

# TARGET SQL PROJECT

Apr 18, 2023

1)

[a]

```
SELECT column_name,data_type from sqlproject.INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME='ORDERS'
```

Query results

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS
Row	column_name	data_type		
1	order_id	STRING		
2	customer_id	STRING		
3	order_status	STRING		
4	order_purchase_timestamp	TIMESTAMP		
5	order_approved_at	TIMESTAMP		
6	order_delivered_carrier_date	TIMESTAMP		
7	order_delivered_customer_date	TIMESTAMP		
8	order_estimated_delivery_date	TIMESTAMP		

## DATA TYPES OF COLUMNS IN A TABLE:

### ORDERS Table:

 ORDERS  QUERY  SHARE  COPY  SNAPSHOT

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter

Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode	Collation
<input type="checkbox"/>	<a href="#">order_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">customer_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">order_status</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">order_purchase_timestamp</a>	TIMESTAMP	NULLABLE	
<input type="checkbox"/>	<a href="#">order_approved_at</a>	TIMESTAMP	NULLABLE	
<input type="checkbox"/>	<a href="#">order_delivered_carrier_date</a>	TIMESTAMP	NULLABLE	
<input type="checkbox"/>	<a href="#">order_delivered_customer_date</a>	TIMESTAMP	NULLABLE	
<input type="checkbox"/>	<a href="#">order_estimated_delivery_date</a>	TIMESTAMP	NULLABLE	

### CONCLUSION:

The Data Type of columns, order\_id is *STRING*, customer\_id is *STRING*, order\_status is *STRING*, order\_purchase\_timestamp is *TIMESTAMP*, order\_approved\_at is *TIMESTAMP*, order\_delivered\_carrier\_date is *TIMESTAMP*, order\_delivered\_customer\_date is *TIMESTAMP*, order\_estimated\_delivery\_date is *TIMESTAMP*.

### ORDER ITEMS Table :

 Order Items  QUERY  SHARE  COPY 

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter

Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode	Collation
<input type="checkbox"/>	<a href="#">order_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">order_item_id</a>	INTEGER	NULLABLE	
<input type="checkbox"/>	<a href="#">product_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">seller_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">shipping_limit_date</a>	TIMESTAMP	NULLABLE	
<input type="checkbox"/>	<a href="#">price</a>	FLOAT	NULLABLE	
<input type="checkbox"/>	<a href="#">freight_value</a>	FLOAT	NULLABLE	

### CONCLUSION:

The Data Type of columns, order\_id is *STRING*, order\_item\_id is *INTEGER*, productid is *STRING*, seller\_id is *STRING*, shipping\_limit\_date is *TIMESTAMP*, price is *FLOAT*, freight\_value is *FLOAT*.

### ORDER\_REVIEWS Table :

Order Reviews

QUERY

SHARE

COPY

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter

Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode	Collation
<input type="checkbox"/>	<a href="#">review_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">order_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">review_score</a>	INTEGER	NULLABLE	
<input type="checkbox"/>	<a href="#">review_comment_title</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">review_creation_date</a>	TIMESTAMP	NULLABLE	
<input type="checkbox"/>	<a href="#">review_answer_timestamp</a>	TIMESTAMP	NULLABLE	

CONCLUSION:  
The Data Type of the columns, review\_id is *STRING*, order\_id is *STRING*, review\_score is *INTEGER*, review\_comment\_title is *STRING*, review\_creation\_date is *TIMESTAMP*, review\_answer\_timestamp is *TIMESTAMP*.

CUSTOMERS Table:

customers

QUERY

SHARE

COPY

S

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter

Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode	Collation
<input type="checkbox"/>	<a href="#">customer_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">customer_unique_id</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">customer_zip_code_prefix</a>	INTEGER	NULLABLE	
<input type="checkbox"/>	<a href="#">customer_city</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">customer_state</a>	STRING	NULLABLE	

CONCLUSION:  
The Data Type of the columns customer\_id is *STRING*, customer\_unique\_id is *STRING*, customer\_zip\_code\_prefix is *INTEGER*, customer\_id is *STRING*, customer\_state is *STRING*.

GEOLOCATION Table:

geolocation

QUERY

SHARE

COPY

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter

Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode	Co
<input type="checkbox"/>	<a href="#">geolocation_zip_code_prefix</a>	INTEGER	NULLABLE	
<input type="checkbox"/>	<a href="#">geolocation_lat</a>	FLOAT	NULLABLE	
<input type="checkbox"/>	<a href="#">geolocation_lng</a>	FLOAT	NULLABLE	
<input type="checkbox"/>	<a href="#">geolocation_city</a>	STRING	NULLABLE	
<input type="checkbox"/>	<a href="#">geolocation_state</a>	STRING	NULLABLE	

CONCLUSION:  
The Data Type of the columns geolocation\_zip\_code\_prefix is an *INTEGER*, geolocation\_lat is *FLOAT*, geolocation\_lng is *FLOAT*, geolocation\_city is *STRING*, geolocation\_state is *STRING*.

### PAYMENTS Table:

payments	QUERY	SHARE	COPY	SNAPS
SCHEMA	DETAILS	PREVIEW	LINEAGE	
Filter Enter property name or value				
<input type="checkbox"/>	Field name	Type	Mode	Collation
<input type="checkbox"/>	order_id	STRING	NULLABLE	
<input type="checkbox"/>	payment_sequential	INTEGER	NULLABLE	
<input type="checkbox"/>	payment_type	STRING	NULLABLE	
<input type="checkbox"/>	payment_installments	INTEGER	NULLABLE	
<input type="checkbox"/>	payment_value	FLOAT	NULLABLE	

The Data Type of the columns order\_id is *STRING*, payment\_sequential is an *INTEGER*, payment\_type is *STRING*, payment\_installments is an *INTEGER*, payment\_value is *FLOAT*.

### PRODUCTS Table:

payments	geolocation	products	Q
products	QUERY	SHARE	COPY
SCHEMA	DETAILS	PREVIEW	LINEAGE
Filter Enter property name or value			
<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	product_id	STRING	NULLABLE
<input type="checkbox"/>	product_category	STRING	NULLABLE
<input type="checkbox"/>	product_name_length	INTEGER	NULLABLE
<input type="checkbox"/>	product_description_length	INTEGER	NULLABLE
<input type="checkbox"/>	product_photos_qty	INTEGER	NULLABLE
<input type="checkbox"/>	product_weight_g	INTEGER	NULLABLE
<input type="checkbox"/>	product_length_cm	INTEGER	NULLABLE
<input type="checkbox"/>	product_height_cm	INTEGER	NULLABLE
<input type="checkbox"/>	product_width_cm	INTEGER	NULLABLE

### CONCLUSION:

The Data Types of columns product\_id is *STRING*, product\_category is *STRING*, product\_name\_length is an *INTEGER*, product\_description\_length is an *INTEGER*, product\_photos\_qty is an *INTEGER*, product\_weight\_g is an *INTEGER*, product\_length\_cm is an *INTEGER*, product\_height\_cm is an *INTEGER*, product\_width\_cm is an *INTEGER*.

### SELLERS Table:

sellers	QUERY	SHARE	COPY	SI
SCHEMA	DETAILS	PREVIEW	LINEAGE	
Filter Enter property name or value				
<input type="checkbox"/>	Field name	Type	Mode	Collation
<input type="checkbox"/>	seller_id	STRING	NULLABLE	
<input type="checkbox"/>	seller_zip_code_prefix	INTEGER	NULLABLE	
<input type="checkbox"/>	seller_city	STRING	NULLABLE	
<input type="checkbox"/>	seller_state	STRING	NULLABLE	

### CONCLUSION:

The data type of the column seller\_id is *STRING*, seller\_zip\_code\_prefix is *INTEGER*, seller\_city is *STRING*, seller\_state is *STRING*.

[b] Time period for which data is given is:

```
SELECT min(order_purchase_timestamp) AS first_purchasetimestamp ,
       max(order_delivered_customer_date) as lastorderdelivered_ts
FROM `sqlproject.ORDERS`;
```

2023-04-03 02:04:44

RUN

SAVE

SHARE

```
1 SELECT min(order_purchase_timestamp) AS first_purchasetimestamp
2     , max(order_delivered_customer_date) as lastorderdelivered_ts
3 FROM `sqlproject.ORDERS`;
```

Query results

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

Row	first_purchasetimestamp	lastorderdelivered_ts
1	2016-09-04 21:15:19 UTC	2018-10-17 13:22:46 UTC

#### CONCLUSION:

Time period is technically in between *first\_purchasetimestamp* and *lastorderdelevered\_ts*.

What is meant by that is frankly speaking time period is in between first time purchase order took place and the last order that was delivered in the first case, in the second case we have taken the max and min of all the time related condition.

[c] CITIES and STATES of customers during the given period:

```
SELECT DISTINCT cust.customer_city, cust.customer_state
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` o ON cust.customer_id = o.customer_id
WHERE o.order_delivered_customer_date BETWEEN order_purchase_timestamp and order_estimated_delivery_date
```

or

```
SELECT DISTINCT customer_city, customer_state
FROM `sqlproject.customers`
is also more than sufficient.
```

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS
Row	customer_city	customer_state		
1	acu	RN		
2	acu	RN		
3	acu	RN		
4	ico	CE		
5	ico	CE		
6	ico	CE		
7	ico	CE		
8	ico	CE		
9	ico	CE		

THESE are few customer cities and states.

(2)

[a] To find the growing trend in e commerce query is given below:

```
SELECT extract(YEAR from ord.order_purchase_timestamp) as Year, count(distinct ord.order_id) as ORDERSS,sum(ordi.price) as TOT_PRICE,sum(pm.payment_value)
as TPT_PAY
FROM
`sqlproject.ORDERS` as ord

JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
JOIN `sqlproject.payments` as pm
on ordi.order_id=pm.order_id
GROUP BY Year
Order By Year
```

Row	Year	ORDERSS	TOT_PRICE	TPT_PAY
1	2016	311	51085.52	74281.72
2	2017	44579	6483893.86	9160941.9
3	2018	53775	7674135.96	11072911.09

CONCLUSION: The fact that you can see the increase in distinct orders from the column orderss proves that there is a growing trend on e commerce.

```
[B] SELECT
CASE
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp)>=5 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp)<9
  THEN 'DAWN'
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp) >= 9 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp) < 12
  THEN 'Morning'
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp) >= 12 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp) < 17
  THEN 'Afternoon'
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp) >= 17 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp) < 22
  THEN 'Night'
  ELSE 'SLEEPING HOURS '
END AS MOMENT_DAY,
COUNT(*) as list_purchases
FROM `sqlproject.customers` as cust
JOIN `sqlproject.ORDERS` as ord
on cust.customer_id=ord.customer_id
GROUP BY MOMENT_DAY
ORDER BY MOMENT_DAY;
```

```
SELECT
CASE
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp)>=5 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp)<9
  THEN 'DAWN'
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp) >= 9 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp) < 12
  THEN 'Morning'
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp) >= 12 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp) < 17
  THEN 'Afternoon'
  WHEN EXTRACT(HOUR FROM ord.order_purchase_timestamp) >= 17 AND EXTRACT(HOUR FROM ord.order_purchase_timestamp) < 22
  THEN 'Night'
  ELSE 'SLEEPING HOURS '
END AS MOMENT_DAY,
COUNT(*) as list_purchases
FROM `sqlproject.customers` as cust
JOIN `sqlproject.ORDERS` as ord
on cust.customer_id=ord.customer_id
GROUP BY MOMENT_DAY
ORDER BY MOMENT_DAY;
```

## Query results

Row	MOMENT_DAY	list_purchases
1	Afternoon	32211
2	DAWN	4888
3	Morning	17540
4	Night	30311
5	SLEEPING HOURS	14491

CONCLUSION: PURCHASES are maximum in the afternoon and minimum at the dawn.

RECOMMENDATION:

Product ads and launch should be in the afternoon more often because different users can come across it.

(3)

[a] MONTH ON MONTH orders by states

```
SELECT extract(MONTH FROM ord.order_purchase_timestamp) AS Month_PUR,
extract(YEAR FROM ord.order_purchase_timestamp) as YEAR_PUR,cust.customer_state,
count(distinct ord.order_id) as oddet
```

FROM `sqlproject.ORDERS` as ord  
JOIN `sqlproject.customers` as cust  
ON ord.customer\_id=cust.customer\_id  
GROUP BY MONTH\_PUR,YEAR\_PUR,cust.customer\_state  
ORDER BY YEAR\_PUR,MONTH\_PUR;

Query results [📄 S.](#)

JOB INFORMATION		RESULTS		JSON	EXECUTION DETAILS	EXECUTION
Row	Month_PUR	YEAR_PUR	customer_state	orddet		
1	9	2016	RR	1		
2	9	2016	RS	1		
3	9	2016	SP	2		
4	10	2016	SP	113		
5	10	2016	RS	24		
6	10	2016	RJ	56		
7	10	2016	MT	3		
8	10	2016	GO	9		
9	10	2016	MG	40		

Results per page:

CONCLUSION: TABLE SHOWS MONTH ON MONTH ORDERS by STATES.

[b]  
DISTRIBUTION OF CUSTOMERS ACROSS THE STATES IS :

SELECT count(customer\_id),customer\_state  
FROM `sqlproject.customers`  
GROUP BY customer\_state

SELECT count(customer\_id),customer\_state  
FROM `sqlproject.customers`  
GROUP BY customer\_state

Query results [📄 SAVE F](#)

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS	EXECUTION GRAF
Row	f0_	customer_state			
1	485	RN			
2	1336	CE			
3	5466	RS			
4	3637	SC			
5	41746	SP			
6	11635	MG			
7	3380	BA			
8	12852	RJ			

Results per page: 50

CONCLUSION:  
THESE ARE THE LIST OF CUSTOMERS SPREAD ACROSS THE STATE.  
SP has the highest distribution



5 (1) `SELECT` order\_id,

customer\_id,

order\_status,

order\_purchase\_timestamp,

order\_delivered\_carrier\_date,

order\_delivered\_customer\_date,

order\_estimated\_delivery\_date,

`DATE_DIFF( order_delivered_customer_date,order_purchase_timestamp,DAY) AS` days\_to\_deliver,

`DATE_DIFF( order_delivered_customer_date,order_estimated_delivery_date,DAY) AS` days\_late

`FROM `sqlproject.ORDERS``

```
1 SELECT order_id,
2        customer_id,
3        order_status,
4        order_purchase_timestamp,
5        order_delivered_carrier_date,
6        order_delivered_customer_date,
7        order_estimated_delivery_date,
8        DATE_DIFF( order_delivered_customer_date,order_purchase_timestamp,DAY) AS days_to_deliver,
9        DATE_DIFF( order_delivered_customer_date,order_estimated_delivery_date,DAY) AS days_late
10 FROM `sqlproject.ORDERS`
```

Query results									
JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS		EXECUTION GRAPH			
Row	order_id	order_status	order_purchase_timestamp	order_delivered_carrier_date	order_delivered_customer_date	order_estimated_delivery_date	days_to_deliver	days_late	
308	ae4f0a...	delivered	2017-12-03 18:18:26 UTC	2017-12-07 16:39:58 UTC	2018-01-23 15:58:31 UTC	2017-12-28 00:00:00 UTC	50	26	
309	d0d41a...	delivered	2017-12-04 12:14:39 UTC	2017-12-06 14:09:20 UTC	2018-01-04 15:28:56 UTC	2017-12-28 00:00:00 UTC	31	7	
310	d0cb47...	delivered	2017-11-29 13:25:18 UTC	2017-12-01 19:28:43 UTC	2017-12-28 21:05:16 UTC	2017-12-28 00:00:00 UTC	29	0	
311	0a16d0...	delivered	2017-11-24 16:12:54 UTC	2017-11-28 20:51:50 UTC	2018-01-03 09:39:52 UTC	2017-12-28 00:00:00 UTC	39	6	
312	4f0309...	delivered	2017-11-29 15:48:38 UTC	2017-11-30 15:27:11 UTC	2018-01-07 18:29:22 UTC	2017-12-28 00:00:00 UTC	39	10	
313	92eaca...	delivered	2017-11-18 00:58:41 UTC	2017-11-27 15:42:37 UTC	2017-12-29 01:48:17 UTC	2017-12-28 00:00:00 UTC	41	1	
314	896e5d...	delivered	2017-12-05 15:45:05 UTC	2017-12-07 00:56:46 UTC	2018-01-04 22:49:00 UTC	2017-12-28 00:00:00 UTC	30	7	
315	50d59f...	delivered	2017-11-28 12:00:43 UTC	2017-12-16 15:38:59 UTC	2018-01-03 23:35:07 UTC	2017-12-28 00:00:00 UTC	36	6	

CONCLUSION :

days\_to\_deliver shows the time between purchases date and estimated delivery date.

days\_late shows whether the ordered was delivered within the estimated delivery date.

5[2]

`SELECT` order\_id, customer\_id,

`DATE_DIFF(`order\_delivered\_customer\_date,order\_purchase\_timestamp ,DAY) `AS` time\_to\_delivery,

`DATE_DIFF( order_delivered_customer_date,order_estimated_delivery_date, DAY) AS` diff\_estimated\_delivery

`FROM `sqlproject.ORDERS``

`WHERE order_status = 'delivered';`

`SELECT` order\_id, customer\_id,

`DATE_DIFF(`order\_delivered\_customer\_date,order\_purchase\_timestamp ,DAY) `AS` time\_to\_delivery,

`DATE_DIFF( order_delivered_customer_date,order_estimated_delivery_date, DAY) AS` diff\_estimated\_delivery

`FROM `sqlproject.ORDERS``

`WHERE order_status = 'delivered';`

|

Query results

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS		EXECUTION GRAPH			
Row	order_id	customer_id	time_to_delivery	diff_estimated_delivery					
1	635c894d068ac37e6e03dc54e...	7a34a8e890765ad6f90db76d0...	30	-1					
2	3b97562c3aee8bdecdcb5c2e45...	065d53860347d845788e041c...	32	0					
3	68f47f50f04c4cb6774570cfde...	0378e1381c730d4504ebc07d2...	29	-1					
4	276e9ec344d3bf029ff83a161c...	d33e520a99eb4cfc0d3ef2b6ff...	43	4					
5	54e1a3c2b97fb0809da548a59...	a0bc11375dd3d8bdd0e0bfcbc...	40	4					
6	fd04fa4105ee8045f6a0139ca5...	8fe0db7abbccaf2d788689e91...	37	1					
7	302bb8109d097a9fc6e9cfc5...	22c0028cdec95ad1808c1fd50...	33	5					
8	66057d37308e787052a32828...	dca924c5e55e17bdba2ad42ae...	38	6					
9	19135c945c554eebfd7576c73...	1c7a9b908094192a2dfae2819...	36	2					
10	4493e45e7ca1084efcd38dde...	a1fa003a1a17fc47164251e0e...	34	0					



#### CONCLUSION:

IF diff\_estimated\_delivery is in negative then order arrived before the estimated time.

```
5[3] SELECT cust.customer_state,
      avg(DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp ,DAY)) AS mean_time_to_delivery,
      avg(DATE_DIFF( order_delivered_customer_date,order_estimated_delivery_date, DAY)) AS mean_diff_estimated_delivery,
      avg(ordi.freight_value) as meanfrv
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
```

```
SELECT cust.customer_state,
      avg(DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp ,DAY)) AS mean_time_to_delivery,
      avg(DATE_DIFF( order_delivered_customer_date,order_estimated_delivery_date, DAY)) AS mean_diff_estimated_delivery,
      avg(ordi.freight_value) as meanfrv
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
```

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS	EXECUTION GRAPH	PREVIEW
Row	customer_state	mean_time_to_delivery	mean_diff_estimated_delivery	meanfrv		
1	GO	14.9481774...	11.3728590...	22.5628678...		
2	SP	8.25966279...	10.2641415...	15.1151823...		
3	RS	14.7082993...	13.2030001...	21.6131920...		
4	BA	18.7746402...	10.1194678...	26.4875563...		
5	MG	11.5140910...	12.3990399...	20.6263425...		
6	MT	17.5081967...	13.6393442...	27.9969141...		
7	RJ	14.6888213...	11.1396450...	20.9114360...		
8	SC	14.5172077...	10.6646326...	21.5073590...		

Load more

5[5] Top 5 states with highest average freight value :

```
SELECT cust.customer_state,
      avg(ordi.freight_value) as meanfrv
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY meanfrv desc
LIMIT 5
```

```
SELECT cust.customer_state,
      avg(ordi.freight_value) as meanfrv
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY meanfrv desc
LIMIT 5
```

#### Query results

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS
Row	customer_state	meanfrv		
1	PB	43.0916894...		
2	RR	43.0880434...		
3	RO	41.3305494...		
4	AC	40.0479120...		
5	PI	39.1150860...		

Top 5 states with lowest average freight value:

```
SELECT cust.customer_state,
```

```
      avg(ordi.freight_value) as meanfrv
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY meanfrv
LIMIT 5
```

Query results

JOB INFORMATION		RESULTS	JSON	EXECUTIO
Row	customer_state		meanfrv	
1	SP		15.1151823...	
2	PR		20.4718162...	
3	MG		20.6263425...	
4	RJ		20.9114360...	
5	DF		21.0721613...	

RECOMMENDATIONS: IF the freight value is to high, you might want to consider warehouses in different places to make it easy.

5[6]HIGHEST AVERAGE TIME TO DELIVERY:

```
SELECT cust.customer_state,
       avg(DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp ,DAY)) AS avg_time_to_delivery,
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY avg_time_to_delivery desc
Limit 5
```

```
32 SELECT cust.customer_state,
33 | avg(DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp ,DAY)) AS avg_time_to_delivery,
34 |
35 FROM `sqlproject.customers` cust
36 JOIN `sqlproject.ORDERS` as ord
37 ON cust.customer_id=ord.customer_id
38 JOIN `sqlproject.Order Items` ordi
39 on ord.order_id=ordi.order_id
40 WHERE order_status = 'delivered'
41 GROUP BY cust.customer_state
42 ORDER BY avg_time_to_delivery desc
43
```

JOB INFORMATION		RESULTS	JSON	EXECUTION D
Row	customer_state		avg_time_to_del	
1	RR		27.8260869...	
2	AP		27.7530864...	
3	AM		25.9631901...	
4	AL		23.9929742...	
5	PA		23.3017077...	

LOWEST AVERAGE TIME TO DELIVERY:

```
SELECT cust.customer_state,
       avg(DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp ,DAY)) AS avg_time_to_delivery,
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY avg_time_to_delivery
limit 5
```

```
32 SELECT cust.customer_state,
33 | avg(DATE_DIFF(order_delivered_customer_date,order_purchase_timestamp ,DAY)) AS avg_time_to_delivery,
34 |
35 FROM `sqlproject.customers` cust
36 JOIN `sqlproject.ORDERS` as ord
37 ON cust.customer_id=ord.customer_id
38 JOIN `sqlproject.Order Items` ordi
39 on ord.order_id=ordi.order_id
40 WHERE order_status = 'delivered'
41 GROUP BY cust.customer_state
42 ORDER BY avg_time_to_delivery |
43 limit 5
44
```

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS
Row	customer_state		avg_time_to_del	
1	SP		8.25966279...	
2	PR		11.4807930...	
3	MG		11.5140910...	
4	DF		12.5014861...	
5	SC		14.5172077...	

#### RECOMMENDATION:

IF the delivery is slow:

Communication with customers: It is important for companies to communicate with customers about delays or delivery issues. They must provide new information about their orders and be clear about any challenges they will face.

Improve logistics: Companies can improve delivery by improving delivery processes, partnering with trusted carriers, and using tracking systems to ensure products are delivered on time.

Offer Alternative Shipping Options: If businesses experience delays while using the shipping process, they may consider offering customers alternative shipping options such as expedited shipping or same-day shipping.

Service or Return: If the customer experiences a delay or problem with delivery, the company may wish to offer a refund or refund to resolve the issue.

This helps increase customer satisfaction and loyalty.

5[7]

Top 5 states where delivery is really fast compared to estimated date:

```
SELECT cust.customer_state,
       avg(DATE_DIFF( order_estimated_delivery_date, order_delivered_customer_date,DAY)) AS avg_delivery_time,
```

```
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY avg_delivery_time ASC
limit 5;
```

#### Query results

JOB INFORMATION		RESULTS	JSON	EXEC
Row	customer_state	avg_delivery_time		
1	AL	7.97658079...		
2	MA	9.10999999...		
3	SE	9.16533333...		
4	ES	9.76853932...		
5	BA	10.1194678...		

NOT SO FAST:

```
SELECT cust.customer_state,
       avg(DATE_DIFF( order_estimated_delivery_date, order_delivered_customer_date,DAY)) AS avg_delivery_time,
```

```
FROM `sqlproject.customers` cust
JOIN `sqlproject.ORDERS` as ord
ON cust.customer_id=ord.customer_id
JOIN `sqlproject.Order Items` ordi
on ord.order_id=ordi.order_id
WHERE order_status = 'delivered'
GROUP BY cust.customer_state
ORDER BY avg_delivery_time DESC
limit 5;
```

#### Query results

JOB INFORMATION		RESULTS	JSON	EXEC
Row	customer_state	avg_delivery_time		
1	AC	20.0109890...		
2	RO	19.0805860...		
3	AM	18.9754601...		
4	AP	17.4444444...		
5	RR	17.4347826...		

(6)

[a] MONTH OVER MONTH :

```
SELECT *,
    order_count-LAG(order_count,1,0) OVER (PARTITION BY payment_type,year Order By month) as monthomonth
FROM
```

```
(SELECT EXTRACT(YEAR from order_purchase_timestamp) as YEAR,
EXTRACT(MONTH FROM order_purchase_timestamp) AS month,
p.payment_type,
COUNT(DISTINCT o.order_id) AS order_count
FROM
```

```
`sqlproject.ORDERS` o
JOIN `sqlproject.payments` p ON o.order_id = p.order_id
```

GROUP BY

1,2,3) as lol

ORDER BY

1,2,3

```
SELECT *,
    order_count-LAG(order_count,1,0) OVER (PARTITION BY payment_type,year Order By month) as monthomonth
FROM
(SELECT EXTRACT(YEAR from order_purchase_timestamp) as YEAR,
EXTRACT(MONTH FROM order_purchase_timestamp) AS month,
p.payment_type,
COUNT(DISTINCT o.order_id) AS order_count
FROM
`sqlproject.ORDERS` o
JOIN `sqlproject.payments` p ON o.order_id = p.order_id
GROUP BY
1,2,3) as lol
ORDER BY
1,2,3
```

### Query results

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS		EXECUTION GRAPH	PREVIEW
Row	YEAR	month	payment_type	order_count	monthomonth		
3	2016	10	credit_card	253	250		
4	2016	10	debit_card	2	2		
5	2016	10	voucher	11	11		
6	2016	12	credit_card	1	-252		
7	2017	1	UPI	197	197		
8	2017	1	credit_card	582	582		
9	2017	1	debit_card	9	9		
10	2017	1	voucher	33	33		
11	2017	2	UPI	398	201		
12	2017	2	credit_card	1347	765		

### CONCLUSION:

THE month over month is shown by monthomonth with respect to different years.

6[b] COUNT of ORDERS based on no. of payment installments:

```
SELECT
pay.payment_installments,
COUNT(DISTINCT ordi.order_id) AS OrderCount
FROM
`sqlproject.ORDERS` ordi
JOIN `sqlproject.payments` pay ON ordi.order_id = pay.order_id
GROUP BY
pay.payment_installments
ORDER BY
pay.payment_installments
5
```

[RUN](#) [SAVE](#) [SHARE](#) [SCHEDULE](#)

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## Query results

JOB INFORMATION		RESULTS	JSON	ED
Row	payment_installment	OrderCount		
2	1	49060		
3	2	12389		
4	3	10443		
5	4	7088		
6	5	5234		
7	6	3916		
8	7	1623		
9	8	4253		

CONCLUSION: BASED on each payment installments the count of orders has been shown above.

(7) The actionable insights are shown in the conclusion of each questions.

(8)RECOMMENDATION GIVEN AFTER FEW QUESTIONS. However here are my overall analysis:  
Based on the analysis of the e-commerce dataset for Brazil, there are several recommendations that can be made to improve the company's operations:

Improve the logistics. The analysis reveals that there are some issues with delivery times in certain regions, so the company could consider optimizing its shipping processes or partnering with reliable shipping carriers to improve its delivery times.

Focus on marketing during peak months. The analysis suggests that there are some seasonality trends in e-commerce sales in Brazil, with peaks during specific months. The company could focus on marketing during these peak months to capitalize on the increased demand.

Improve estimated delivery times. The analysis reveals that there are some issues with estimated delivery times not being met, which could lead to dissatisfied customers. By improving the accuracy of its estimated delivery times, the company could improve customer satisfaction and loyalty.