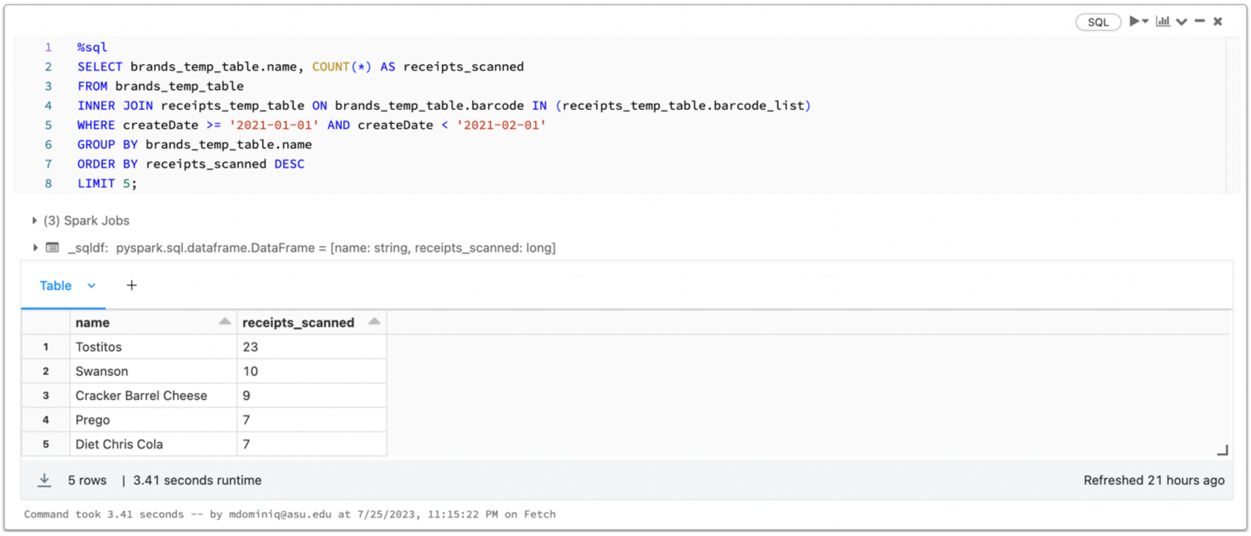
SQL Queries against the new structured Relational Data Model

- What are the top 5 brands by receipts scanned for most recent month?

```
SELECT brands_temp_table.name, COUNT(*) AS receipts_scanned
FROM brands_temp_table
INNER JOIN receipts_temp_table ON brands_temp_table.barcode IN
(receipts_temp_table.barcode_list)
WHERE createDate >= '2021-01-01' AND createDate < '2021-02-01'
GROUP BY brands_temp_table.name
ORDER BY receipts_scanned DESC
LIMIT 5;
```



```
%sql
SELECT brands_temp_table.name, COUNT(*) AS receipts_scanned
FROM brands_temp_table
INNER JOIN receipts_temp_table ON brands_temp_table.barcode IN (receipts_temp_table.barcode_list)
WHERE createDate >= '2021-01-01' AND createDate < '2021-02-01'
GROUP BY brands_temp_table.name
ORDER BY receipts_scanned DESC
LIMIT 5;
```

▸ (3) Spark Jobs

▸ _sqldf: pyspark.sql.dataframe.DataFrame = [name: string, receipts_scanned: long]

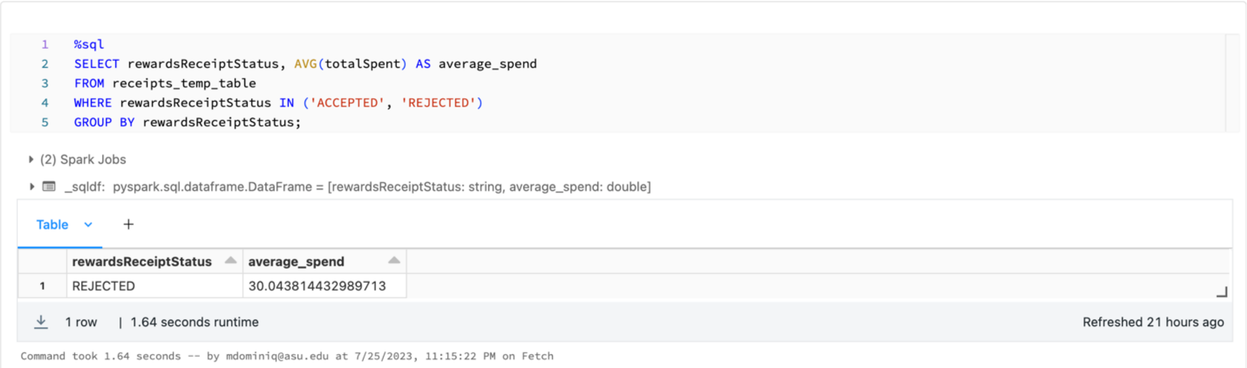
	name	receipts_scanned
1	Tostitos	23
2	Swanson	10
3	Cracker Barrel Cheese	9
4	Prego	7
5	Diet Chris Cola	7

5 rows | 3.41 seconds runtime   Refreshed 21 hours ago

```
Command took 3.41 seconds -- by mdominiq@asu.edu at 7/25/2023, 11:15:22 PM on Fetch
```

- When considering *average spend* from receipts with 'rewardsReceiptStatus’ of ‘Accepted’ or ‘Rejected’, which is greater?

```
SELECT rewardsReceiptStatus, AVG(totalSpent) AS average_spend
FROM receipts_temp_table
WHERE rewardsReceiptStatus IN ('ACCEPTED', 'REJECTED')
GROUP BY rewardsReceiptStatus;
```



```
%sql
SELECT rewardsReceiptStatus, AVG(totalSpent) AS average_spend
FROM receipts_temp_table
WHERE rewardsReceiptStatus IN ('ACCEPTED', 'REJECTED')
GROUP BY rewardsReceiptStatus;
```

(2) Spark Jobs

_sqldf: pyspark.sql.dataframe.DataFrame = [rewardsReceiptStatus: string, average_spend: double]

	rewardsReceiptStatus	average_spend
1	REJECTED	30.043814432989713

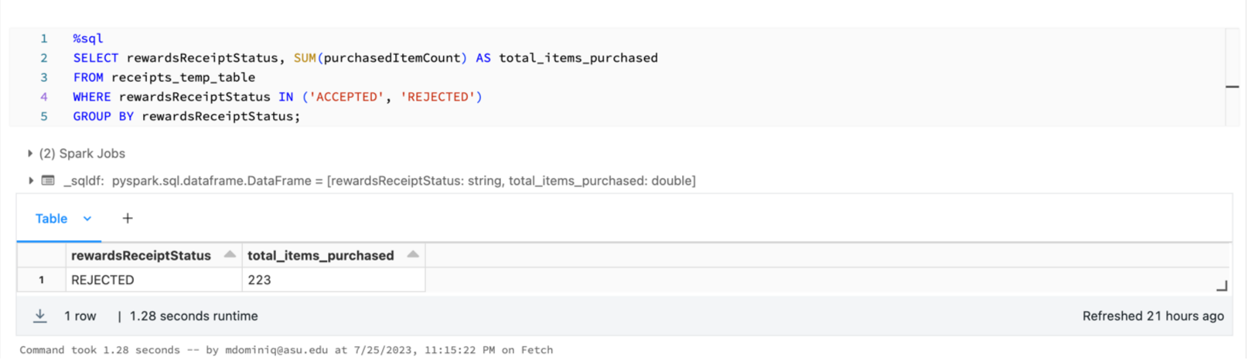
1 row | 1.64 seconds runtime

Refreshed 21 hours ago

Command took 1.64 seconds -- by mdominiq@asu.edu at 7/25/2023, 11:15:22 PM on Fetch

- When considering total number of items purchased from receipts with 'rewardsReceiptStatus' of 'Accepted' or 'Rejected', which is greater?

```
SELECT rewardsReceiptStatus, SUM(purchasedItemCount) AS
total_items_purchased
FROM receipts_temp_table
WHERE rewardsReceiptStatus IN ('ACCEPTED', 'REJECTED')
GROUP BY rewardsReceiptStatus;
```



```
%sql
SELECT rewardsReceiptStatus, SUM(purchasedItemCount) AS total_items_purchased
FROM receipts_temp_table
WHERE rewardsReceiptStatus IN ('ACCEPTED', 'REJECTED')
GROUP BY rewardsReceiptStatus;
```

(2) Spark Jobs

_sqldf: pyspark.sql.dataframe.DataFrame = [rewardsReceiptStatus: string, total_items_purchased: double]

	rewardsReceiptStatus	total_items_purchased
1	REJECTED	223

1 row | 1.28 seconds runtime

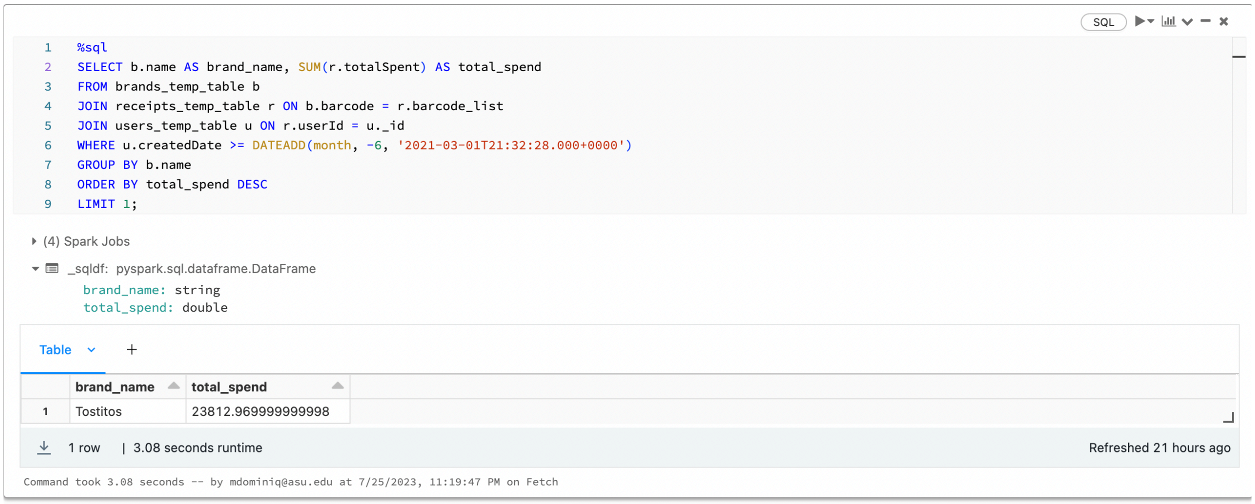
Refreshed 21 hours ago

Command took 1.28 seconds -- by mdominiq@asu.edu at 7/25/2023, 11:15:22 PM on Fetch

- Which brand has the most *spend* among users who were created within the past 6 months?

```
SELECT b.name AS brand_name, SUM(r.totalSpent) AS total_spend
FROM brands_temp_table b
JOIN receipts_temp_table r ON b.barcode = r.barcode_list
JOIN users_temp_table u ON r.userId = u._id
```

```
WHERE u.createdDate >= DATEADD(month, -6, '2021-03-
01T21:32:28.000+0000')
GROUP BY b.name
ORDER BY total_spend DESC
LIMIT 1;
```



```
%sql
SELECT b.name AS brand_name, SUM(r.totalSpent) AS total_spend
FROM brands_temp_table b
JOIN receipts_temp_table r ON b.barcode = r.barcode_list
JOIN users_temp_table u ON r.userId = u._id
WHERE u.createdDate >= DATEADD(month, -6, '2021-03-01T21:32:28.000+0000')
GROUP BY b.name
ORDER BY total_spend DESC
LIMIT 1;
```

(4) Spark Jobs

_sqldf: pyspark.sql.dataframe.DataFrame

```
brand_name: string
total_spend: double
```

	brand_name	total_spend
1	Tostitos	23812.969999999998

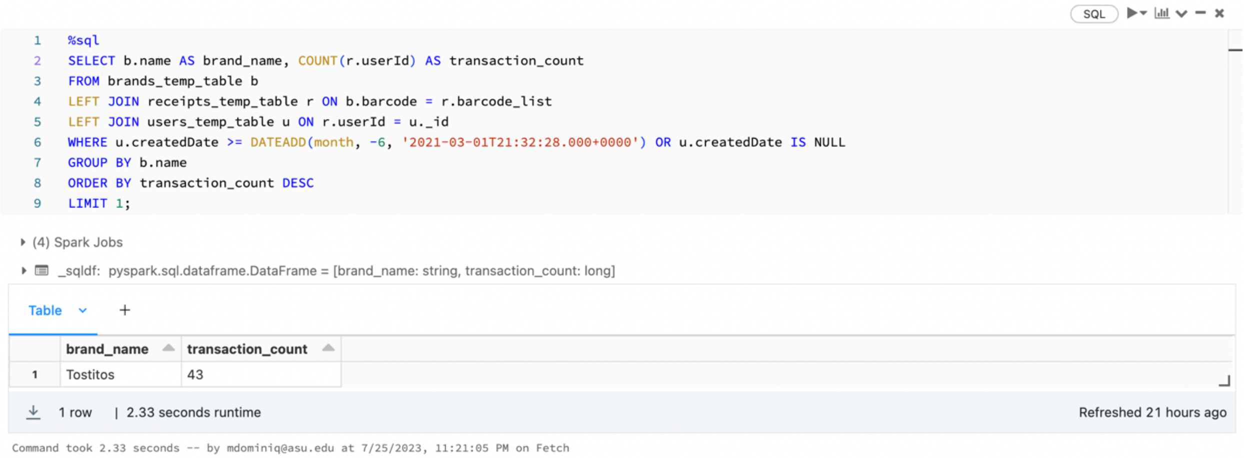
1 row | 3.08 seconds runtime

Refreshed 21 hours ago

```
Command took 3.08 seconds -- by mdominiq@asu.edu at 7/25/2023, 11:19:47 PM on Fetch
```

- Which brand has the most *transactions* among users who were created within the past 6 months?

```
SELECT b.name AS brand_name, COUNT(r.userId) AS transaction_count
FROM brands_temp_table b
LEFT JOIN receipts_temp_table r ON b.barcode = r.barcode_list
LEFT JOIN users_temp_table u ON r.userId = u._id
WHERE u.createdDate >= DATEADD(month, -6, '2021-03-
01T21:32:28.000+0000') OR u.createdDate IS NULL
GROUP BY b.name
ORDER BY transaction_count DESC
LIMIT 1;
```



```sql
%sql
SELECT b.name AS brand_name, COUNT(r.userId) AS transaction_count
FROM brands_temp_table b
LEFT JOIN receipts_temp_table r ON b.barcode = r.barcode_list
LEFT JOIN users_temp_table u ON r.userId = u._id
WHERE u.createdDate >= DATEADD(month, -6, '2021-03-01T21:32:28.000+0000') OR u.createdDate IS NULL
GROUP BY b.name
ORDER BY transaction_count DESC
LIMIT 1;
```

(4) Spark Jobs

_sqldf: pyspark.sql.dataframe.DataFrame = [brand_name: string, transaction_count: long]

	brand_name	transaction_count
1	Tostitos	43

1 row | 2.33 seconds runtime Refreshed 21 hours ago

```
Command took 2.33 seconds -- by mdominiq@asu.edu at 7/25/2023, 11:21:05 PM on Fetch
```