

```
88 -- a. Select customers from USA ordered by last name
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```
89 • SELECT first_name, last_name, country
```

```
90 FROM customers
```

```
91 WHERE country = 'USA'
```

```
92 ORDER BY last_name;
```

```
93
```

Result Grid |  Filter Rows: | Export:  | Wrap Cell Content: 

first_name	last_name	country
Alice	Brown	USA
Eve	Clark	USA
Charlie	Davis	USA

```
94 -- b. INNER JOIN orders with customers
```




```
95 • SELECT o.order_id, c.first_name, c.last_name, o.order_date
```

```
96 FROM orders o
```

```
97 INNER JOIN customers c ON o.customer_id = c.customer_id;
```

```
98
```

```
99 -- c. Subquery: Customers who spent more than average spending
```

Result Grid |  Filter Rows: | Export:  | Wrap Cell Content: 

	order_id	first_name	last_name	order_date
1	1	Alice	Brown	2023-07-01
2	2	Alice	Brown	2023-07-15
3	3	Bob	Smith	2023-06-25
4	4	Charlie	Davis	2023-07-10
5	5	Dana	Wilson	2023-07-12
6	6	Eve	Clark	2023-07-15

```
00 • SELECT c.first_name, c.last_name, total_spent
```

```
01 FROM (
```

```
02 SELECT o.customer_id, SUM(oi.price * oi.quantity) AS total_spent
```

```
03 FROM orders o
```

```
04 JOIN order_items oi ON o.order_id = oi.order_id
```

```
05 GROUP BY o.customer_id
```

```
06 ) AS spending
```

```
07 JOIN customers c ON spending.customer_id = c.customer_id
```

```
08 WHERE total_spent > (
```

```
09 SELECT AVG(total)
```

```
10 FROM (
```

```
11 SELECT SUM(oi.price * oi.quantity) AS total
```

```
12 FROM orders o
```




```
13 JOIN order_items oi ON o.order_id = oi.order_id
```

```
14 GROUP BY o.customer_id
```

```
15 ) AS averages
```

```
16 )
```

```
17
```

Result Grid |  Filter Rows: | Export:  | Wrap Cell Content: 

first_name	last_name	total_spent
Alice	Brown	1659.95
Eve	Clark	999.99

```

-- d. Aggregate: Average order value by country
SELECT c.country, AVG(order_total) AS avg_order_value
FROM customers c
JOIN (
    SELECT o.customer_id, SUM(oi.price * oi.quantity) AS order_total
    FROM orders o
    JOIN order_items oi ON o.order_id = oi.order_id
    GROUP BY o.order_id
) AS order_summaries ON c.customer_id = order_summaries.customer_id
GROUP BY c.country;

```

e. Create a view for customer order summary

country	avg_order_value
USA	736.357500
Canada	300.000000
UK	99.980000

```

-- Query the view
SELECT * FROM customer_order_summary
WHERE total_spent > 500
ORDER BY total_spent DESC;

```




f. Create indexes to optimize queries

customer_id	first_name	last_name	country	orders_count	total_spent
1	Alice	Brown	USA	2	1659.95
5	Eve	Clark	USA	1	999.99

151

152 • SHOW INDEX FROM customers;




153

Result Grid  Filter Rows: <input type="text"/> Export:  Wrap Cell Content: 														
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	5	NULL	NULL		BTREE			YES	NULL
customers	1	idx_customers_country	1	country	A	3	NULL	NULL		BTREE			YES	NULL

155

156 • SHOW INDEX FROM orders;




157

Result Grid  Filter Rows: <input type="text"/> Export:  Wrap Cell Content: 														
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	6	NULL	NULL		BTREE			YES	NULL
orders	1	customer_id	1	customer_id	A	5	NULL	NULL		BTREE			YES	NULL

160

161 • SHOW INDEX FROM order_items;

162

Result Grid  Filter Rows: <input type="text"/> Export:  Wrap Cell Content: 														
Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expressio
order_items	0	PRIMARY	1	order_item_id	A	8	NULL	NULL		BTREE			YES	NULL
order_items	1	order_id	1	order_id	A	6	NULL	NULL		BTREE			YES	NULL
order_items	1	idx_order_items_product	1	product_id	A	7	NULL	NULL		BTREE			YES	NULL

