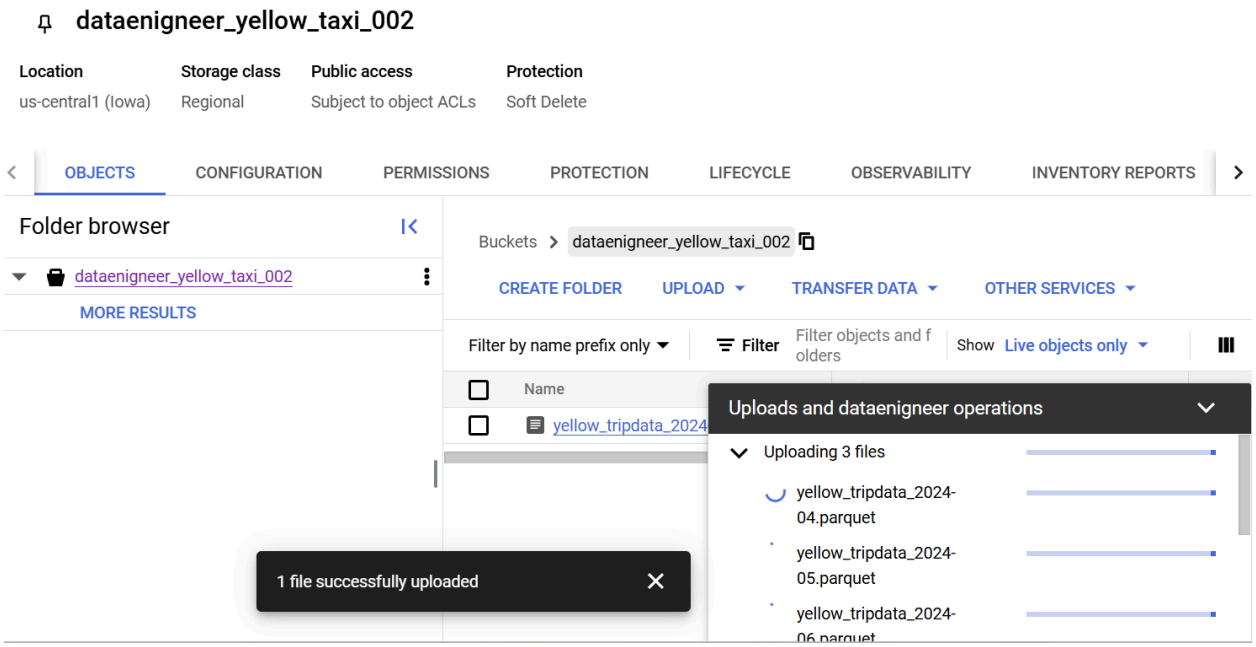


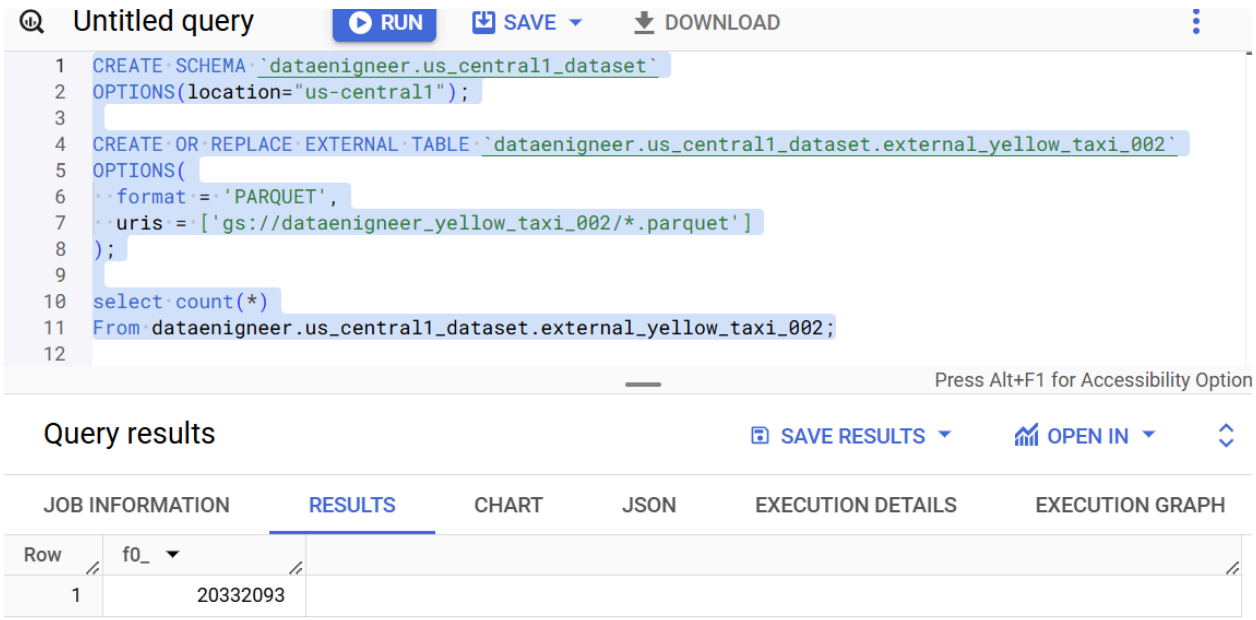

```
CREATE SCHEMA `dataenigneer.us_central1_dataset`
OPTIONS(location="us-central1");

CREATE OR REPLACE EXTERNAL TABLE
`dataenigneer.us_central1_dataset.external_yellow_taxi_002`
OPTIONS(
  format = 'PARQUET',
  uris = ['gs://dataenigneer_yellow_taxi_002/*.parquet']
);

SELECT COUNT(*)
From dataenigneer.us_central1_dataset.external_yellow_taxi_002;
```

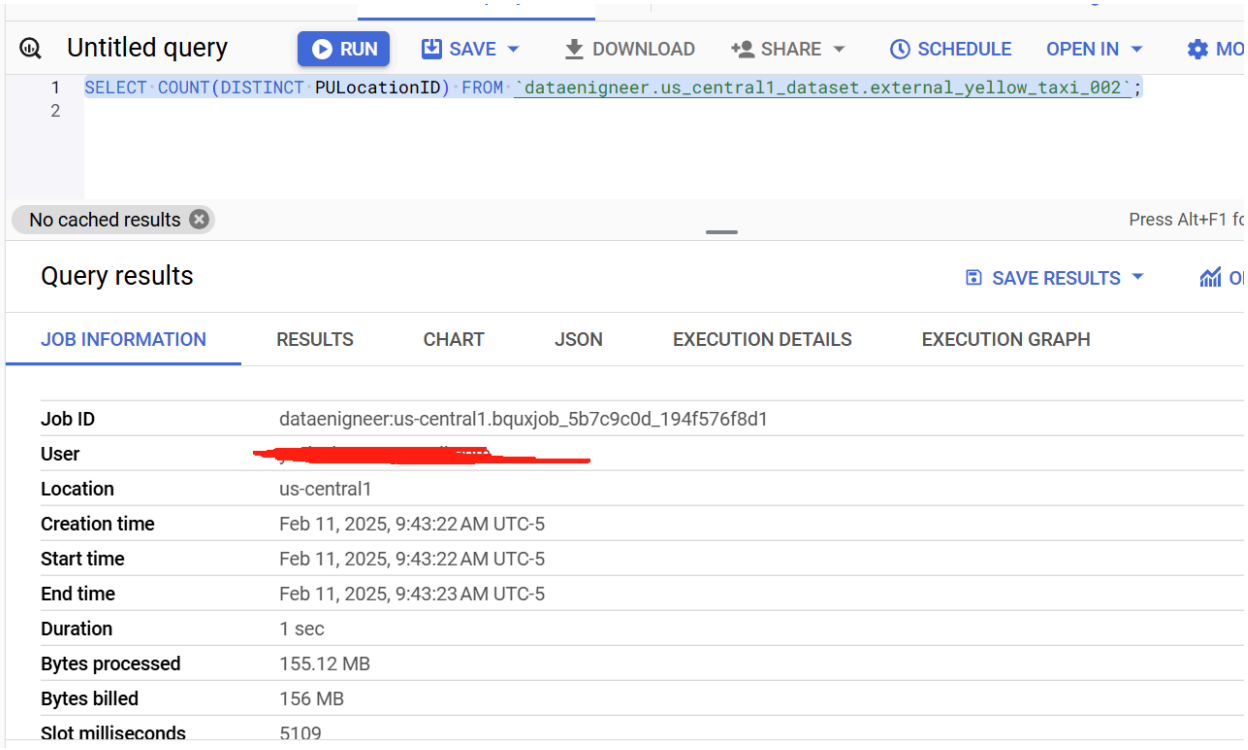
Question 1: What is count of records for the 2024 Yellow Taxi Data?

- [ ] 65,623
- [ ] 840,402
- [x] 20,332,093
- [ ] 85,431,289



Question 2:Write a query to count the distinct number of PULocationIDs for the entire dataset on both the tables.
What is the estimated amount of data that will be read when this query is executed on the External Table and the Table?

- ☐ 18.82 MB for the External Table and 47.60 MB for the Materialized Table
- ☑ 0 MB for the External Table and 155.12 MB for the Materialized Table
- ☐ 2.14 GB for the External Table and 0MB for the Materialized Table
- ☐ 0 MB for the External Table and 0MB for the Materialized Table



Question 3:Write a query to retrieve the PULocationID from the table (not the external table) in BigQuery. Now write a query to retrieve the PULocationID and DOLocationID on the same table. Why are the estimated number of Bytes different?

- [x] BigQuery is a columnar database, and it only scans the specific columns requested in the query. Querying two columns (PULocationID, DOLocationID) requires reading more data than querying one column (PULocationID), leading to a higher estimated number of bytes processed.
- [ ] BigQuery duplicates data across multiple storage partitions, so selecting two columns instead of one requires scanning the table twice, doubling the estimated bytes processed.
- [ ] BigQuery automatically caches the first queried column, so adding a second column increases processing time but does not affect the estimated bytes scanned.
- [ ] When selecting multiple columns, BigQuery performs an implicit join operation between them, increasing the estimated bytes processed

Question 4:How many records have a fare_amount of 0?

- [ ] 128,210
- [ ] 546,578
- [ ] 20,188,016
- [x] 8,333

```
8
9  SELECT COUNT(fare_amount)  FROM `dataenigneer.us_central1_dataset.external_yellow_taxi_002`
10 WHERE fare_amount = 0 ;
```

Pr

Query results

SAVE RESULTS

JOB INFORMATION | RESULTS | CHART | JSON | EXECUTION DETAILS | EXECUTION GRAPH

Metadata caching is disabled. You can accelerate queries over external tables by enabling metadata caching. Learn more.

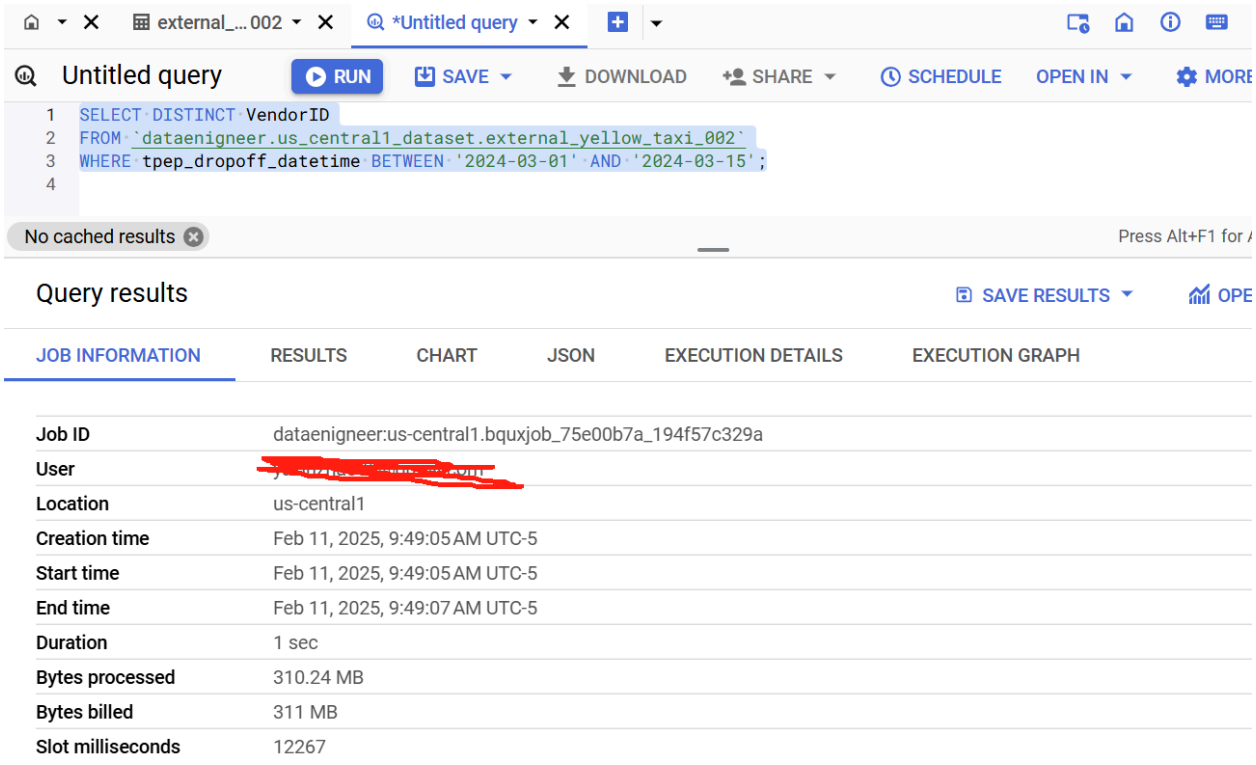
Row	f0_
1	8333

Question 5: What is the best strategy to make an optimized table in Big Query if your query will always filter based on tpep_dropoff_datetime and order the results by VendorID (Create a new table with this strategy)

- [x] Partition by tpep_dropoff_datetime and Cluster on VendorID
- [ ] Cluster on by tpep_dropoff_datetime and Cluster on VendorID
- [ ] Cluster on tpep_dropoff_datetime Partition by VendorID
- [ ] Partition by tpep_dropoff_datetime and Partition by VendorID

Question 6: Write a query to retrieve the distinct VendorIDs between tpep_dropoff_datetime 2024-03-01 and 2024-03-15 (inclusive)
Use the materialized table you created earlier in your from clause and note the estimated bytes. Now change the table in the from clause to the partitioned table you created for question 5 and note the estimated bytes processed. What are these values?
Choose the answer which most closely matches.

- [ ] 12.47 MB for non-partitioned table and 326.42 MB for the partitioned table
- [x] 310.24 MB for non-partitioned table and 26.84 MB for the partitioned table
- [ ] 5.87 MB for non-partitioned table and 0 MB for the partitioned table
- [ ] 310.31 MB for non-partitioned table and 285.64 MB for the partitioned table



Question 7: Where is the data stored in the External Table you created?

- ☐ Big Query
- ☐ Container Registry
- ☑ GCP Bucket
- ☐ Big Table

Question 8 :It is best practice in Big Query to always cluster your data:

- ☐ True
- ☑ False