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38 -- a. Select customers from USA ordered by last name
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```
39 • SELECT first_name, last_name, country
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```
40 FROM customers
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```
41 WHERE country = 'USA'
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```
42 ORDER BY last_name;
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43
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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
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95 • SELECT o.order_id, c.first_name, c.last_name, o.order_date
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```
96 FROM orders o
```

```
97 INNER JOIN customers c ON o.customer_id = c.customer_id;
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98
```

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99 -- c. Subquery: Customers who spent more than average spending
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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: [IA](#)

first_name	last_name	total_spent
Alice	Brown	1659.95
Eve	Clark	999.99

```

08 -- d. Aggregate: Average order value by country
09 • SELECT c.country, AVG(order_total) AS avg_order_value
10 FROM customers c
11 JOIN (
12     SELECT o.customer_id, SUM(oi.price * oi.quantity) AS order_total
13     FROM orders o
14     JOIN order_items oi ON o.order_id = oi.order_id
15     GROUP BY o.order_id
16 ) AS order_summaries ON c.customer_id = order_summaries.customer_id
17 GROUP BY c.country;
18

```

09 -- e. Create a view for customer order summary

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [IA](#)

country	avg_order_value
USA	736.357500
Canada	300.000000
UK	99.980000

```

18
19 -- Query the view
20 • SELECT * FROM customer_order_summary
21 WHERE total_spent > 500
22 ORDER BY total_spent DESC;
23
24 f. Create indexes to optimize queries

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

```

Result Grid Filter Rows: Export: Wrap Cell Contents:														
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: Export: Wrap Cell Content: A

	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: Export: Wrap Cell Content: A

	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