

# DATABRICKS-CERTIFIED-PR OFESSIONAL-DATA-ENGINEER<sup>Q&As</sup>

Databricks Certified Professional Data Engineer Exam

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#### **QUESTION 1**

A Delta Lake table was created with the below query:

Realizing that the original query had a typographical error, the below code was executed:

ALTER TABLE prod.sales\_by\_stor RENAME TO prod.sales\_by\_store

Which result will occur after running the second command?

- A. The table reference in the metastore is updated and no data is changed.
- B. The table name change is recorded in the Delta transaction log.
- C. All related files and metadata are dropped and recreated in a single ACID transaction.
- D. The table reference in the metastore is updated and all data files are moved.
- E. A new Delta transaction log Is created for the renamed table.

Correct Answer: A

The guery uses the CREATE TABLE USING DELTA syntax to create a Delta Lake table from an existing Parquet file stored in DBFS. The query also uses the LOCATION keyword to specify the path to the Parquet file as /mnt/ finance\_eda\_bucket/tx\_sales.parquet. By using the LOCATION keyword, the query creates an external table, which is a table that is stored outside of the default warehouse directory and whose metadata is not managed by Databricks. An external table can be created from an existing directory in a cloud storage system, such as DBFS or S3, that contains data files in a supported format, such as Parquet or CSV. The result that will occur after running the second command is that the table reference in the metastore is updated and no data is changed. The metastore is a service that stores metadata about tables, such as their schema, location, properties, and partitions. The metastore allows users to access tables using SQL commands or Spark APIs without knowing their physical location or format. When renaming an external table using the ALTER TABLE RENAME TO command, only the table reference in the metastore is updated with the new name; no data files or directories are moved or changed in the storage system. The table will still point to the same location and use the same format as before. However, if renaming a managed table, which is a table whose metadata and data are both managed by Databricks, both the table reference in the metastore and the data files in the default warehouse directory are moved and renamed accordingly. Verified References: [Databricks Certified Data Engineer Professional], under "Delta Lake" section; Databricks Documentation, under "ALTER TABLE RENAME TO" section; Databricks Documentation, under "Metastore" section; Databricks Documentation, under "Managed and external tables" section.

#### **QUESTION 2**

A Databricks SQL dashboard has been configured to monitor the total number of records present in a collection of Delta Lake tables using the following query pattern:

SELECT COUNT (\*) FROM table-

Which of the following describes how results are generated each time the dashboard is updated?

- A. The total count of rows is calculated by scanning all data files
- B. The total count of rows will be returned from cached results unless REFRESH is run



- C. The total count of records is calculated from the Delta transaction logs
- D. The total count of records is calculated from the parquet file metadata
- E. The total count of records is calculated from the Hive metastore

Correct Answer: C

https://delta.io/blog/2023-04-19-faster-aggregations-metadata/#:~:text=You%20can%20get%20the%20number,a%20given%20Delta%20table %20version.

### **QUESTION 3**

A team of data engineer are adding tables to a DLT pipeline that contain repetitive expectations for many of the same data quality checks.

One member of the team suggests reusing these data quality rules across all tables defined for this pipeline.

What approach would allow them to do this?

- A. Maintain data quality rules in a Delta table outside of this pipeline\\'s target schema, providing the schema name as a pipeline parameter.
- B. Use global Python variables to make expectations visible across DLT notebooks included in the same pipeline.
- C. Add data quality constraints to tables in this pipeline using an external job with access to pipeline configuration files.
- D. Maintain data quality rules in a separate Databricks notebook that each DLT notebook of file.

Correct Answer: A

Maintaining data quality rules in a centralized Delta table allows for the reuse of these rules across multiple DLT (Delta Live Tables) pipelines. By storing these rules outside the pipeline\\'s target schema and referencing the schema name as a pipeline parameter, the team can apply the same set of data quality checks to different tables within the pipeline. This approach ensures consistency in data quality validations and reduces redundancy in code by not having to replicate the same rules in each DLT notebook or file. References: Databricks Documentation on Delta Live Tables: Delta Live Tables Guide

## **QUESTION 4**

An hourly batch job is configured to ingest data files from a cloud object storage container where each batch represent all records produced by the source system in a given hour. The batch job to process these records into the Lakehouse is sufficiently delayed to ensure no late-arriving data is missed. The user\_id field represents a unique key for the data, which has the following schema:

user\_id BIGINT, username STRING, user\_utc STRING, user\_region STRING, last\_login BIGINT, auto\_pay BOOLEAN, last\_updated BIGINT

New records are all ingested into a table named account\_history which maintains a full record of all data in the same schema as the source. The next table in the system is named account\_current and is implemented as a Type 1 table representing the most recent value for each unique user\_id.

Assuming there are millions of user accounts and tens of thousands of records processed hourly, which implementation



can be used to efficiently update the described account\_current table as part of each hourly batch job?

- A. Use Auto Loader to subscribe to new files in the account history directory; configure a Structured Streaminq trigger once job to batch update newly detected files into the account current table.
- B. Overwrite the account current table with each batch using the results of a query against the account history table grouping by user id and filtering for the max value of last updated.
- C. Filter records in account history using the last updated field and the most recent hour processed, as well as the max last iogin by user id write a merge statement to update or insert the most recent value for each user id.
- D. Use Delta Lake version history to get the difference between the latest version of account history and one version prior, then write these records to account current.
- E. Filter records in account history using the last updated field and the most recent hour processed, making sure to deduplicate on username; write a merge statement to update or insert the most recent value for each username.

Correct Answer: C

This is the correct answer because it efficiently updates the account current table with only the most recent value for each user id. The code filters records in account history using the last updated field and the most recent hour processed, which means it will only process the latest batch of data. It also filters by the max last login by user id, which means it will only keep the most recent record for each user id within that batch. Then, it writes a merge statement to update or insert the most recent value for each user id into account current, which means it will perform an upsert operation based on the user id column. Verified References: [Databricks Certified Data Engineer Professional], under "Delta Lake" section; Databricks Documentation, under "Upsert into a table using merge" section.

#### **QUESTION 5**

The data architect has mandated that all tables in the Lakehouse should be configured as external (also known as "unmanaged") Delta Lake tables.

Which approach will ensure that this requirement is met?

- A. When a database is being created, make sure that the LOCATION keyword is used.
- B. When configuring an external data warehouse for all table storage, leverage Databricks for all ELT.
- C. When data is saved to a table, make sure that a full file path is specified alongside the Delta format.
- D. When tables are created, make sure that the EXTERNAL keyword is used in the CREATE TABLE statement.
- E. When the workspace is being configured, make sure that external cloud object storage has been mounted.

Correct Answer: D

To create an external or unmanaged Delta Lake table, you need to use the EXTERNAL keyword in the CREATE TABLE statement. This indicates that the table is not managed by the catalog and the data files are not deleted when the table is

dropped. You also need to provide a LOCATION clause to specify the path where the data files are stored. For example:

CREATE EXTERNAL TABLE events (date DATE, eventId STRING, eventType STRING, data STRING) USING DELTA LOCATION `/mnt/delta/events\\'; This creates an external Delta Lake table named events that references the data files



in

the `/mnt/delta/events\\' path. If you drop this table, the data files will remain intact and you can recreate the table with the same statement.

#### References:

https://docs.databricks.com/delta/delta-batch.html#create-a-table https://docs.databricks.com/delta-batch.html#create-a-table https://docs.databricks.com/delta-batch.html#create-a-table https://docs.databricks.com/delta-batch.html#create-a-table https://docs.datab batch.html#drop-a-table

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