SQL QUESTIONS, QUERY AND SCREENSHOTS

Here is the CSV FILE that I have used for solve the questions

customers.csv   orders.csv

TO IMPORT THE DATA IN SQL :

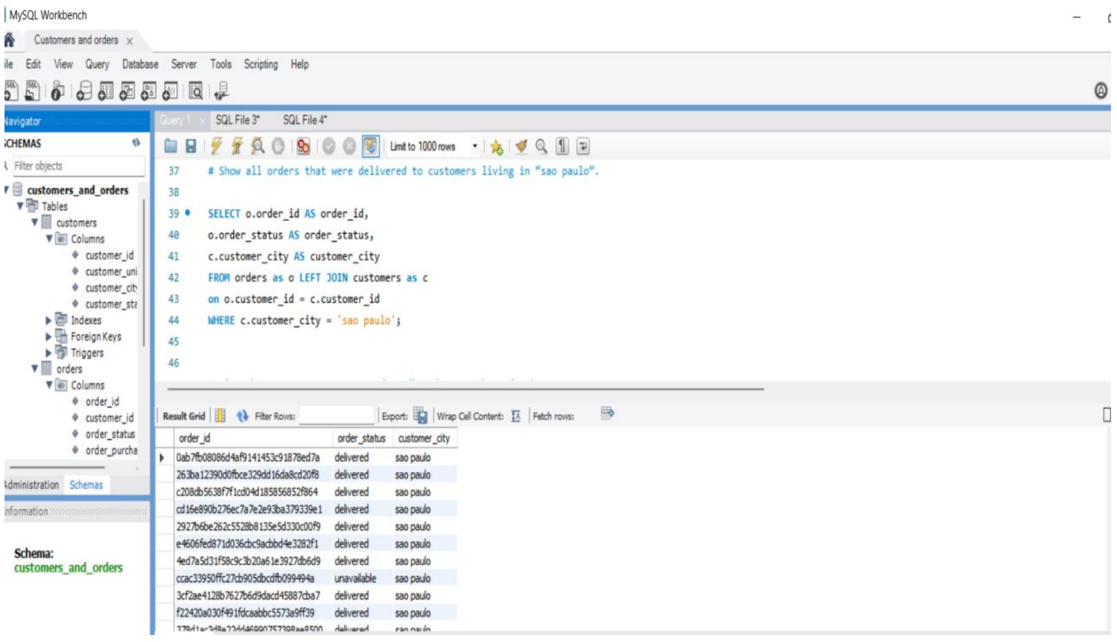
```
create database customers_and_orders;

use customers_and_orders;

CREATE TABLE customers (
   customer_id VARCHAR(50) PRIMARY KEY,
   customer_unique_id VARCHAR(50),
   customer_city VARCHAR(100),
   customer_state VARCHAR(100)
);

CREATE TABLE orders (
   order_id VARCHAR(50) PRIMARY KEY,
   customer_id VARCHAR(50),
   order_status VARCHAR(50),
   order_purchase DATE,
   order_approved_at DATE,
   carrier_date DATE,
   customer_date DATE,
   delivery_date DATE,
   FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
);
```

```
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server
8.0/Uploads/customers.csv'
INTO TABLE customers
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;

LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/orders.csv'
INTO TABLE orders
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

QUERY QUESTIONS AND SCREENSHOTS :

1.Show all orders that were delivered to customers living in “sao paulo”.

```
SELECT o.order_id AS order_id,
o.order_status AS order_status,
c.customer_city AS customer_city
FROM orders as o LEFT JOIN customers as c
on o.customer_id = c.customer_id
WHERE c.customer_city = 'sao paulo';
```

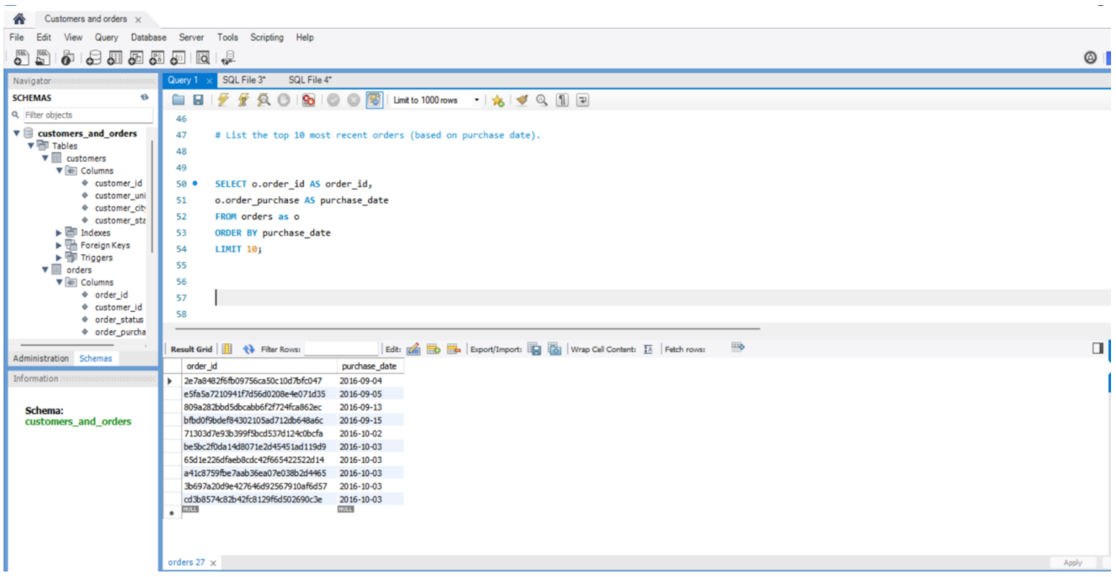


```
# Show all orders that were delivered to customers living in "sao paulo".

SELECT o.order_id AS order_id,
o.order_status AS order_status,
c.customer_city AS customer_city
FROM orders as o LEFT JOIN customers as c
on o.customer_id = c.customer_id
WHERE c.customer_city = 'sao paulo';
```

order_id	order_status	customer_city
0ab7fb08086d4af9141453c91878ed7a	delivered	sao paulo
263ba12390d0fbce329dd16da8cd20f8	delivered	sao paulo
c208db5638f7f1cd04d185856852f864	delivered	sao paulo
cd16e890b276ec7a7e2e93ba379339e1	delivered	sao paulo
2927b6be262c5528b8135e5d330c00f9	delivered	sao paulo
e4606fed871d036cbc9acbbd4e3282f1	delivered	sao paulo
4ed7a5d31f58c9c3b20a61e3927db6d9	delivered	sao paulo
ccac33950ffc27cb905dbcdfb099494a	unavailable	sao paulo
3cf2ae4128b7627b6d9dacd45887cba7	delivered	sao paulo
f22420a030f491fdcaabbc5573a9ff39	delivered	sao paulo
378d1ac3d8e22dd46990757398ae8500	delivered	sao paulo

2 . List the top 10 most recent orders (based on purchase date).

```
SELECT o.order_id AS order_id,
o.order_purchase AS purchase_date
FROM orders as o
ORDER BY purchase_date
LIMIT 10;
```

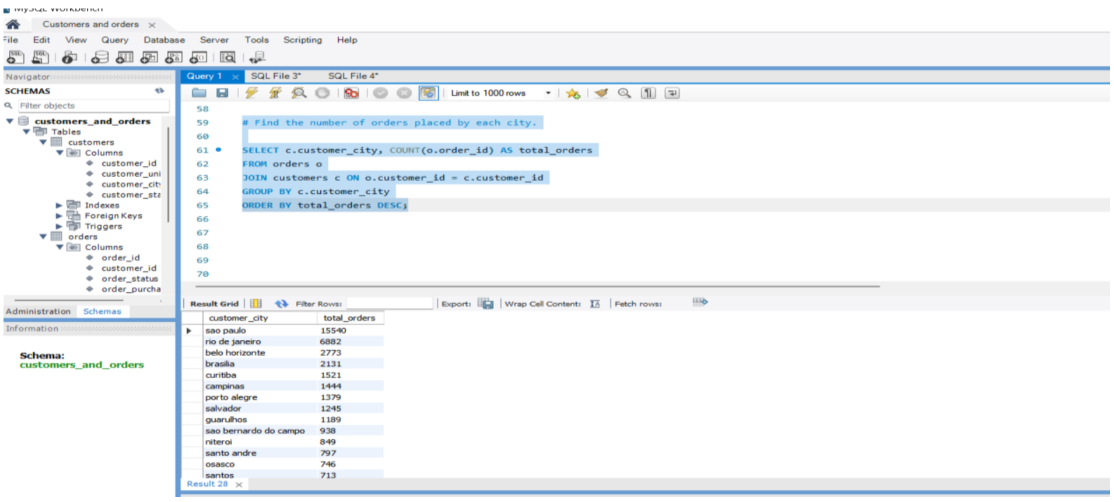


```
# List the top 10 most recent orders (based on purchase date).

SELECT o.order_id AS order_id,
o.order_purchase AS purchase_date
FROM orders as o
ORDER BY purchase_date
LIMIT 10;
```

order_id	purchase_date
2e7a8482f6fb09756ca50c10d7bfc047	2016-09-04
e5fa5a7210941f7d56d0208e4e071d35	2016-09-05
809a282bbd5dbcabb6f2f724fca862ec	2016-09-13
bfbd0f9bdef84302105ad712db648a6c	2016-09-15
71303d7e93b399f5bcd537d124c0bcfa	2016-10-02
be5bc2f0da14d8071e2d45451ad119d9	2016-10-03
65d1e226dfaeb8cdc42f665422522d14	2016-10-03
a41c8759fbe7aab36ea07e038b2d4465	2016-10-03
3b697a20d9e427646d925679 10af6d57	2016-10-03
cd3b8574c82b42fc8129f6d502690c3e	2016-10-03
NULL	NULL

3. Find the number of orders placed by each city.

```
SELECT c.customer_city, COUNT(o.order_id) AS total_orders
 FROM orders o
 JOIN customers c ON o.customer_id = c.customer_id
GROUP BY c.customer_city
ORDER BY total_orders DESC;
```

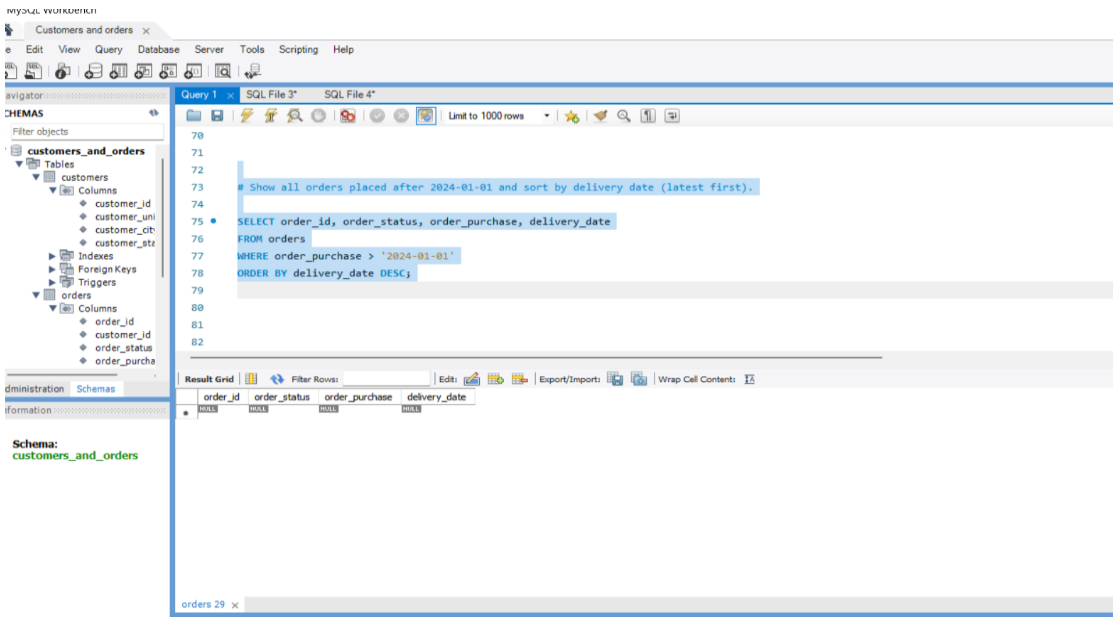


```
# Find the number of orders placed by each city.

SELECT c.customer_city, COUNT(o.order_id) AS total_orders
FROM orders o
JOIN customers c ON o.customer_id = c.customer_id
GROUP BY c.customer_city
ORDER BY total_orders DESC;
```

customer_city	total_orders
sao paulo	15540
rio de janeiro	6882
belo horizonte	2773
brasilia	2131
curitiba	1521
campinas	1444
porto alegre	1379
salvador	1245
guarulhos	1189
sao bernardo do campo	938
niteroi	849
santo andre	797
osasco	746
santos	713

4 . Show all orders placed after 2024-01-01 and sort by delivery date (latest first).

SELECT order_id, order_status, order_purchase, delivery_date
FROM orders
WHERE order_purchase > '2024-01-01'
ORDER BY delivery_date DESC;

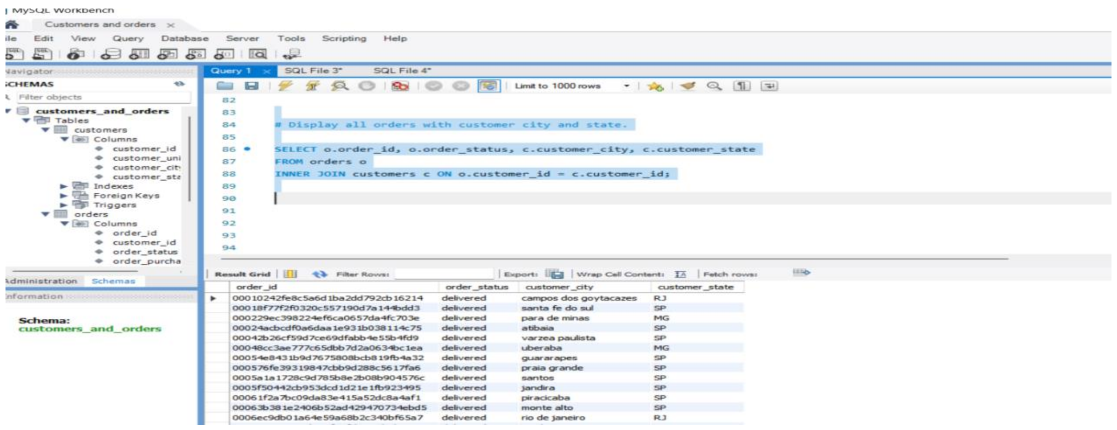


```
# Show all orders placed after 2024-01-01 and sort by delivery date (latest first).

SELECT order_id, order_status, order_purchase, delivery_date
FROM orders
WHERE order_purchase > '2024-01-01'
ORDER BY delivery_date DESC;
```

order_id	order_status	order_purchase	delivery_date
NULL	NULL	NULL	NULL

5 . Display all orders with customer city and state.

SELECT o.order_id, o.order_status, c.customer_city, c.customer_state
FROM orders o
INNER JOIN customers c ON o.customer_id = c.customer_id;

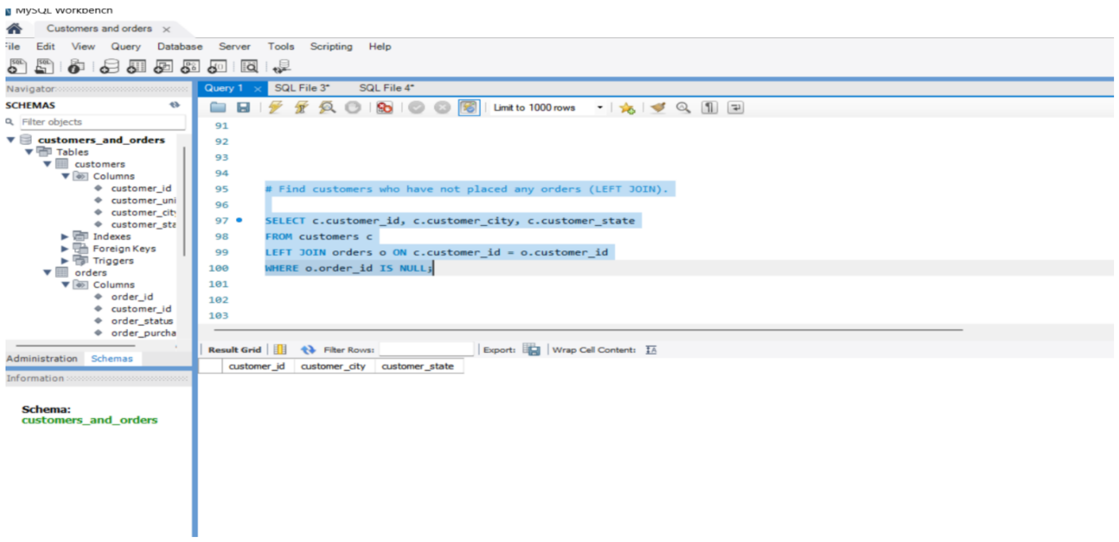


```
# Display all orders with customer city and state.

SELECT o.order_id, o.order_status, c.customer_city, c.customer_state
FROM orders o
INNER JOIN customers c ON o.customer_id = c.customer_id;
```

order_id	order_status	customer_city	customer_state
00010242fe8c5a6d1ba2dd792cb16214	delivered	campos dos goytacazes	RJ
00018f77f2f0320c557190d7a144bdd3	delivered	santa fe do sul	SP
000229ec398224ef6ca0657da4fc703e	delivered	para de minas	MG
00024acbcdf0a6daa1e931b038114c75	delivered	atibaia	SP
00042b26cf59d7ce69dfabb4e55b4fd9	delivered	varzea paulista	SP
00048cc3ae777c65dbb7d2a0634bc1ea	delivered	uberaba	MG
00054e8431b9d7675808bcb819fb4a32	delivered	guararapes	SP
000576fe39319847cbb9d288c5617fa6	delivered	praia grande	SP
0005a1a1728c9d785b8e2b08b904576c	delivered	santos	SP
0005f50442cb953dcd1d21e1fb923495	delivered	jandira	SP
00061f2a7bc09da83e415a52dc8a4af1	delivered	piracicaba	SP
00063b381e2406b52ad429470734ebd5	delivered	monte alto	SP
0006ec9db01a64e59a68b2c340bf65a7	delivered	rio de janeiro	RJ

6. Find customers who have not placed any orders (LEFT JOIN).

```
SELECT c.customer_id, c.customer_city, c.customer_state
FROM customers c
LEFT JOIN orders o ON c.customer_id = o.customer_id
WHERE o.order_id IS NULL;
```

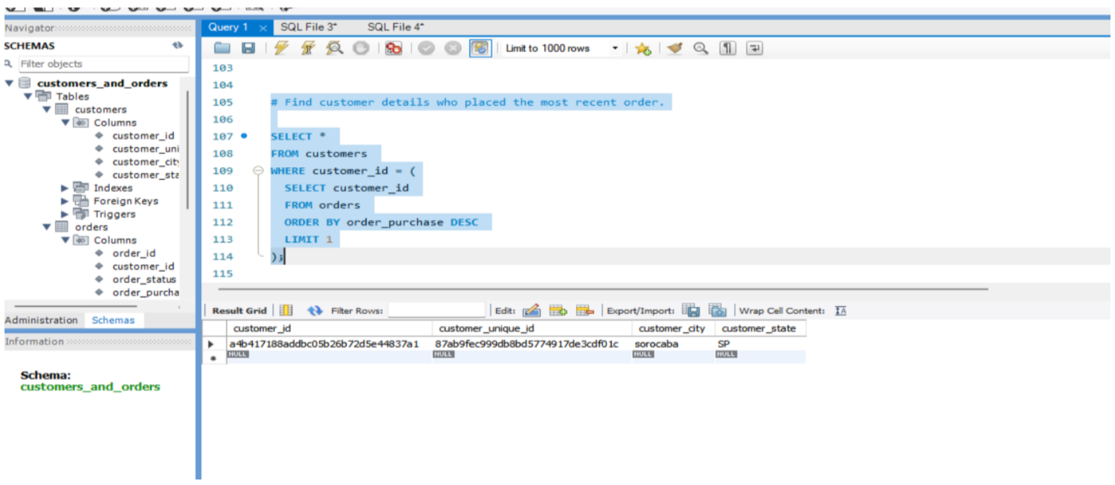


```
# Find customers who have not placed any orders (LEFT JOIN).

SELECT c.customer_id, c.customer_city, c.customer_state
FROM customers c
LEFT JOIN orders o ON c.customer_id = o.customer_id
WHERE o.order_id IS NULL;
```

customer_id	customer_city	customer_state

7.Find customer details who placed the most recent order.

```
SELECT *
FROM customers
WHERE customer_id = (
  SELECT customer_id
  FROM orders
  ORDER BY order_purchase DESC
  LIMIT 1
);
```

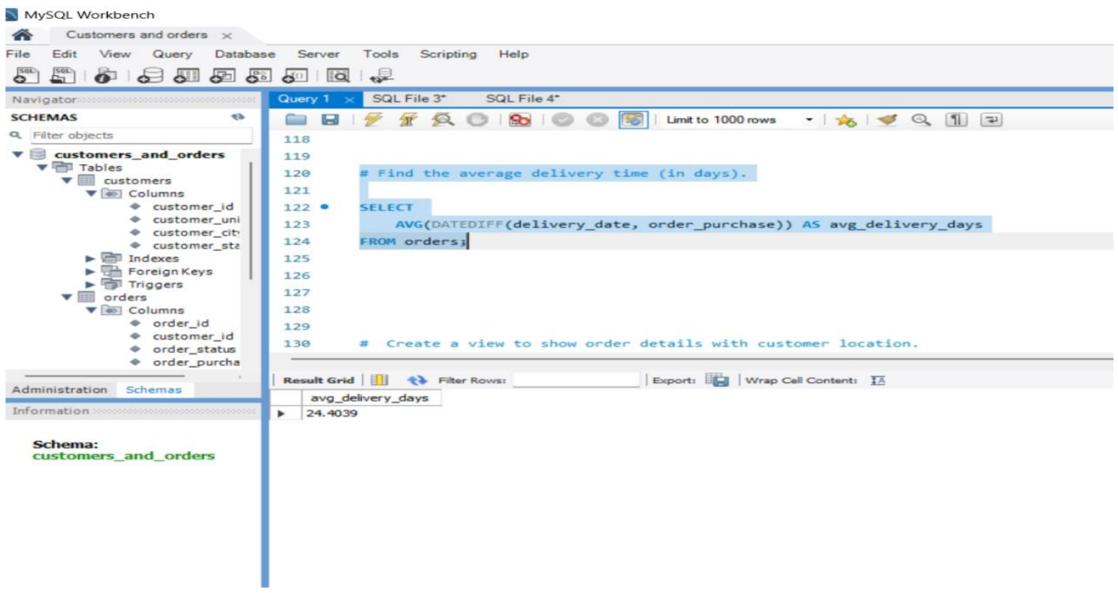


```
# Find customer details who placed the most recent order.

SELECT *
FROM customers
WHERE customer_id = (
  SELECT customer_id
  FROM orders
  ORDER BY order_purchase DESC
  LIMIT 1
);
```

customer_id	customer_unique_id	customer_city	customer_state
a4b417188addbc05b26b72d5e44837a1	87ab9fec999db8bd5774917de3cdf01c	sorocaba	SP
NULL	NULL	NULL	NULL

8. Find the average delivery time (in days).

```
SELECT
   AVG(DATEDIFF(delivery_date, order_purchase)) AS avg_delivery_days
FROM orders;
```



```
# Find the average delivery time (in days).

SELECT
    AVG(DATEDIFF(delivery_date, order_purchase)) AS avg_delivery_days
FROM orders;





#  Create a view to show order details with customer location.
```

```
avg_delivery_days
24.4039
```

9. Create a view to show order details with customer location.

# VIEWS

```
CREATE VIEW order_customer_summary AS
SELECT
   o.order_id,
   o.order_status,
   o.delivery_date,
   c.customer_city,
   c.customer_state
FROM orders o
JOIN customers c ON o.customer_id = c.customer_id;
```

# QUERY

```
SHOW FULL TABLES WHERE TABLE_TYPE = 'VIEW';

SELECT * FROM order_customer_summary LIMIT 10;
```

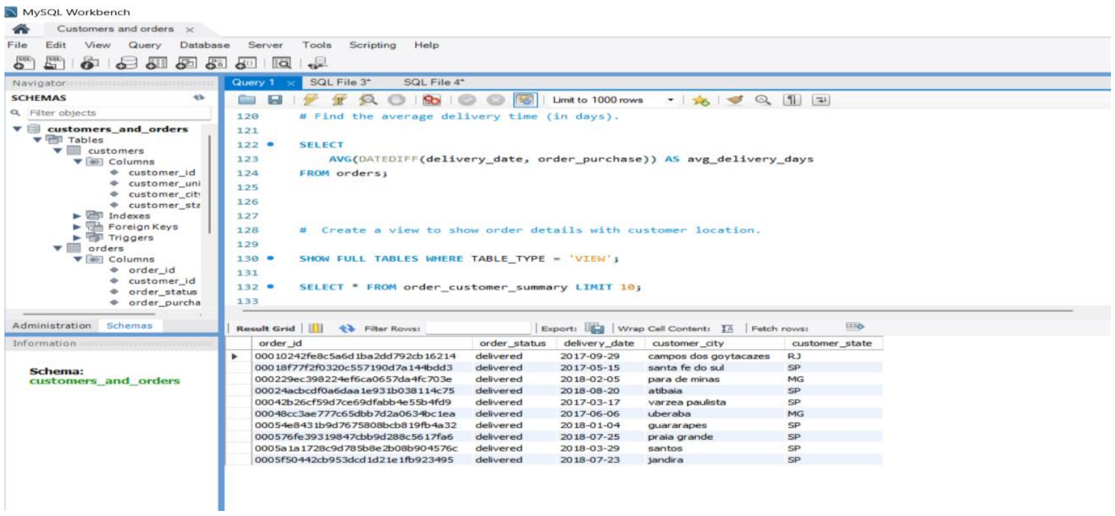
-- Filter by city

```
SELECT * FROM order_customer_summary
```

```
WHERE customer_city = 'sao paulo';
```

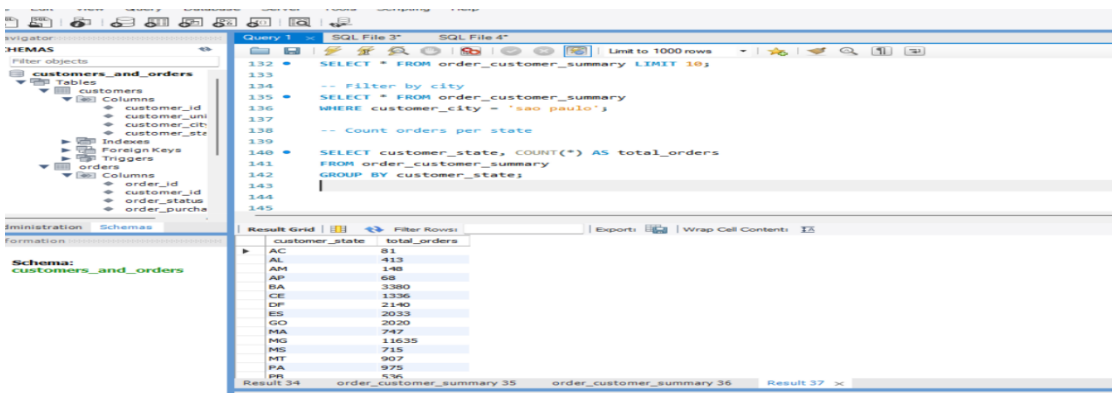
-- Count orders per state

```
SELECT customer_state, COUNT(*) AS total_orders
FROM order_customer_summary
GROUP BY customer_state;
```



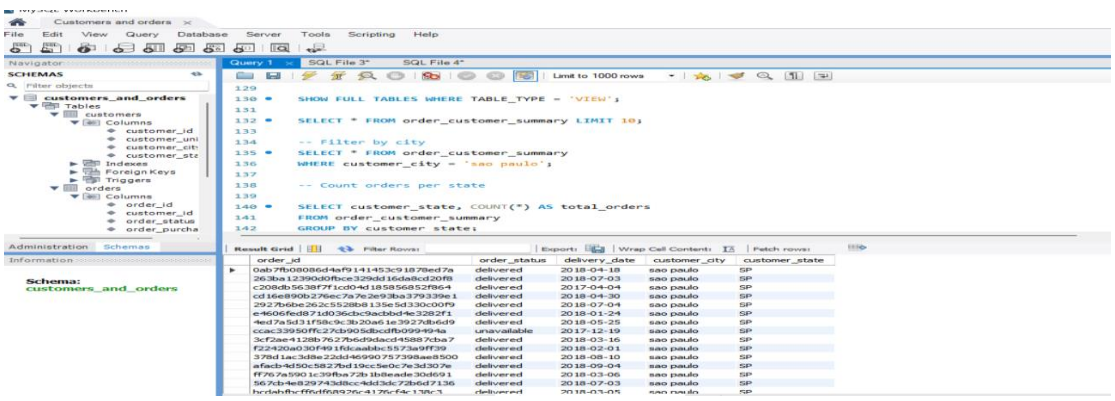
```
# Find the average delivery time (in days).

SELECT
    AVG(DATEDIFF(delivery_date, order_purchase)) AS avg_delivery_days
FROM orders;



#  Create a view to show order details with customer location.

SHOW FULL TABLES WHERE TABLE_TYPE = 'VIEW';

SELECT * FROM order_customer_summary LIMIT 10;
```

order_id	order_status	delivery_date	customer_city	customer_state
00010242fe8c5a6d1ba2dd792cb16214	delivered	2017-09-29	campos dos goytacazes	RJ
00018f77f2f0320c557190d7a144bdd3	delivered	2017-05-15	santa fe do sul	SP
000229ec398224ef6ca0657da4fc703e	delivered	2018-02-05	para de minas	MG
00024acbcdf0a6daa1e931b038114c75	delivered	2018-08-20	atibaia	SP
00042b26cf59d7ce69dfabb4e55b4fd9	delivered	2017-03-17	varzea paulista	SP
00048cc3ae777c65dbb7d2a0634bc1ea	delivered	2017-06-06	uberaba	MG
00054e8431b9d7675808bcb819fb4a32	delivered	2018-01-04	guararapes	SP
000576fe39319847cbb9d288c5617fa6	delivered	2018-07-25	praia grande	SP
0005a1a1728c9d785b8e2b08b904576c	delivered	2018-03-29	santos	SP
0005f50442cb953dcd1d21e1fb923495	delivered	2018-07-23	jandira	SP



```
SELECT * FROM order_customer_summary LIMIT 10;

-- Filter by city
SELECT * FROM order_customer_summary
WHERE customer_city = 'sao paulo';

-- Count orders per state

SELECT customer_state, COUNT(*) AS total_orders
FROM order_customer_summary
GROUP BY customer_state;
```

customer_state	total_orders
AC	81
AL	413
AM	148
AP	68
BA	3380
CE	1336
DF	2140
ES	2033
GO	2020
MA	747
MG	11635
MS	715
MT	907
PA	975
PR	536



```
SHOW FULL TABLES WHERE TABLE_TYPE = 'VIEW';

SELECT * FROM order_customer_summary LIMIT 10;

-- Filter by city
SELECT * FROM order_customer_summary
WHERE customer_city = 'sao paulo';

-- Count orders per state

SELECT customer_state, COUNT(*) AS total_orders
FROM order_customer_summary
GROUP BY customer state;
```

order_id	order_status	delivery_date	customer_city	customer_state
0ab7fb08086d4af9141453c91878ed7a	delivered	2018-04-18	sao paulo	SP
263ba12390d0fbce329dd16da8cd20f8	delivered	2018-07-03	sao paulo	SP
c208db5638f7f1cd04d185856852f864	delivered	2017-04-04	sao paulo	SP
cd16e890b276ec7a7e2e93ba379339e1	delivered	2018-04-30	sao paulo	SP
2927b6be262c5528b8135e5d330c00f9	delivered	2018-07-04	sao paulo	SP
e4606fed871d036cbc9acbbd4e3282f1	delivered	2018-01-24	sao paulo	SP
4ed7a5d31f58c9c3b20a61e3927db6d9	delivered	2018-05-25	sao paulo	SP
ccac33950ffc27cb905dbcdfb099494a	unavailable	2017-12-19	sao paulo	SP
3cf2ae4128b7627b6d9dacd45887cba7	delivered	2018-03-16	sao paulo	SP
f22420a030f491fdcaabbc5573a9ff39	delivered	2018-02-01	sao paulo	SP
378d1ac3d8e22dd46990757398ae8500	delivered	2018-08-10	sao paulo	SP
afacb4d50c5827bd19cc5e0c7e3d307e	delivered	2018-09-04	sao paulo	SP
ff767a5901c39fba72b1b8eade30d691	delivered	2018-03-06	sao paulo	SP
567cb4e829743d8cc4dd3dc72b6d7136	delivered	2018-07-03	sao paulo	SP
bcdabfbcff6df68926c4176cf4c138c3	delivered	2018-03-05	sao paulo	SP

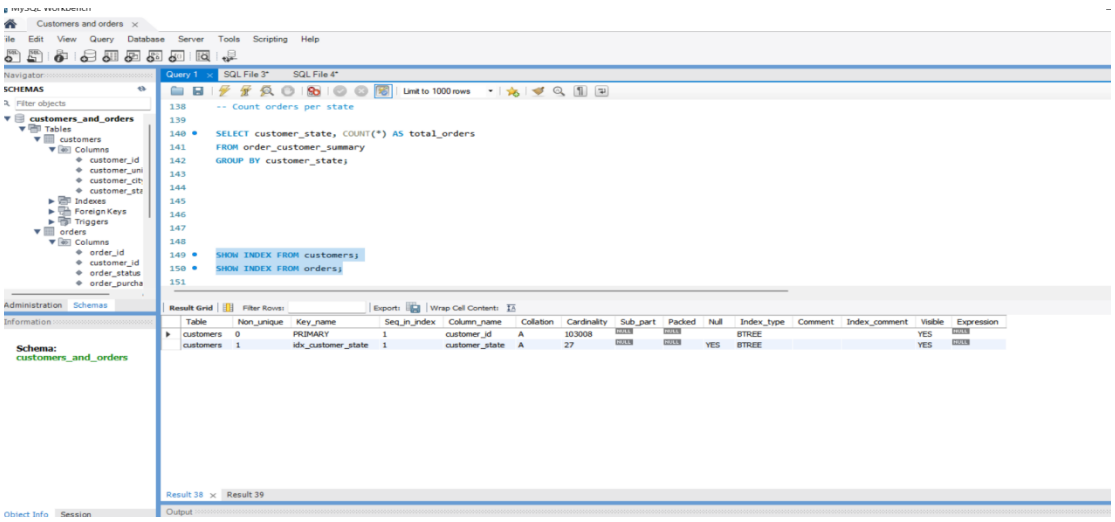
10 Add indexes for faster joins and filtering.

# INDEX

CREATE INDEX idx_customer_id ON orders(customer_id);

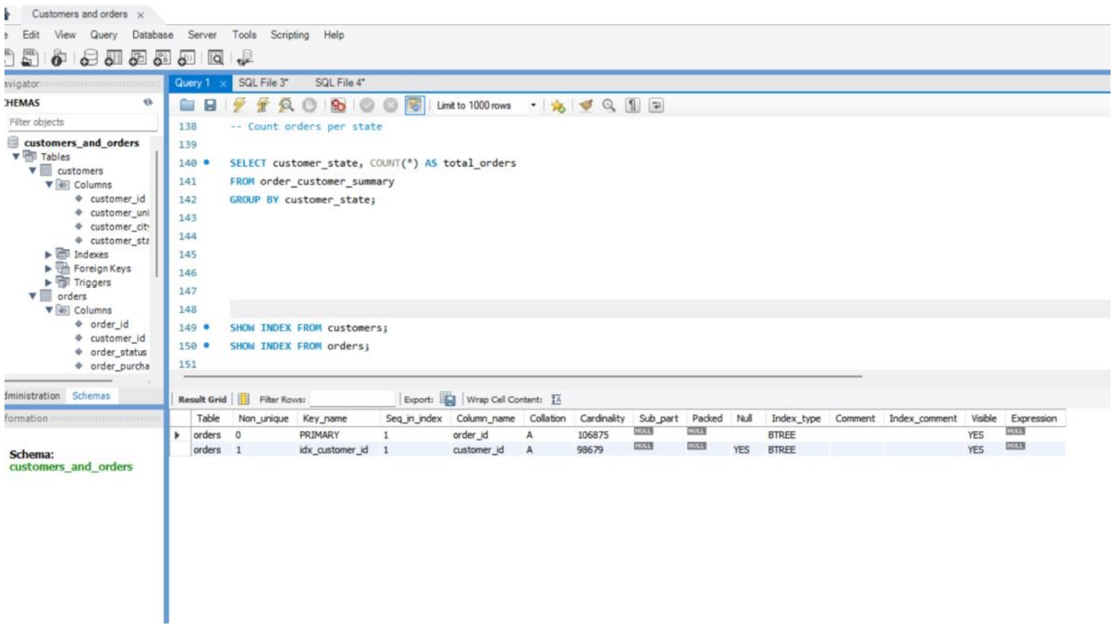
CREATE INDEX idx_customer_state ON customers(customer_state);

# QUERY



```sql
-- Count orders per state

SELECT customer_state, COUNT(*) AS total_orders
FROM order_customer_summary
GROUP BY customer_state;

SHOW INDEX FROM customers;
SHOW INDEX FROM orders;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expression
customers	0	PRIMARY	1	customer_id	A	103008	NULL	NULL		BTREE			YES	NULL
customers	1	idx_customer_state	1	customer_state	A	27	NULL	NULL	YES	BTREE			YES	NULL



```sql
-- Count orders per state

SELECT customer_state, COUNT(*) AS total_orders
FROM order_customer_summary
GROUP BY customer_state;

SHOW INDEX FROM customers;
SHOW INDEX FROM orders;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expression
orders	0	PRIMARY	1	order_id	A	106875	NULL	NULL		BTREE			YES	NULL
orders	1	idx_customer_id	1	customer_id	A	98679	NULL	NULL	YES	BTREE			YES	NULL