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CODING CHALLENGE SQL
ECOMMERCE – SQL

1.CREATE DATABASE

```
create database ecomdb;
use ecomdb;
```

2.TABLES:

```
create table customers (
   customer_id int primary key,
   name varchar(255),
   email varchar(255),
   password varchar(255)
);

create table products (
   product_id int primary key,
   name varchar(255),
   price decimal(10,2),
   description text,
   stockquantity int
);

create table cart (
   cart_id int primary key,
   customer_id int,
   product_id int,
   quantity int,
   foreign key (customer_id) references customers(customer_id),
   foreign key (product_id) references products(product_id)
);

create table orders (
   order_id int primary key,
   customer_id int,
   order_date date,
   total_price decimal(10,2),
   shipping_address text,
   foreign key (customer_id) references customers(customer_id)
);

create table order_items (
   order_item_id int primary key,
   order_id int,
   product_id int,
   quantity int,
   foreign key (order_id) references orders(order_id),
   foreign key (product_id) references products(product_id)
);
```

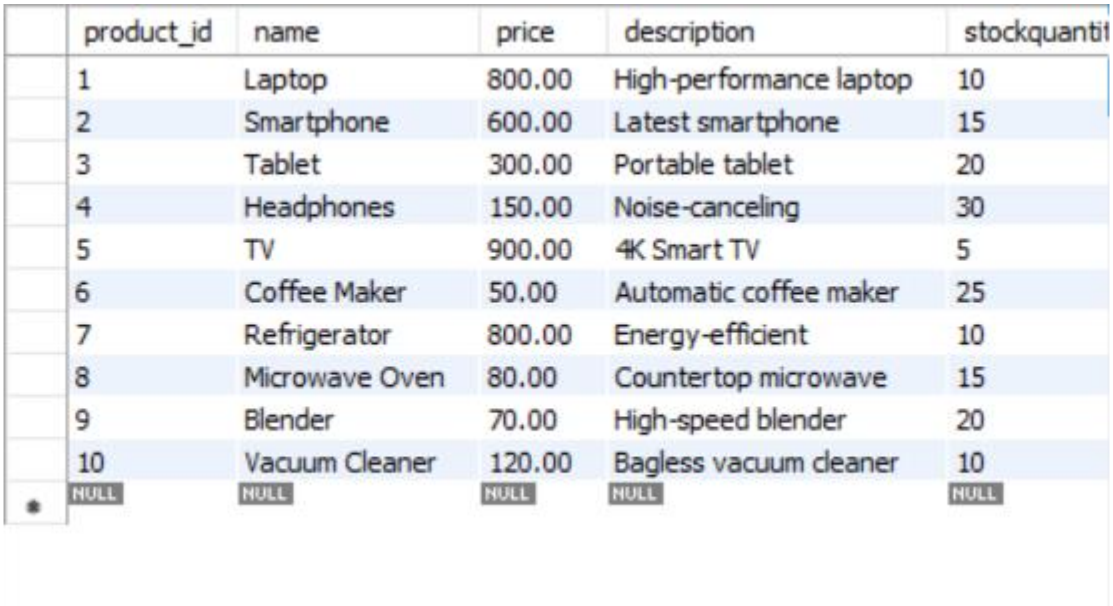
3.DATA’S:

```
insert into customers (customer_id, name, email, password) values
(1, 'john doe', 'johndoe@example.com', 'password1'),
(2, 'jane smith', 'janesmith@example.com', 'password2'),
(3, 'robert johnson', 'robert@example.com', 'password3'),
(4, 'sarah brown', 'sarah@example.com', 'password4'),
(5, 'david lee', 'david@example.com', 'password5'),
(6, 'laura hall', 'laura@example.com', 'password6'),
(7, 'michael davis', 'michael@example.com', 'password7'),
(8, 'emma wilson', 'emma@example.com', 'password8'),
(9, 'william taylor', 'william@example.com', 'password9'),
(10, 'olivia adams', 'olivia@example.com', 'password10');

insert into products (product_id, name, price, description, stockquantity) values
(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', 700.00, '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);

insert into cart (cart_id, customer_id, product_id, quantity) values
(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);

insert into orders (order_id, customer_id, order_date, total_price,
shipping_address) values
(1, 1, '2023-01-05', 1200.00, '123 main st, city'),
(2, 2, '2023-02-10', 900.00, '456 elm st, town'),
(3, 3, '2023-03-15', 300.00, '789 oak st, village'),
(4, 4, '2023-04-20', 150.00, '101 pine st, suburb'),
(5, 5, '2023-05-25', 1800.00, '234 cedar st, district'),
(6, 6, '2023-06-30', 400.00, '567 birch st, county'),
(7, 7, '2023-07-05', 700.00, '890 maple st, state'),
(8, 8, '2023-08-10', 160.00, '321 redwood st, country'),
(9, 9, '2023-09-15', 140.00, '432 spruce st, province'),
(10, 10, '2023-10-20', 1400.00, '765 fir st, territory');

insert into order_items (order_item_id, order_id, product_id, quantity) values
(1, 1, 1, 2),
(2, 1, 3, 1),
(3, 2, 2, 3),
(4, 3, 5, 2),
(5, 4, 4, 4),
(6, 4, 6, 1),
(7, 5, 1, 1),
(8, 5, 2, 2),
```

(9, 6, 10, 2),
(10, 6, 9, 3);

1. update refrigerator product price to 800.

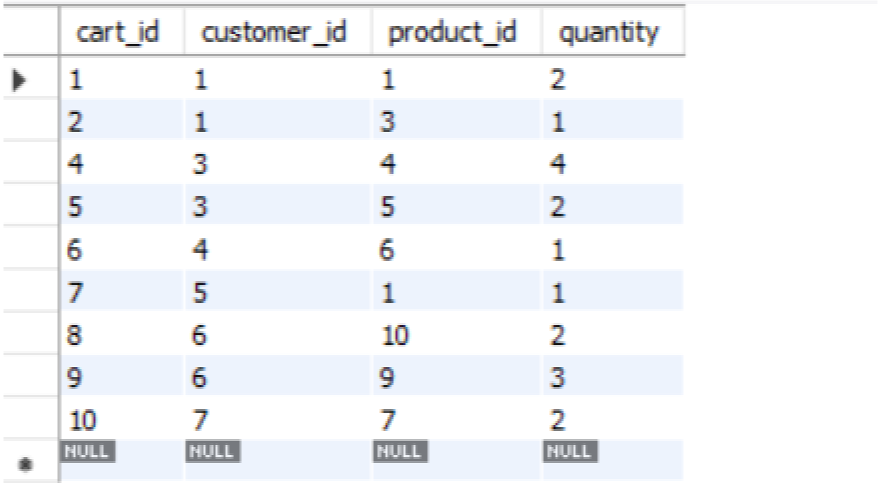
update products set price = 800.00 where name = 'refrigerator';



product_id	name	price	description	stockquantit
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

2. remove all cart items for a specific customer.

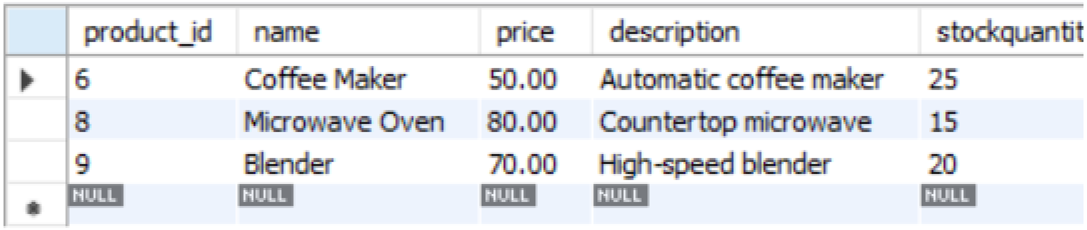
delete from cart where customer_id = 2;



cart_id	customer_id	product_id	quantity
1	1	1	2
2	1	3	1
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
NULL	NULL	NULL	NULL

3. retrieve products priced below $100.

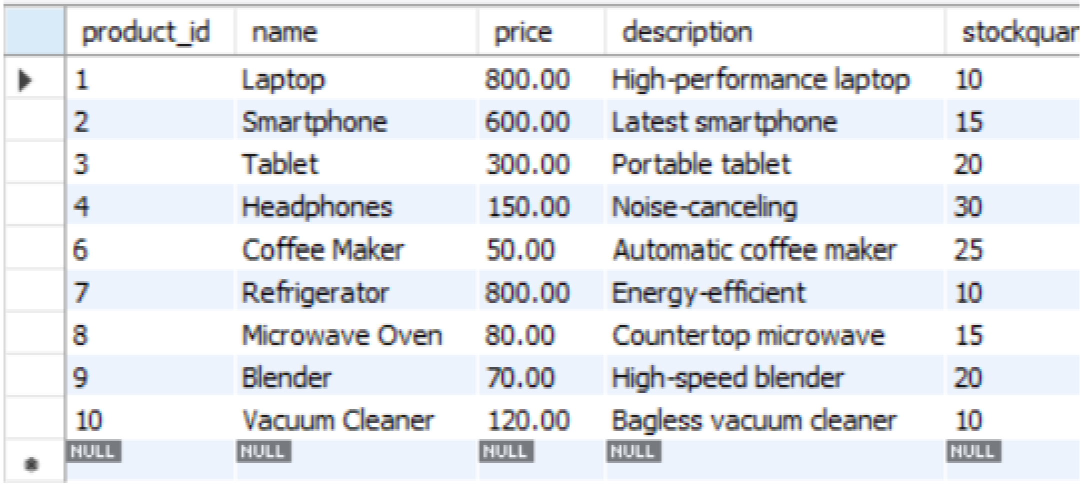
select * from products where price < 100;



	product_id	name	price	description	stockquantit
▶	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.

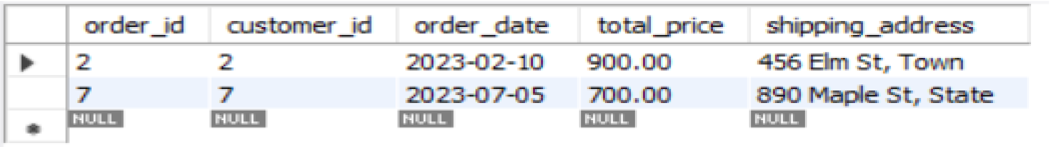
select * from products where stockquantity > 5;



	product_id	name	price	description	stockquar
▶	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.

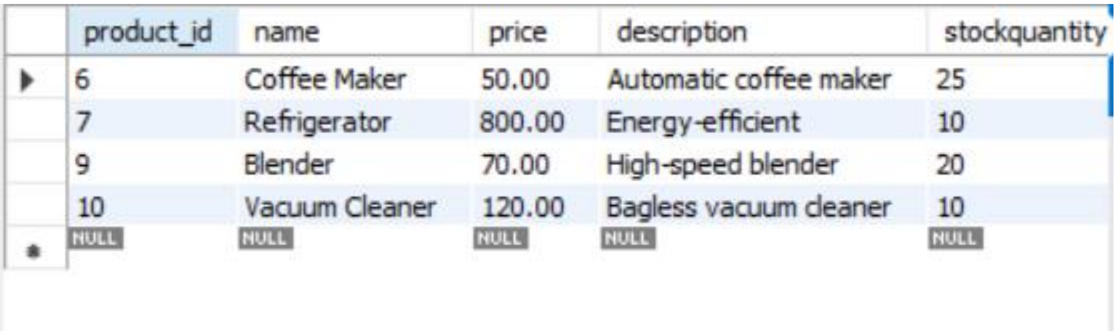
select * from orders where total_price between 500 and 1000;



	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’.

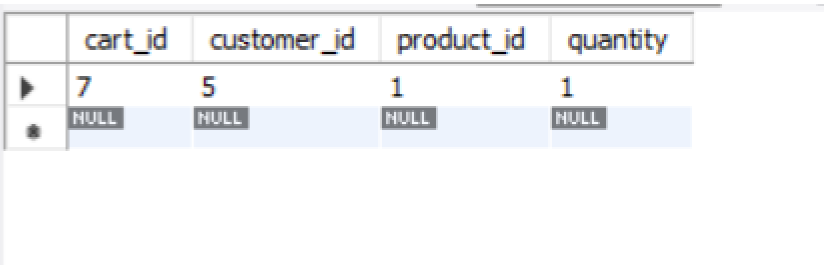
select * from products where name like '%r';



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.

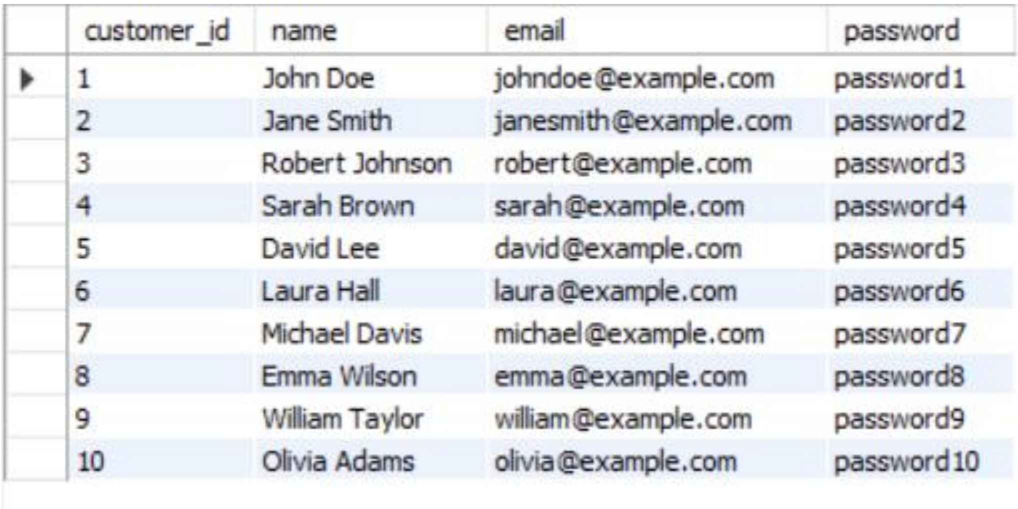
select * from cart where customer_id = 5;



cart_id	customer_id	product_id	quantity
7	5	1	1
NULL	NULL	NULL	NULL

8. find customers who placed orders in 2023.

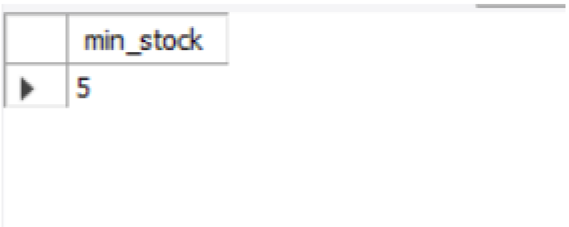
select distinct c.* from customers c
join orders o on c.customer_id = o.customer_id
where year(o.order_date) = 2023;



customer_id	name	email	password
1	John Doe	johndoe@example.com	password1
2	Jane Smith	janesmith@example.com	password2
3	Robert Johnson	robert@example.com	password3
4	Sarah Brown	sarah@example.com	password4
5	David Lee	david@example.com	password5
6	Laura Hall	laura@example.com	password6
7	Michael Davis	michael@example.com	password7
8	Emma Wilson	emma@example.com	password8
9	William Taylor	william@example.com	password9
10	Olivia Adams	olivia@example.com	password10

9. determine the minimum stock quantity for each product category.

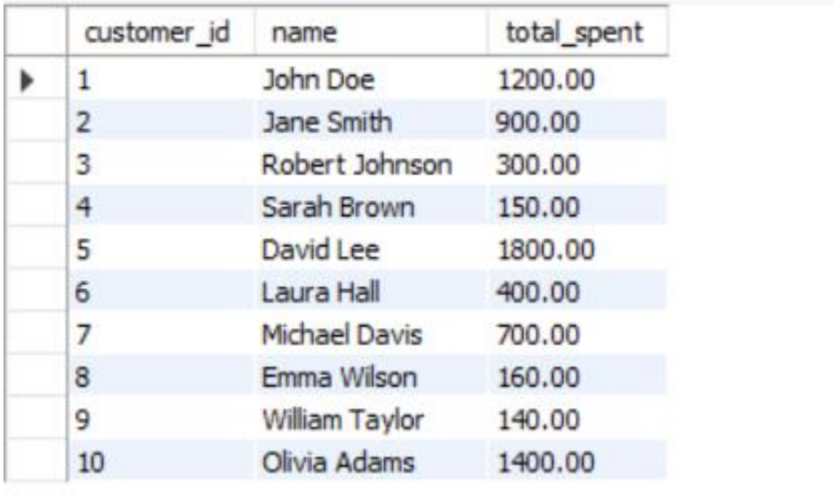
select min(stockquantity) as min_stock from products;



min_stock
5

10. calculate the total amount spent by each customer.

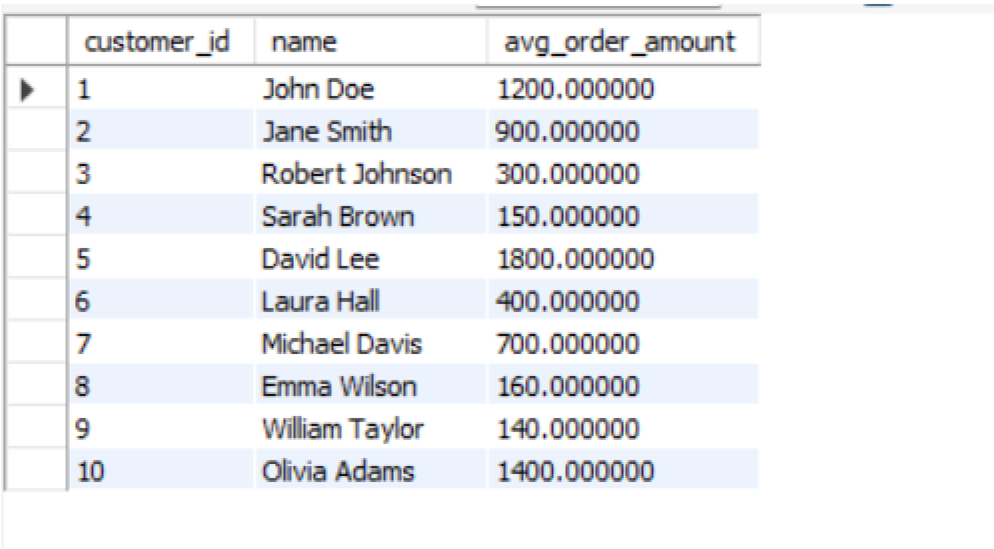
select c.customer_id, c.name, sum(o.total_price) as total_spent
from customers c
join orders o on c.customer_id = o.customer_id
group by c.customer_id, c.name;



customer_id	name	total_spent
1	John Doe	1200.00
2	Jane Smith	900.00
3	Robert Johnson	300.00
4	Sarah Brown	150.00
5	David Lee	1800.00
6	Laura Hall	400.00
7	Michael Davis	700.00
8	Emma Wilson	160.00
9	William Taylor	140.00
10	Olivia Adams	1400.00

11. find the average order amount for each customer.

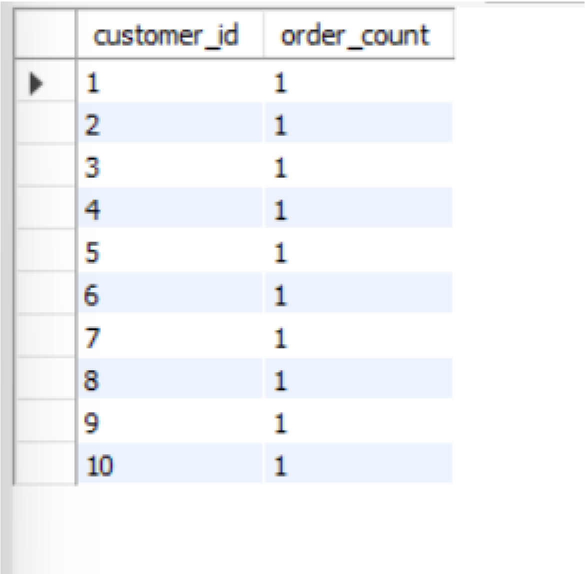
select c.customer_id, c.name, avg(o.total_price) as avg_order_amount
from customers c
join orders o on c.customer_id = o.customer_id
group by c.customer_id, c.name;



customer_id	name	avg_order_amount
1	John Doe	1200.000000
2	Jane Smith	900.000000
3	Robert Johnson	300.000000
4	Sarah Brown	150.000000
5	David Lee	1800.000000
6	Laura Hall	400.000000
7	Michael Davis	700.000000
8	Emma Wilson	160.000000
9	William Taylor	140.000000
10	Olivia Adams	1400.000000

12. count the number of orders placed by each customer.

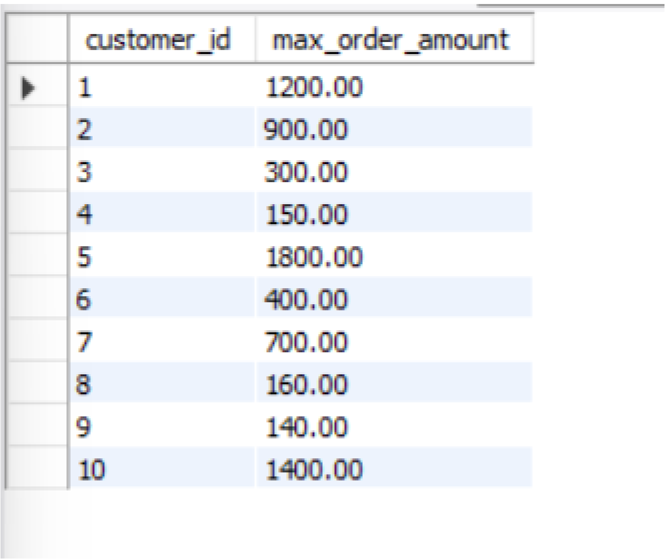
select customer_id, count(*) as order_count from orders group by customer_id;



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.

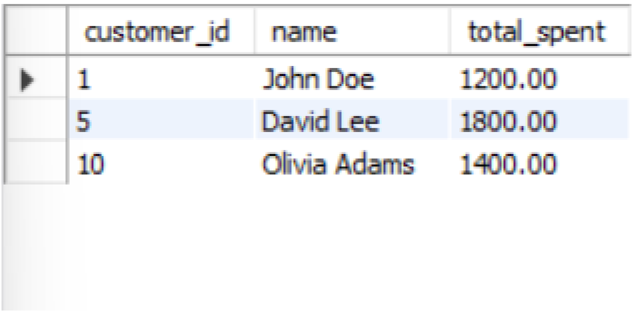
select customer_id, max(total_price) as max_order_amount from orders group by customer_id;



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.

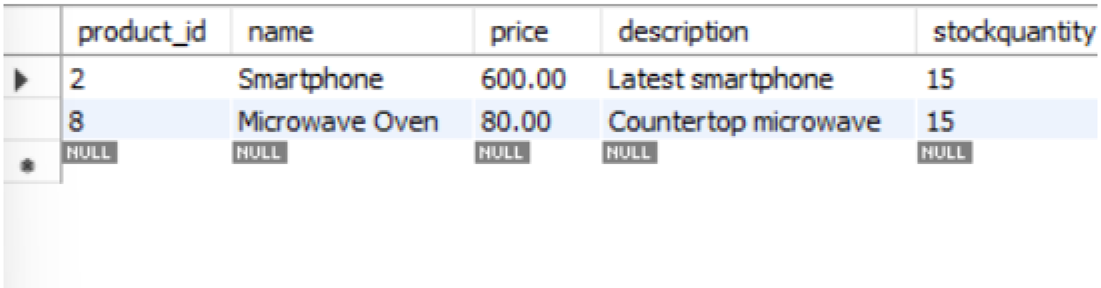
```
select c.customer_id, c.name, sum(o.total_price) as total_spent
from customers c
join orders o on c.customer_id = o.customer_id
group by c.customer_id, c.name
having total_spent > 1000;
```



customer_id	name	total_spent
1	John Doe	1200.00
5	David Lee	1800.00
10	Olivia Adams	1400.00

15. subquery to find products not in the cart.

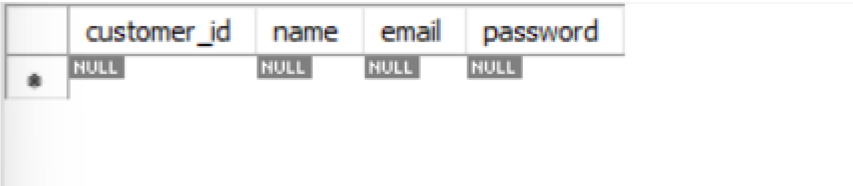
```
select * from products where product_id not in (select distinct product_id from
cart);
```



product_id	name	price	description	stockquantity
2	Smartphone	600.00	Latest smartphone	15
8	Microwave Oven	80.00	Countertop microwave	15
NULL	NULL	NULL	NULL	NULL

16. subquery to find customers who haven't placed orders.

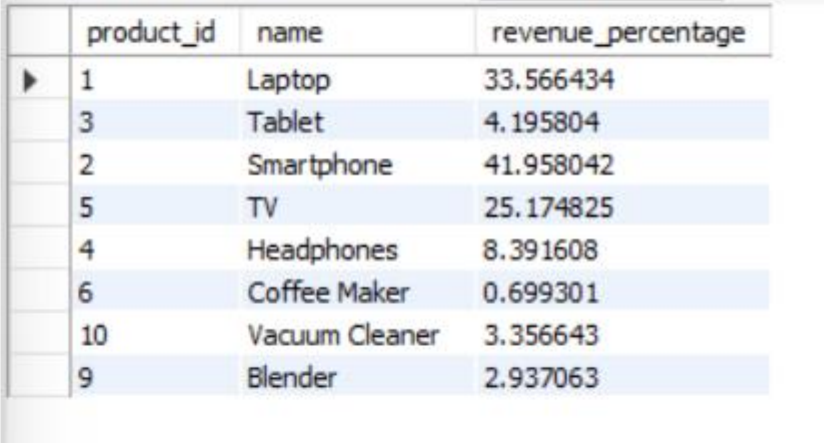
select * from customers where customer_id not in (select distinct customer_id from orders);



customer_id	name	email	password
NULL	NULL	NULL	NULL

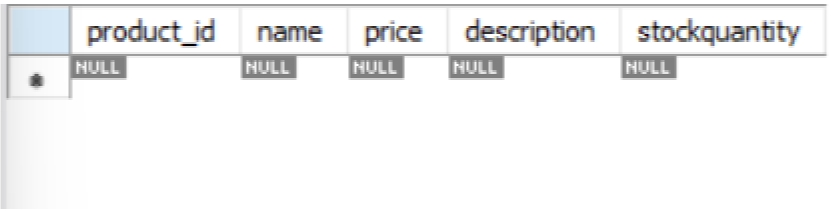
17. subquery to calculate the percentage of total revenue for a product.

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;



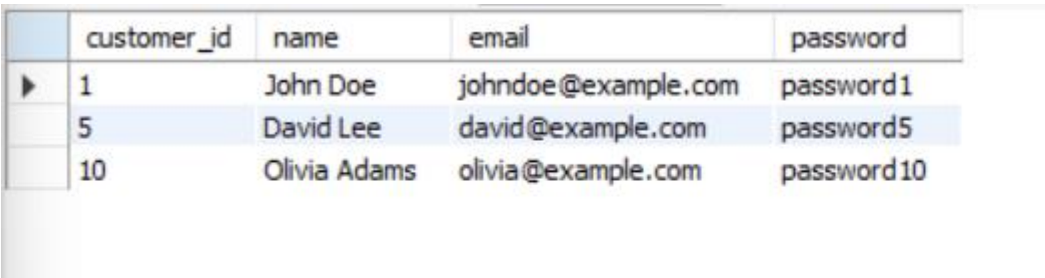
product_id	name	revenue_percentage
1	Laptop	33.566434
3	Tablet	4.195804
2	Smartphone	41.958042
5	TV	25.174825
4	Headphones	8.391608
6	Coffee Maker	0.699301
10	Vacuum Cleaner	3.356643
9	Blender	2.937063

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 distinct c.* from customers c
join orders o on c.customer_id = o.customer_id
where o.total_price > 1000;



customer_id	name	email	password
1	John Doe	johndoe@example.com	password1
5	David Lee	david@example.com	password5
10	Olivia Adams	olivia@example.com	password10