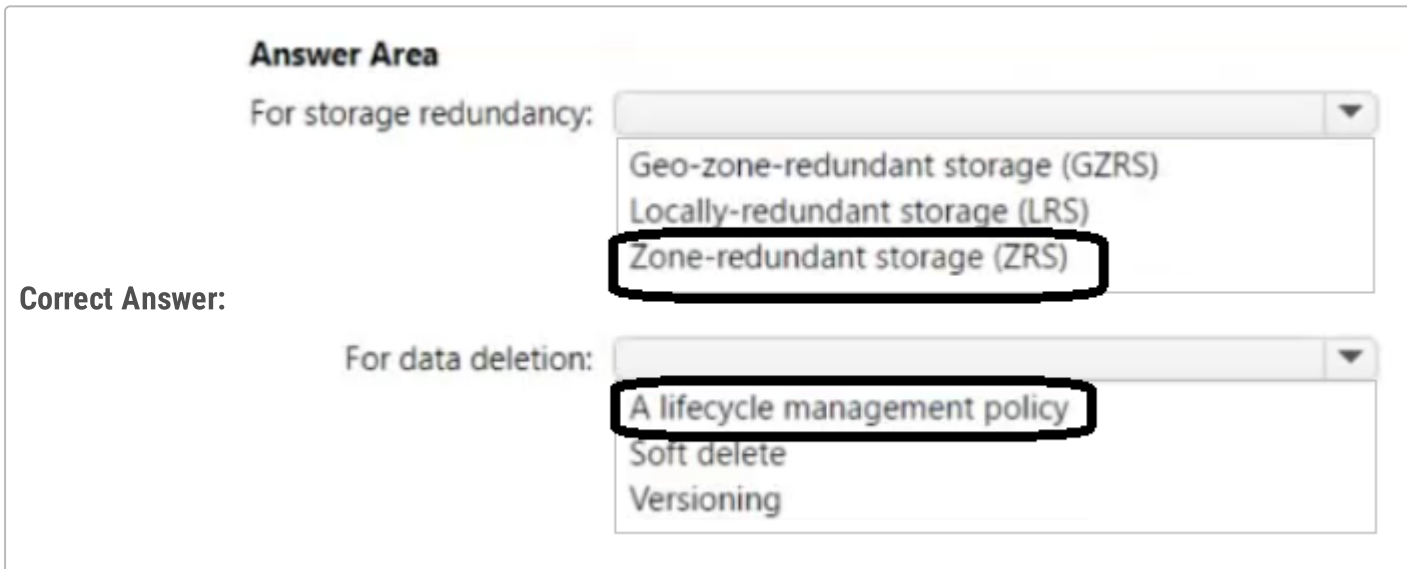
• Read and write access to data must be maintained if an availability zone becomes unavailable.
• Data that was last modified more than two years ago must be deleted automatically.
• Costs must be minimized.

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

NOTE: Each correct selection is worth one point.



Correct Answer:



Previous Questions Next Questions

Question #81 *Topic 1*

HOTSPOT
-

You are designing an Azure Data Lake Storage Gen2 container to store data for the human resources (HR) department and the operations department at your company.

You have the following data access requirements:

• After initial processing, the HR department data will be retained for seven years and rarely accessed.
• The operations department data will be accessed frequently for the first six months, and then accessed once per month.

You need to design a data retention solution to meet the access requirements. The solution must minimize storage costs.

What should you include in the storage policy for each department? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

HR:

- Archive storage after one day and delete storage after 2,555 days.
- Archive storage after 2,555 days.
- Cool storage after one day.
- Cool storage after 180 days.
- Cool storage after 180 days and delete storage after 2,555 days.
- Delete after one day.
- Delete after 180 days.

Operations:

- Archive storage after one day and delete storage after 2,555 days.
- Archive storage after 2,555 days.
- Cool storage after one day.
- Cool storage after 180 days.
- Cool storage after 180 days and delete storage after 2,555 days.
- Delete after one day.
- Delete after 180 days.

Answer Area

HR:

- Archive storage after one day and delete storage after 2,555 days.
- Archive storage after 2,555 days.
- Cool storage after one day.
- Cool storage after 180 days.
- Cool storage after 180 days and delete storage after 2,555 days.
- Delete after one day.
- Delete after 180 days.

Correct Answer:

Operations:

- Archive storage after one day and delete storage after 2,555 days.
- Archive storage after 2,555 days.
- Cool storage after one day.
- Cool storage after 180 days.
- Cool storage after 180 days and delete storage after 2,555 days.
- Delete after one day.
- Delete after 180 days.

Question #82 *Topic 1*

HOTSPOT
-

You are developing an Azure Synapse Analytics pipeline that will include a mapping data flow named Dataflow1. Dataflow1 will read customer data from an external source and use a Type 1 slowly changing dimension (SCD) when loading the data into a table named DimCustomer in an Azure Synapse Analytics dedicated SQL pool.

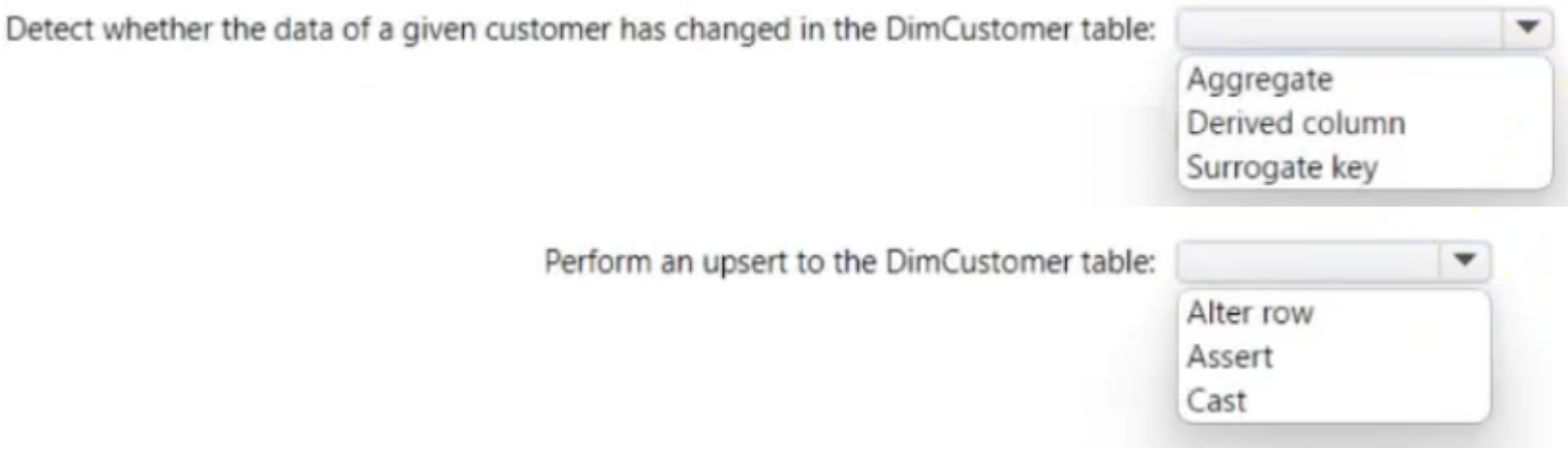
You need to ensure that Dataflow1 can perform the following tasks:

• Detect whether the data of a given customer has changed in the DimCustomer table.
• Perform an upsert to the DimCustomer table.

Which type of transformation should you use for each task? To answer, select the appropriate options in the answer area.

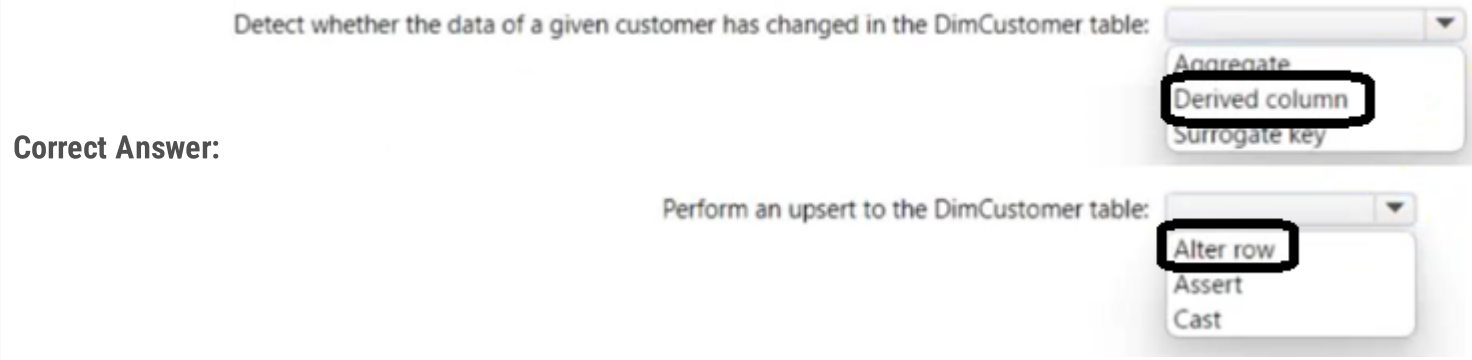
NOTE: Each correct selection is worth one point.

Answer Area



Correct Answer:

Answer Area



Question #83 *Topic 1*

DRAG DROP
-

You have an Azure Synapse Analytics serverless SQL pool.

You have an Azure Data Lake Storage account named adls1 that contains a public container named container1. The container1 container contains a folder named folder1.

You need to query the top 100 rows of all the CSV files in folder1.

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

Correct Answer:

Question #84 *Topic 1*

You have an Azure Synapse Analytics workspace named WS1 that contains an Apache Spark pool named Pool1.

You plan to create a database named DB1 in Pool1.

You need to ensure that when tables are created in DB1, the tables are available automatically as external tables to the built-in serverless SQL pool.

Which format should you use for the tables in DB1?

A. Parquet Most Voted

B. ORC

C. JSON

D. HIVE

Correct Answer: *A*

Community vote distribution

A (100%)

Question #85 *Topic 1*

You have an Azure Data Lake Storage Gen2 account named storage1.

You plan to implement query acceleration for storage1.

Which two file types support query acceleration? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A. JSON Most Voted

B. Apache Parquet

C. XML

D. CSV Most Voted

E. Avro

Correct Answer: *AD*

Community vote distribution

AD (100%)

Question #86 *Topic 1*

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Description
storage1	Azure Blob storage account	Contains publicly accessible JSON files
WS1	Azure Synapse Analytics workspace	Contains a serverless SQL pool

You need to read the files in storage1 by using ad-hoc queries and the OPENROWSET function. The solution must ensure that each rowset contains a single JSON record.

To what should you set the FORMAT option of the OPENROWSET function?

A. JSON

B. DELTA

C. PARQUET

D. CSV Most Voted

Correct Answer: *A*

Community vote distribution

D (97%)

Question #87 *Topic 1*

HOTSPOT

-

You have an Azure subscription that contains the Azure Synapse Analytics workspaces shown in the following table.

Name	Primary storage account
workspace1	datalake1
workspace2	datalake2
workspace3	datalake1

Each workspace must read and write data to datalake1.

Each workspace contains an unused Apache Spark pool.

You plan to configure each Spark pool to share catalog objects that reference datalake1.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
The shared catalog objects can be stored in Azure Database for MySQL.	○	○
For the Apache Hive Metastore of each workspace, you must configure a linked service that uses user-password authentication.	○	○
The users of workspace1 must be assigned the Storage Blob Contributor role for datalake1.	○	○

Answer Area

Statements	Yes	No
Correct Answer: The shared catalog objects can be stored in Azure Database for MySQL.	◉	○
For the Apache Hive Metastore of each workspace, you must configure a linked service that uses user-password authentication.	◉	○
The users of workspace1 must be assigned the Storage Blob Contributor role for datalake1.	○	◉

Question #88 *Topic 1*

DRAG DROP
-

You have a data warehouse.

You need to implement a slowly changing dimension (SCD) named Product that will include three columns named ProductName, ProductColor, and ProductSize. The solution must meet the following requirements:

• Prevent changes to the values stored in ProductName.
• Retain only the current and the last values in ProductSize.
• Retain all the current and previous values in ProductColor.

Which type of SCD should you implement for each column? To answer, drag the appropriate types to the correct columns. Each type 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.

SCD Type

Type 0
Type 1
Type 2
Type 3

Answer Area

ProductName:
Color:
Size:

Answer Area

Correct Answer:

ProductName: Type 0
Color: Type 1
Size: Type 2

Question #89 *Topic 1*

HOTSPOT
-

You are incrementally loading data into fact tables in an Azure Synapse Analytics dedicated SQL pool.

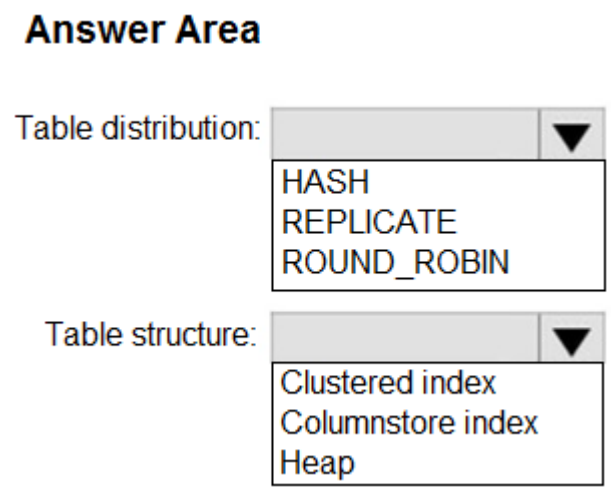
Each batch of incoming data is staged before being loaded into the fact tables.

You need to ensure that the incoming data is staged as quickly as possible.

How should you configure the staging tables? To answer, select the appropriate options in the answer area.

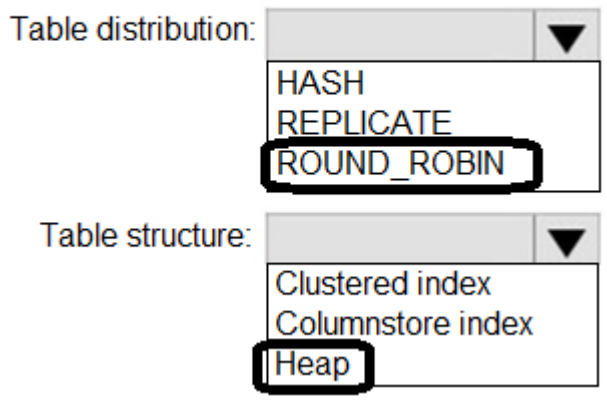
NOTE: Each correct selection is worth one point.

Answer Area



Correct Answer:

Answer Area



Question #90 *Topic 1*

You have an Azure subscription that contains an Azure Synapse Analytics workspace named ws1 and an Azure Cosmos DB database account named Cosmos1. Cosmos1 contains a container named container1 and ws1 contains a serverless SQL pool.

You need to ensure that you can query the data in container1 by using the serverless SQL pool.

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

NOTE: Each correct selection is worth one point.

A. Enable Azure Synapse Link for Cosmos1.

B. Disable the analytical store for container1.

C. In ws1, create a linked service that references Cosmos1.

D. Enable the analytical store for container1.

E. Disable indexing for container1.

Correct Answer: *ACD*

Community vote distribution

ACD (100%)

Previous Questions Next Questions

Question #91 *Topic 1*

HOTSPOT

-

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Description
Workspace1	Azure Synapse workspace	Contains the Built-in serverless SQL pool
Pool1	Azure Synapse Analytics dedicated SQL pool	Deployed to Workspace1
storage1	Storage account	Hierarchical namespace enabled

The storage1 account contains a container named container1. The container1 container contains the following files.

```
Webdata <root folder>
    Monthly <folder>
            _monthly.csv
            Monthly.csv
    .testdata.csv
    testdata.csv
```

In Pool1, you run the following script.

```
CREATE EXTERNAL DATA SOURCE Ds1
WITH
    ( LOCATION = 'abfss://container1@storage1.dfs.core.windows.net' ,
    CREDENTIAL = credential1,
    TYPE = HADOOP
  ) ;
```

In the Built-in serverless SQL pool, you run the following script.

```
CREATE EXTERNAL DATA SOURCE Ds2
WITH (
    LOCATION = 'https://storage1.blob.core.windows.net/container1/Webdata/',
    CREDENTIAL = credential2
);
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
An external table that uses Ds1 can read the _monthly.csv file.	○	○
An external table that uses Ds1 can read the Monthly.csv file.	○	○
An external table that uses Ds2 can read the .testdata.csv file.	○	○

Answer Area

Statements	Yes	No
An external table that uses Ds1 can read the _monthly.csv file.	○	●
An external table that uses Ds1 can read the Monthly.csv file.	●	○
An external table that uses Ds2 can read the .testdata.csv file.	●	○

Correct Answer:

Question #92 *Topic 1*

DRAG DROP

-

You have an Azure subscription that contains an Azure Data Lake Storage Gen2 account named account1 and a user named User1.

In account1, you create a container named container1. In container1, you create a folder named folder1.

You need to ensure that User1 can list and read all the files in folder1. The solution must use the principle of least privilege.

How should you configure the permissions for each folder? To answer, drag the appropriate permissions to the correct folders. Each permission may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Permissions

Execute	None
Read	Read and Execute
Read and Write	Write

Answer Area

container1/: [ ]

container1/folder1: [ ]

Answer Area

Correct Answer:

container1/: Execute

container1/folder1: Read and Execute

Question #93 *Topic 1*

You have an Azure Data Factory pipeline named pipeline1.

You need to execute pipeline1 at 2 AM every day. The solution must ensure that if the trigger for pipeline1 stops, the next pipeline execution will occur at 2 AM, following a restart of the trigger.

Which type of trigger should you create?

A. schedule Most Voted

B. tumbling

C. storage event

D. custom event

Correct Answer: *A*

Community vote distribution

A (75%) D (25%)

Question #94 *Topic 1*

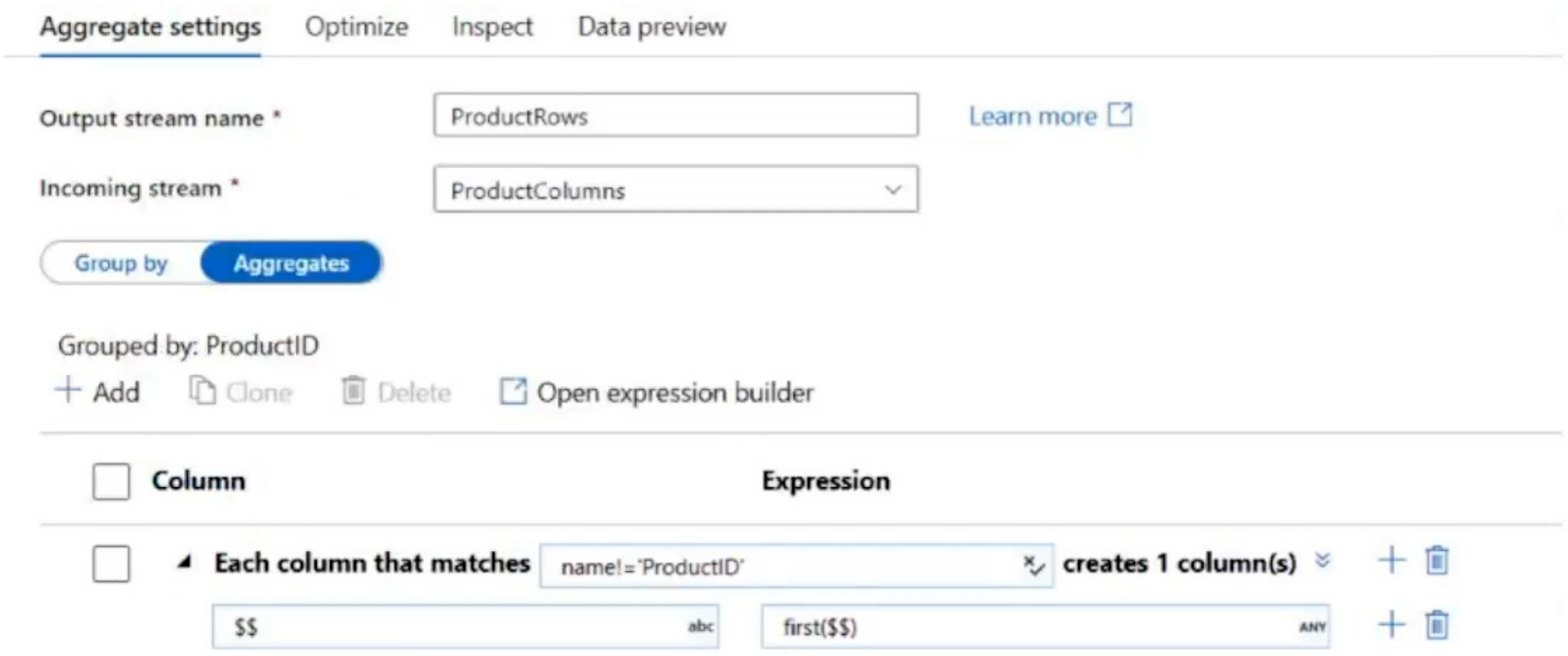
HOTSPOT
-

You have an Azure data factory named adf1 that contains a pipeline named ExecProduct. ExecProduct contains a data flow named Product.

The Product data flow contains the following transformations:

1. WeeklyData: A source that points to a CSV file in an Azure Data Lake Storage Gen2 account with 20 columns
2. ProductColumns: A select transformation that selects from WeeklyData six columns named ProductID, ProductDescr, ProductSubCategory, ProductCategory, ProductStatus, and ProductLastUpdated
3. ProductRows: An aggregate transformation
4. ProductList: A sink that outputs data to an Azure Synapse Analytics dedicated SQL pool

The Aggregate settings for ProductRows are configured as shown in the following exhibit.



For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
There will be six columns in the output of ProductRows.	○	○
There will always be one output row for each unique value of ProductDescr.	○	○
There will always be one output row for each unique value of ProductID.	○	○

Correct Answer:

Answer Area

Statements	Yes	No
There will be six columns in the output of ProductRows.	○	●
There will always be one output row for each unique value of ProductDescr.	○	●
There will always be one output row for each unique value of ProductID.	●	○

Question #95 *Topic 1*

You manage an enterprise data warehouse in Azure Synapse Analytics.

Users report slow performance when they run commonly used queries. Users do not report performance changes for infrequently used queries.

You need to monitor resource utilization to determine the source of the performance issues.

Which metric should you monitor?

A. DWU limit

B. Cache hit percentage

C. Local tempdb percentage

D. Data IO percentage

Correct Answer: *B*

Community vote distribution

B (100%)

Question #96 *Topic 1*

HOTSPOT

-

You have an Azure Synapse Analytics serverless SQL pool.

You have an Apache Parquet file that contains 10 columns.

You need to query data from the file. The solution must return only two columns.

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

NOTE: Each correct selection is worth one point.

Answer Area

```
SELECT * FROM
OPENROWSET( [ ▼ ] N'https://myaccount.dfs.core.windows.net/mycontainer/mysubfolder/data.parquet', FORMAT = 'PARQUET')
WITH [ ▼ ] as rows
```

BULK
DELTA
OPENQUERY
SINGLE_BLOB

(Col1 int, Col2 varchar(20))
FILEPATH(2)
PARSER_VERSION = '2.0'
SINGLE_BLOB

Question #97 *Topic 1*

You have an Azure Synapse Analytics workspace that contains an Apache Spark pool named SparkPool1. SparkPool1 contains a Delta Lake table named SparkTable1.

You need to recommend a solution that supports Transact-SQL queries against the data referenced by SparkTable1. The solution must ensure that the queries can use partition elimination.

What should you include in the recommendation?

A. a partitioned table in a dedicated SQL pool

B. a partitioned view in a dedicated SQL pool

C. a partitioned index in a dedicated SQL pool

D. a partitioned view in a serverless SQL pool

Correct Answer: *D*

Community vote distribution

D (100%)

Question #98 *Topic 1*

You are designing a sales transactions table in an Azure Synapse Analytics dedicated SQL pool. The table will contain 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

Correct Answer: *A*

Community vote distribution

A (75%) D (25%)

Question #99 *Topic 1*

You have an Azure Synapse Analytics workspace.

You plan to deploy a lake database by using a database template in Azure Synapse.

Which two elements are included in the template? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. relationships Most Voted

B. data formats

C. linked services

D. table permissions

E. table definitions Most Voted

Correct Answer: *AE*

Community vote distribution

AE (100%)

Question #100 *Topic 1*

You are implementing a star schema in an Azure Synapse Analytics dedicated SQL pool.

You plan to create a table named DimProduct.

DimProduct must be a Type 3 slowly changing dimension (SCD) table that meets the following requirements:

- The values in two columns named ProductKey and ProductSourceID will remain the same.
- The values in three columns named ProductName, ProductDescription, and Color can change.

You need to add additional columns to complete the following table definition.

```
CREATE TABLE [dbo].[dimproduct]
  (
     [ProductKey]          INT NOT NULL,
     [ProductSourceID]     INT NOT NULL,
     [ProductName]         NVARCHAR(100) NOT NULL,
     [ProductDescription]  NVARCHAR(2000) NOT NULL,
     [Color]               NVARCHAR(50) NOT NULL
  )
WITH
(
    DISTRIBUTION = REPLICATE,
    CLUSTERED COLUMNSTORE INDEX
);
```

Which three columns should you add? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. [EffectiveStartDate] [datetime] NOT NULL

B. [EffectiveEndDate] [datetime] NOT NULL

C. [OriginalProductDescription] NVARCHAR(2000) NOT NULL Most Voted

D. [IsCurrentRow] [bit] NOT NULL

E. [OriginalColor] NVARCHAR(50) NOT NULL Most Voted

F. [OriginalProductName] NVARCHAR(100) NULL Most Voted

Correct Answer: *CEF*

Community vote distribution

CEF (100%)

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