Target SQL Business Case Study

Presented By:

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Introduction

About Target

Target is a globally renowned brand and a prominent retailer in the United States. Target makes itself a preferred shopping destination by offering outstanding value, inspiration, innovation and an exceptional guest experience that no other retailer can deliver.

This particular business case focuses on the operations of Target in Brazil and provides insightful information about 100,000 orders placed between 2016 and 2018. The dataset offers a comprehensive view of various dimensions including the order status, price, payment and freight performance, customer location, product attributes, and customer reviews.
By analyzing this extensive dataset, it becomes possible to gain valuable insights into Target's operations in Brazil. The information can shed light on various aspects of the business, such as order processing, pricing strategies, payment and shipping efficiency, customer demographics, product characteristics, and customer satisfaction levels.

About the Dataset

The dataset is structured into multiple related tables, capturing customers, orders, payments, products, sellers, reviews, and geolocation data. Each table provides unique insights into a different dimension of the business.

- **Customers Table**
    - customer_id: ID of the consumer
    - customer_unique_id: Unique customer identifier
    - customer_zip_code_prefix: Location zip code
    - customer_city: City name
    - customer_state: State code (e.g., São Paulo – SP)
- **Sellers Table**
    - seller_id: Unique seller ID
    - seller_zip_code_prefix: Seller location
    - seller_city: City name
    - seller_state: State code
- **Orders Table**
    - order_id: Unique order identifier
    - customer_id: Customer reference
    - order_status: Delivered, shipped, canceled, etc.
    - order_purchase_timestamp: Time of purchase

    - order_delivered_customer_date: Actual delivery date

    - order_estimated_delivery_date: Estimated delivery date
- **Order Items Table**
    - order_id
    - order_item_id
    - product_id
    - seller_id
    - shipping_limit_date
    - price
    - freight_value
- **Geolocation Table**
    - geolocation_zip_code_prefix
    - geolocation_lat
    - geolocation_lng
    - geolocation_city
    - Geolocation_state
- **Payments Table**
    - order_id: Order reference
    - payment_type: Mode of payment (credit card, boleto, etc.)
    - payment_installments: Number of installments (for EMI)
    - payment_value: Total amount paid
- **Reviews Table**
    - review_id
    - order_id
    - review_score: Rating (1–5)
    - review_comment_title & review_comment_message
    - review_creation_date
    - review_answer_timestamp
- **Products Table**
    - product_id
    - product_category_name
    - product_weight_g
    - product_length_cm
    - product_height_cm
    - product_width_cm
    - product_photos_qty
    - product_description_length
- **ER Diagram**

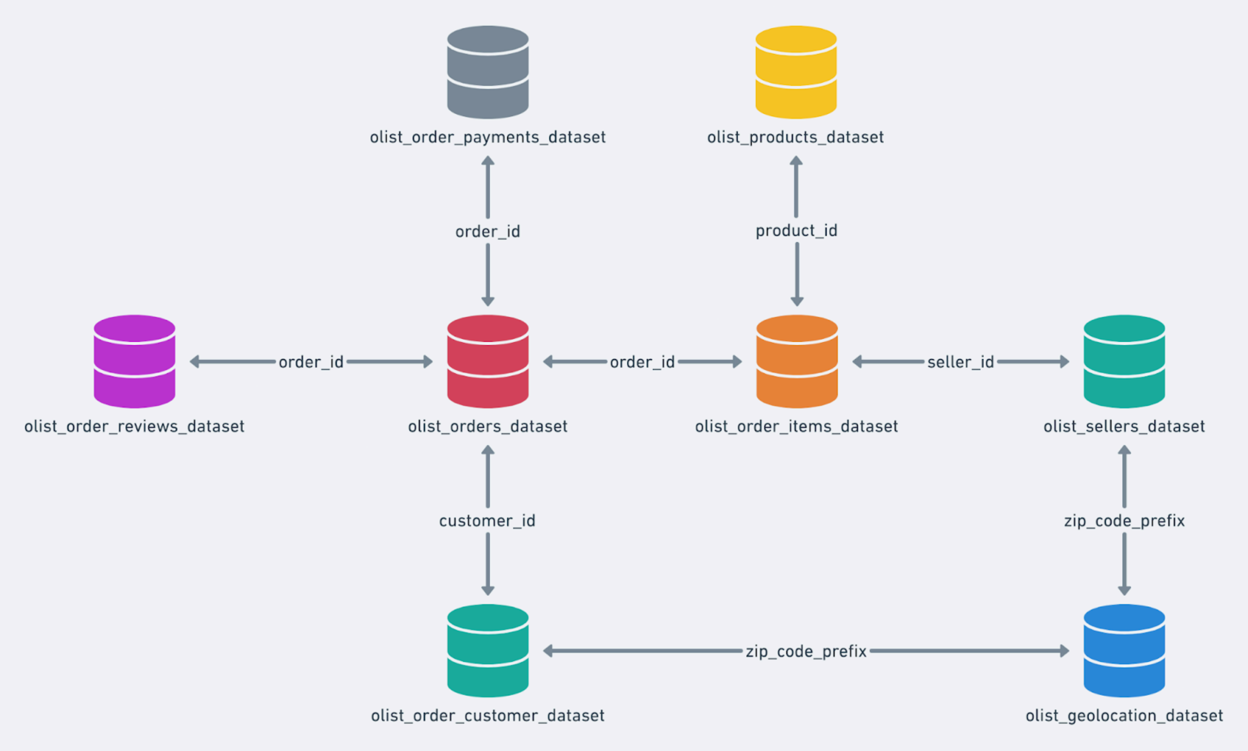
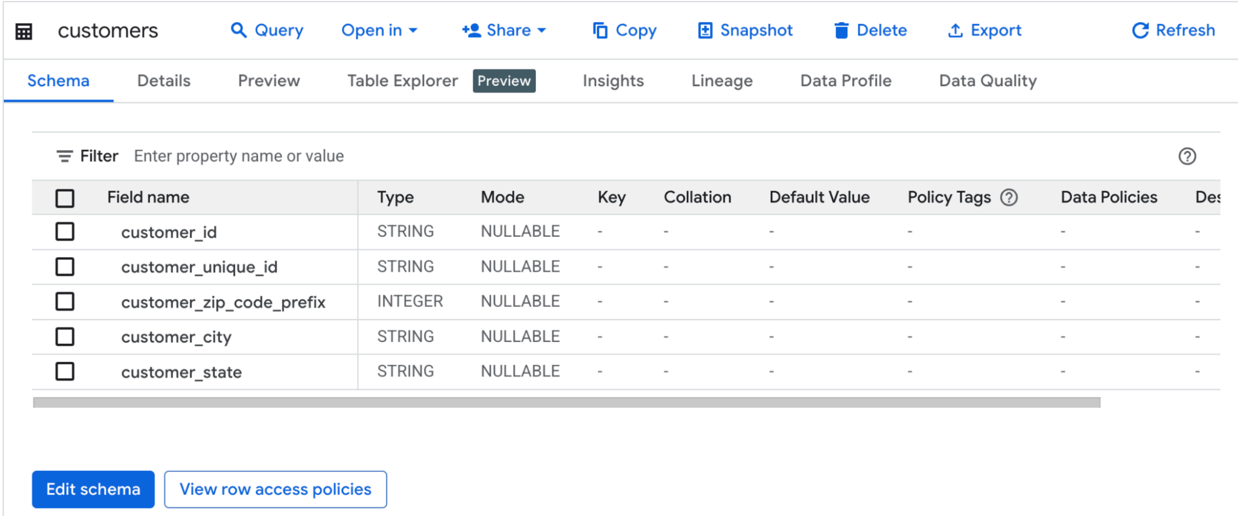


Figure 1: Entity Relationship (ER) Diagram of Target Brazil Dataset.

Initial Exploration

1. Data type of all columns in the “customers” table.

Screenshot:



□	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Data Policies	Des
□	customer_id	STRING	NULLABLE	-	-	-	-	-	-
□	customer_unique_id	STRING	NULLABLE	-	-	-	-	-	-
□	customer_zip_code_prefix	INTEGER	NULLABLE	-	-	-	-	-	-
□	customer_city	STRING	NULLABLE	-	-	-	-	-	-
□	customer_state	STRING	NULLABLE	-	-	-	-	-	-

Insight:
The “customers” table contains five columns. Most attributes are STRING type, except customer_zip_code_prefix which is INTEGER. All columns are NULLABLE, suggesting that missing values are possible.

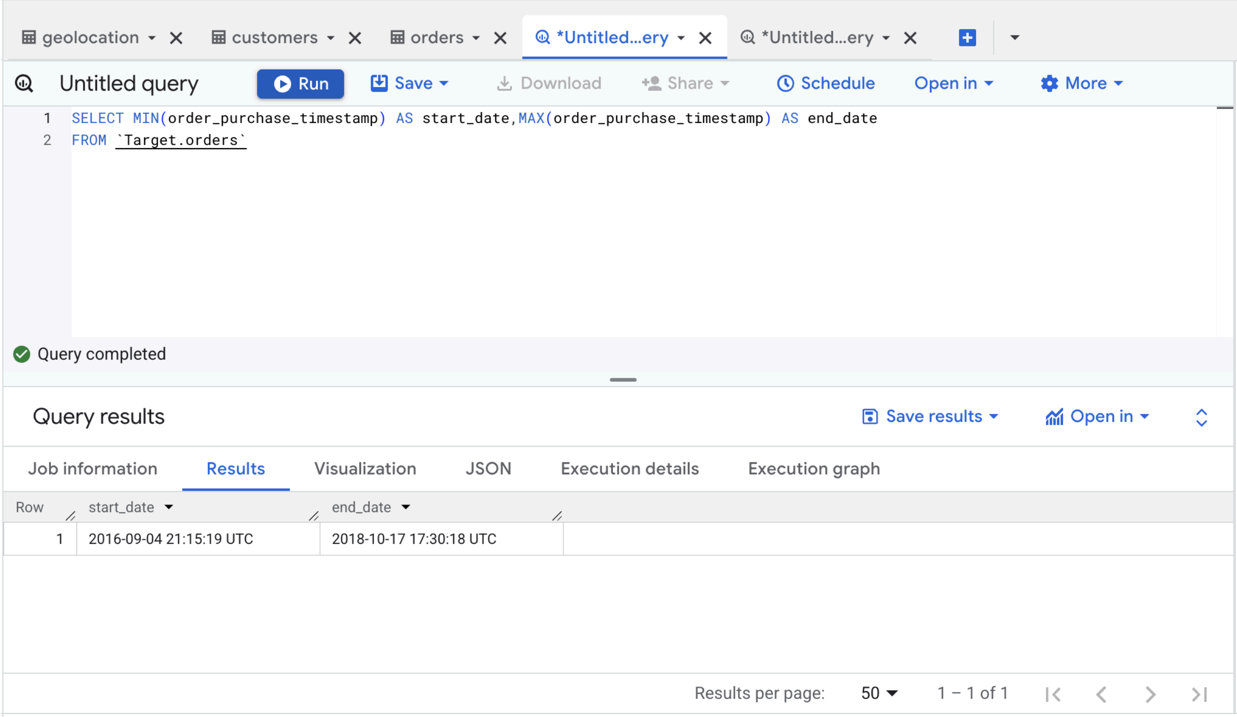
- customer_id - STRING
- customer_unique_id - STRING
- customer_zip_code_prefix - INTEGER
- customer_city - STRING
- customer_state - STRING

2.Get the time range between which the orders were placed.

Query:

```
SELECT MIN(order_purchase_timestamp) AS start_date,MAX(order_purchase_timestamp) AS end_date
FROM `Target.orders`
```

Screenshot:



```
SELECT MIN(order_purchase_timestamp) AS start_date,MAX(order_purchase_timestamp) AS end_date
FROM `Target.orders`
```

Row	start_date	end_date
1	2016-09-04 21:15:19 UTC	2018-10-17 17:30:18 UTC

Insight:

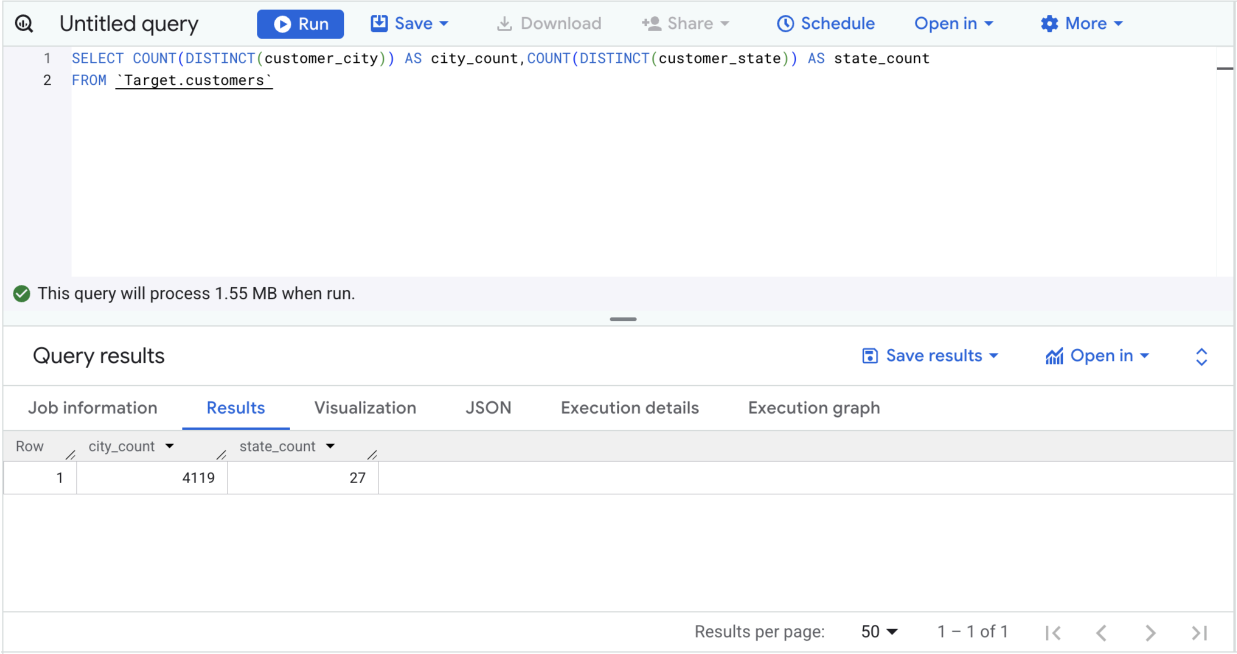
The dataset covers orders from September 2016 to August 2018.

3.Count the Cities & States of customers who ordered during the given period.

Query:

```
SELECT
COUNT(DISTINCT(customer_city)) AS city_count,
COUNT(DISTINCT(customer_state)) AS state_count
FROM `Target.customers`;
```

Screenshot:



```
SELECT COUNT(DISTINCT(customer_city)) AS city_count,COUNT(DISTINCT(customer_state)) AS state_count
FROM `Target.customers`
```

This query will process 1.55 MB when run.

Row	city_count	state_count
1	4119	27

Insight:

4119 cities, 27 states

In-depth Exploration

1. Is there a growing trend in the no.of orders places over the past years?

Query:

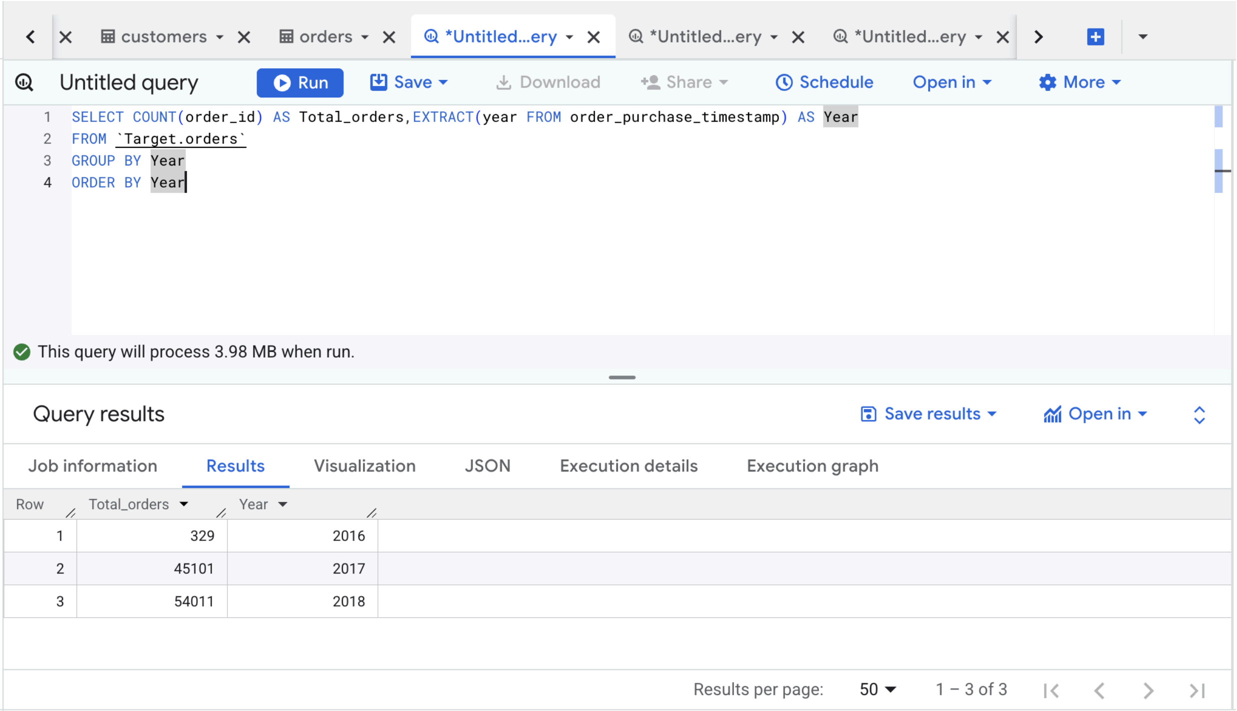
```
SELECT COUNT(order_id) AS Total_orders,EXTRACT(year FROM order_purchase_timestamp) AS Year

FROM `Target.orders`

GROUP BY Year

ORDER BY Year
```

Screenshot:



```
SELECT COUNT(order_id) AS Total_orders,EXTRACT(year FROM order_purchase_timestamp) AS Year
FROM `Target.orders`
GROUP BY Year
ORDER BY Year
```

This query will process 3.98 MB when run.

Row	Total_orders	Year
1	329	2016
2	45101	2017
3	54011	2018

Insight:

There is a clear growing trend in the number of orders. Orders increased sharply from 329 in 2016 to 45,101 in 2017, and continued to rise to 54,011 in 2018 (till August). This indicates strong year-over-year growth in Target's Brazilian e-commerce operations.

2. Can we see some kind of monthly seasonality in terms of the no. of orders being placed?

Query:

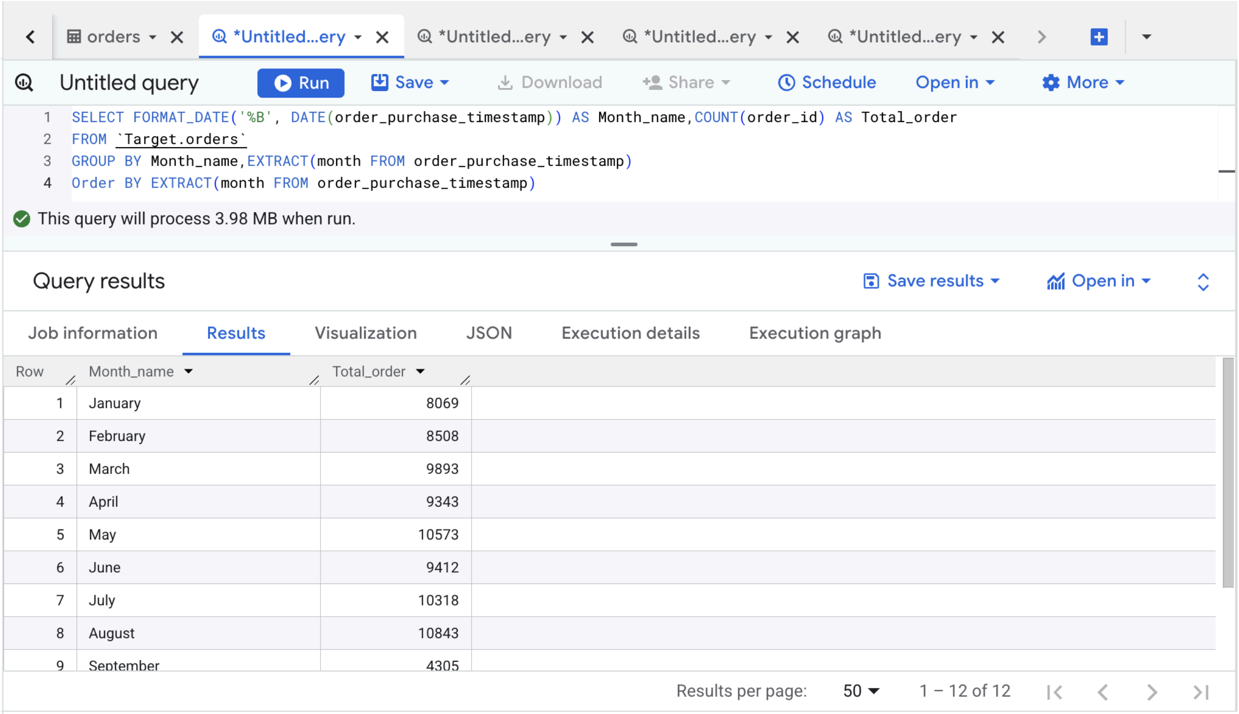
```
SELECT FORMAT_DATE('%B', DATE(order_purchase_timestamp)) AS Month_name,COUNT(order_id) AS
Total_order

FROM `Target.orders`

GROUP BY Month_name,EXTRACT(month FROM order_purchase_timestamp)

Order BY EXTRACT(month FROM order_purchase_timestamp)
```

Screenshot:

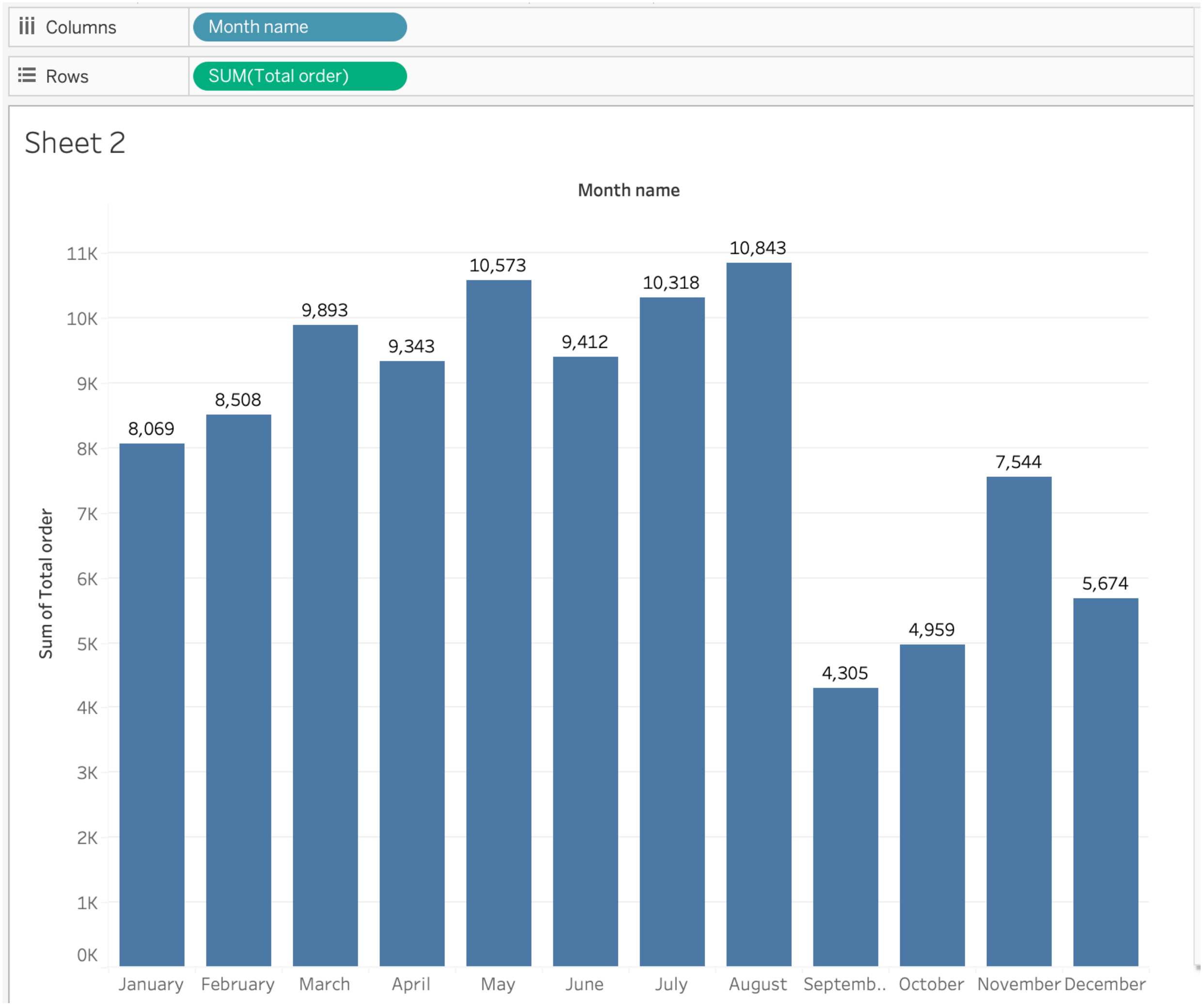


```
SELECT FORMAT_DATE('%B', DATE(order_purchase_timestamp)) AS Month_name,COUNT(order_id) AS Total_order
FROM `Target.orders`
GROUP BY Month_name,EXTRACT(month FROM order_purchase_timestamp)
Order BY EXTRACT(month FROM order_purchase_timestamp)
```

This query will process 3.98 MB when run.

Row	Month_name	Total_order
1	January	8069
2	February	8508
3	March	9893
4	April	9343
5	May	10573
6	June	9412
7	July	10318
8	August	10843
9	September	4305

Insight:



Columns: Month name

Rows: SUM(Total order)

Sheet 2

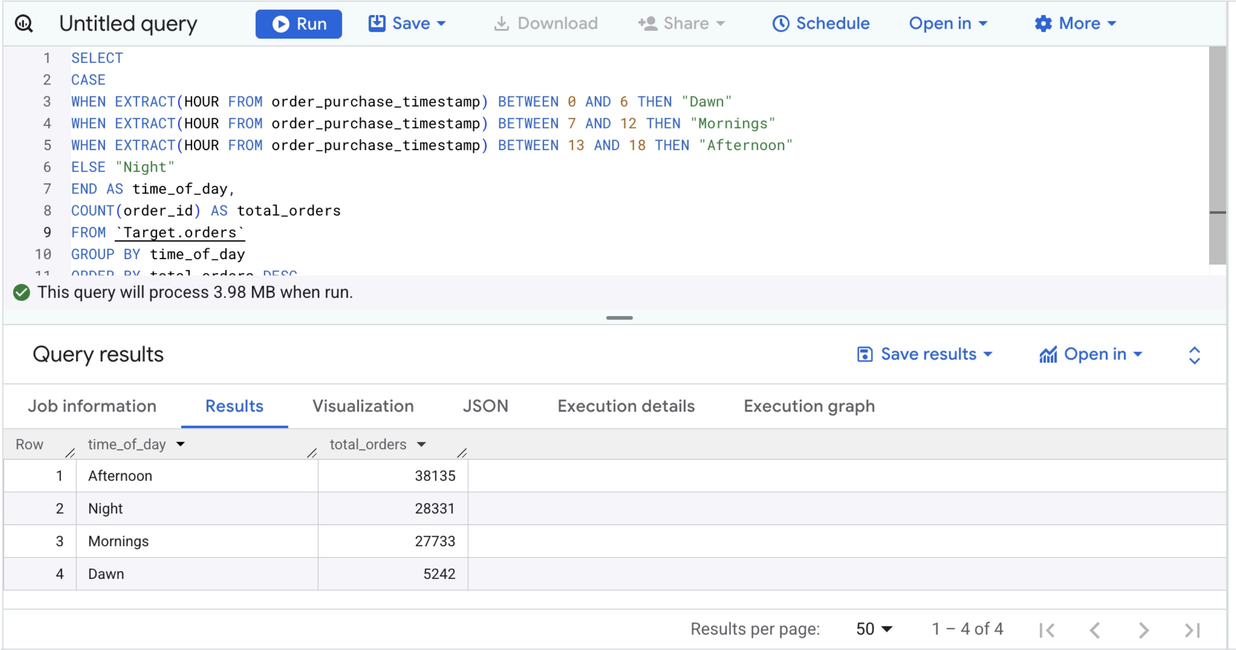
The analysis reveals clear monthly seasonality in customer orders. Orders peak in mid-year (May–August), dip significantly during September and October, and recover during November (Black Friday) and December (holiday shopping). This seasonal trend indicates that Target should plan inventory, logistics, and marketing campaigns around mid-year sales and end-of-year festivals while optimizing resources for the September–October slowdown.

3. **During what time of the day,do the Brazilian customers mostly place their orders? (Dawn,Morning,Afternoon or Night)**
    a. **0-6 hrs : Dawn**
    b. **7-12 hrs : Mornings**
    c. **13-18 hrs : Afternoon**
    d. **19 - 23 hrs : Night**

Query:

```
SELECT
CASE
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 0 AND 6 THEN "Dawn"
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 7 AND 12 THEN "Mornings"
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 13 AND 18 THEN "Afternoon"
ELSE "Night"
END AS time_of_day,
COUNT(order_id) AS total_orders
FROM `Target.orders`
GROUP BY time_of_day
ORDER BY total_orders DESC
```

Screenshot:



```
SELECT
CASE
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 0 AND 6 THEN "Dawn"
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 7 AND 12 THEN "Mornings"
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 13 AND 18 THEN "Afternoon"
ELSE "Night"
END AS time_of_day,
COUNT(order_id) AS total_orders
FROM `Target.orders`
GROUP BY time_of_day
ORDER BY total_orders DESC
```

This query will process 3.98 MB when run.

Row	time_of_day	total_orders
1	Afternoon	38135
2	Night	28331
3	Mornings	27733
4	Dawn	5242

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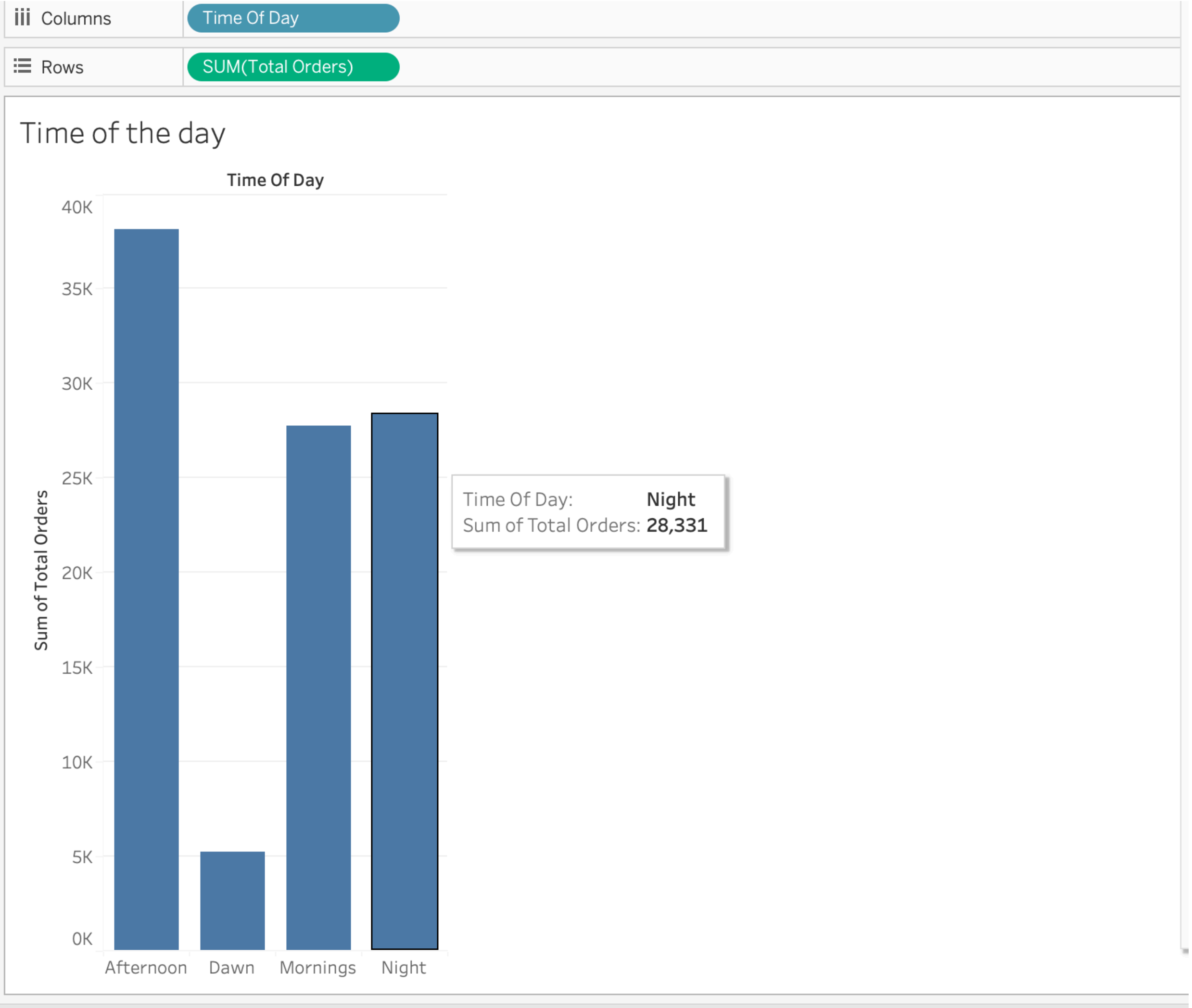
Insight:



Columns: Time Of Day

Rows: SUM(Total Orders)

Time of the day

Time Of Day: Night
Sum of Total Orders: 28,331

The analysis shows that Brazilian customers mostly place their orders during the Afternoon (13–18 hrs), followed by the Night (19–23 hrs). Mornings also contribute significantly, whereas very few orders are placed during Dawn (0–6 hrs). This highlights that Target should schedule promotional campaigns, website push notifications, and advertisements during Afternoon and Night hours to maximize engagement and conversion.

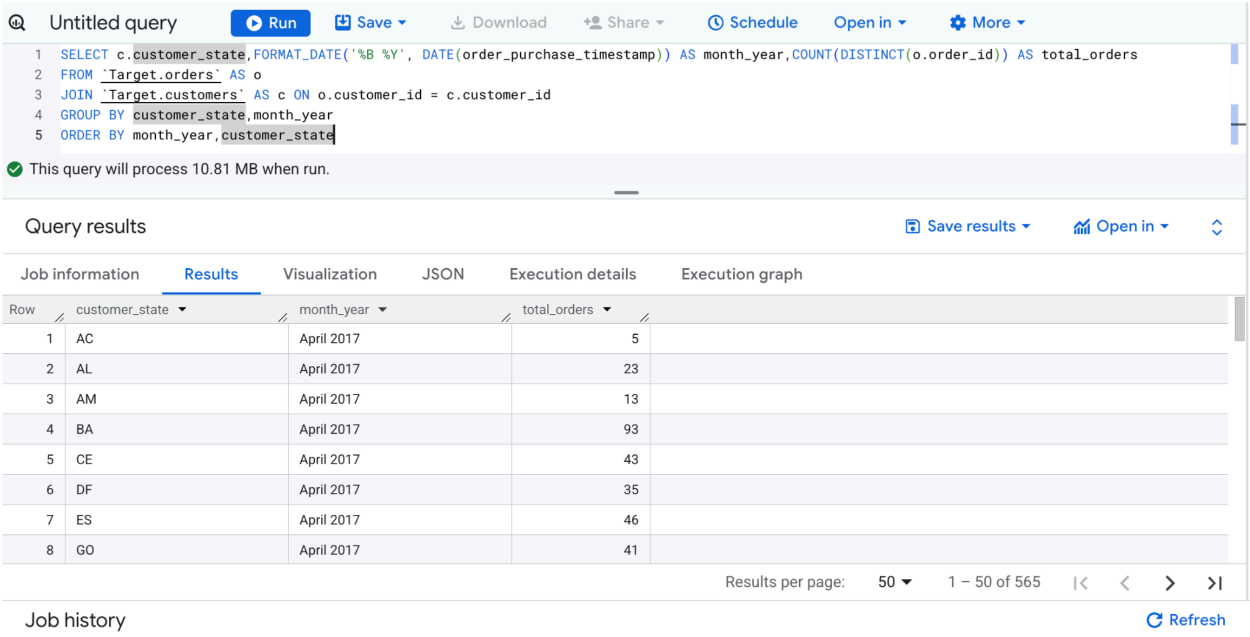
Evolution of E-commerce Orders in Brazil

1.Get the month on month no. of orders placed in each state.

Query:

```
SELECT c.customer_state,FORMAT_DATE('%B %Y', DATE(order_purchase_timestamp)) AS
month_year,COUNT(DISTINCT(o.order_id)) AS total_orders

FROM `Target.orders` AS o

JOIN `Target.customers` AS c ON o.customer_id = c.customer_id

GROUP BY customer_state,month_year

ORDER BY month_year,customer_state
```

Screenshot:



```
SELECT c.customer_state,FORMAT_DATE('%B %Y', DATE(order_purchase_timestamp)) AS month_year,COUNT(DISTINCT(o.order_id)) AS total_orders
FROM `Target.orders` AS o
JOIN `Target.customers` AS c ON o.customer_id = c.customer_id
GROUP BY customer_state,month_year
ORDER BY month_year,customer_state
```

This query will process 10.81 MB when run.

Row	customer_state	month_year	total_orders
1	AC	April 2017	5
2	AL	April 2017	23
3	AM	April 2017	13
4	BA	April 2017	93
5	CE	April 2017	43
6	DF	April 2017	35
7	ES	April 2017	46
8	GO	April 2017	41

Results per page: 50 1 – 50 of 565

Insight:

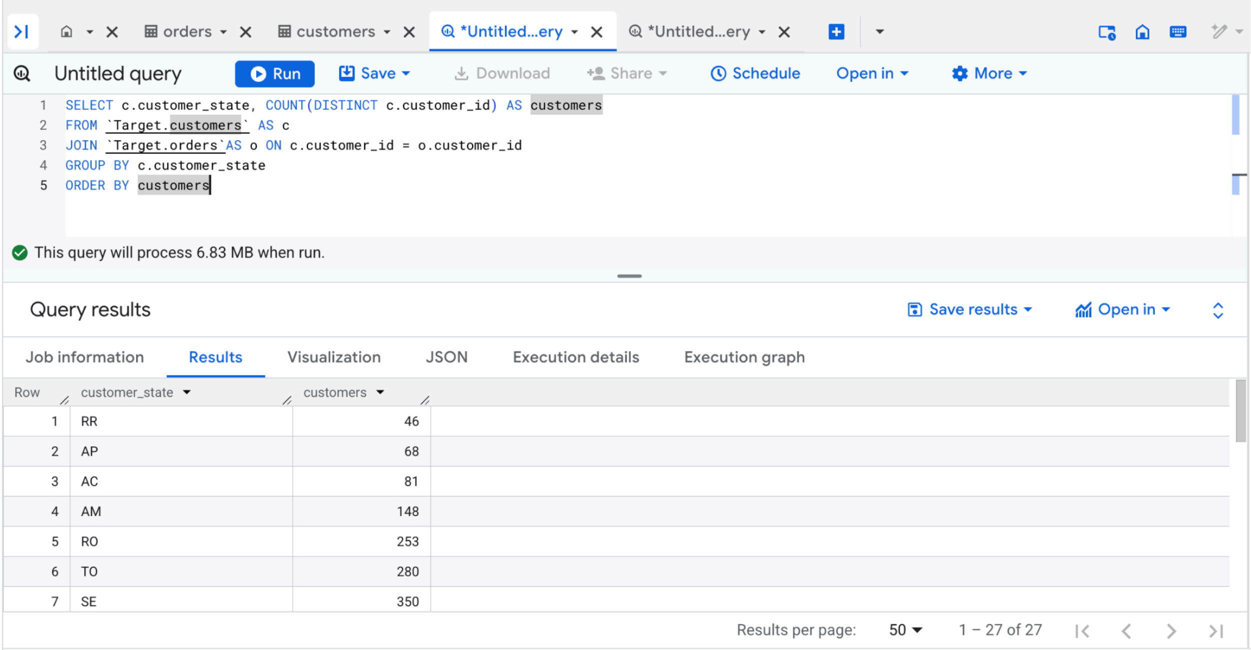
The analysis shows that customer orders are heavily concentrated in major states such as SP, RJ, MG, and BA, while smaller states contribute only a small share. This suggests the need for state-wise differentiated strategies: aggressive growth strategies in core states and awareness/penetration campaigns in smaller ones.

2.How are the customers distributed across all the states?

Query:

```
SELECT c.customer_state, COUNT(DISTINCT c.customer_id) AS customers

FROM `Target.customers` AS c

JOIN `Target.orders`AS o ON c.customer_id = o.customer_id

GROUP BY c.customer_state

ORDER BY customers
```

Screenshot:



```
SELECT c.customer_state, COUNT(DISTINCT c.customer_id) AS customers
FROM `Target.customers` AS c
JOIN `Target.orders`AS o ON c.customer_id = o.customer_id
GROUP BY c.customer_state
ORDER BY customers
```

This query will process 6.83 MB when run.

Query results

Row	customer_state	customers
1	RR	46
2	AP	68
3	AC	81
4	AM	148
5	RO	253
6	TO	280
7	SE	350

Results per page: 50 1 – 27 of 27

Insight:

Customer distribution is highly uneven across Brazilian states. While SP, RJ, and MG dominate in terms of customer base, northern states like RR, AP, and AC contribute minimally, indicating a need for expansion strategies in underserved regions.

Impact on Economy

1.Get the % increase in cost of orders from 2017 to 2018 (include months between Jan to Aug only).
You can use the “payment_value” column in the payments table to get the cost of orders.

Query:

Screenshot:

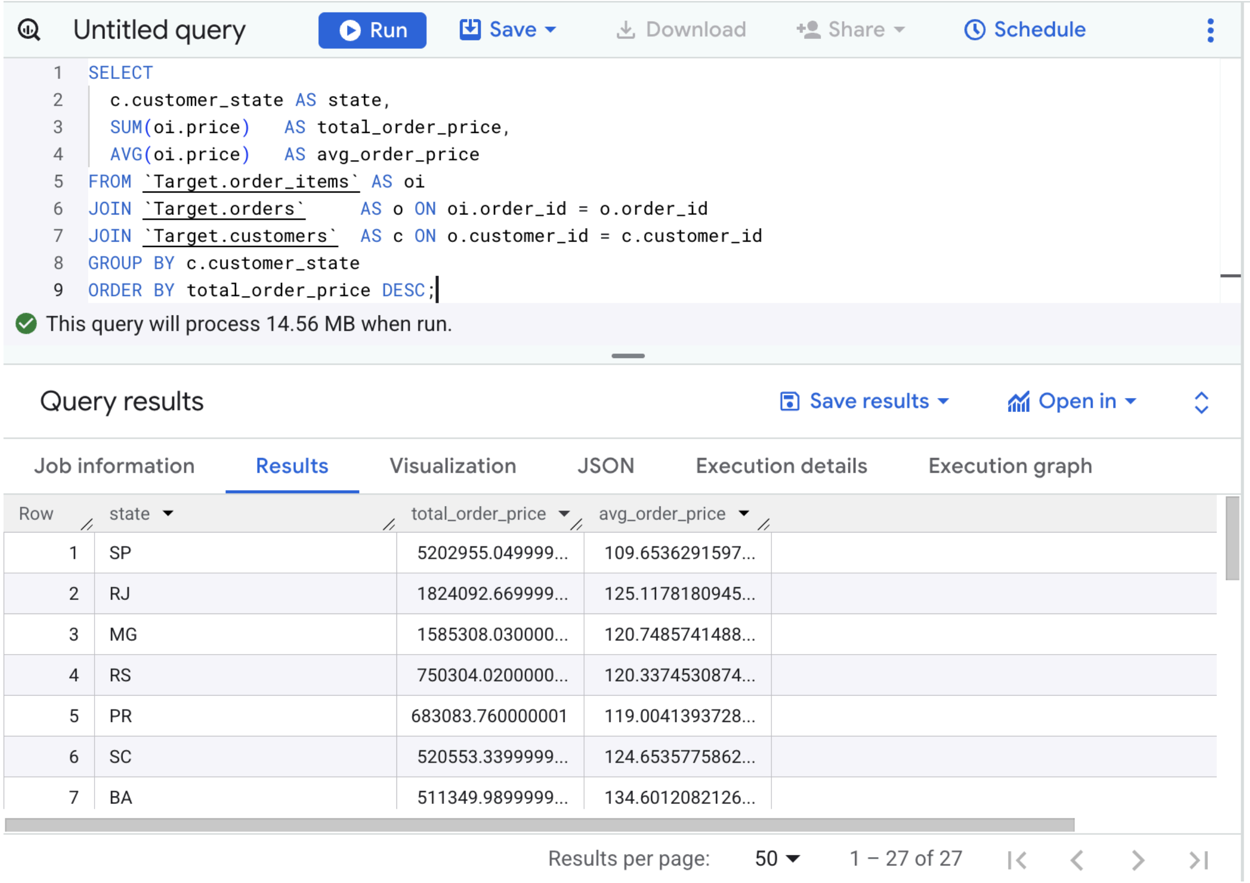
Insight:

2.Calculate the Total & Average value of order price for each state.

Query:

```
SELECT
c.customer_state AS state,
SUM(oi.price)   AS total_order_price,
AVG(oi.price)   AS avg_order_price
FROM `Target.order_items` AS oi
JOIN `Target.orders`     AS o ON oi.order_id = o.order_id
JOIN `Target.customers`  AS c ON o.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY total_order_price DESC;
```

Screenshot:



```
SELECT
  c.customer_state AS state,
  SUM(oi.price)   AS total_order_price,
  AVG(oi.price)   AS avg_order_price
FROM `Target.order_items` AS oi
JOIN `Target.orders`     AS o ON oi.order_id = o.order_id
JOIN `Target.customers`  AS c ON o.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY total_order_price DESC;
```

This query will process 14.56 MB when run.

Row	state	total_order_price	avg_order_price
1	SP	5202955.049999...	109.6536291597...
2	RJ	1824092.669999...	125.1178180945...
3	MG	1585308.030000...	120.7485741488...
4	RS	750304.0200000...	120.3374530874...
5	PR	683083.760000001	119.0041393728...
6	SC	520553.3399999...	124.6535775862...
7	BA	511349.9899999...	134.6012082126...

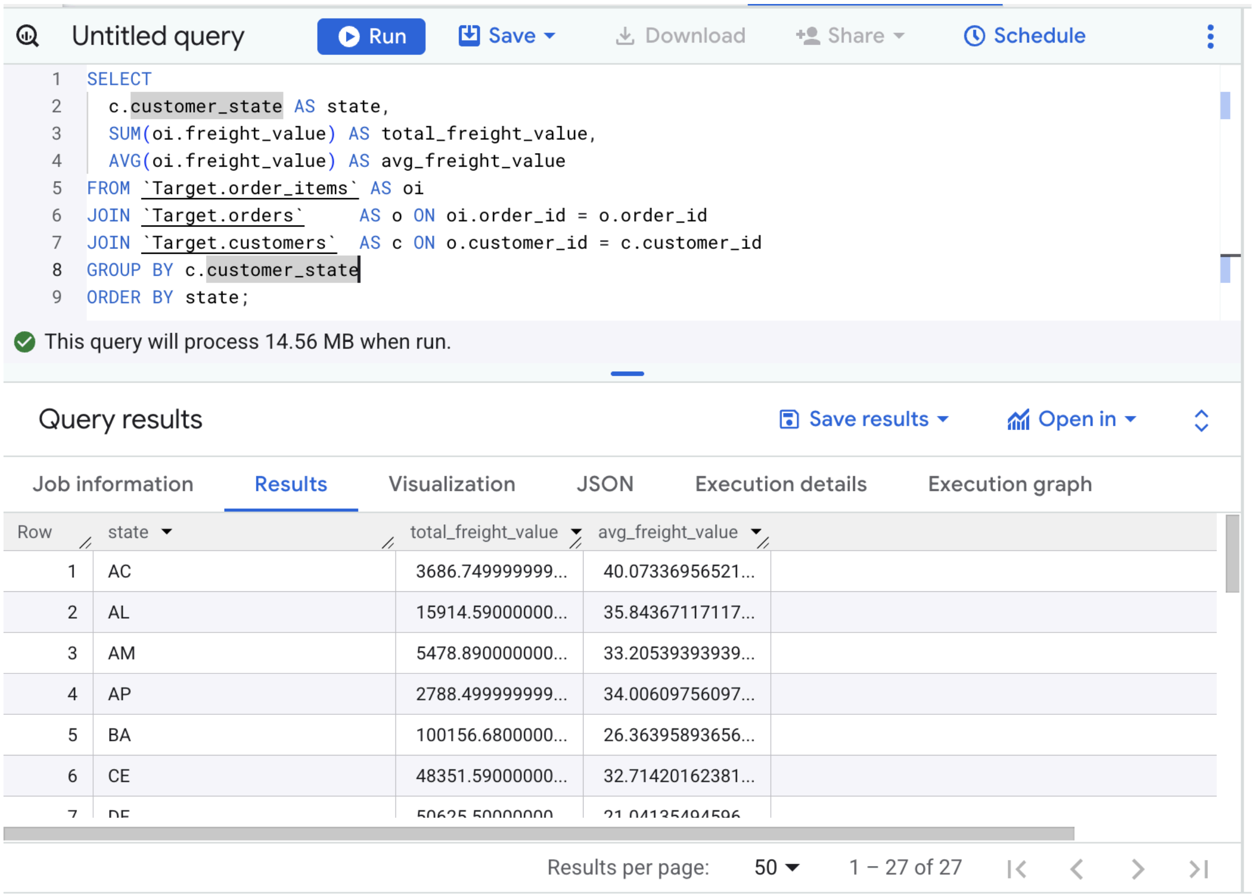
Insight:

3.Calculate the Total & Average value of order freight for each stage.

Query:

```
SELECT
c.customer_state AS state,
SUM(oi.freight_value) AS total_freight_value,
AVG(oi.freight_value) AS avg_freight_value
FROM `Target.order_items` AS oi
JOIN `Target.orders`     AS o ON oi.order_id = o.order_id
JOIN `Target.customers`  AS c ON o.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY state;
```

Screenshot:



```
SELECT
  c.customer_state AS state,
  SUM(oi.freight_value) AS total_freight_value,
  AVG(oi.freight_value) AS avg_freight_value
FROM `Target.order_items` AS oi
JOIN `Target.orders`     AS o ON oi.order_id = o.order_id
JOIN `Target.customers`  AS c ON o.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY state;
```

This query will process 14.56 MB when run.

Row	state	total_freight_value	avg_freight_value
1	AC	3686.749999999...	40.07336956521...
2	AL	15914.59000000...	35.84367117117...
3	AM	5478.890000000...	33.20539393939...
4	AP	2788.499999999...	34.00609756097...
5	BA	100156.6800000...	26.36395893656...
6	CE	48351.59000000...	32.71420162381...
7	DF	50625.50000000	21.04135494596

Results per page: 50 1 – 27 of 27

Insight:

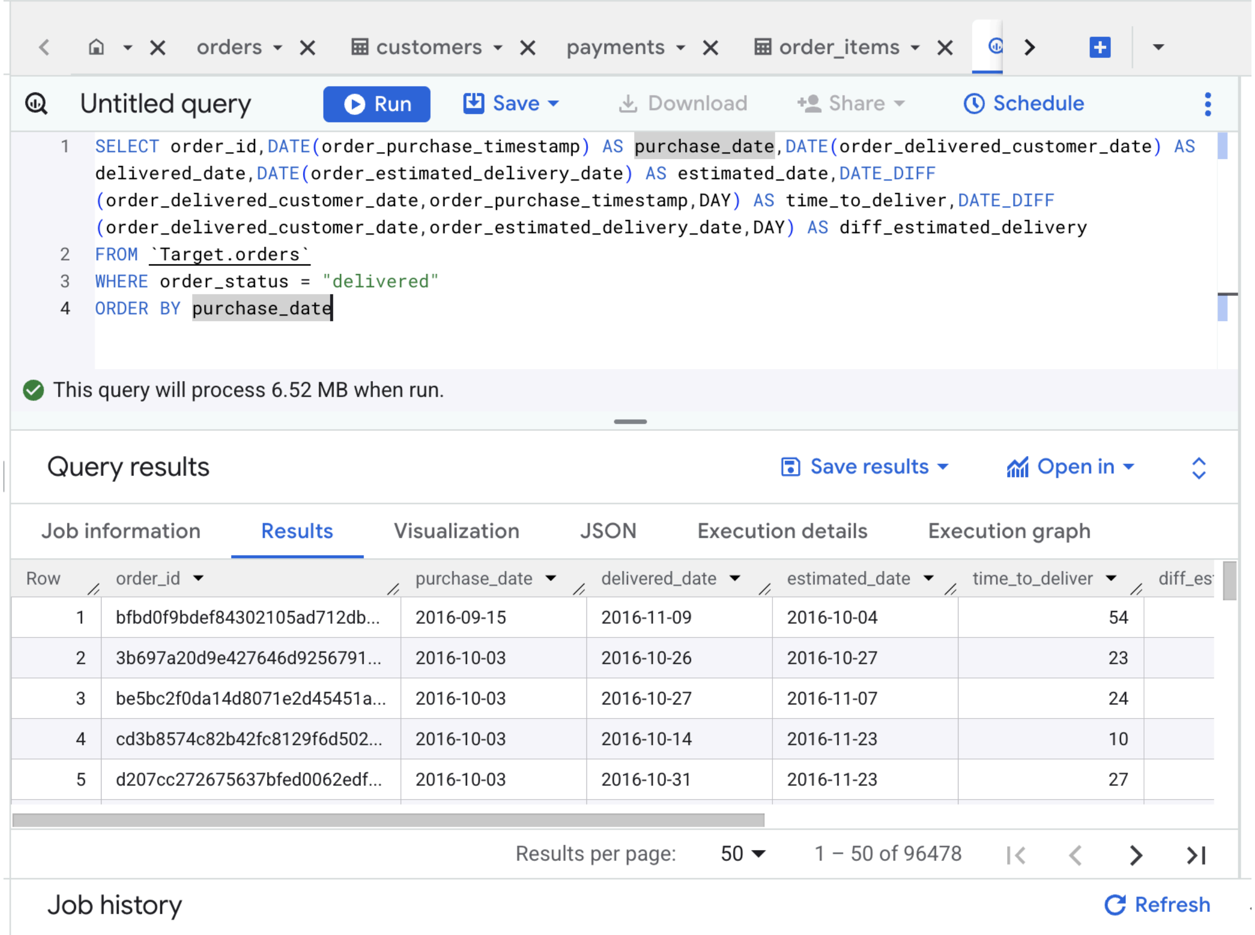
Analysis on Sales,Freight & Delivery Time

1.Find the no.of days taken to deliver each order from the order's purchase date as delivery time.Also,calculate the difference (in days) between the estimated & actual delivery date of an order.

Query:

```
SELECT order_id,DATE(order_purchase_timestamp) AS purchase_date,DATE(order_delivered_customer_date) AS
delivered_date,DATE(order_estimated_delivery_date) AS
estimated_date,DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp,DAY) AS
time_to_deliver,DATE_DIFF(order_delivered_customer_date,order_estimated_delivery_date,DAY) AS diff_estimated_delivery
FROM `Target.orders`
WHERE order_status = "delivered"
ORDER BY purchase_date
```

Screenshot:



```
SELECT order_id,DATE(order_purchase_timestamp) AS purchase_date,DATE(order_delivered_customer_date) AS
delivered_date,DATE(order_estimated_delivery_date) AS estimated_date,DATE_DIFF
(order_delivered_customer_date,order_purchase_timestamp,DAY) AS time_to_deliver,DATE_DIFF
(order_delivered_customer_date,order_estimated_delivery_date,DAY) AS diff_estimated_delivery
FROM `Target.orders`
WHERE order_status = "delivered"
ORDER BY purchase_date
```

This query will process 6.52 MB when run.

Row	order_id	purchase_date	delivered_date	estimated_date	time_to_deliver	diff_es
1	bfbd0f9bdef84302105ad712db...	2016-09-15	2016-11-09	2016-10-04	54	
2	3b697a20d9e427646d9256791...	2016-10-03	2016-10-26	2016-10-27	23	
3	be5bc2f0da14d8071e2d45451a...	2016-10-03	2016-10-27	2016-11-07	24	
4	cd3b8574c82b42fc8129f6d502...	2016-10-03	2016-10-14	2016-11-23	10	
5	d207cc272675637bfed0062edf...	2016-10-03	2016-10-31	2016-11-23	27	

Results per page: 50 1 – 50 of 96478

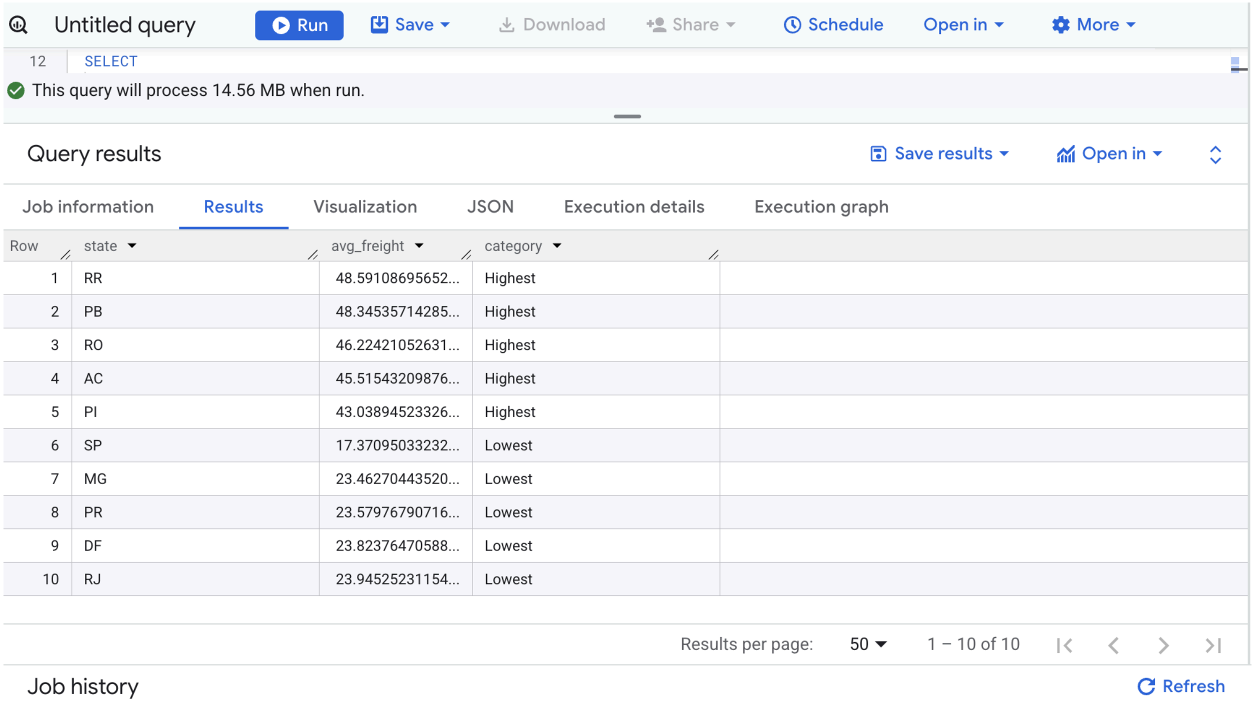
Insight:

2.Find out the 5 states with the highest & lowest average freight value.

Query:

```
WITH order_freight AS (
 SELECT
   o.order_id,
   c.customer_state AS state,
   SUM(oi.freight_value) AS order_freight
 FROM `Target.order_items` AS oi
 JOIN `Target.orders`      AS o  USING (order_id)
 JOIN `Target.customers`   AS c  ON o.customer_id = c.customer_id
 GROUP BY o.order_id, state
),
state_avg AS (
 SELECT
   ofr.state,
   AVG(ofr.order_freight) AS avg_freight
 FROM order_freight AS ofr
 GROUP BY ofr.state
),
top5 AS (
 SELECT state, avg_freight, 'Highest' AS category
 FROM state_avg
 ORDER BY avg_freight DESC
 LIMIT 5
),
bottom5 AS (
 SELECT state, avg_freight, 'Lowest' AS category
 FROM state_avg
 ORDER BY avg_freight ASC
 LIMIT 5
)
SELECT * FROM top5
UNION ALL
SELECT * FROM bottom5
ORDER BY category,
        CASE WHEN category='Highest' THEN -avg_freight ELSE avg_freight END;
```

Screenshot:



```
SELECT
```

This query will process 14.56 MB when run.

Row	state	avg_freight	category
1	RR	48.59108695652...	Highest
2	PB	48.34535714285...	Highest
3	RO	46.22421052631...	Highest
4	AC	45.51543209876...	Highest
5	PI	43.03894523326...	Highest
6	SP	17.37095033232...	Lowest
7	MG	23.46270443520...	Lowest
8	PR	23.57976790716...	Lowest
9	DF	23.82376470588...	Lowest
10	RJ	23.94525231154...	Lowest

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Insight:

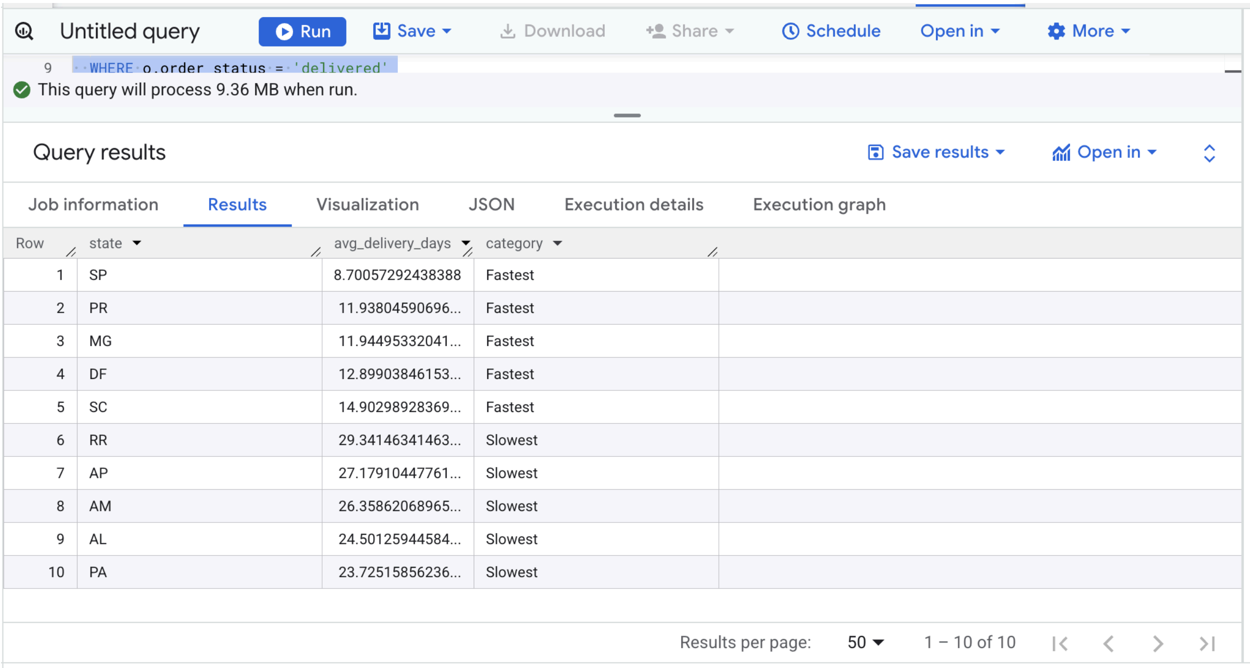
- **Highest Freight States → RR, PB, RO, AC, PI (avg freight > 43 BRL).**
  - Remote & less connected, with weaker logistics networks, leading to higher costs.
- **Lowest Freight States → SP, MG, PR, DF, RJ (avg freight between 17–24 BRL).**
  - Major urban hubs with dense population & efficient logistics, lowering costs.

3.Find out the 5 states with the highest & lowest average delivery time.

Query:

```
WITH delivery_time AS (
 SELECT
   o.order_id,
   c.customer_state AS state,
   DATE_DIFF(DATE(o.order_delivered_customer_date), DATE(o.order_purchase_timestamp), DAY) AS delivery_days
 FROM `Target.orders` AS o
 JOIN `Target.customers` AS c
   ON o.customer_id = c.customer_id
 WHERE o.order_status = 'delivered'
   AND o.order_delivered_customer_date IS NOT NULL
),
state_avg AS (
 SELECT
   state,
   AVG(delivery_days) AS avg_delivery_days
 FROM delivery_time
 GROUP BY state
),
top5 AS (
 SELECT state, avg_delivery_days, 'Slowest' AS category
 FROM state_avg
 ORDER BY avg_delivery_days DESC
 LIMIT 5
),
bottom5 AS (
 SELECT state, avg_delivery_days, 'Fastest' AS category
 FROM state_avg
 ORDER BY avg_delivery_days ASC
 LIMIT 5
)
SELECT * FROM top5
UNION ALL
SELECT * FROM bottom5
ORDER BY category,
        CASE WHEN category='Slowest' THEN -avg_delivery_days ELSE avg_delivery_days END;
```

Screenshot:



```
  WHERE o.order_status = 'delivered'
```

This query will process 9.36 MB when run.

Row	state	avg_delivery_days	category
1	SP	8.70057292438388	Fastest
2	PR	11.93804590696...	Fastest
3	MG	11.94495332041...	Fastest
4	DF	12.89903846153...	Fastest
5	SC	14.90298928369...	Fastest
6	RR	29.34146341463...	Slowest
7	AP	27.17910447761...	Slowest
8	AM	26.35862068965...	Slowest
9	AL	24.50125944584...	Slowest
10	PA	23.72515856236...	Slowest

Insight:

Fastest States:

- São Paulo (SP) has the quickest deliveries, averaging just 8.7 days, followed by Paraná (PR), Minas Gerais (MG), and Distrito Federal (DF) (11–13 days).

- These states are major urban and logistics hubs, which explains the efficiency in delivery speed.

Slowest States:

- States like Roraima (RR) (29.3 days), Amapá (AP) (27.2 days), and Amazonas (AM) (26.3 days) show the longest delivery times.

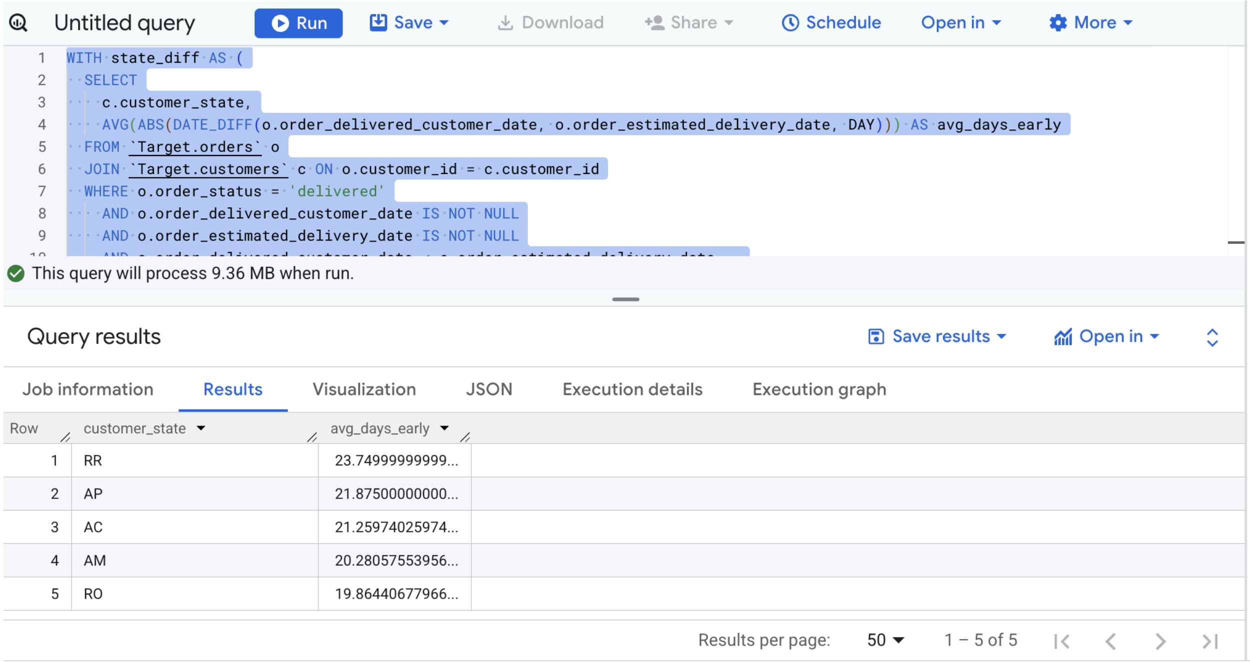
- These regions are geographically remote, with logistical challenges such as limited transport routes and greater reliance on air/river freight.

4.Find out the 5 states where the order delivery is really fast as compared to the estimated date of delivery. You can use the difference between the averages of actual & estimated delivery date to figure out how fast the delivery was for each state

Query:

```
WITH state_diff AS (
 SELECT
   c.customer_state,
   AVG(ABS(DATE_DIFF(o.order_delivered_customer_date, o.order_estimated_delivery_date, DAY))) AS
avg_days_early
 FROM `Target.orders` o
 JOIN `Target.customers` c ON o.customer_id = c.customer_id
 WHERE o.order_status = 'delivered'
   AND o.order_delivered_customer_date IS NOT NULL
   AND o.order_estimated_delivery_date IS NOT NULL
   AND o.order_delivered_customer_date < o.order_estimated_delivery_date
 GROUP BY c.customer_state
)
SELECT customer_state, avg_days_early
FROM state_diff
ORDER BY avg_days_early DESC
LIMIT 5;
```

Screenshot:



```
WITH state_diff AS (
  SELECT
    c.customer_state,
    AVG(ABS(DATE_DIFF(o.order_delivered_customer_date, o.order_estimated_delivery_date, DAY))) AS avg_days_early
  FROM `Target.orders` o
  JOIN `Target.customers` c ON o.customer_id = c.customer_id
  WHERE o.order_status = 'delivered'
    AND o.order_delivered_customer_date IS NOT NULL
    AND o.order_estimated_delivery_date IS NOT NULL
```

This query will process 9.36 MB when run.

Row	customer_state	avg_days_early
1	RR	23.74999999999...
2	AP	21.87500000000...
3	AC	21.25974025974...
4	AM	20.28057553956...
5	RO	19.86440677966...

Results per page: 50 1 – 5 of 5

Insight:

“Customers in RR, AP, AC, AM, and RO received their orders on average 20+ days before the estimated delivery date, indicating that Target’s delivery promises are too conservative in these states. This creates an opportunity to optimize estimated delivery timelines for better customer communication while still delighting them with fast service.”

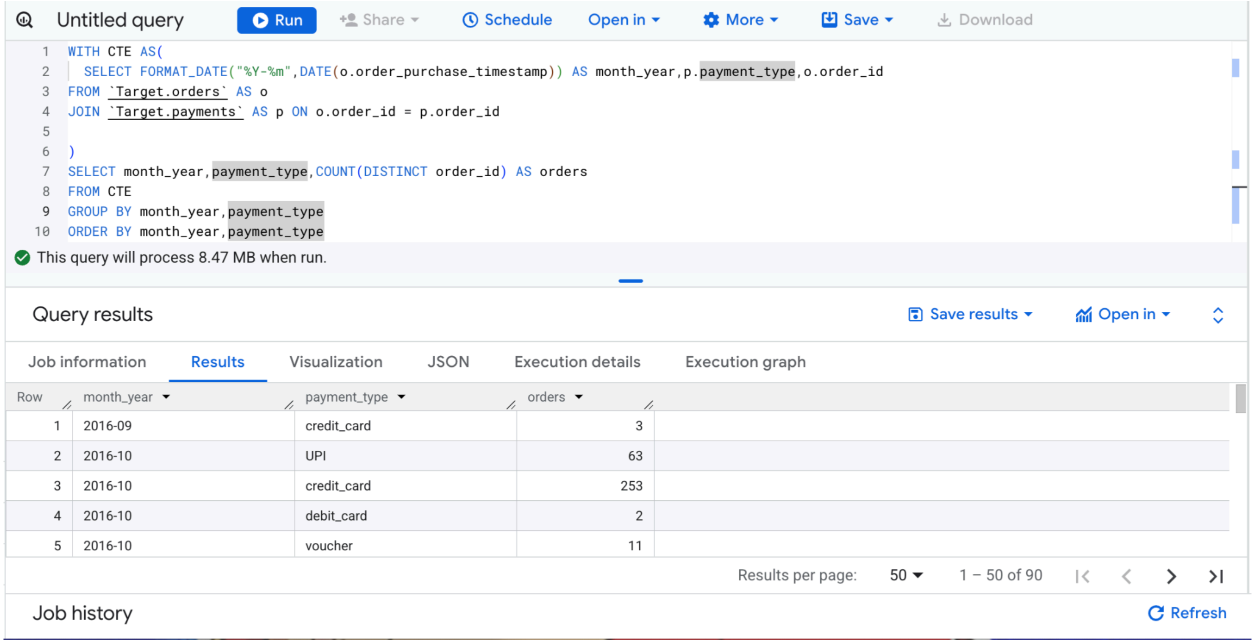
Analysis Based on Payments

1.Find the month on month no.of orders placed using different payment types.

Query:

```
WITH CTE AS(
 SELECT FORMAT_DATE("%Y-%m",DATE(o.order_purchase_timestamp)) AS
month_year,p.payment_type,o.order_id
FROM `Target.orders` AS o
JOIN `Target.payments` AS p ON o.order_id = p.order_id)
SELECT month_year,payment_type,COUNT(DISTINCT order_id) AS orders
FROM CTE
GROUP BY month_year,payment_type
ORDER BY month_year,payment_type
```

Screenshot:



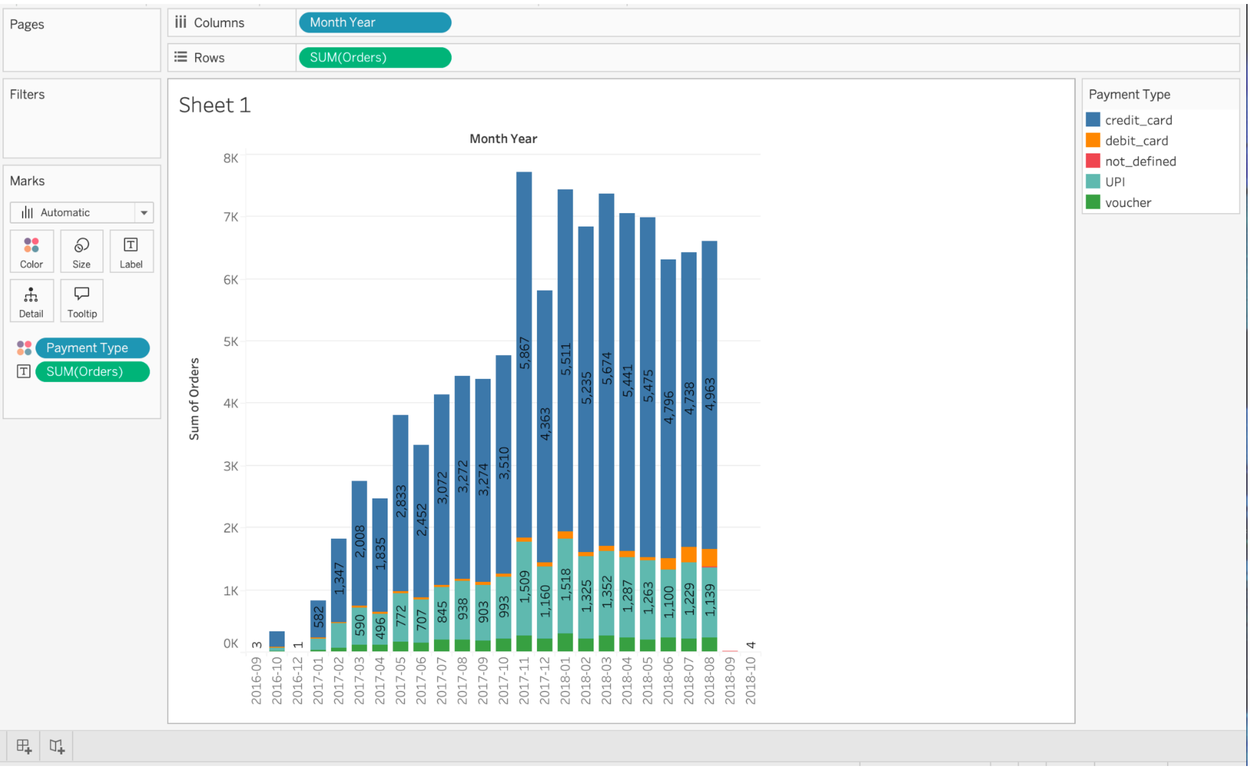
```
WITH CTE AS(
  SELECT FORMAT_DATE("%Y-%m",DATE(o.order_purchase_timestamp)) AS month_year,p.payment_type,o.order_id
FROM `Target.orders` AS o
JOIN `Target.payments` AS p ON o.order_id = p.order_id

)
SELECT month_year,payment_type,COUNT(DISTINCT order_id) AS orders
FROM CTE
GROUP BY month_year,payment_type
ORDER BY month_year,payment_type
```

This query will process 8.47 MB when run.

Row	month_year	payment_type	orders
1	2016-09	credit_card	3
2	2016-10	UPI	63
3	2016-10	credit_card	253
4	2016-10	debit_card	2
5	2016-10	voucher	11

Insight:



Columns: Month Year

Rows: SUM(Orders)

Marks: Automatic

Color: Payment Type

Label: SUM(Orders)

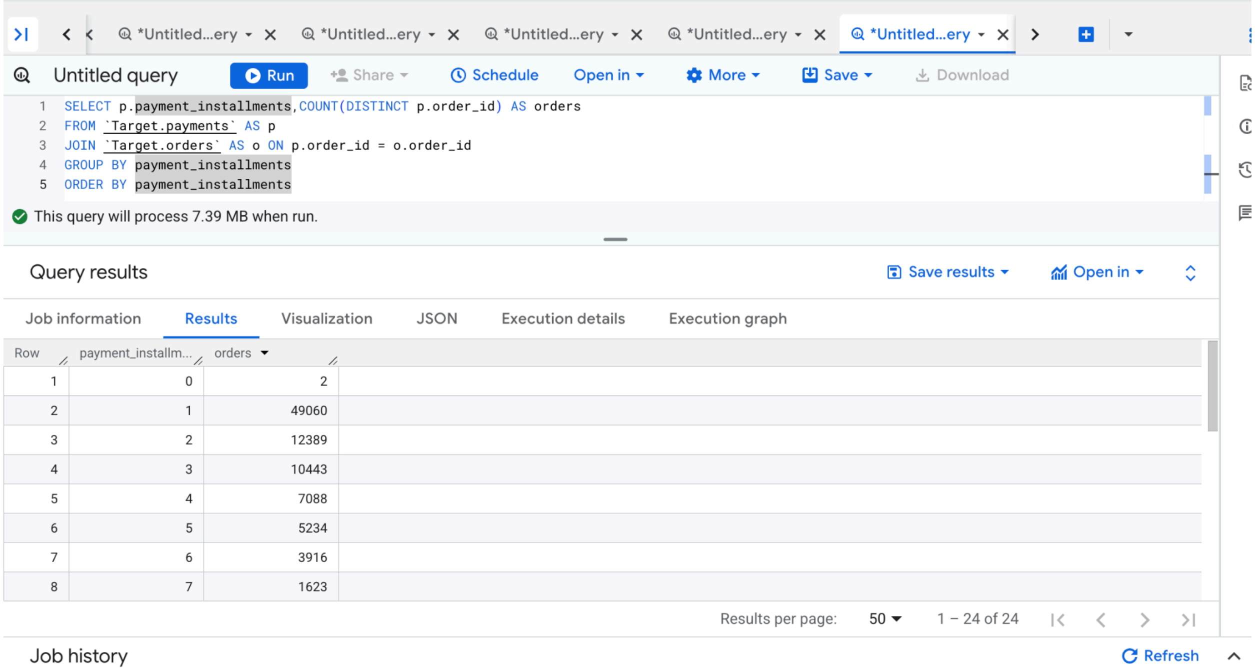
Analysis of month-on-month orders by payment type shows that credit cards are the overwhelmingly preferred method of payment, driving overall order growth. While other methods maintain steady volumes, they do not show the same growth trajectory. Seasonal spikes in December and January reflect holiday shopping, further emphasizing credit card dominance. Alternative methods (debit, vouchers, UPI) remain niche, suggesting limited customer adoption.

2.Find the no.of orders placed on the basis of the payment installments that have been paid.

Query:

```
SELECT p.payment_installments,COUNT(DISTINCT p.order_id) AS orders
FROM `Target.payments` AS p
JOIN `Target.orders` AS o ON p.order_id = o.order_id
GROUP BY payment_installments
ORDER BY payment_installments
```

Screenshot:



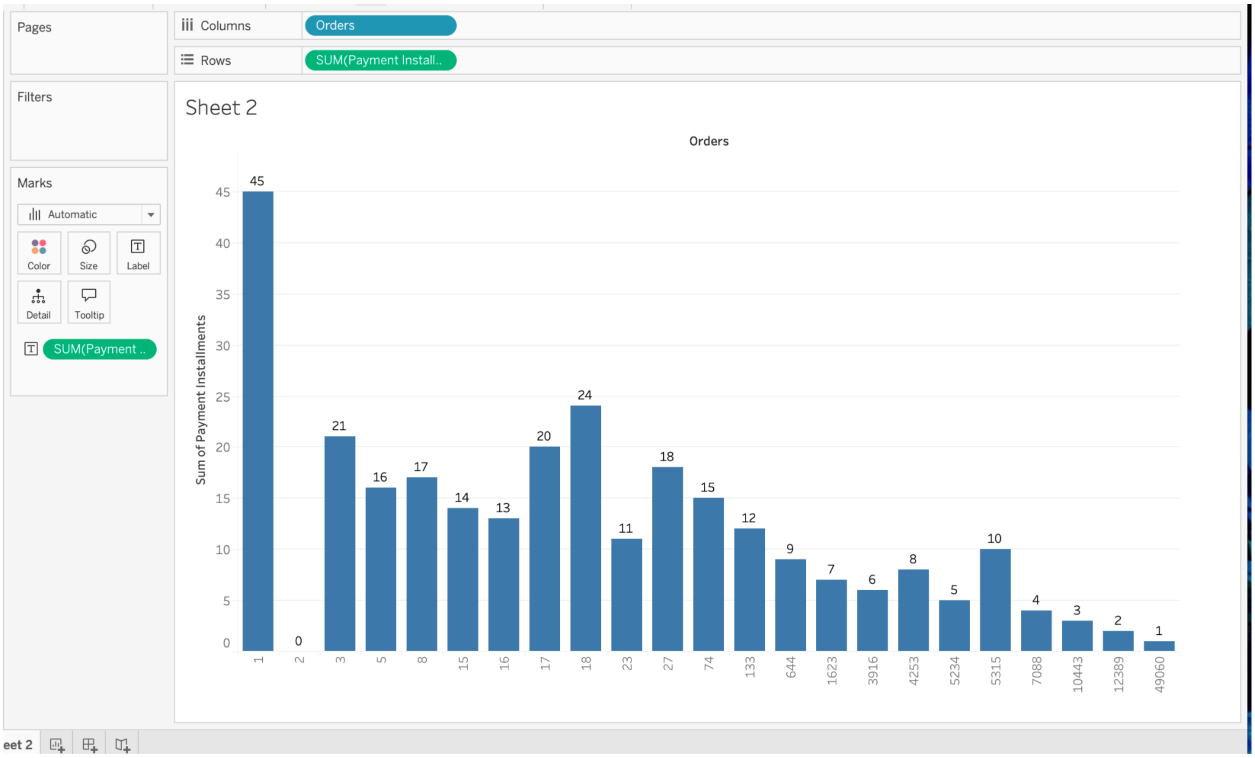
```
SELECT p.payment_installments,COUNT(DISTINCT p.order_id) AS orders
FROM `Target.payments` AS p
JOIN `Target.orders` AS o ON p.order_id = o.order_id
GROUP BY payment_installments
ORDER BY payment_installments
```

This query will process 7.39 MB when run.

Row	payment_installm...	orders
1	0	2
2	1	49060
3	2	12389
4	3	10443
5	4	7088
6	5	5234
7	6	3916
8	7	1623

Results per page: 50 1 – 24 of 24

Insight:



The majority of orders are paid in a single installment, showing customer preference for upfront payments. Installment plans up to 6 months see moderate adoption, while longer installment options are rarely chosen. This suggests that offering short-term installment promotions (3–6 months) could align well with customer behavior, while extended EMI schemes may not add much value.