Ecommerce – SQL

SQL Tables:

1. **customers** table:
   - customer_id (Primary Key)
   - name
   - email
   - password
2. **products** table:
   - product_id (Primary Key)
   - name
   - price
   - description
   - stockQuantity
3. **cart** table:
   - cart_id (Primary Key)
   - customer_id (Foreign Key)
   - product_id (Foreign Key)
   - quantity
4. **orders** table:
   - order_id (Primary Key)
   - customer_id (Foreign Key)
   - order_date
   - total_price
   - shipping_address
5. **order_items** table (to store order details):
   - order_item_id (Primary Key)
   - order_id (Foreign Key)
   - product_id (Foreign Key)
   - quantity

Product Table

productID	**name**	**Description**	**price**	**stockQuantity**
1	Laptop	High-performance laptop	800.00	10
2	Smartphone	Latest smartphone	600.00	15
3	Tablet	Portable tablet	300.00	20
4	Headphones	Noise-canceling	150.00	30
5	TV	4K Smart TV	900.00	5
6	Coffee Maker	Automatic coffee maker	50.00	25
productID	**name**	**Description**	**price**	**stockQuantity**

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7	Refrigerator	Energy-efficient	700.00	10
8	Microwave Oven	Countertop microwave	80.00	15
9	Blender	High-speed blender	70.00	20
10	Vacuum Cleaner	Bagless vacuum cleaner	120.00	10

Customer Table

customerID	firstName	lastName	Email	address
1	John	Doe	johndoe@example.com	123 Main St, City
2	Jane	Smith	janesmith@example.com	456 Elm St, Town
3	Robert	Johnson	robert@example.com	789 Oak St, Village
4	Sarah	Brown	sarah@example.com	101 Pine St, Suburb
5	David	Lee	david@example.com	234 Cedar St, District
6	Laura	Hall	laura@example.com	567 Birch St, County
7	Michael	Davis	michael@example.com	890 Maple St, State
8	Emma	Wilson	emma@example.com	321 Redwood St, Country
9	William	Taylor	william@example.com	432 Spruce St, Province
10	Olivia	Adams	olivia@example.com	765 Fir St, Territory

Order Table

orderID	customerID	orderDate	totalAmount
1	1	2023-01-05	1200.00
2	2	2023-02-10	900.00
3	3	2023-03-15	300.00
4	4	2023-04-20	150.00
5	5	2023-05-25	1800.00
6	6	2023-06-30	400.00
7	7	2023-07-05	700.00
8	8	2023-08-10	160.00
9	9	2023-09-15	140.00
10	10	2023-10-20	1400.00

OrderItem Table

orderItemID	orderID	productID	quantity	itemAmount
1	1	1	2	1600.00
orderItemID	**orderID**	**productID**	**quantity**	**itemAmount**
2	1	3	1	300.00
3	2	2	3	1800.00
4	3	5	2	1800.00

5	4	4	4	600.00
6	4	6	1	50.00
7	5	1	1	800.00
8	5	2	2	1200.00
9	6	10	2	240.00
10	6	9	3	210.00

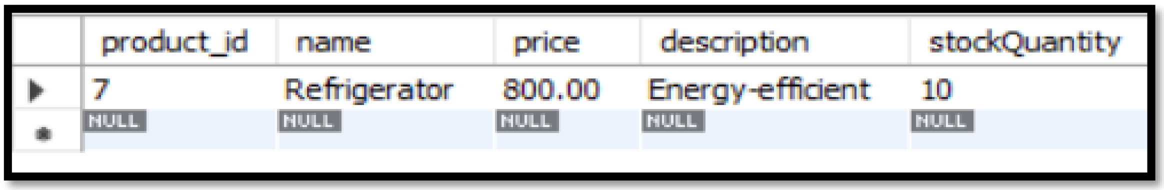
Cart Table

cartID	customerID	productid	quantity
1	1	1	2
2	1	3	1
3	2	2	3
4	3	4	4
5	3	5	2
6	4	6	1
7	5	1	1
8	6	10	2
9	6	9	3
10	7	7	2

1.

1. Update refrigerator product price to 800.

UPDATE products SET price = 800 WHERE name = 'Refrigerator';
SELECT * FROM products WHERE name = 'Refrigerator';



	product_id	name	price	description	stockQuantity
▶	7	Refrigerator	800.00	Energy-efficient	10
*	NULL	NULL	NULL	NULL	NULL

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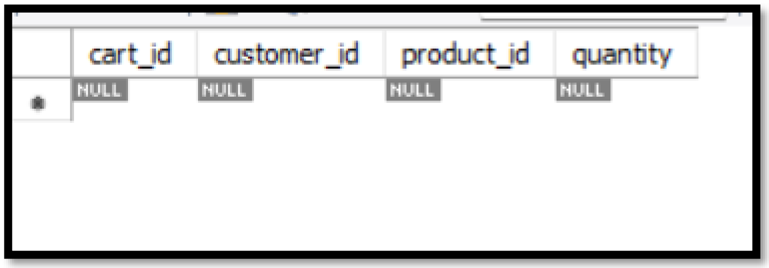
2. **Remove all cart items for a specific customer.**

DELETE FROM cart WHERE customer_id = customer_id;

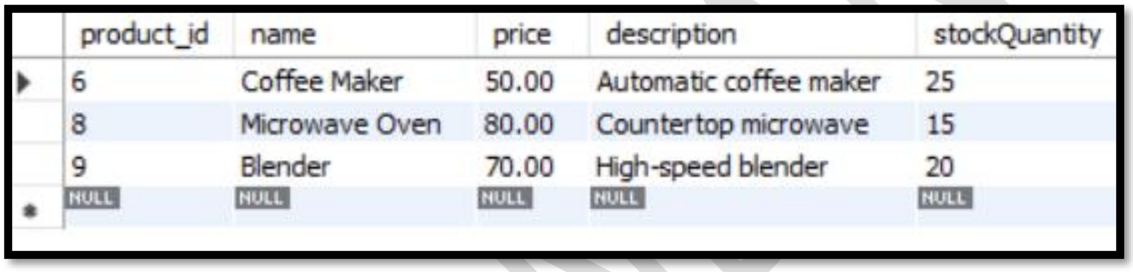
SELECT * FROM cart WHERE customer_id = customer_id;



cart_id	customer_id	product_id	quantity
NULL	NULL	NULL	NULL

3. **Retrieve Products Priced Below $100.**

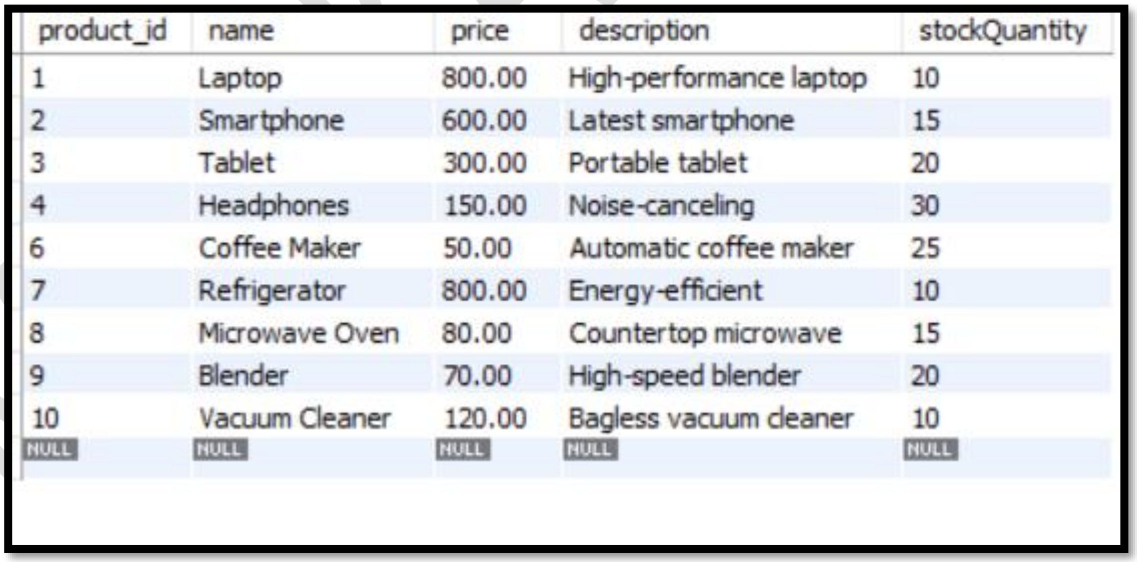
SELECT * FROM products WHERE price < 100;



product_id	name	price	description	stockQuantity
6	Coffee Maker	50.00	Automatic coffee maker	25
8	Microwave Oven	80.00	Countertop microwave	15
9	Blender	70.00	High-speed blender	20
NULL	NULL	NULL	NULL	NULL

4. **Find Products with Stock Quantity Greater Than 5.**

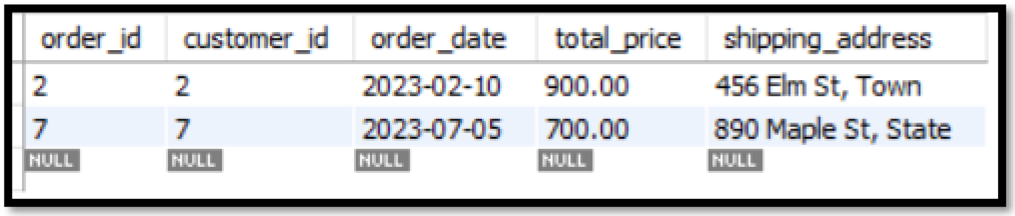
SELECT * FROM products WHERE stockQuantity > 5;



product_id	name	price	description	stockQuantity
1	Laptop	800.00	High-performance laptop	10
2	Smartphone	600.00	Latest smartphone	15
3	Tablet	300.00	Portable tablet	20
4	Headphones	150.00	Noise-canceling	30
6	Coffee Maker	50.00	Automatic coffee maker	25
7	Refrigerator	800.00	Energy-efficient	10
8	Microwave Oven	80.00	Countertop microwave	15
9	Blender	70.00	High-speed blender	20
10	Vacuum Cleaner	120.00	Bagless vacuum cleaner	10
NULL	NULL	NULL	NULL	NULL

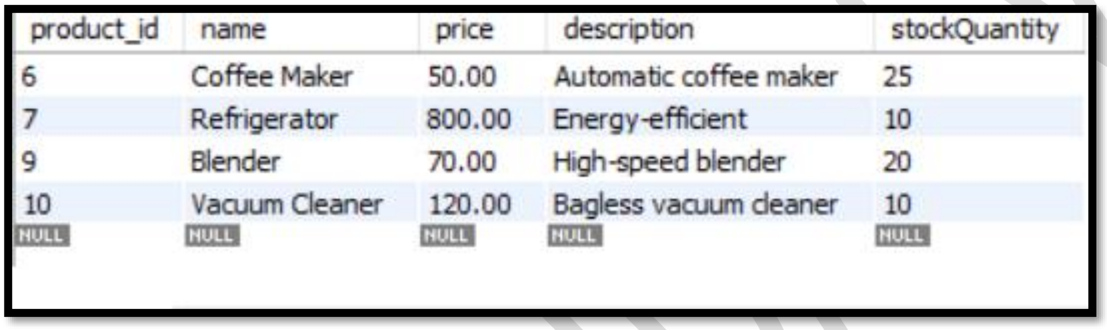
5. **Retrieve Orders with Total Amount Between $500 and $1000.**

SELECT * FROM orders WHERE total_price BETWEEN 500 AND 1000;



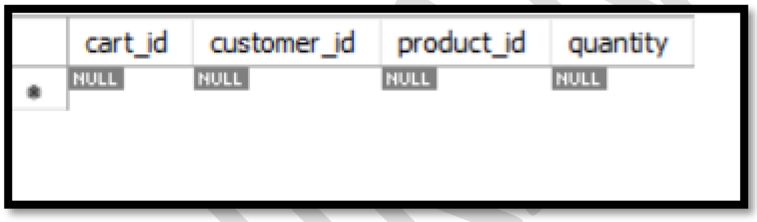
order_id	customer_id	order_date	total_price	shipping_address
2	2	2023-02-10	900.00	456 Elm St, Town
7	7	2023-07-05	700.00	890 Maple St, State
NULL	NULL	NULL	NULL	NULL

6. **Find Products which name end with letter 'r'.**
SELECT * FROM products WHERE name LIKE '%r';



product_id	name	price	description	stockQuantity
6	Coffee Maker	50.00	Automatic coffee maker	25
7	Refrigerator	800.00	Energy-efficient	10
9	Blender	70.00	High-speed blender	20
10	Vacuum Cleaner	120.00	Bagless vacuum cleaner	10
NULL	NULL	NULL	NULL	NULL

7. **Retrieve Cart Items for Customer 5.**
SELECT * FROM cart WHERE customer_id = 5;



cart_id	customer_id	product_id	quantity
NULL	NULL	NULL	NULL

8. **Find Customers Who Placed Orders in 2023.**
SELECT DISTINCT c.* FROM customers c
JOIN orders o ON c.customer_id = o.customer_id
WHERE YEAR(o.order_date) = 2023;

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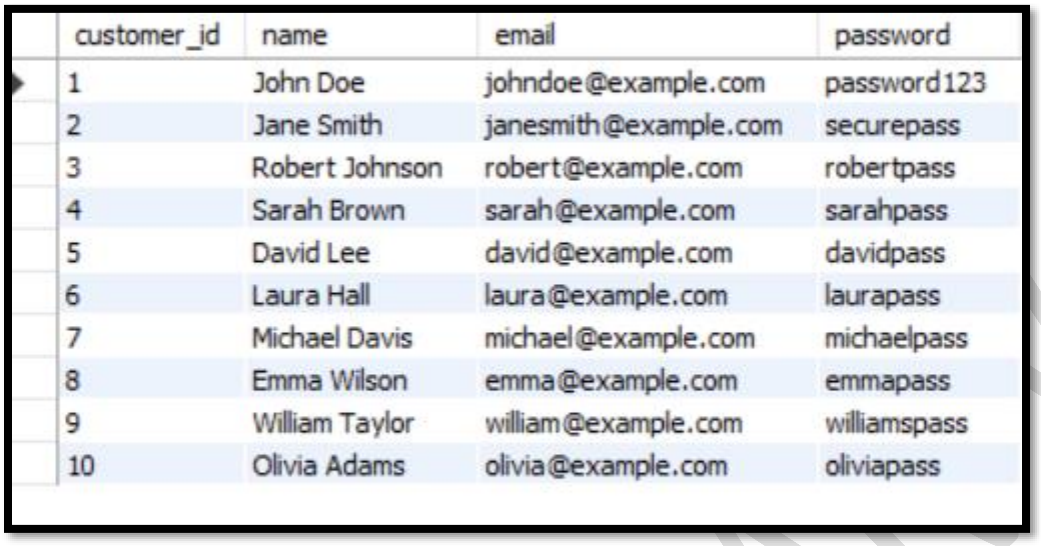
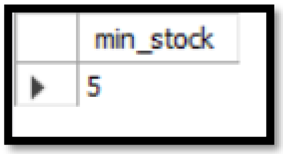


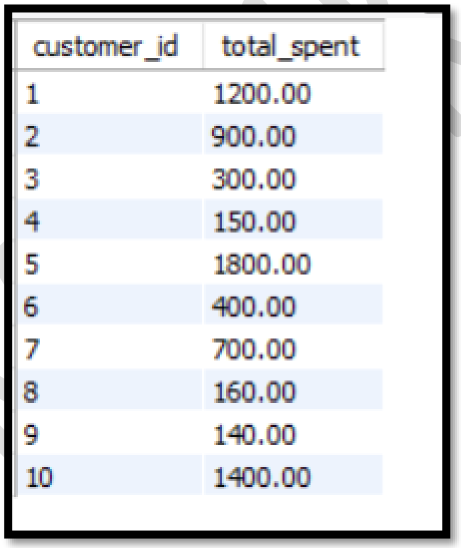
customer_id	name	email	password
1	John Doe	johndoe@example.com	password123
2	Jane Smith	janesmith@example.com	securepass
3	Robert Johnson	robert@example.com	robertpass
4	Sarah Brown	sarah@example.com	sarahpass
5	David Lee	david@example.com	davidpass
6	Laura Hall	laura@example.com	laurapass
7	Michael Davis	michael@example.com	michaelpass
8	Emma Wilson	emma@example.com	emmapass
9	William Taylor	william@example.com	williamspass
10	Olivia Adams	olivia@example.com	oliviapass

9. **Determine the Minimum Stock Quantity for Each Product Category.**
SELECT MIN(stockQuantity) AS min_stock FROM products;



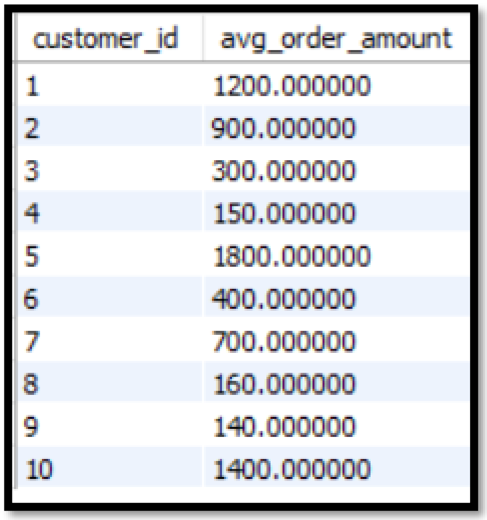
min_stock
5

10. **Calculate the Total Amount Spent by Each Customer.**
SELECT customer_id, SUM(total_price) AS total_spent
FROM orders GROUP BY customer_id;



customer_id	total_spent
1	1200.00
2	900.00
3	300.00
4	150.00
5	1800.00
6	400.00
7	700.00
8	160.00
9	140.00
10	1400.00

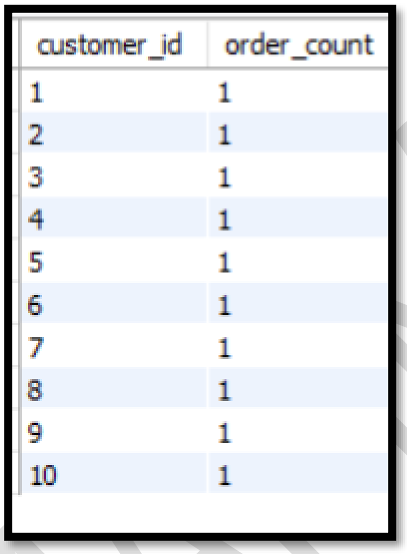
11. **Find the Average Order Amount for Each Customer.**
SELECT customer_id, AVG(total_price) AS avg_order_amount
FROM orders GROUP BY customer_id;



customer_id	avg_order_amount
1	1200.000000
2	900.000000
3	300.000000
4	150.000000
5	1800.000000
6	400.000000
7	700.000000
8	160.000000
9	140.000000
10	1400.000000

12. **Count the Number of Orders Placed by Each Customer.**

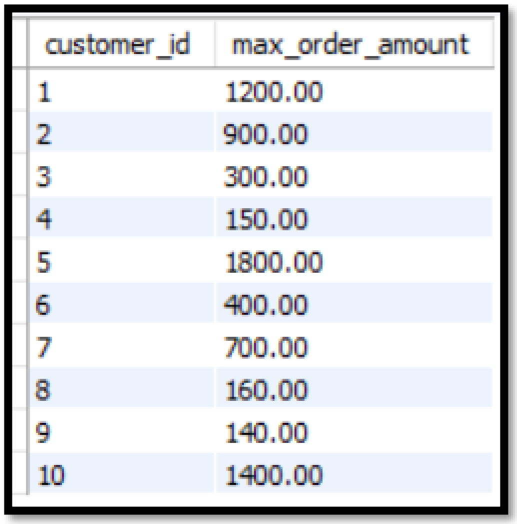
SELECT customer_id, COUNT(*) AS order_count
FROM orders GROUP BY customer_id;



customer_id	order_count
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1

13. **Find the Maximum Order Amount for Each Customer.**

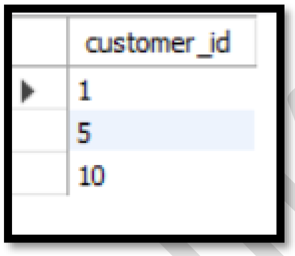
SELECT customer_id, MAX(total_price) AS max_order_amount
FROM orders GROUP BY customer_id;



customer_id	max_order_amount
1	1200.00
2	900.00
3	300.00
4	150.00
5	1800.00
6	400.00
7	700.00
8	160.00
9	140.00
10	1400.00

14. **Get Customers Who Placed Orders Totaling Over $1000.**

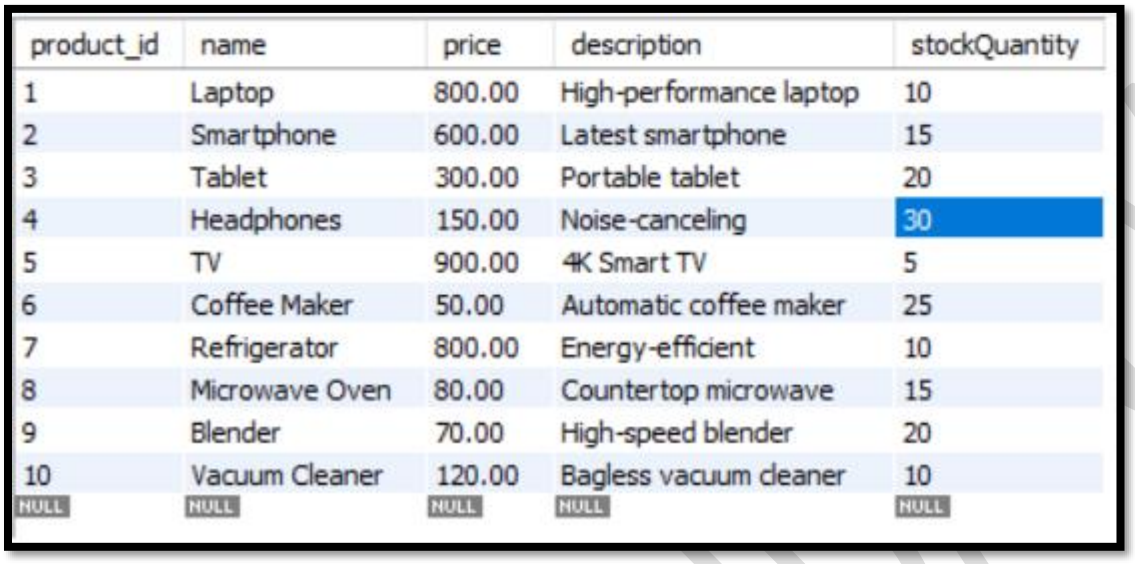
```
SELECT customer_id FROM orders
    GROUP BY customer_id HAVING SUM(total_price) > 1000;
```



customer_id
1
5
10

15. **Subquery to Find Products Not in the Cart.**

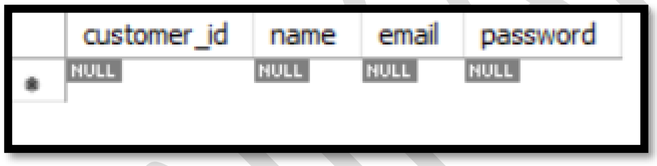
SELECT * FROM products
WHERE product_id NOT IN (SELECT DISTINCT product_id FROM cart);



product_id	name	price	description	stockQuantity
1	Laptop	800.00	High-performance laptop	10
2	Smartphone	600.00	Latest smartphone	15
3	Tablet	300.00	Portable tablet	20
4	Headphones	150.00	Noise-canceling	30
5	TV	900.00	4K Smart TV	5
6	Coffee Maker	50.00	Automatic coffee maker	25
7	Refrigerator	800.00	Energy-efficient	10
8	Microwave Oven	80.00	Countertop microwave	15
9	Blender	70.00	High-speed blender	20
10	Vacuum Cleaner	120.00	Bagless vacuum cleaner	10
NULL	NULL	NULL	NULL	NULL

16. **Subquery to Find Customers Who Haven't Placed Orders.**

SELECT * FROM customers
WHERE customer_id NOT IN (SELECT DISTINCT customer_id FROM orders);



customer_id	name	email	password
NULL	NULL	NULL	NULL

17. **Subquery to Calculate the Percentage of Total Revenue for a Product.**

SELECT p.product_id, p.name,
(SUM(oi.quantity * p.price) / (SELECT SUM(total_price) FROM orders)) * 100 AS revenue_percentage
FROM order_items oi
JOIN products p ON oi.product_id = p.product_id
GROUP BY p.product_id, p.name;

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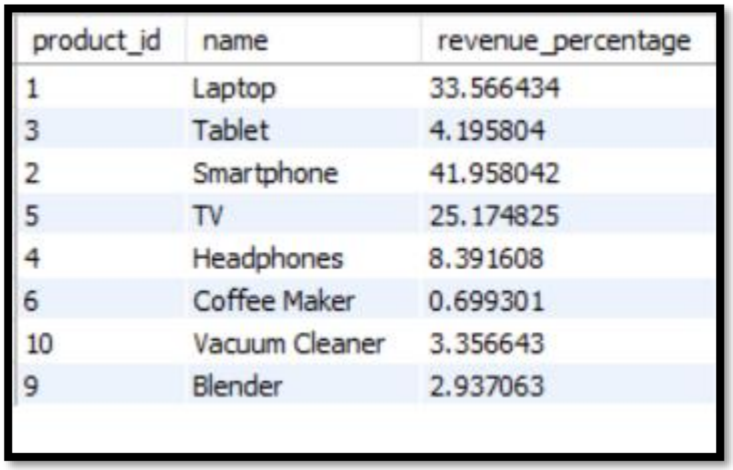
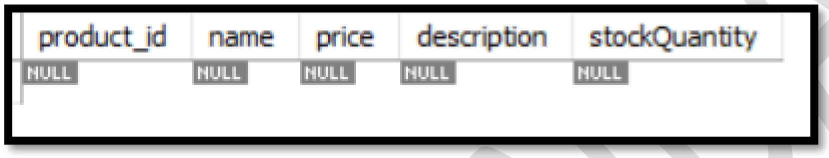


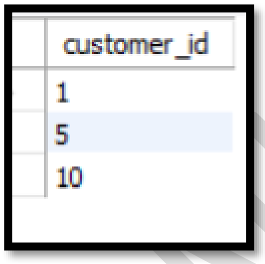
product_id	name	revenue_percentage
1	Laptop	33.566434
3	Tablet	4.195804
2	Smartphone	41.958042
5	TV	25.174825
4	Headphones	8.391608
6	Coffee Maker	0.699301
10	Vacuum Cleaner	3.356643
9	Blender	2.937063

18. **Subquery to Find Products with Low Stock.**
SELECT * FROM products WHERE stockQuantity < 5;



product_id	name	price	description	stockQuantity
NULL	NULL	NULL	NULL	NULL

19. **Subquery to Find Customers Who Placed High-Value Orders.**
SELECT customer_id FROM orders WHERE total_price > 1000;



customer_id
1
5
10