Databricks

Exam Questions Databricks-Certified-Data-Engineer-Associate

Databricks Certified Data Engineer Associate Exam

NEW QUESTION 1
A data engineer has created a new database using the following command: CREATE DATABASE IF NOT EXISTS customer360;
In which of the following locations will the customer360 database be located?

A. dbfs:/user/hive/database/customer360
B. dbfs:/user/hive/warehouse
C. dbfs:/user/hive/customer360
D. More information is needed to determine the correct response

Answer: B

Explanation:
dbfs:/user/hive/warehouse - which is the default location

NEW QUESTION 2
A data engineer has configured a Structured Streaming job to read from a table, manipulate the data, and then perform a streaming write into a new table.
The cade block used by the data engineer is below:

```
(spark.table("sales")
    .withColumn("avg_price", col("sales") / col("units"))
    .writeStream
    .option("checkpointLocation", checkpointPath)
    .outputMode("complete")
    .______
    .table("new_sales")
)
```

If the data engineer only wants the query to execute a micro-batch to process data every 5 seconds, which of the following lines of code should the data engineer use to fill in the blank?

A. trigger("5 seconds")
B. trigger()
C. trigger(once="5 seconds")
D. trigger(processingTime="5 seconds")
E. trigger(continuous="5 seconds")

Answer: D

Explanation:
# ProcessingTime trigger with two-seconds micro-batch interval df.writeStream \
format("console") \ trigger(processingTime='2 seconds') \ start()
https://spark.apache.org/docs/latest/structured-streaming-programming-guide.html#triggers

NEW QUESTION 3
A data analyst has developed a query that runs against Delta table. They want help from the data engineering team to implement a series of tests to ensure the data returned by the query is clean. However, the data engineering team uses Python for its tests rather than SQL.
Which of the following operations could the data engineering team use to run the query and operate with the results in PySpark?

A. SELECT * FROM sales
B. spark.delta.table
C. spark.sql
D. There is no way to share data between PySpark and SQL.
E. spark.table

Answer: C

Explanation:
from pyspark.sql import SparkSession spark = SparkSession.builder.getOrCreate()
df = spark.sql("SELECT * FROM sales") print(df.count())

NEW QUESTION 4
A data engineer wants to schedule their Databricks SQL dashboard to refresh every hour, but they only want the associated SQL endpoint to be running when it is necessary. The dashboard has multiple queries on multiple datasets associated with it. The data that feeds the dashboard is automatically processed using a Databricks Job.
Which of the following approaches can the data engineer use to minimize the total running time of the SQL endpoint used in the refresh schedule of their dashboard?

A. They can turn on the Auto Stop feature for the SQL endpoint.
B. They can ensure the dashboard's SQL endpoint is not one of the included query's SQL endpoint.
C. They can reduce the cluster size of the SQL endpoint.
D. They can ensure the dashboard's SQL endpoint matches each of the queries' SQL endpoints.
E. They can set up the dashboard's SQL endpoint to be serverless.

Answer: A

NEW QUESTION 5
Which of the following can be used to simplify and unify siloed data architectures that are specialized for specific use cases?

A. None of these
B. Data lake
C. Data warehouse
D. All of these
E. Data lakehouse

Answer: E

NEW QUESTION 6
A data engineer only wants to execute the final block of a Python program if the Python variable day_of_week is equal to 1 and the Python variable review_period is True.
Which of the following control flow statements should the data engineer use to begin this conditionally executed code block?

A. if day_of_week = 1 and review_period:
B. if day_of_week = 1 and review_period = "True":
C. if day_of_week == 1 and review_period == "True":
D. if day_of_week == 1 and review_period:
E. if day_of_week = 1 & review_period: = "True":

Answer: D

Explanation:
This statement will check if the variable day_of_week is equal to 1 and if the variable review_period evaluates to a truthy value. The use of the double equal sign (==) in the comparison of day_of_week is important, as a single equal sign (=) would be used to assign a value to the variable instead of checking its value. The use of a single ampersand (&) instead of the keyword and is not valid syntax in Python. The use of quotes around True in options B and C will result in a string comparison, which will not evaluate to True even if the value of review_period is True.

NEW QUESTION 7
Which of the following describes the storage organization of a Delta table?

A. Delta tables are stored in a single file that contains data, history, metadata, and other attributes.
B. Delta tables store their data in a single file and all metadata in a collection of files in a separate location.
C. Delta tables are stored in a collection of files that contain data, history, metadata, and other attributes.
D. Delta tables are stored in a collection of files that contain only the data stored within the table.
E. Delta tables are stored in a single file that contains only the data stored within the table.

Answer: C

Explanation:
Delta tables store data in a structured manner using Parquet files, and they also maintain metadata and transaction logs in separate directories. This organization allows for versioning, transactional capabilities, and metadata tracking in Delta Lake. Thank
you for pointing out the error, and I appreciate your understanding.

NEW QUESTION 8
A data analyst has created a Delta table sales that is used by the entire data analysis team. They want help from the data engineering team to implement a series of tests to ensure the data is clean. However, the data engineering team uses Python for its tests rather than SQL.
Which of the following commands could the data engineering team use to access sales in PySpark?

A. SELECT * FROM sales
B. There is no way to share data between PySpark and SQL.
C. spark.sql("sales")
D. spark.delta.table("sales")
E. spark.table("sales")

Answer: E

Explanation:
https://spark.apache.org/docs/3.2.1/api/python/reference/api/pyspark.sql.SparkSession.tabl e.html

NEW QUESTION 9
Which of the following describes the relationship between Bronze tables and raw data?

A. Bronze tables contain less data than raw data files.
B. Bronze tables contain more truthful data than raw data.
C. Bronze tables contain aggregates while raw data is unaggregated.
D. Bronze tables contain a less refined view of data than raw data.
E. Bronze tables contain raw data with a schema applied.

Answer: E

Explanation:
The Bronze layer is where we land all the data from external source systems. The table structures in this layer correspond to the source system table structures "as-is," along with any additional metadata columns that capture the load date/time, process ID, etc. The focus in this layer is quick Change Data Capture and the ability to provide an historical archive of source (cold storage), data lineage, auditability, reprocessing if needed without rereading the data from the source system.https://www.databricks.com/glossary/medallion- architecture#:~:text=Bronze%20layer%20%28raw%20data%29

NEW QUESTION 10

Which of the following is hosted completely in the control plane of the classic Databricks architecture?

A. Worker node
B. JDBC data source
C. Databricks web application
D. Databricks Filesystem
E. Driver node

Answer: C

Explanation:
In the classic Databricks architecture, the control plane includes components like the Databricks web application, the Databricks REST API, and the Databricks Workspace. These components are responsible for managing and controlling the Databricks environment, including cluster provisioning, notebook management, access control, and job scheduling. The other options, such as worker nodes, JDBC data sources, Databricks Filesystem (DBFS), and driver nodes, are typically part of the data plane or the execution environment, which is separate from the control plane. Worker nodes are responsible for executing tasks and computations, JDBC data sources are used to connect to external databases, DBFS is a distributed file system for data storage, and driver nodes are responsible for coordinating the execution of Spark jobs.

NEW QUESTION 10
A data engineer needs to use a Delta table as part of a data pipeline, but they do not know if they have the appropriate permissions.
In which of the following locations can the data engineer review their permissions on the table?

A. Databricks Filesystem
B. Jobs
C. Dashboards
D. Repos
E. Data Explorer

Answer: E

NEW QUESTION 14
A data analyst has a series of queries in a SQL program. The data analyst wants this program to run every day. They only want the final query in the program to run on Sundays. They ask for help from the data engineering team to complete this task.
Which of the following approaches could be used by the data engineering team to complete this task?

A. They could submit a feature request with Databricks to add this functionality.
B. They could wrap the queries using PySpark and use Python's control flow system to determine when to run the final query.
C. They could only run the entire program on Sundays.
D. They could automatically restrict access to the source table in the final query so that it is only accessible on Sundays.
E. They could redesign the data model to separate the data used in the final query into a new table.

Answer: B

NEW QUESTION 19
A dataset has been defined using Delta Live Tables and includes an expectations clause:
CONSTRAINT valid_timestamp EXPECT (timestamp > '2020-01-01') ON VIOLATION DROP ROW
What is the expected behavior when a batch of data containing data that violates these constraints is processed?

A. Records that violate the expectation are dropped from the target dataset and loaded into a quarantine table.
B. Records that violate the expectation are added to the target dataset and flagged as invalid in a field added to the target dataset.
C. Records that violate the expectation are dropped from the target dataset and recorded as invalid in the event log.
D. Records that violate the expectation are added to the target dataset and recorded as invalid in the event log.
E. Records that violate the expectation cause the job to fail.

Answer: C

Explanation:
With the defined constraint and expectation clause, when a batch of data is processed, any records that violate the expectation (in this case, where the timestamp is not greater than '2020-01-01') will be dropped from the target dataset. These dropped records will also be recorded as invalid in the event log, allowing for auditing and tracking of the data quality issues without causing the entire job to fail. https://docs.databricks.com/en/delta-live-tables/expectations.html

NEW QUESTION 24
Which of the following commands will return the number of null values in the member_id column?

A. SELECT count(member_id) FROM my_table;
B. SELECT count(member_id) - count_null(member_id) FROM my_table;
C. SELECT count_if(member_id IS NULL) FROM my_table;
D. SELECT null(member_id) FROM my_table;
E. SELECT count_null(member_id) FROM my_table;

Answer: C

Explanation:
https://docs.databricks.com/en/sql/language-manual/functions/count.html
Returns
A BIGINT.
If * is specified also counts row containing NULL values.
If expr are specified counts only rows for which all expr are not NULL. If DISTINCT duplicate rows are not counted.

NEW QUESTION 27
A data engineer wants to schedule their Databricks SQL dashboard to refresh once per day, but they only want the associated SQL endpoint to be running when it is necessary.
Which of the following approaches can the data engineer use to minimize the total running time of the SQL endpoint used in the refresh schedule of their dashboard?

A. They can ensure the dashboard's SQL endpoint matches each of the queries' SQL endpoints.
B. They can set up the dashboard's SQL endpoint to be serverless.
C. They can turn on the Auto Stop feature for the SQL endpoint.
D. They can reduce the cluster size of the SQL endpoint.
E. They can ensure the dashboard's SQL endpoint is not one of the included query's SQL endpoint.

Answer: C

NEW QUESTION 30
A data engineer has a Python notebook in Databricks, but they need to use SQL to accomplish a specific task within a cell. They still want all of the other cells to use Python without making any changes to those cells.
Which of the following describes how the data engineer can use SQL within a cell of their Python notebook?

A. It is not possible to use SQL in a Python notebook
B. They can attach the cell to a SQL endpoint rather than a Databricks cluster
C. They can simply write SQL syntax in the cell
D. They can add %sql to the first line of the cell
E. They can change the default language of the notebook to SQL

Answer: D

NEW QUESTION 33
Which of the following describes a scenario in which a data engineer will want to use a single-node cluster?

A. When they are working interactively with a small amount of data
B. When they are running automated reports to be refreshed as quickly as possible
C. When they are working with SQL within Databricks SQL
D. When they are concerned about the ability to automatically scale with larger data
E. When they are manually running reports with a large amount of data

Answer: A

Explanation:
A Single Node cluster is a cluster consisting of an Apache Spark driver and no Spark workers. A Single Node cluster supports Spark jobs and all Spark data sources, including Delta Lake. A Standard cluster requires a minimum of one Spark worker to run Spark jobs.

NEW QUESTION 38
An engineering manager wants to monitor the performance of a recent project using a Databricks SQL query. For the first week following the project's release, the manager wants the query results to be updated every minute. However, the manager is concerned that the compute resources used for the query will be left running and cost the organization a lot of money beyond the first week of the project's release.
Which of the following approaches can the engineering team use to ensure the query does not cost the organization any money beyond the first week of the project's release?

A. They can set a limit to the number of DBUs that are consumed by the SQL Endpoint.
B. They can set the query's refresh schedule to end after a certain number of refreshes.
C. They cannot ensure the query does not cost the organization money beyond the first week of the project's release.
D. They can set a limit to the number of individuals that are able to manage the query's refresh schedule.
E. They can set the query's refresh schedule to end on a certain date in the query scheduler.

Answer: E

Explanation:
If a dashboard is configured for automatic updates, it has a Scheduled button at the top, rather than a Schedule button. To stop automatically updating the dashboard and remove its subscriptions:
Click Scheduled.
In the Refresh every drop-down, select Never.
Click Save. The Scheduled button label changes to Schedule. Source:https://learn.microsoft.com/en-us/azure/databricks/sql/user/dashboards/

NEW QUESTION 41
A data engineer has a Job that has a complex run schedule, and they want to transfer that schedule to other Jobs.
Rather than manually selecting each value in the scheduling form in Databricks, which of the following tools can the data engineer use to represent and submit the schedule programmatically?

A. pyspark.sql.types.DateType
B. datetime
C. pyspark.sql.types.TimestampType
D. Cron syntax
E. There is no way to represent and submit this information programmatically

Answer: D

NEW QUESTION 44

A data engineer needs to apply custom logic to string column city in table stores for a specific use case. In order to apply this custom logic at scale, the data engineer wants to create a SQL user-defined function (UDF).
Which of the following code blocks creates this SQL UDF?

A.
```
CREATE FUNCTION combine_nyc(city STRING)
RETURNS STRING
RETURN CASE
  WHEN city = "brooklyn" THEN "new york"
  ELSE city
END;
```

B.
```
CREATE UDF combine_nyc(city STRING)
RETURNS STRING
CASE
  WHEN city = "brooklyn" THEN "new york"
  ELSE city
END;
```

C.
```
CREATE UDF combine_nyc(city STRING)
RETURN CASE
  WHEN city = "brooklyn" THEN "new york"
  ELSE city
END;
```

D.
```
CREATE FUNCTION combine_nyc(city STRING)
RETURN CASE
  WHEN city = "brooklyn" THEN "new york"
  ELSE city
END;
```

E.
```
CREATE UDF combine_nyc(city STRING)
RETURNS STRING
RETURN CASE
  WHEN city = "brooklyn" THEN "new york"
  ELSE city
END;
```

A.

Answer: A

Explanation:
https://www.databricks.com/blog/2021/10/20/introducing-sql-user-defined- functions.html

NEW QUESTION 46
A Delta Live Table pipeline includes two datasets defined using STREAMING LIVE TABLE. Three datasets are defined against Delta Lake table sources using LIVE TABLE.
The table is configured to run in Production mode using the Continuous Pipeline Mode. Assuming previously unprocessed data exists and all definitions are valid, what is the
expected outcome after clicking Start to update the pipeline?

A. All datasets will be updated at set intervals until the pipeline is shut dow
B. The compute resources will persist to allow for additional testing.
C. All datasets will be updated once and the pipeline will persist without any processin
D. The compute resources will persist but go unused.
E. All datasets will be updated at set intervals until the pipeline is shut dow
F. The compute resources will be deployed for the update and terminated when the pipeline is stopped.
G. All datasets will be updated once and the pipeline will shut dow
H. The compute resources will be terminated.
I. All datasets will be updated once and the pipeline will shut dow
J. The compute resources will persist to allow for additional testing.

Answer: C

Explanation:
In a Delta Live Table pipeline running in Continuous Pipeline Mode, when you click Start to update the pipeline, the following outcome is expected: All datasets defined using STREAMING LIVE TABLE and LIVE TABLE against Delta Lake table sources will be updated at set intervals. The compute resources will be deployed for the update process and will be active during the execution of the pipeline. The compute resources will be terminated when the pipeline is stopped or shut down. This mode allows for continuous and periodic updates to the datasets as new data arrives or changes in the
underlying Delta Lake tables occur. The compute resources are provisioned and utilized during the update intervals to process the data and perform the necessary operations.

NEW QUESTION 47
A data engineer has been given a new record of data:
id STRING = 'a1'
rank INTEGER = 6 rating FLOAT = 9.4
Which of the following SQL commands can be used to append the new record to an existing Delta table my_table?

A. INSERT INTO my_table VALUES ('a1', 6, 9.4)
B. my_table UNION VALUES ('a1', 6, 9.4)
C. INSERT VALUES ('a1' , 6, 9.4) INTO my_table
D. UPDATE my_table VALUES ('a1', 6, 9.4)
E. UPDATE VALUES ('a1', 6, 9.4) my_table

Answer: A

NEW QUESTION 51
A data engineer has left the organization. The data team needs to transfer ownership of the data engineer's Delta tables to a new data engineer. The new data engineer is the lead engineer on the data team.
Assuming the original data engineer no longer has access, which of the following individuals must be the one to transfer ownership of the Delta tables in Data Explorer?

A. Databricks account representative
B. This transfer is not possible
C. Workspace administrator
D. New lead data engineer
E. Original data engineer

Answer: C

Explanation:
https://docs.databricks.com/sql/admin/transfer-ownership.html

NEW QUESTION 52
A data engineer and data analyst are working together on a data pipeline. The data engineer is working on the raw, bronze, and silver layers of the pipeline using Python, and the data analyst is working on the gold layer of the pipeline using SQL. The raw source of the pipeline is a streaming input. They now want to migrate their pipeline to use Delta Live Tables.
Which of the following changes will need to be made to the pipeline when migrating to Delta Live Tables?

A. None of these changes will need to be made
B. The pipeline will need to stop using the medallion-based multi-hop architecture
C. The pipeline will need to be written entirely in SQL
D. The pipeline will need to use a batch source in place of a streaming source
E. The pipeline will need to be written entirely in Python

Answer: A

NEW QUESTION 57
A Delta Live Table pipeline includes two datasets defined using STREAMING LIVE TABLE. Three datasets are defined against Delta Lake table sources using LIVE TABLE.
The table is configured to run in Development mode using the Continuous Pipeline Mode.
Assuming previously unprocessed data exists and all definitions are valid, what is the expected outcome after clicking Start to update the pipeline?

A. All datasets will be updated once and the pipeline will shut dow
B. The compute resources will be terminated.
C. All datasets will be updated at set intervals until the pipeline is shut dow
D. The compute resources will persist until the pipeline is shut down.
E. All datasets will be updated once and the pipeline will persist without any processin
F. The compute resources will persist but go unused.
G. All datasets will be updated once and the pipeline will shut dow
H. The compute resources will persist to allow for additional testing.
I. All datasets will be updated at set intervals until the pipeline is shut dow
J. The compute resources will persist to allow for additional testing.

Answer: E

Explanation:
You can optimize pipeline execution by switching between development and production modes. Use the Delta Live Tables Environment Toggle Icon buttons in the Pipelines UI to switch between these two modes. By default, pipelines run in development mode.
When you run your pipeline in development mode, the Delta Live Tables system does the following:
Reuses a cluster to avoid the overhead of restarts. By default, clusters run for two hours when development mode is enabled. You can change this with the pipelines.clusterShutdown.delay setting in the Configure your compute settings.
Disables pipeline retries so you can immediately detect and fix errors. In production mode, the Delta Live Tables system does the following:
Restarts the cluster for specific recoverable errors, including memory leaks and stale credentials.
Retries execution in the event of specific errors, for example, a failure to start a cluster. https://docs.databricks.com/en/delta-live-tables/updates.html#optimize-execution

NEW QUESTION 61
A data engineer that is new to using Python needs to create a Python function to add two integers together and return the sum?
Which of the following code blocks can the data engineer use to complete this task?
A)

```
function add_integers(x, y):
    return x + y
```

B)

```
function add_integers(x, y):
    x + y
```

C)

```
def add_integers(x, y):
    print(x + y)
```

D)

```
def add_integers(x, y):
    return x + y
```

E)

```
def add_integers(x, y):
    x + y
```

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E

Answer: D

Explanation:
https://www.w3schools.com/python/python_functions.asp

NEW QUESTION 66
Which of the following Structured Streaming queries is performing a hop from a Silver table to a Gold table?
A.

```
(spark.readStream.load(rawSalesLocation)
    .writeStream
    .option("checkpointLocation", checkpointPath)
    .outputMode("append")
    .table("newSales")
)
```

B.

```
(spark.read.load(rawSalesLocation)
    .writeStream
    .option("checkpointLocation", checkpointPath)
    .outputMode("append")
    .table("newSales")
)
```

C.

```
(spark.table("sales")
    .withColumn("avgPrice", col("sales") / col("units"))
    .writeStream
    .option("checkpointLocation", checkpointPath)
    .outputMode("append")
    .table("newSales")
)
```

D.

```
(spark.table("sales")
    .filter(col("units") > 0)
    .writeStream
    .option("checkpointLocation", checkpointPath)
    .outputMode("append")
    .table("newSales")
)
```

E.

```
(spark.table("sales")
    .groupBy("store")
    .agg(sum("sales"))
    .writeStream
    .option("checkpointLocation", checkpointPath)
    .outputMode("complete")
    .table("newSales")
)
```

A.

Answer: E

NEW QUESTION 70
Which of the following is stored in the Databricks customer's cloud account?

A. Databricks web application
B. Cluster management metadata
C. Repos
D. Data
E. Notebooks

Answer: D

NEW QUESTION 74
A data engineer wants to create a relational object by pulling data from two tables. The relational object does not need to be used by other data engineers in other sessions. In order to save on storage costs, the data engineer wants to avoid copying and storing physical data.
Which of the following relational objects should the data engineer create?

A. Spark SQL Table
B. View
C. Database
D. Temporary view
E. Delta Table

Answer: D

Explanation:
Temp view : session based Create temp view view_name as query All these are termed as session ended: Opening a new notebook Detaching and reattaching a cluster Installing a python package Restarting a cluster

NEW QUESTION 79
A data engineer is designing a data pipeline. The source system generates files in a shared directory that is also used by other processes. As a result, the files should be kept as is and will accumulate in the directory. The data engineer needs to identify which files are new since the previous run in the pipeline, and set up the pipeline to only ingest those new files with each run.
Which of the following tools can the data engineer use to solve this problem?

A. Unity Catalog
B. Delta Lake
C. Databricks SQL
D. Data Explorer
E. Auto Loader

Answer: E

Explanation:
Auto Loader incrementally and efficiently processes new data files as they arrive in cloud storage without any additional setup.https://docs.databricks.com/en/ingestion/auto-loader/index.html

NEW QUESTION 81
A data architect has determined that a table of the following format is necessary:

employeeId	startDate	avgRating
a1	2009-01-06	5.5
a2	2018-11-21	7.1
...	...	...

Which of the following code blocks uses SQL DDL commands to create an empty Delta table in the above format regardless of whether a table already exists with this name?

A.
```
CREATE TABLE IF NOT EXISTS table_name (
  employeeId STRING,
  startDate DATE,
  avgRating FLOAT
)
```

B.
```
CREATE OR REPLACE TABLE table_name AS
SELECT
  employeeId STRING,
  startDate DATE,
  avgRating FLOAT
USING DELTA
```

C.
```
CREATE OR REPLACE TABLE table_name WITH COLUMNS (
  employeeId STRING,
  startDate DATE,
  avgRating FLOAT
) USING DELTA
```

D.
```
CREATE TABLE table_name AS
SELECT
  employeeId STRING,
  startDate DATE,
  avgRating FLOAT
```

E.
```
CREATE OR REPLACE TABLE table_name (
  employeeId STRING,
  startDate DATE,
  avgRating FLOAT
)
```

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E

Answer: E

NEW QUESTION 84
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