Insights using SQL QUERY

Problem Statement:

Analyze the retail dataset to extract valuable insights and provide actionable recommendations.

What does 'good' look like?

1. **Import the dataset and do usual exploratory analysis steps like checking the structure & characteristics of the dataset:**

    1. **Data type of all columns in the "customers" table.**

Query

```
SELECT column_name,
  data_type
FROM`target.INFORMATION_SCHEMA.COLUMNS`
WHERE table_name = 'customers'
```

Sample Output

Query results

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

Row	column_name	data_type
1	customer_id	STRING
2	customer_unique_id	STRING
3	customer_zip_code_prefix	INT64
4	customer_city	STRING
5	customer_state	STRING

Insights:

Customer_id and customer_unique_id are in string. So can be converted into integer for further manipulation if required.

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

Query

```
SELECT
  MIN(order_purchase_timestamp) AS order_first_date,
  MAX(order_purchase_timestamp) AS order_last_date
FROM
`target.orders`
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXECUTION DETAILS

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

Insights:

The order range is around two years.

3. **Count the number of Cities and States in our dataset.**

Query

```
SELECT
    COUNT(DISTINCT customer_city) AS num_of_cities,
    COUNT(DISTINCT customer_state) AS num_of_states,
FROM
`target.customers`
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON

Row	num_of_cities	num_of_states
1	4119	27

Insights:

There are around 4119 cities and 27 states in the dataset

2. **In-depth Exploration:**

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

Query

```
SELECT
EXTRACT(YEAR FROM order_purchase_timestamp) AS year_of_purchase,
EXTRACT(MONTH FROM order_purchase_timestamp) AS month_of_purchase,
COUNT(*) AS order_count
FROM
`target.orders`
GROUP BY year_of_purchase,month_of_purchase
ORDER BY year_of_purchase,month_of_purchase
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXECUTION

Row	year_of_purchase	month_of_purchase	order_count
1	2016	9	4
2	2016	10	324
3	2016	12	1
4	2017	1	800
5	2017	2	1780
6	2017	3	2682
7	2017	4	2404
8	2017	5	3700
9	2017	6	3245
10	2017	7	4026
11	2017	8	4331
12	2017	9	4285
13	2017	10	4631
14	2017	11	7544

Insights

September, October, November,December of 2016 and September, October of 2018 has less number of orders

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

Query

```
SELECT
EXTRACT(MONTH FROM order_purchase_timestamp) AS month_of_purchase,
COUNT(*) AS order_count
FROM
`target.orders`
GROUP BY month_of_purchase
ORDER BY order_count DESC
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON

Row	month_of_purchase	order_count
1	8	10843
2	5	10573
3	7	10318
4	3	9893
5	6	9412
6	4	9343
7	2	8508
8	1	8069
9	11	7544
10	12	5674
11	10	4959
12	9	4305

Insights

May,July,August month has highest number of orders.

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

Query

```
SELECT x.time_of_day, count(x.time_of_day) AS purchase_count
FROM(
SELECT
EXTRACT(HOUR FROM order_purchase_timestamp) AS hour_of_day,
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 'Morning'
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 13 AND 18 THEN 'Afternoon'
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 19 AND 23 THEN 'Night'
END AS time_of_day
FROM
`target.orders`) AS x
GROUP BY x.time_of_day
ORDER BY purchase_count DESC
LIMIT 1
```

Sample Output

Query results

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

Row	time_of_day	purchase_count
1	Afternoon	38135

Insights

Most of the Brazilian customer do their purchase in the afternoon

3. **Evolution of E-commerce orders in the Brazil region:**
    1. **Get the month on month no. of orders placed in each state.**

Query

```
SELECT c.customer_state,
EXTRACT(YEAR FROM o.order_purchase_timestamp) AS year_of_purchase,
EXTRACT(MONTH FROM o.order_purchase_timestamp) AS month_of_purchase,
COUNT(*) AS order_count
FROM
`target.customers` AS c
JOIN `target.orders` AS o
ON c.customer_id = o.customer_id
GROUP BY c.customer_state,year_of_purchase,month_of_purchase
ORDER BY c.customer_state,year_of_purchase,month_of_purchase
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXECUTION DETAILS | EXECUTION GRAP

Row	customer_state	year_of_purchase	month_of_purchase	order_count
1	AC	2017	1	2
2	AC	2017	2	3
3	AC	2017	3	2
4	AC	2017	4	5
5	AC	2017	5	8
6	AC	2017	6	4
7	AC	2017	7	5
8	AC	2017	8	4
9	AC	2017	9	5
10	AC	2017	10	6
11	AC	2017	11	5
12	AC	2017	12	5

INSIGHTS:

State BA and RJ has highest number of orders

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

Query

```
SELECT customer_state, COUNT(*) AS customer_count
FROM `target.customers`
GROUP BY customer_state
ORDER BY customer_count
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EX

Row	customer_state	customer_count
1	RR	46
2	AP	68
3	AC	81
4	AM	148
5	RO	253
6	TO	280
7	SE	350
8	AL	413
9	RN	485
10	PI	495
11	PB	536
12	MS	715
13	MA	747
14	MT	907
15	PA	975
16	CE	1336
17	PE	1652
18	GO	2020
19	ES	2033
20	DF	2140
21	BA	3380
22	SC	3637
23	PR	5045
24	RS	5466
25	MG	11635
26	RJ	12852
27	SP	41746

Insights

Largest number of customer from SP and lowest number of customer from RR

4. **Impact on Economy: Analyze the money movement by e-commerce by looking at order prices, freight and others.**
    1. **Get the % increase in the cost of orders from year 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

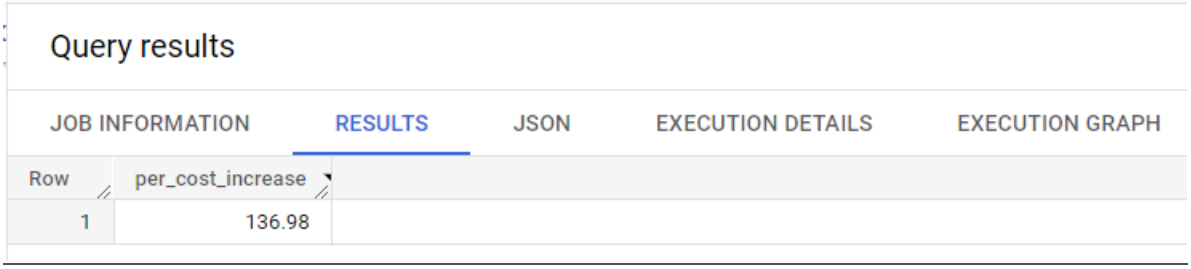
```
WITH y2017_summary AS(
  SELECT ROUND(SUM(p.payment_value),2) AS cost_of_order_2017
    FROM
    `target.payments` AS p
    JOIN `target.orders`AS o
    ON p.order_id = o.order_id
    WHERE (EXTRACT(YEAR FROM order_purchase_timestamp)= 2017) AND (EXTRACT(MONTH FROM
order_purchase_timestamp) BETWEEN 1 AND 8)),
    y2018_summary AS(
  SELECT ROUND(SUM(p.payment_value),2) AS cost_of_order_2018
```

```
    FROM
    `target.payments` AS p
    JOIN `target.orders`AS o
    ON p.order_id = o.order_id
    WHERE (EXTRACT(YEAR FROM order_purchase_timestamp)= 2018) AND (EXTRACT(MONTH FROM
order_purchase_timestamp) BETWEEN 1 AND 8))

SELECT
  ROUND(((y18.cost_of_order_2018 - y17.cost_of_order_2017)/
y17.cost_of_order_2017)*100,2) AS per_cost_increase
  FROM y2017_summary AS y17,
  y2018_summary AS y18
```

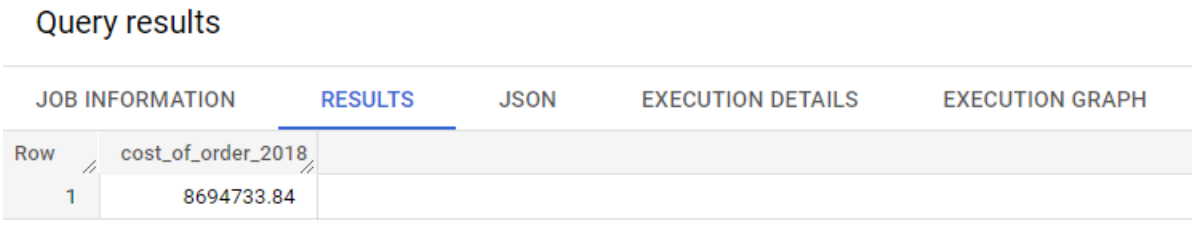
Sample Output

Output for the % increase in the cost of orders from year 2017 to 2018 (include months between Jan to Aug only).



Output for the cost of order in 2017 from Jan to Aug

Output for the cost of order in 2018 from Jan to Aug



Insights

In Brazilian country the there is 136.98 % increase in cost happened from 2017 to 2018 in the month January to August

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

Query

```sql
SELECT c.customer_state,
ROUND(SUM(oi.price),2) AS Total_order_price,
ROUND(AVG(oi.price),2) AS Average_order_price,
FROM `target.customers` AS c
JOIN `target.orders` AS o
ON c.customer_id = o.customer_id
JOIN `target.order_items` AS oi
ON o.order_id = oi.order_id
GROUP BY c.customer_state
```

Sample Output

Query results

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

Row	customer_state	Total_order_price	Average_order_price
1	SP	5202955.05	109.65
2	RJ	1824092.67	125.12
3	MG	1585308.03	120.75
4	RS	750304.02	120.34
5	PR	683083.76	119.0
6	SC	520553.34	124.65
7	BA	511349.99	134.6
8	DF	302603.94	125.77
9	GO	294591.95	126.27
10	ES	275037.31	121.91

Insights

- Sao Paulo (SP) in brazil has highest total order price with the value of 5202955 and Roraima(RR) has lowest total cost price with the value of 7829
- Paraiba(PB) has highest average order price with the value of 191 and SP has lowest average order price with the value of 109
- Even though SP has more total cost than other state, since the average value is low, it indicates more number of customers made each order with low value of cost

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

Query

```sql
SELECT c.customer_state,
ROUND(SUM(oi.freight_value),2) AS Total_order_freight,
ROUND(AVG(oi.freight_value),2) AS Average_order_freight,
FROM `target.customers` AS c
JOIN `target.orders` AS o
ON c.customer_id = o.customer_id
JOIN `target.order_items` AS oi
ON o.order_id = oi.order_id
GROUP BY c.customer_state
ORDER BY Total_order_freight DESC
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXECUTION DETAILS | EXECUT

Row	customer_state	Total_order_freight	Average_order_freight
1	SP	718723.07	15.15
2	RJ	305589.31	20.96
3	MG	270853.46	20.63
4	RS	135522.74	21.74
5	PR	117851.68	20.53
6	BA	100156.68	26.36
7	SC	89660.26	21.47
8	PE	59449.66	32.92
9	GO	53114.98	22.77
10	DF	50625.5	21.04

Insights

- Sao Paulo (SP) in brazil has highest total order price with the value of 718723 and Roraima(RR) has lowest total cost price with the value of 2235
- Roraima(RR) has highest average order price with the value of 42.98 and SP has lowest average order price with the value of 15.15

5. **Analysis based on sales, freight and 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.
    Do this in a single query.

    You can calculate the delivery time and the difference between the estimated & actual delivery date using the given formula:
        - **time_to_deliver** = order_delivered_customer_date - order_purchase_timestamp
        - **diff_estimated_delivery** = order_estimated_delivery_date - order_delivered_customer_date

Query 1

```
SELECT
order_id,customer_id,order_purchase_timestamp,order_estimated_delivery_date,order_deli
vered_customer_date,
DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp,DAY) AS
time_to_deliver,
```

```
DATE_DIFF(order_estimated_delivery_date,order_delivered_customer_date,DAY) AS
diff_estimated_delivery
FROM
`target.orders`
WHERE order_delivered_customer_date IS NOT NULL
ORDER BY time_to_deliver DESC
```

Sample Output

Query results

SAVE RESULTS | EXPLORE DATA

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

Row	order_id	customer_id	order_purchase_timestamp	order_estimated_delivery_date	order_delivered_customer_date	time_to_deliver	diff_estimated_deliv
1	ca07593549f1816d26a572e06...	75683a92331068e2d281b11a...	2017-02-21 23:31:27 UTC	2017-03-22 00:00:00 UTC	2017-09-19 14:36:39 UTC	209	-181
2	1b3190b2dfa9d789e1f14c05b...	d306426abe5fca15e54b645e4...	2018-02-23 14:57:35 UTC	2018-03-15 00:00:00 UTC	2018-09-19 23:24:07 UTC	208	-188
3	440d0d17af552815d15a9e41a...	7815125148cfa1e8c7fee1ff79...	2017-03-07 23:59:51 UTC	2017-04-07 00:00:00 UTC	2017-09-19 15:12:50 UTC	195	-165
4	0f4519c5f1c541ddec9f21b3bd...	1a8a4a30dc296976717f44e78...	2017-03-09 13:26:57 UTC	2017-04-11 00:00:00 UTC	2017-09-19 14:38:21 UTC	194	-161
5	285ab9426d6982034523a855f...	9cf2c3fa2632cee748e1a59ca9...	2017-03-08 22:47:40 UTC	2017-04-06 00:00:00 UTC	2017-09-19 14:00:04 UTC	194	-166
6	2fb597c2f772eca01b1f5c561b...	217906bc11a32c1e470eb7e08...	2017-03-08 18:09:02 UTC	2017-04-17 00:00:00 UTC	2017-09-19 14:33:17 UTC	194	-155
7	47b40429ed8cce3aee9199792...	cb2caaaead400c97350c37a3f...	2018-01-03 09:44:01 UTC	2018-01-19 00:00:00 UTC	2018-07-13 20:51:31 UTC	191	-175
8	2fe324febf907e3ea3f2aa9650...	65b14237885b3972ebec28c0f...	2017-03-13 20:17:10 UTC	2017-04-05 00:00:00 UTC	2017-09-19 17:00:07 UTC	189	-167
9	2d7561026d542c8dbd8f0daea...	8199345f57c6d1cbe9701f924...	2017-03-15 11:24:27 UTC	2017-04-13 00:00:00 UTC	2017-09-19 14:38:18 UTC	188	-159
10	437222e3fd1b07396f1d9ba8c...	9b39de85d94d55a21991e70b...	2017-03-16 11:36:00 UTC	2017-04-28 00:00:00 UTC	2017-09-19 16:28:58 UTC	187	-144

Insights

Maximum number of days it has taken to deliver is 209 and it has taken 188 more days from the estimated date.

Query 2

```
SELECT
order_id,customer_id,order_purchase_timestamp,order_estimated_delivery_date,order_deli
vered_customer_date,
DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp,DAY) AS
time_to_deliver,
DATE_DIFF(order_estimated_delivery_date,order_delivered_customer_date,DAY) AS
diff_estimated_delivery
FROM
`target.orders`
WHERE order_delivered_customer_date IS NOT NULL AND
DATE_DIFF(order_estimated_delivery_date,order_delivered_customer_date,DAY) < 0
ORDER BY diff_estimated_delivery
```

SAMPLE OUTPUT

Query results

SAVE RESULTS | EXPLORE DATA

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

Row	order_id	customer_id	order_purchase_timestamp	order_estimated_delivery_date	order_delivered_customer_date	time_to_deliver	diff_estimated_deliv
1	1b3190b2dfa9d789e1f14c05b...	d306426abe5fca15e54b645e4...	2018-02-23 14:57:35 UTC	2018-03-15 00:00:00 UTC	2018-09-19 23:24:07 UTC	208	-188
2	ca07593549f1816d26a572e06...	75683a92331068e2d281b11a...	2017-02-21 23:31:27 UTC	2017-03-22 00:00:00 UTC	2017-09-19 14:36:39 UTC	209	-181
3	47b40429ed8cce3aee9199792...	cb2caaaead400c97350c37a3f...	2018-01-03 09:44:01 UTC	2018-01-19 00:00:00 UTC	2018-07-13 20:51:31 UTC	191	-175
4	2fe324febf907e3ea3f2aa9650...	65b14237885b3972ebec28c0f...	2017-03-13 20:17:10 UTC	2017-04-05 00:00:00 UTC	2017-09-19 17:00:07 UTC	189	-167
5	285ab9426d6982034523a855f...	9cf2c3fa2632cee748e1a59ca9...	2017-03-08 22:47:40 UTC	2017-04-06 00:00:00 UTC	2017-09-19 14:00:04 UTC	194	-166
6	440d0d17af552815d15a9e41a...	7815125148cfa1e8c7fee1ff79...	2017-03-07 23:59:51 UTC	2017-04-07 00:00:00 UTC	2017-09-19 15:12:50 UTC	195	-165
7	c27815f7e3dd0b926b5855262...	f85e9ec0719b16dc4dd0edd43...	2017-03-15 23:23:17 UTC	2017-04-10 00:00:00 UTC	2017-09-19 17:14:25 UTC	187	-162
8	0f4519c5f1c541ddec9f21b3bd...	1a8a4a30dc296976717f44e78...	2017-03-09 13:26:57 UTC	2017-04-11 00:00:00 UTC	2017-09-19 14:38:21 UTC	194	-161
9	d24e8541128cea179a11a6517...	beeda72b31be3b8a38b5c2b77...	2017-06-12 13:14:11 UTC	2017-06-26 00:00:00 UTC	2017-12-04 18:36:29 UTC	175	-161
10	2d7561026d542c8dbd8f0daea...	8199345f57c6d1cbe9701f924...	2017-03-15 11:24:27 UTC	2017-04-13 00:00:00 UTC	2017-09-19 14:38:18 UTC	188	-159

INSIGHTS

There are **6535 out of 96476(6%)** order are delivered after estimated date

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

Query 1:Top 5 states with highest average freight value

```
SELECT c.customer_state,
ROUND(AVG(oi.freight_value),2) AS Average_order_freight,
FROM `target.customers` AS c
JOIN `target.orders` AS o
ON c.customer_id = o.customer_id
JOIN `target.order_items` AS oi
ON o.order_id = oi.order_id
GROUP BY c.customer_state
ORDER BY Average_order_freight DESC
LIMIT 5
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXE

Row	customer_state	Average_order_freigh
1	RR	42.98
2	PB	42.72
3	RO	41.07
4	AC	40.07
5	PI	39.15

Insights

RR, PB, RO,AC,PI has highest average freight value

Query 2: Top 5 states with lowest average freight value

```
SELECT c.customer_state,
ROUND(AVG(oi.freight_value),2) AS Average_order_freight,
FROM `target.customers` AS c
JOIN `target.orders` AS o
ON c.customer_id = o.customer_id
JOIN `target.order_items` AS oi
ON o.order_id = oi.order_id
GROUP BY c.customer_state
ORDER BY Average_order_freight
LIMIT 5
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXE

Row	customer_state	Average_order_freigh
1	SP	15.15
2	PR	20.53
3	MG	20.63
4	RJ	20.96
5	DF	21.04

Insights

SP,PR,MG,RJ,DF has lowest average freight value

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

Query 1: Top 5 states with the highest average delivery time.

```
WITH cte AS(
SELECT order_id,customer_id,order_purchase_timestamp,order_delivered_customer_date,
DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp,DAY) AS
time_to_deliver,
FROM
`target.orders`
WHERE order_delivered_customer_date IS NOT NULL
)

SELECT c.customer_state,
ROUND(AVG(ct.time_to_deliver),2) AS average_delivery_time
FROM cte AS ct
JOIN `target.customers` AS c
ON  ct.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY average_delivery_time DESC
LIMIT 5
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXE

Row	customer_state	average_delivery_tim
1	RR	28.98
2	AP	26.73
3	AM	25.99
4	AL	24.04
5	PA	23.32

Insights:

Top 5 states with the highest average delivery time are RR,AP,AM,AL,PA

Query 2: Top 5 states with the lowest average delivery time.

```
WITH cte AS(
SELECT order_id,customer_id,order_purchase_timestamp,order_delivered_customer_date,
DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp,DAY) AS
time_to_deliver,
FROM
`target.orders`
WHERE order_delivered_customer_date IS NOT NULL
)

SELECT c.customer_state,
ROUND(AVG(ct.time_to_deliver)) AS average_delivery_time
FROM cte AS ct
```

```
JOIN `target.customers` AS c
ON  ct.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY average_delivery_time
LIMIT 5
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EX

Row	customer_state	average_delivery_tir
1	SP	8.0
2	MG	12.0
3	PR	12.0
4	DF	13.0
5	SC	14.0

Insights

Top 5 states with the lowest average delivery time are SP, PR, MG, DF, SC

4. **Find out the top 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 cte AS(
SELECT
order_id,customer_id,order_purchase_timestamp,order_estimated_delivery_date,order_deli
vered_customer_date,
DATE_DIFF(order_estimated_delivery_date,order_delivered_customer_date,DAY) AS
diff_estimated_delivery
FROM
`target.orders`
WHERE order_delivered_customer_date IS NOT NULL
)

SELECT c.customer_state,
ROUND(AVG(ct.diff_estimated_delivery)) AS delivery_time
FROM cte AS ct
JOIN `target.customers` AS c
ON  ct.customer_id = c.customer_id
GROUP BY c.customer_state
ORDER BY delivery_time
LIMIT 5
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXECUTION DET

Row	customer_state	delivery_time
1	AL	8.0
2	MA	9.0
3	SE	9.0
4	ES	10.0
5	SP	10.0

Insights

Top 5 states in Brazil where average of delivery date is approximately equal to delivery estimated date are AL,MA,SE,ES,SP

6. **Analysis based on the payments:**
    1. **Find the month on month no. of orders placed using different payment types.**

Query

```
SELECT p.payment_type,
EXTRACT(YEAR FROM o.order_purchase_timestamp) AS year_of_purchase,
EXTRACT(MONTH FROM o.order_purchase_timestamp) AS month_of_purchase,
COUNT(*) AS order_count
FROM
`target.payments` AS p
JOIN `target.orders` AS o
ON p.order_id = o.order_id
GROUP BY p.payment_type,year_of_purchase,month_of_purchase
ORDER BY p.payment_type,year_of_purchase,month_of_purchase
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON | EXECUTION DETAILS | EXECUTION GRAF

Row	payment_type	year_of_purchase	month_of_purchase	order_count
1	UPI	2016	10	63
2	UPI	2017	1	197
3	UPI	2017	2	398
4	UPI	2017	3	590
5	UPI	2017	4	496
6	UPI	2017	5	772
7	UPI	2017	6	707
8	UPI	2017	7	845
9	UPI	2017	8	938
10	UPI	2017	9	903
11	UPI	2017	10	993
12	UPI	2017	11	1509
13	UPI	2017	12	1160
14	UPI	2018	1	1518

Insights

There are less orders placed through UPI

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

Query

```
SELECT p.payment_installments,
COUNT(*) AS order_count
FROM
`target.payments` AS p
JOIN `target.orders` AS o
ON p.order_id = o.order_id
GROUP BY p.payment_installments
ORDER BY order_count DESC
```

Sample Output

Query results

JOB INFORMATION | RESULTS | JSON

Row	payment_installment	order_count
1	1	52546
2	2	12413
3	3	10461
4	4	7098
5	10	5328
6	5	5239
7	8	4268
8	6	3920
9	7	1626
10	9	644
11	12	133

Insights

Most of the orders prefer 1,2 3 4 installments only

Recommendations:

- Since most of the Brazilian customers purchase products in the afternoon, we can predict that most of the orders are done by homemakers so household products can be increased to increase the sale.
- Largest number of customers are from the state São Paulo (SP), so a greater number of delivery units can be placed over there.
- The number of orders has increased from 2017 to 2018 by 136 %, we can say it will increase in 2018 also.
- 6% of order delivered after estimated time so need to take care of it.