

A.-----ORDER BY -----

SQL 1*	
1	SELECT customer_id, customer_city, customer_state
2	FROM customers
3	WHERE customer_state = 'SP'
4	ORDER BY customer_city ASC
5	LIMIT 5;
6	

	customer_id	customer_city	customer_state
1	ed35271185aa3ecf2e421970e47e473f	adamantina	SP
2	9c8238260ea546e75c56fc27c0fedfc8	adamantina	SP
3	f5219627819a30474a6ef14e1598e7f4	adamantina	SP
4	5684f8bf0ee27f2003ba2380c4ba8b08	adamantina	SP
5	cc6a744ba14a060493fb64b97087006c	adamantina	SP

----- GROUP BY -----

SQL 1*	
1	SELECT customer_state, COUNT(*) AS num_customers
2	FROM customers
3	GROUP BY customer_state
4	ORDER BY num_customers DESC;

	customer_state	num_customers
1	SP	41746
2	RJ	12852
3	MG	11635
4	RS	5466
5	PR	5045
6	SC	3637
7	BA	3380
8	DF	2140
9	ES	2033
10	GO	2020
11	PE	1652
12	CE	1336
13	PA	975
14	MT	907
15	MA	747
16	MS	715
17	PB	536
18	PI	495

B. ----- JOINS -----

```
12 SELECT o.order_id, c.customer_city
13 FROM orders o
14 INNER JOIN customers c ON o.customer_id = c.customer_id
15 LIMIT 5;
```

	order_id	customer_city
1	e481f51cbdc54678b7cc49136f2d6af7	sao paulo
2	53cdb2fc8bc7dce0b6741e2150273451	barreiras
3	47770eb9100c2d0c44946d9cf07ec65d	vianopolis
4	949d5b44dbf5de918fe9c16f97b45f8a	sao goncalo do amarante
5	ad21c59c0840e6cb83a9ceb5573f8159	santo andre

```
18 SELECT o.order_id, c.customer_city
19 FROM orders o
20 LEFT JOIN customers c ON o.customer_id = c.customer_id;
21
22
```

	order_id	customer_city
1	e481f51cbdc54678b7cc49136f2d6af7	sao paulo
2	53cdb2fc8bc7dce0b6741e2150273451	barreiras
3	47770eb9100c2d0c44946d9cf07ec65d	vianopolis
4	949d5b44dbf5de918fe9c16f97b45f8a	sao goncalo do amarante
5	ad21c59c0840e6cb83a9ceb5573f8159	santo andre
6	a4591c265e18cb1dcee52889e2d8acc3	congonhinas
7	136cce7faa42fdb2cefd53fdc79a6098	santa rosa
8	6514b8ad8028c9f2cc2374ded245783f	nilopolis
9	76c6e866289321a7c93b82b54852dc33	faxinalzinho
10	e69bfb5eb88e0ed6a785585b27e16dbf	sorocaba
11	e6ce16cb79ec1d90b1da9085a6118aeb	rio de janeiro
12	34513ce0c4fab462a55830c0989c7edb	sao paulo
13	82566a660a982b15fb86e904c8d32918	ouro preto
14	5ff96c15d0b717ac6ad1f3d77225a350	sao paulo
15	432aaf21d85167c2c86ec9448c4e42cc	sao paulo
16	dcb36b511fcac050b97cd5c05de84dc3	goiania
17	403b97836b0c04a622354cf531062e5f	rio de janeiro
18	116f0b09343b49556bbad5f35bee0cdf	imbituba

C. ----- Write Subqueries -----

```

1  -- Find the top 5 cities by number of orders
2  SELECT c.customer_city, COUNT(o.order_id) AS order_count
3  FROM customers c
4  JOIN orders o ON c.customer_id = o.customer_id
5  GROUP BY c.customer_city
6  ORDER BY order_count DESC
7  LIMIT 5;
8

```

	customer_city	order_count
1	sao paulo	15540
2	rio de janeiro	6882
3	belo horizonte	2773
4	brasilia	2131
5	curitiba	1521

D. -----Aggregate Functions (SUM, AVG) -----

The screenshot shows the DB Browser for SQLite application. The SQL editor contains the following query:

```

35 SELECT order_id, SUM(price) AS total_price
36 FROM order_items
37 GROUP BY order_id;
38

```

The results pane displays a table with two columns: `order_id` and `total_price`. The data is as follows:

order_id	total_price
00010242fe8c5a6d1ba2dd792cb16214	58.9
00018f77f2f0320c557190d7a144bdd3	239.9
000229ec398224ef6ca0657da4fc703e	199.0
00024acbd0a6daa1e931b038114c75	12.99
00042b26cf59d7ce69dfabb4e55b4fd9	199.9
00048cc3ae777c65dbb7d2a0634bc1ea	21.9
00054e8431b9d7675808bcb819fb4a32	810.0
000576fe39319847cbb9d288c5617fa6	145.95
0005f50442cb953dcd1d21e1fb923495	53.99
00061f2a7bc09da83e415a52dc9a4af1	59.99
00063b381e2406b52ad429470734ebd5	45.0
0006ec9db01a64e59a68b2c340bf65a7	74.0
0008288aa423d2a3f00fcb17cd7d8719	99.8
0009792311464db532ff765bf7b182ae	99.9
0009c9a17f916a706d71784483a5d643	639.0
000aed2e25dbad2f9db70584c5a2ded	144.0
000c3e6612759851cc3cbb4b83257986	99.0

The interface also shows a right-hand pane for editing database cells, currently displaying a NULL value. The bottom status bar indicates the application is running on a Windows system with the date 15-05-2025 and time 18:18.

DB Browser for SQLite - C:\Users\marth\Downloads\archive (5)\olist.sqlite

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragma Execute SQL

SQL 1*

```

34  L);
35
36  SELECT order_id, SUM(price) AS total_price
37  FROM order_items
38  GROUP BY order_id;
39
40  SELECT seller_id, AVG(freight_value) AS avg_freight
41  FROM order_items
42  GROUP BY seller_id
43  LIMIT 5;

```

	seller_id	avg_freight
1	0015a82c2db000af6aaaf3ae2ecb0532	21.02
2	001cca7ae9ae17fb1caed9dfb1094831	37.0466108786611
3	001e6ad469a905060d959994f1b41e4f	17.94
4	002100f778ceb8431b7a1020ff7ab48f	14.4301818181818
5	003554e2dce176b5555353e4f3555ac8	19.38

Execution finished without errors.
Result: 5 rows returned in 120ms
At line 40:
SELECT seller_id, AVG(freight_value) AS avg_freight
FROM order_items
GROUP BY seller_id
LIMIT 5;

Edit Database Cell

Mode: Text

NULL

No cell active.
Type: NULL; Size: 0 bytes

Remote

Identity Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

WhatsApp

Sanjana Vits

Just take a ss of screen and leave the rest

2 unread messages

Type a reply Send

SQL Log

18:17 15-05-2025

E. -----Create Views for Analysis-----

DB Browser for SQLite - C:\Users\marth\Downloads\archive (5)\olist.sqlite

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project

Database Structure Browse Data Edit Pragma Execute SQL

SQL 1*

```

1  DROP VIEW IF EXISTS customer_order_count;
2
3  CREATE VIEW customer_order_count AS
4  SELECT customer_id, COUNT(*) AS total_orders
5  FROM orders
6  GROUP BY customer_id;
7  SELECT * FROM customer_order_count LIMIT 5;
8

```

	customer_id	total_orders
1	00012a2ce6f8dcda20d059ce98491703	1
2	000161a058600d5901f007fab4c27140	1
3	0001fd6190edaaaf884bcaf3d49edf079	1
4	0002414f95344307404f0ace7a26f1d5	1
5	000379cdec625522490c315e70c7a9fb	1

Execution finished without errors.
Result: 5 rows returned in 9ms
At line 7:
SELECT * FROM customer_order_count LIMIT 5;

F. ---- Optimize Queries with Indexes----

DB Browser for SQLite - C:\Users\mARTH\Downloads\archive (5)\olist.sqlite

File Edit View Tools Help

New DatabaseOpen DatabaseWrite ChangesRevert ChangesUndoOpen ProjectSave ProjectAttach DatabaseClose Database

Database StructureBrowse DataEdit PragmasExecute SQL

SQL 1*

```
31 FROM orders
32 GROUP BY customer_id
33 HAVING COUNT(*) > 2
34
35 SELECT order_id, SUM(price) AS total_price
36 FROM order_items
37 GROUP BY order_id;
38
39 SELECT seller_id, AVG(freight_value) AS avg_freight
40 FROM order_items
41 GROUP BY seller_id
42 LIMIT 5;
43
44 CREATE INDEX idx_orders_customer_id ON orders(customer_id);
45
```

	seller_id	avg_freight
1	0015a82c2db000af6aaaf3ae2ecb0532	21.02
2	001cca7ae9ae17fb1caed9dfb1094831	37.0466108786611
3	001e6ad469a905060d959994f1b41e4f	17.94
4	002100f778ceb8431b7a1020ff7ab48f	14.4301818181818
5	003554e2dce176b555535e4f3555ac8	19.38

Execution finished without errors.
Result: query executed successfully. Took 150ms
At line 45:
CREATE INDEX idx_orders_customer_id ON orders(customer_id);

Edit Database Cell

Mode: Text

NULL

No cell active.
Type: NULL; Size: 0 bytes

Apply

Remote

Identity Select an identity to connect

Upload

DBHub.ioLocalCurrent Database

Name	Last modified	Size
------	---------------	------

SQL LogPlotDB SchemaRemote

UTF-8

18:22

15-05-2025

SQL 1*

```
1 DROP INDEX IF EXISTS idx_order_items_order_id;
2
3 CREATE INDEX idx_order_items_order_id ON order_items(order_id);
4 PRAGMA index_list('order_items');
5
```

	seq	name	unique	origin	partial
1	0	idx_order_items_order_id	0	c	0
2	1	idx_order_items_order_id_v2	0	c	0