Basic SQL Training Questions Answer

```
-- Step 1: Create Database
CREATE DATABASE e_commerce;
USE e_commerce;

 -- Step 2: Create Tables
CREATE TABLE Customers (
    customer_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(50),
    email VARCHAR(50),
    mobile VARCHAR(15)
);

CREATE TABLE Products (
    id INT,
    name VARCHAR(50) NOT NULL,
    description VARCHAR(200),
    price DECIMAL(10,2) NOT NULL,
    category VARCHAR(50)
);

-- step 3:  Modify Tables
ALTER TABLE Customers MODIFY name VARCHAR(50) NOT NULL;
ALTER TABLE Customers MODIFY email VARCHAR(50) NOT NULL;
ALTER TABLE Customers ADD UNIQUE (email);
ALTER TABLE Customers ADD COLUMN age INT;

ALTER TABLE Products CHANGE COLUMN id product_id INT;
ALTER TABLE Products MODIFY product_id INT PRIMARY KEY
AUTO_INCREMENT;
ALTER TABLE Products MODIFY description TEXT;

-- step 4: create order table
CREATE TABLE Orders (
```

```sql
    order_id INT AUTO_INCREMENT PRIMARY KEY,
    customer_id INT,
    product_id INT,
    quantity INT NOT NULL,
    order_date DATE NOT NULL,
    status ENUM('Pending', 'Success', 'Cancel'),
    payment_method ENUM('Credit', 'Debit', 'UPI'),
    total_amount DECIMAL(10,2) NOT NULL,
                FOREIGN    KEY    (customer_id)    REFERENCES
Customers(customer_id),
    FOREIGN KEY (product_id) REFERENCES Products(product_id)
);

-- step 5:  modify order table
ALTER  TABLE  Orders  MODIFY  status  ENUM('Pending',  'Success',
'Cancel') DEFAULT 'Pending';
ALTER TABLE Orders MODIFY payment_method ENUM('Credit', 'Debit',
'UPI', 'COD');
ALTER TABLE Orders ADD FOREIGN KEY (product_id) REFERENCES
Products(product_id);

--  step 6: Insert some sample records in all the tables.

INSERT INTO Customers (name, email, mobile, age) VALUES
('John Doe', 'john@example.com', '1234567890', 25),
('Jane Smith', 'jane@example.com', '0987654321', 30),
('Alice Johnson', 'alice@example.com', '2345678901', 28),
('Bob Brown', 'bob@example.com', '3456789012', 35),
('Charlie White', 'charlie@example.com', '4567890123', 40),
('David Green', 'david@example.com', '5678901234', 22),
('Emily Adams', 'emily@example.com', '6789012345', 27),
('Frank Carter', 'frank@example.com', '7890123456', 32),
('Grace Hall', 'grace@example.com', '8901234567', 29),
('Henry Lee', 'henry@example.com', '9012345678', 31),
('Isabella King', 'isabella@example.com', '0123456789', 26),
('Jack Martin', 'jack@example.com', '1234509876', 37),
('Katherine Scott', 'katherine@example.com', '2345609875', 24),
```

('Liam Turner', 'liam@example.com', '3456709874', 33),
('Mia Walker', 'mia@example.com', '4567809873', 36),
('Noah Young', 'noah@example.com', '5678909872', 29),
('Olivia Baker', 'olivia@example.com', '6789009871', 23),
('Paul Harris', 'paul@example.com', '7890009870', 34),
('Quinn Nelson', 'quinn@example.com', '8900009869', 28),
('Rachel Moore', 'rachel@example.com', '9000009868', 21);

INSERT INTO Products (name, description, price, category) VALUES
('Laptop', 'Gaming laptop', 799.99, 'Electronics'),
('Smartphone', 'Latest model', 499.99, 'Electronics'),
('Headphones', 'Noise-canceling', 99.99, 'Electronics'),
('Keyboard', 'Mechanical keyboard', 69.99, 'Electronics'),
('Mouse', 'Wireless mouse', 39.99, 'Electronics'),
('Monitor', '27-inch 4K display', 299.99, 'Electronics'),
('Tablet', '10-inch display', 199.99, 'Electronics'),
('Smartwatch', 'Fitness tracking', 149.99, 'Electronics'),
('Bluetooth Speaker', 'Portable speaker', 79.99, 'Electronics'),
('Camera', 'Digital camera', 399.99, 'Electronics'),
('Coffee Maker', 'Automatic machine', 89.99, 'Home Appliances'),
('Vacuum Cleaner', 'Cordless vacuum', 149.99, 'Home Appliances'),
('Microwave', 'Countertop microwave', 129.99, 'Home Appliances'),
('Refrigerator', 'Double-door fridge', 899.99, 'Home Appliances'),
('Washing Machine', 'Front-load washing machine', 499.99, 'Home Appliances'),
('Sofa', 'Leather sofa', 699.99, 'Furniture'),
('Dining Table', 'Wooden dining table', 349.99, 'Furniture'),
('Chair', 'Ergonomic office chair', 119.99, 'Furniture'),
('Bed', 'Queen-size bed frame', 599.99, 'Furniture'),
('Bookshelf', '5-tier bookshelf', 99.99, 'Furniture');

INSERT INTO Orders (customer_id, product_id, quantity, order_date, status, payment_method, total_amount) VALUES
(1, 2, 1, '2025-02-01', 'Success', 'Credit', 499.99),
(3, 4, 2, '2025-02-02', 'Pending', 'UPI', 139.98),

(5, 6, 1, '2025-02-03', 'Success', 'Debit', 299.99),
(7, 8, 1, '2025-02-04', 'Success', 'Credit', 149.99),
(9, 10, 2, '2025-02-05', 'Pending', 'COD', 799.98),
(11, 12, 1, '2025-02-06', 'Success', 'UPI', 149.99),
(13, 14, 1, '2025-02-07', 'Pending', 'Credit', 899.99),
(15, 16, 1, '2025-02-08', 'Success', 'Debit', 699.99),
(17, 18, 1, '2025-02-09', 'Success', 'Credit', 119.99),
(19, 20, 1, '2025-02-10', 'Pending', 'COD', 99.99),
(2, 1, 3, '2025-02-11', 'Success', 'Credit', 1499.97),
(4, 3, 2, '2025-02-12', 'Pending', 'UPI', 279.98),
(6, 5, 1, '2025-02-13', 'Success', 'Debit', 39.99),
(8, 7, 2, '2025-02-14', 'Pending', 'Credit', 399.98),
(10, 9, 1, '2025-02-15', 'Success', 'COD', 79.99),
(12, 11, 3, '2025-02-16', 'Pending', 'UPI', 269.97),
(14, 13, 2, '2025-02-17', 'Success', 'Credit', 259.98),
(16, 15, 1, '2025-02-18', 'Pending', 'Debit', 499.99),
(18, 17, 2, '2025-02-19', 'Success', 'Credit', 699.98),
(20, 19, 1, '2025-02-20', 'Pending', 'COD', 99.99);

-- step 7: Perform following queries:

SELECT category, COUNT(*) AS product_count FROM Products GROUP BY category;

SELECT * FROM Products
WHERE category = 'Electronics'
AND price BETWEEN 50 AND 500
AND name LIKE '%a%';

SELECT * FROM Products
WHERE category = 'Electronics'
ORDER BY price DESC
LIMIT 5 OFFSET 2;

SELECT * FROM Customers
WHERE customer_id NOT IN (SELECT DISTINCT customer_id FROM Orders);

```sql
SELECT customer_id, AVG(total_amount) AS avg_spent
FROM Orders GROUP BY customer_id;
SELECT * FROM Products
WHERE price < (SELECT AVG(price) FROM Products);

SELECT customer_id, SUM(quantity) AS total_quantity
FROM Orders GROUP BY customer_id;

SELECT Orders.order_id, Customers.name AS customer_name,
Products.name AS product_name, Orders.quantity, Orders.order_date,
Orders.status
FROM Orders
JOIN Customers ON Orders.customer_id = Customers.customer_id
JOIN Products ON Orders.product_id = Products.product_id;

SELECT * FROM Products
WHERE product_id NOT IN (SELECT DISTINCT product_id FROM
Orders);
```

MySQL Shell

```
Type '\help' or '\?' for help; '\quit' to exit.
 MySQL  JS > \connect root@localhost
Creating a session to 'root@localhost'
Fetching schema names for auto-completion... Press ^C to stop.
Your MySQL connection id is 51 (X protocol)
Server version: 8.0.37 MySQL Community Server - GPL
No default schema selected; type \use <schema> to set one.
 MySQL  localhost:33060+ ssl  JS > \sql
Switching to SQL mode... Commands end with ;
Fetching global names for auto-completion... Press ^C to stop.
 MySQL  localhost:33060+ ssl  SQL > CREATE DATABASE e_commerce;
Query OK, 1 row affected (0.0290 sec)
 MySQL  localhost:33060+ ssl  SQL > show databases;
+--------------------+
| Database           |
+--------------------+
| e_commerce         |
| information_schema |
| mysql              |
| org                |
| performance_schema |
+--------------------+
5 rows in set (0.0013 sec)
 MySQL  localhost:33060+ ssl  SQL > USE e_commerce;
Default schema set to `e_commerce`.
Fetching global names, object names from `e_commerce` for auto-completion... Press ^C to stop.
 MySQL  localhost:33060+ ssl  e_commerce  SQL > CREATE TABLE Customers (
                                            ->     customer_id INT AUTO_INCREMENT PRIMARY KEY,
                                            ->     name VARCHAR(50),
                                            ->     email VARCHAR(50),
                                            ->     mobile VARCHAR(15)
                                            -> );
Query OK, 0 rows affected (0.0578 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > CREATE TABLE Products (
                                            ->     id INT,
                                            ->     name VARCHAR(50) NOT NULL,
                                            ->     description VARCHAR(200),
                                            ->     price DECIMAL(10,2) NOT NULL,
                                            ->     category VARCHAR(50)
                                            -> );
Query OK, 0 rows affected (0.0750 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > show tables;
+----------------------+
| Tables_in_e_commerce |
+----------------------+
| customers            |
| products             |
+----------------------+
2 rows in set (0.0021 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Customers MODIFY name VARCHAR(50) NOT NULL;
Query OK, 0 rows affected (0.2424 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Customers MODIFY email VARCHAR(50) NOT NULL;
Query OK, 0 rows affected (0.1201 sec)

Records: 0  Duplicates: 0  Warnings: 0
```

Select MySQL Shell

```
Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Customers ADD UNIQUE (email);
Query OK, 0 rows affected (0.0819 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Customers ADD COLUMN age INT;
Query OK, 0 rows affected (0.0190 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Products CHANGE COLUMN id product_id INT;
Query OK, 0 rows affected (0.0650 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Products MODIFY product_id INT PRIMARY KEY AUTO_INCREMENT;
Query OK, 0 rows affected (0.2366 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Products MODIFY description TEXT;
Query OK, 0 rows affected (0.1663 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > CREATE TABLE Orders (
                                            ->     order_id INT AUTO_INCREMENT PRIMARY KEY,
                                            ->     customer_id INT,
                                            ->     product_id INT,
                                            ->     quantity INT NOT NULL,
                                            ->     order_date DATE NOT NULL,
                                            ->     status ENUM('Pending', 'Success', 'Cancel'),
                                            ->     payment_method ENUM('Credit', 'Debit', 'UPI'),
                                            ->     total_amount DECIMAL(10,2) NOT NULL,
                                            ->     FOREIGN KEY (customer_id) REFERENCES Customers(customer_id),
                                            ->     FOREIGN KEY (product_id) REFERENCES Products(product_id)
                                            -> );
Query OK, 0 rows affected (0.0739 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Orders MODIFY status ENUM('Pending', 'Success', 'Cancel') DEFAULT 'Pending';
Query OK, 0 rows affected (0.0393 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Orders MODIFY payment_method ENUM('Credit', 'Debit', 'UPI', 'COD');
Query OK, 0 rows affected (0.0317 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > ALTER TABLE Orders ADD FOREIGN KEY (product_id) REFERENCES Products(product_id);
Query OK, 0 rows affected (0.2550 sec)

Records: 0  Duplicates: 0  Warnings: 0
 MySQL  localhost:33060+ ssl  e_commerce  SQL > INSERT INTO Customers (name, email, mobile, age) VALUES
                                            -> ('John Doe', 'john@example.com', '1234567890', 25),
                                            -> ('Jane Smith', 'jane@example.com', '0987654321', 30),
                                            -> ('Alice Johnson', 'alice@example.com', '2345678901', 28),
                                            -> ('Bob Brown', 'bob@example.com', '3456789012', 35),
                                            -> ('Charlie White', 'charlie@example.com', '4567890123', 40),
                                            -> ('David Green', 'david@example.com', '5678901234', 22),
                                            -> ('Emily Adams', 'emily@example.com', '6789012345', 27),
                                            -> ('Frank Carter', 'frank@example.com', '7890123456', 32),
                                            -> ('Grace Hall', 'grace@example.com', '8901234567', 29),
                                            -> ('Henry Lee', 'henry@example.com', '9012345678', 31),
                                            -> ('Isabella King', 'isabella@example.com', '0123456789', 26),
                                            -> ('Jack Martin', 'jack@example.com', '1234509876', 37),
                                            -> ('Katherine Scott', 'katherine@example.com', '2345609875', 24),
                                            -> ('Liam Turner', 'liam@example.com', '3456709874', 33),
                                            -> ('Mia Walker', 'mia@example.com', '4567809873', 36),
                                            -> ('Noah Young', 'noah@example.com', '5678909872', 29),
```

Window 1 (top)

```
Records: 0  Duplicates: 0  Warnings: 0
MySQL  localhost:33060+ ssl  e_commerce  SQL > INSERT INTO Customers (name, email, mobile, age) VALUES
                                         -> ('John Doe', 'john@example.com', '1234567890', 25),
                                         -> ('Jane Smith', 'jane@example.com', '0987654321', 30),
                                         -> ('Alice Johnson', 'alice@example.com', '2345678901', 28),
                                         -> ('Bob Brown', 'bob@example.com', '3456789012', 35),
                                         -> ('Charlie White', 'charlie@example.com', '4567890123', 40),
                                         -> ('David Green', 'david@example.com', '5678901234', 22),
                                         -> ('Emily Adams', 'emily@example.com', '6789012345', 27),
                                         -> ('Frank Carter', 'frank@example.com', '7890123456', 32),
                                         -> ('Grace Hall', 'grace@example.com', '8901234567', 29),
                                         -> ('Henry Lee', 'henry@example.com', '9012345678', 31),
                                         -> ('Isabella King', 'isabella@example.com', '0123456789', 26),
                                         -> ('Jack Martin', 'jack@example.com', '1234509876', 37),
                                         -> ('Katherine Scott', 'katherine@example.com', '2345609875', 24),
                                         -> ('Liam Turner', 'liam@example.com', '3456709874', 33),
                                         -> ('Mia Walker', 'mia@example.com', '4567809873', 36),
                                         -> ('Noah Young', 'noah@example.com', '5678909872', 29),
                                         -> ('Olivia Baker', 'olivia@example.com', '6789009871', 23),
                                         -> ('Paul Harris', 'paul@example.com', '7890009870', 34),
                                         -> ('Quinn Nelson', 'quinn@example.com', '8900009869', 28),
                                         -> ('Rachel Moore', 'rachel@example.com', '9000009868', 21);
Query OK, 20 rows affected (0.0210 sec)

Records: 20  Duplicates: 0  Warnings: 0
MySQL  localhost:33060+ ssl  e_commerce  SQL > select * from customers;
+-------------+-----------------+------------------------+------------+------+
| customer_id | name            | email                  | mobile     | age  |
+-------------+-----------------+------------------------+------------+------+
|           1 | John Doe        | john@example.com       | 1234567890 |   25 |
|           2 | Jane Smith      | jane@example.com       | 0987654321 |   30 |
|           3 | Alice Johnson   | alice@example.com      | 2345678901 |   28 |
|           4 | Bob Brown       | bob@example.com        | 3456789012 |   35 |
|           5 | Charlie White   | charlie@example.com    | 4567890123 |   40 |
|           6 | David Green     | david@example.com      | 5678901234 |   22 |
|           7 | Emily Adams     | emily@example.com      | 6789012345 |   27 |
|           8 | Frank Carter    | frank@example.com      | 7890123456 |   32 |
|           9 | Grace Hall      | grace@example.com      | 8901234567 |   29 |
|          10 | Henry Lee       | henry@example.com      | 9012345678 |   31 |
|          11 | Isabella King   | isabella@example.com   | 0123456789 |   26 |
|          12 | Jack Martin     | jack@example.com       | 1234509876 |   37 |
|          13 | Katherine Scott | katherine@example.com  | 2345609875 |   24 |
|          14 | Liam Turner     | liam@example.com       | 3456709874 |   33 |
|          15 | Mia Walker      | mia@example.com        | 4567809873 |   36 |
|          16 | Noah Young      | noah@example.com       | 5678909872 |   29 |
|          17 | Olivia Baker    | olivia@example.com     | 6789009871 |   23 |
|          18 | Paul Harris     | paul@example.com       | 7890009870 |   34 |
|          19 | Quinn Nelson    | quinn@example.com      | 8900009869 |   28 |
|          20 | Rachel Moore    | rachel@example.com     | 9000009868 |   21 |
+-------------+-----------------+------------------------+------------+------+
20 rows in set (0.0010 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > INSERT INTO Products (name, description, price, category) VALUES
                                         -> ('Laptop', 'Gaming laptop', 799.99, 'Electronics'),
                                         -> ('Smartphone', 'Latest model', 499.99, 'Electronics'),
                                         -> ('Headphones', 'Noise-canceling', 99.99, 'Electronics'),
                                         -> ('Keyboard', 'Mechanical keyboard', 69.99, 'Electronics'),
                                         -> ('Mouse', 'Wireless mouse', 39.99, 'Electronics'),
                                         -> ('Monitor', '27-inch 4K display', 299.99, 'Electronics'),
                                         -> ('Tablet', '10-inch display', 199.99, 'Electronics'),
                                         -> ('Smartwatch', 'Fitness tracking', 149.99, 'Electronics'),
                                         -> ('Bluetooth Speaker', 'Portable speaker', 79.99, 'Electronics'),
                                         -> ('Camera', 'Digital camera', 399.99, 'Electronics'),
```

Window 2 (bottom)

```
MySQL  localhost:33060+ ssl  e_commerce  SQL > INSERT INTO Products (name, description, price, category) VALUES
                                         -> ('Laptop', 'Gaming laptop', 799.99, 'Electronics'),
                                         -> ('Smartphone', 'Latest model', 499.99, 'Electronics'),
                                         -> ('Headphones', 'Noise-canceling', 99.99, 'Electronics'),
                                         -> ('Keyboard', 'Mechanical keyboard', 69.99, 'Electronics'),
                                         -> ('Mouse', 'Wireless mouse', 39.99, 'Electronics'),
                                         -> ('Monitor', '27-inch 4K display', 299.99, 'Electronics'),
                                         -> ('Tablet', '10-inch display', 199.99, 'Electronics'),
                                         -> ('Smartwatch', 'Fitness tracking', 149.99, 'Electronics'),
                                         -> ('Bluetooth Speaker', 'Portable speaker', 79.99, 'Electronics'),
                                         -> ('Camera', 'Digital camera', 399.99, 'Electronics'),
                                         -> ('Coffee Maker', 'Automatic machine', 89.99, 'Home Appliances'),
                                         -> ('Vacuum Cleaner', 'Cordless vacuum', 149.99, 'Home Appliances'),
                                         -> ('Microwave', 'Countertop microwave', 129.99, 'Home Appliances'),
                                         -> ('Refrigerator', 'Double-door fridge', 899.99, 'Home Appliances'),
                                         -> ('Washing Machine', 'Front-load washing machine', 499.99, 'Home Appliances'),
                                         -> ('Sofa', 'Leather sofa', 699.99, 'Furniture'),
                                         -> ('Dining Table', 'Wooden dining table', 349.99, 'Furniture'),
                                         -> ('Chair', 'Ergonomic office chair', 119.99, 'Furniture'),
                                         -> ('Bed', 'Queen-size bed frame', 599.99, 'Furniture'),
                                         -> ('Bookshelf', '5-tier bookshelf', 99.99, 'Furniture');
Query OK, 20 rows affected (0.0225 sec)

Records: 20  Duplicates: 0  Warnings: 0
MySQL  localhost:33060+ ssl  e_commerce  SQL > select * from products;
+------------+-------------------+----------------------------+--------+-----------------+
| product_id | name              | description                | price  | category        |
+------------+-------------------+----------------------------+--------+-----------------+
|          1 | Laptop            | Gaming laptop              | 799.99 | Electronics     |
|          2 | Smartphone        | Latest model               | 499.99 | Electronics     |
|          3 | Headphones        | Noise-canceling            |  99.99 | Electronics     |
|          4 | Keyboard          | Mechanical keyboard        |  69.99 | Electronics     |
|          5 | Mouse             | Wireless mouse             |  39.99 | Electronics     |
|          6 | Monitor           | 27-inch 4K display         | 299.99 | Electronics     |
|          7 | Tablet            | 10-inch display            | 199.99 | Electronics     |
|          8 | Smartwatch        | Fitness tracking           | 149.99 | Electronics     |
|          9 | Bluetooth Speaker | Portable speaker           |  79.99 | Electronics     |
|         10 | Camera            | Digital camera             | 399.99 | Electronics     |
|         11 | Coffee Maker      | Automatic machine          |  89.99 | Home Appliances |
|         12 | Vacuum Cleaner    | Cordless vacuum            | 149.99 | Home Appliances |
|         13 | Microwave         | Countertop microwave       | 129.99 | Home Appliances |
|         14 | Refrigerator      | Double-door fridge         | 899.99 | Home Appliances |
|         15 | Washing Machine   | Front-load washing machine | 499.99 | Home Appliances |
|         16 | Sofa              | Leather sofa               | 699.99 | Furniture       |
|         17 | Dining Table      | Wooden dining table        | 349.99 | Furniture       |
|         18 | Chair             | Ergonomic office chair     | 119.99 | Furniture       |
|         19 | Bed               | Queen-size bed frame       | 599.99 | Furniture       |
|         20 | Bookshelf         | 5-tier bookshelf           |  99.99 | Furniture       |
+------------+-------------------+----------------------------+--------+-----------------+
20 rows in set (0.0000 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > INSERT INTO Orders (customer_id, product_id, quantity, order_date, status, payment_method, total_amount) VALUES
                                         -> (1, 2, 1, '2025-02-01', 'Success', 'Credit', 499.99),
                                         -> (3, 4, 2, '2025-02-02', 'Pending', 'UPI', 139.98),
                                         -> (5, 6, 1, '2025-02-03', 'Success', 'Debit', 299.99),
                                         -> (7, 8, 1, '2025-02-04', 'Success', 'Credit', 149.99),
                                         -> (9, 10, 2, '2025-02-05', 'Pending', 'COD', 799.98),
                                         -> (11, 12, 1, '2025-02-06', 'Success', 'UPI', 149.99),
                                         -> (13, 14, 1, '2025-02-07', 'Pending', 'Credit', 899.99),
                                         -> (15, 16, 1, '2025-02-08', 'Success', 'Debit', 699.99),
                                         -> (17, 18, 1, '2025-02-09', 'Success', 'Credit', 119.99),
                                         -> (19, 20, 1, '2025-02-10', 'Pending', 'COD', 99.99),
                                         -> (2, 1, 3, '2025-02-11', 'Success', 'Credit', 1499.97),
                                         -> (4, 3, 2, '2025-02-12', 'Pending', 'UPI', 279.98),
```

```
20 rows in set (0.0009 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > INSERT INTO Orders (customer_id, product_id, quantity, order_date, status, payment_method, total_amount) VALUES
    -> (1, 2, 1, '2025-02-01', 'Success', 'Credit', 499.99),
    -> (3, 4, 2, '2025-02-02', 'Pending', 'UPI', 139.98),
    -> (5, 6, 1, '2025-02-03', 'Success', 'Debit', 299.99),
    -> (7, 8, 1, '2025-02-04', 'Success', 'Credit', 149.99),
    -> (9, 10, 2, '2025-02-05', 'Pending', 'COD', 799.98),
    -> (11, 12, 1, '2025-02-06', 'Success', 'UPI', 149.99),
    -> (13, 14, 1, '2025-02-07', 'Pending', 'Credit', 899.99),
    -> (15, 16, 1, '2025-02-08', 'Success', 'Debit', 699.99),
    -> (17, 18, 1, '2025-02-09', 'Success', 'Credit', 119.99),
    -> (19, 20, 1, '2025-02-10', 'Pending', 'COD', 99.99),
    -> (2, 1, 3, '2025-02-11', 'Success', 'Credit', 1499.97),
    -> (4, 3, 2, '2025-02-12', 'Pending', 'UPI', 279.98),
    -> (6, 5, 1, '2025-02-13', 'Success', 'Debit', 39.99),
    -> (8, 7, 2, '2025-02-14', 'Pending', 'Credit', 399.98),
    -> (10, 9, 1, '2025-02-15', 'Success', 'COD', 79.99),
    -> (12, 11, 3, '2025-02-16', 'Pending', 'UPI', 269.97),
    -> (14, 13, 2, '2025-02-17', 'Success', 'Credit', 259.98),
    -> (16, 15, 1, '2025-02-18', 'Pending', 'Debit', 499.99),
    -> (18, 17, 2, '2025-02-19', 'Success', 'Credit', 699.98),
    -> (20, 19, 1, '2025-02-20', 'Pending', 'COD', 99.99);
Query OK, 20 rows affected (0.0237 sec)

Records: 20  Duplicates: 0  Warnings: 0
MySQL  localhost:33060+ ssl  e_commerce  SQL > select * from orders;
+----------+-------------+------------+----------+------------+---------+----------------+--------------+
| order_id | customer_id | product_id | quantity | order_date | status  | payment_method | total_amount |
+----------+-------------+------------+----------+------------+---------+----------------+--------------+
|        1 |           1 |          2 |        1 | 2025-02-01 | Success | Credit         |       499.99 |
|        2 |           3 |          4 |        2 | 2025-02-02 | Pending | UPI            |       139.98 |
|        3 |           5 |          6 |        1 | 2025-02-03 | Success | Debit          |       299.99 |
|        4 |           7 |          8 |        1 | 2025-02-04 | Success | Credit         |       149.99 |
|        5 |           9 |         10 |        2 | 2025-02-05 | Pending | COD            |       799.98 |
|        6 |          11 |         12 |        1 | 2025-02-06 | Success | UPI            |       149.99 |
|        7 |          13 |         14 |        1 | 2025-02-07 | Pending | Credit         |       899.99 |
|        8 |          15 |         16 |        1 | 2025-02-08 | Success | Debit          |       699.99 |
|        9 |          17 |         18 |        1 | 2025-02-09 | Success | Credit         |       119.99 |
|       10 |          19 |         20 |        1 | 2025-02-10 | Pending | COD            |        99.99 |
|       11 |           2 |          1 |        3 | 2025-02-11 | Success | Credit         |      1499.97 |
|       12 |           4 |          3 |        2 | 2025-02-12 | Pending | UPI            |       279.98 |
|       13 |           6 |          5 |        1 | 2025-02-13 | Success | Debit          |        39.99 |
|       14 |           8 |          7 |        2 | 2025-02-14 | Pending | Credit         |       399.98 |
|       15 |          10 |          9 |        1 | 2025-02-15 | Success | COD            |        79.99 |
|       16 |          12 |         11 |        3 | 2025-02-16 | Pending | UPI            |       269.97 |
|       17 |          14 |         13 |        2 | 2025-02-17 | Success | Credit         |       259.98 |
|       18 |          16 |         15 |        1 | 2025-02-18 | Pending | Debit          |       499.99 |
|       19 |          18 |         17 |        2 | 2025-02-19 | Success | Credit         |       699.98 |
|       20 |          20 |         19 |        1 | 2025-02-20 | Pending | COD            |        99.99 |
+----------+-------------+------------+----------+------------+---------+----------------+--------------+
20 rows in set (0.0009 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL >
```

```
    -> (20, 19, 1, '2025-02-20', 'Pending', 'COD', 99.99);
Query OK, 20 rows affected (0.0237 sec)

Records: 20  Duplicates: 0  Warnings: 0
MySQL  localhost:33060+ ssl  e_commerce  SQL > select * from orders;
+----------+-------------+------------+----------+------------+---------+----------------+--------------+
| order_id | customer_id | product_id | quantity | order_date | status  | payment_method | total_amount |
+----------+-------------+------------+----------+------------+---------+----------------+--------------+
|        1 |           1 |          2 |        1 | 2025-02-01 | Success | Credit         |       499.99 |
|        2 |           3 |          4 |        2 | 2025-02-02 | Pending | UPI            |       139.98 |
|        3 |           5 |          6 |        1 | 2025-02-03 | Success | Debit          |       299.99 |
|        4 |           7 |          8 |        1 | 2025-02-04 | Success | Credit         |       149.99 |
|        5 |           9 |         10 |        2 | 2025-02-05 | Pending | COD            |       799.98 |
|        6 |          11 |         12 |        1 | 2025-02-06 | Success | UPI            |       149.99 |
|        7 |          13 |         14 |        1 | 2025-02-07 | Pending | Credit         |       899.99 |
|        8 |          15 |         16 |        1 | 2025-02-08 | Success | Debit          |       699.99 |
|        9 |          17 |         18 |        1 | 2025-02-09 | Success | Credit         |       119.99 |
|       10 |          19 |         20 |        1 | 2025-02-10 | Pending | COD            |        99.99 |
|       11 |           2 |          1 |        3 | 2025-02-11 | Success | Credit         |      1499.97 |
|       12 |           4 |          3 |        2 | 2025-02-12 | Pending | UPI            |       279.98 |
|       13 |           6 |          5 |        1 | 2025-02-13 | Success | Debit          |        39.99 |
|       14 |           8 |          7 |        2 | 2025-02-14 | Pending | Credit         |       399.98 |
|       15 |          10 |          9 |        1 | 2025-02-15 | Success | COD            |        79.99 |
|       16 |          12 |         11 |        3 | 2025-02-16 | Pending | UPI            |       269.97 |
|       17 |          14 |         13 |        2 | 2025-02-17 | Success | Credit         |       259.98 |
|       18 |          16 |         15 |        1 | 2025-02-18 | Pending | Debit          |       499.99 |
|       19 |          18 |         17 |        2 | 2025-02-19 | Success | Credit         |       699.98 |
|       20 |          20 |         19 |        1 | 2025-02-20 | Pending | COD            |        99.99 |
+----------+-------------+------------+----------+------------+---------+----------------+--------------+
20 rows in set (0.0009 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT category, COUNT(*) AS product_count FROM Products GROUP BY category;
+-----------------+---------------+
| category        | product_count |
+-----------------+---------------+
| Electronics     |            10 |
| Home Appliances |             5 |
| Furniture       |             5 |
+-----------------+---------------+
3 rows in set (0.0007 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT * FROM Products
    -> WHERE category = 'Electronics'
    -> AND price BETWEEN 50 AND 500
    -> AND name LIKE '%a%';
+------------+-----------------+-------------------+--------+-------------+
| product_id | name            | description       | price  | category    |
+------------+-----------------+-------------------+--------+-------------+
|          2 | Smartphone      | Latest model      | 499.99 | Electronics |
|          3 | Headphones      | Noise-canceling   |  99.99 | Electronics |
|          4 | Keyboard        | Mechanical keyboard |  69.99 | Electronics |
|          7 | Tablet          | 10-inch display   | 199.99 | Electronics |
|          8 | Smartwatch      | Fitness tracking  | 149.99 | Electronics |
|          9 | Bluetooth Speaker | Portable speaker |  79.99 | Electronics |
|         10 | Camera          | Digital camera    | 399.99 | Electronics |
+------------+-----------------+-------------------+--------+-------------+
7 rows in set (0.0010 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT * FROM Products
    -> WHERE category = 'Electronics'
    -> ORDER BY price DESC
    -> LIMIT 5 OFFSET 2;
+------------+--------+----------------+--------+-------------+
| product_id | name   | description    | price  | category    |
+------------+--------+----------------+--------+-------------+
|         10 | Camera | Digital camera | 399.99 | Electronics |
```

```
                7 | Tablet          | 10-inch display     | 199.99 | Electronics |
                8 | Smartwatch      | Fitness tracking    | 149.99 | Electronics |
                3 | Headphones      | Noise-canceling     |  99.99 | Electronics |
 +------------+-----------------+---------------------+--------+-------------+
 5 rows in set (0.0008 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT * FROM Customers
                                            -> WHERE customer_id NOT IN (SELECT DISTINCT customer_id FROM Orders);
 Empty set (0.0008 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT customer_id, AVG(total_amount) AS avg_spent
                                            -> FROM Orders GROUP BY customer_id;
 +-------------+-------------+
 | customer_id | avg_spent   |
 +-------------+-------------+
 |           1 |  499.990000 |
 |           2 | 1499.970000 |
 |           3 |  139.980000 |
 |           4 |  279.980000 |
 |           5 |  299.990000 |
 |           6 |   39.990000 |
 |           7 |  149.990000 |
 |           8 |  399.980000 |
 |           9 |  799.980000 |
 |          10 |   79.990000 |
 |          11 |  149.990000 |
 |          12 |  269.970000 |
 |          13 |  899.990000 |
 |          14 |  259.980000 |
 |          15 |  699.990000 |
 |          16 |  499.990000 |
 |          17 |  119.990000 |
 |          18 |  699.980000 |
 |          19 |   99.990000 |
 |          20 |   99.990000 |
 +-------------+-------------+
 20 rows in set (0.0008 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT * FROM Products
                                            -> WHERE price < (SELECT AVG(price) FROM Products);
 +------------+-----------------+------------------------+--------+-----------------+
 | product_id | name            | description            | price  | category        |
 +------------+-----------------+------------------------+--------+-----------------+
 |          3 | Headphones      | Noise-canceling        |  99.99 | Electronics     |
 |          4 | Keyboard        | Mechanical keyboard    |  69.99 | Electronics     |
 |          5 | Mouse           | Wireless mouse         |  39.99 | Electronics     |
 |          6 | Monitor         | 27-inch 4K display     | 299.99 | Electronics     |
 |          7 | Tablet          | 10-inch display        | 199.99 | Electronics     |
 |          8 | Smartwatch      | Fitness tracking       | 149.99 | Electronics     |
 |          9 | Bluetooth Speaker | Portable speaker     |  79.99 | Electronics     |
 |         11 | Coffee Maker    | Automatic machine      |  89.99 | Home Appliances |
 |         12 | Vacuum Cleaner  | Cordless vacuum        | 149.99 | Home Appliances |
 |         13 | Microwave       | Countertop microwave   | 129.99 | Home Appliances |
 |         18 | Chair           | Ergonomic office chair | 119.99 | Furniture       |
 |         20 | Bookshelf       | 5-tier bookshelf       |  99.99 | Furniture       |
 +------------+-----------------+------------------------+--------+-----------------+
 12 rows in set (0.0017 sec)
 MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT customer_id, SUM(quantity) AS total_quantity
                                            -> FROM Orders GROUP BY customer_id;
 +-------------+----------------+
 | customer_id | total_quantity |
 +-------------+----------------+
 |           1 |              1 |
 |           2 |              3 |
 |           3 |              2 |
 |           4 |              2 |
```

```
|    16 |      499.990000 |
|    17 |      119.990000 |
|    18 |      699.980000 |
|    19 |       99.990000 |
|    20 |       99.990000 |
+-------+-----------------+
20 rows in set (0.0008 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT * FROM Products
                                         -> WHERE price < (SELECT AVG(price) FROM Products);
+------------+-----------------+------------------------+--------+------------------+
| product_id | name            | description            | price  | category         |
+------------+-----------------+------------------------+--------+------------------+
|          3 | Headphones      | Noise-canceling        |  99.99 | Electronics      |
|          4 | Keyboard        | Mechanical keyboard    |  69.99 | Electronics      |
|          5 | Mouse           | Wireless mouse         |  39.99 | Electronics      |
|          6 | Monitor         | 27-inch 4K display     | 299.99 | Electronics      |
|          7 | Tablet          | 10-inch display        | 199.99 | Electronics      |
|          8 | Smartwatch      | Fitness tracking       | 149.99 | Electronics      |
|          9 | Bluetooth Speaker | Portable speaker     |  79.99 | Electronics      |
|         11 | Coffee Maker    | Automatic machine      |  89.99 | Home Appliances  |
|         12 | Vacuum Cleaner  | Cordless vacuum        | 149.99 | Home Appliances  |
|         13 | Microwave       | Countertop microwave   | 129.99 | Home Appliances  |
|         18 | Chair           | Ergonomic office chair | 119.99 | Furniture        |
|         20 | Bookshelf       | 5-tier bookshelf       |  99.99 | Furniture        |
+------------+-----------------+------------------------+--------+------------------+
12 rows in set (0.0017 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT customer_id, SUM(quantity) AS total_quantity
                                         -> FROM Orders GROUP BY customer_id;
+-------------+----------------+
| customer_id | total_quantity |
+-------------+----------------+
|           1 |              1 |
|           2 |              3 |
|           3 |              2 |
|           4 |              2 |
|           5 |              1 |
|           6 |              1 |
|           7 |              1 |
|           8 |              2 |
|           9 |              2 |
|          10 |              1 |
|          11 |              1 |
|          12 |              3 |
|          13 |              1 |
|          14 |              2 |
|          15 |              1 |
|          16 |              1 |
|          17 |              1 |
|          18 |              2 |
|          19 |              1 |
|          20 |              1 |
+-------------+----------------+
20 rows in set (0.0016 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT Orders.order_id, Customers.name AS customer_name, Products.name AS product_name, Orders.quantity, Orders.order_date, Orders.status
                                         -> FROM Orders
                                         -> JOIN Customers ON Orders.customer_id = Customers.customer_id
                                         -> JOIN Products ON Orders.product_id = Products.product_id;
+----------+---------------+--------------+----------+------------+---------+
| order_id | customer_name | product_name | quantity | order_date | status  |
+----------+---------------+--------------+----------+------------+---------+
|        1 | John Doe      | Smartphone   |        1 | 2025-02-01 | Success |
|        2 | Alice Johnson | Keyboard     |        2 | 2025-02-02 | Pending |
|        3 | Charlie White | Monitor      |        1 | 2025-02-03 | Success |
```

```
|           6 |              1 |
|           7 |              1 |
|           8 |              2 |
|           9 |              2 |
|          10 |              1 |
|          11 |              1 |
|          12 |              3 |
|          13 |              1 |
|          14 |              2 |
|          15 |              1 |
|          16 |              1 |
|          17 |              1 |
|          18 |              2 |
|          19 |              1 |
|          20 |              1 |
+-------------+----------------+
20 rows in set (0.0016 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT Orders.order_id, Customers.name AS customer_name, Products.name AS product_name, Orders.quantity, Orders.order_date, Orders.status
                                         -> FROM Orders
                                         -> JOIN Customers ON Orders.customer_id = Customers.customer_id
                                         -> JOIN Products ON Orders.product_id = Products.product_id;
+----------+---------------+-------------------+----------+------------+---------+
| order_id | customer_name | product_name      | quantity | order_date | status  |
+----------+---------------+-------------------+----------+------------+---------+
|        1 | John Doe      | Smartphone        |        1 | 2025-02-01 | Success |
|        2 | Alice Johnson | Keyboard          |        2 | 2025-02-02 | Pending |
|        3 | Charlie White | Monitor           |        1 | 2025-02-03 | Success |
|        4 | Emily Adams   | Smartwatch        |        1 | 2025-02-04 | Success |
|        5 | Grace Hall    | Camera            |        2 | 2025-02-05 | Pending |
|        6 | Isabella King | Vacuum Cleaner    |        1 | 2025-02-06 | Success |
|        7 | Katherine Scott | Refrigerator    |        1 | 2025-02-07 | Pending |
|        8 | Mia Walker    | Sofa              |        1 | 2025-02-08 | Success |
|        9 | Olivia Baker  | Chair             |        1 | 2025-02-09 | Success |
|       10 | Quinn Nelson  | Bookshelf         |        1 | 2025-02-10 | Pending |
|       11 | Jane Smith    | Laptop            |        3 | 2025-02-11 | Success |
|       12 | Bob Brown     | Headphones        |        2 | 2025-02-12 | Pending |
|       13 | David Green   | Mouse             |        1 | 2025-02-13 | Success |
|       14 | Frank Carter  | Tablet            |        2 | 2025-02-14 | Pending |
|       15 | Henry Lee     | Bluetooth Speaker |        1 | 2025-02-15 | Success |
|       16 | Jack Martin   | Coffee Maker      |        3 | 2025-02-16 | Pending |
|       17 | Liam Turner   | Microwave         |        2 | 2025-02-17 | Success |
|       18 | Noah Young    | Washing Machine   |        1 | 2025-02-18 | Pending |
|       19 | Paul Harris   | Dining Table      |        2 | 2025-02-19 | Success |
|       20 | Rachel Moore  | Bed               |        1 | 2025-02-20 | Pending |
+----------+---------------+-------------------+----------+------------+---------+
20 rows in set (0.0011 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL > SELECT * FROM Products
                                         -> WHERE product_id NOT IN (SELECT DISTINCT product_id FROM Orders);
Empty set (0.0009 sec)
MySQL  localhost:33060+ ssl  e_commerce  SQL >
```