```
mysql> create database ecommerce;
Query OK, 1 row affected (0.07 sec)

mysql> use ecommerce;
Database changed
mysql> CREATE TABLE Customers (
    ->     customer_id INT PRIMARY KEY AUTO_INCREMENT,
    ->     name VARCHAR(100),
    ->     email VARCHAR(100),
    ->     country VARCHAR(50)
    -> );
Query OK, 0 rows affected (0.10 sec)

mysql> CREATE TABLE Products (
    ->     product_id INT PRIMARY KEY AUTO_INCREMENT,
    ->     product_name VARCHAR(100),
    ->     category VARCHAR(50),
    ->     price DECIMAL(10,2)
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql>
mysql> CREATE TABLE Orders (
    ->     order_id INT PRIMARY KEY AUTO_INCREMENT,
    ->     customer_id INT,
    ->     order_date DATE,
    ->     total_amount DECIMAL(10,2),
    ->     FOREIGN KEY (customer_id) REFERENCES Customers(customer_id)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql>
mysql> CREATE TABLE Orders (
    ->     order_id INT PRIMARY KEY AUTO_INCREMENT,
    ->     customer_id INT,
    ->     order_date DATE,
    ->     total_amount DECIMAL(10,2),
    ->     FOREIGN KEY (customer_id) REFERENCES Customers(customer_id)
```

MySQL 8.0 Command Line Cli

```
mysql> desc customers;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| customer_id | int          | NO   | PRI | NULL    | auto_increment |
| name        | varchar(100) | YES  |     | NULL    |                |
| email       | varchar(100) | YES  |     | NULL    |                |
| country     | varchar(50)  | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
4 rows in set (0.08 sec)

mysql> desc products;
+--------------+---------------+------+-----+---------+----------------+
| Field        | Type          | Null | Key | Default | Extra          |
+--------------+---------------+------+-----+---------+----------------+
| product_id   | int           | NO   | PRI | NULL    | auto_increment |
| product_name | varchar(100)  | YES  |     | NULL    |                |
| category     | varchar(50)   | YES  |     | NULL    |                |
| price        | decimal(10,2) | YES  |     | NULL    |                |
+--------------+---------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> desc orders;
+--------------+---------------+------+-----+---------+----------------+
| Field        | Type          | Null | Key | Default | Extra          |
+--------------+---------------+------+-----+---------+----------------+
| order_id     | int           | NO   | PRI | NULL    | auto_increment |
| customer_id  | int           | YES  | MUL | NULL    |                |
| order_date   | date          | YES  |     | NULL    |                |
| total_amount | decimal(10,2) | YES  |     | NULL    |                |
+--------------+---------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> desc orderdetails;
+-----------------+------+------+-----+---------+----------------+
| Field           | Type | Null | Key | Default | Extra          |
+-----------------+------+------+-----+---------+----------------+
| order_detail_id | int  | NO   | PRI | NULL    | auto_increment |
| order_id        | int  | YES  | MUL | NULL    |                |
| product_id      | int  | YES  | MUL | NULL    |                |
```

MySQL 8.0 Command Line Cli

```
mysql> select * from products;
+------------+--------------+-------------+---------+
| product_id | product_name | category    | price   |
+------------+--------------+-------------+---------+
|          1 | Laptop       | Electronics | 1200.00 |
|          2 | Phone        | Electronics |  700.00 |
|          3 | Shoes        | Fashion     |   80.00 |
|          4 | Watch        | Fashion     |  150.00 |
+------------+--------------+-------------+---------+
4 rows in set (0.00 sec)

mysql> select * from customers;
+-------------+---------+-------------------+---------+
| customer_id | name    | email             | country |
+-------------+---------+-------------------+---------+
|           1 | Alice   | alice@email.com   | USA     |
|           2 | Bob     | bob@email.com     | UK      |
|           3 | Charlie | charlie@email.com | India   |
+-------------+---------+-------------------+---------+
3 rows in set (0.00 sec)

mysql> select * from orders;
+----------+-------------+------------+--------------+
| order_id | customer_id | order_date | total_amount |
+----------+-------------+------------+--------------+
|        1 |           1 | 2025-09-01 |      1980.00 |
|        2 |           2 | 2025-09-02 |       700.00 |
|        3 |           3 | 2025-09-03 |       230.00 |
+----------+-------------+------------+--------------+
3 rows in set (0.00 sec)

mysql> select * from orderdetails;
+-----------------+----------+------------+----------+
| order_detail_id | order_id | product_id | quantity |
+-----------------+----------+------------+----------+
|               1 |        1 |          1 |        1 |
|               2 |        1 |          2 |        1 |
|               3 |        2 |          2 |        1 |
|               4 |        3 |          3 |        1 |
|               5 |        3 |          4 |        1 |
```

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```
|               2 |         1 |           2 |         1 |
|               3 |         2 |           2 |         1 |
|               4 |         3 |           3 |         1 |
|               5 |         3 |           4 |         1 |
+-----------------+-----------+-------------+-----------+
5 rows in set (0.00 sec)

mysql> -- Get all orders sorted by amount
mysql> SELECT order_id, total_amount
    -> FROM Orders
    -> ORDER BY total_amount DESC;
+----------+--------------+
| order_id | total_amount |
+----------+--------------+
|        1 |      1980.00 |
|        2 |       700.00 |
|        3 |       230.00 |
+----------+--------------+
3 rows in set (0.00 sec)

mysql> - Join customers with their orders
    -> SELECT c.name, o.order_id, o.total_amount
    -> FROM Customers c
```

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```
mysql> -- Join customers with their orders
mysql> SELECT c.name, o.order_id, o.total_amount
    -> FROM Customers c
    -> INNER JOIN Orders o ON c.customer_id = o.customer_id;
+---------+----------+--------------+
| name    | order_id | total_amount |
+---------+----------+--------------+
| Alice   |        1 |      1980.00 |
| Bob     |        2 |       700.00 |
| Charlie |        3 |       230.00 |
+---------+----------+--------------+
3 rows in set (0.01 sec)

mysql> -- Total revenue
mysql> SELECT SUM(total_amount) AS total_revenue
    -> FROM Orders;
+---------------+
| total_revenue |
+---------------+
|       2910.00 |
+---------------+
1 row in set (0.02 sec)

mysql> -- Average order value
mysql> SELECT AVG(total_amount) AS avg_order_value
    -> FROM Orders;
+-----------------+
| avg_order_value |
+-----------------+
|      970.000000 |
+-----------------+
1 row in set (0.00 sec)

mysql> -- Revenue by country
mysql> SELECT c.country, SUM(o.total_amount) AS country_revenue
    -> FROM Customers c
    -> JOIN Orders o ON c.customer_id = o.customer_id
    -> GROUP BY c.country;
+---------+-----------------+
| country | country_revenue |
+---------+-----------------+
```

MySQL 8.0 Command Line Cli

```
    -> JOIN Orders o ON c.customer_id = o.customer_id
    -> GROUP BY c.country;
+---------+-----------------+
| country | country_revenue |
+---------+-----------------+
| USA     |         1980.00 |
| UK      |          700.00 |
| India   |          230.00 |
+---------+-----------------+
3 rows in set (0.00 sec)

mysql> -- Customers who spent more than average
mysql> SELECT name
    -> FROM Customers
    -> WHERE customer_id IN (
    ->     SELECT customer_id
    ->     FROM Orders
    ->     GROUP BY customer_id
    ->     HAVING SUM(total_amount) > (SELECT AVG(total_amount) FROM Orders)
    -> );
+-------+
| name  |
+-------+
| Alice |
+-------+
1 row in set (0.02 sec)

mysql> -- Create a view for order summary
mysql> CREATE VIEW OrderSummary AS
    -> SELECT o.order_id, c.name, o.order_date, o.total_amount
    -> FROM Orders o
    -> JOIN Customers c ON o.customer_id = c.customer_id;
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> -- Create index for faster joins
mysql> CREATE INDEX idx_customer_id ON Orders(customer_id);
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MySQL 8.0 Command Line Cli

```
    -> FROM Orders o
    -> JOIN Customers c ON o.customer_id = c.customer_id;
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> -- Create index for faster joins
mysql> CREATE INDEX idx_customer_id ON Orders(customer_id);
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> -- Show all customers, even if they have no orders
mysql> SELECT c.name, o.order_id, o.total_amount
    -> FROM Customers c
    -> LEFT JOIN Orders o ON c.customer_id = o.customer_id;
+---------+----------+--------------+
| name    | order_id | total_amount |
+---------+----------+--------------+
| Alice   |        1 |      1980.00 |
| Bob     |        2 |       700.00 |
| Charlie |        3 |       230.00 |
+---------+----------+--------------+
3 rows in set (0.00 sec)

mysql> -- Show all orders, even if customer info is missing
mysql> SELECT o.order_id, o.total_amount, c.name
    -> FROM Customers c
    -> RIGHT JOIN Orders o ON c.customer_id = o.customer_id;
+----------+--------------+---------+
| order_id | total_amount | name    |
+----------+--------------+---------+
|        1 |      1980.00 | Alice   |
|        2 |       700.00 | Bob     |
|        3 |       230.00 | Charlie |
+----------+--------------+---------+
3 rows in set (0.01 sec)
```

```
mysql>
mysql> CREATE TABLE OrderDetails (
    ->     order_detail_id INT PRIMARY KEY AUTO_INCREMENT,
    ->     order_id INT,
    ->     product_id INT,
    ->     quantity INT,
    ->     FOREIGN KEY (order_id) REFERENCES Orders(order_id),
    ->     FOREIGN KEY (product_id) REFERENCES Products(product_id)
    -> );
Query OK, 0 rows affected (0.09 sec)

mysql> INSERT INTO Customers (name, email, country) VALUES
    -> ('Alice', 'alice@email.com', 'USA'),
    -> ('Bob', 'bob@email.com', 'UK'),
    -> ('Charlie', 'charlie@email.com', 'India');
Query OK, 3 rows affected (0.03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Products (product_name, category, price) VALUES
    -> ('Laptop', 'Electronics', 1200.00),
    -> ('Phone', 'Electronics', 700.00),
    -> ('Shoes', 'Fashion', 80.00),
    -> ('Watch', 'Fashion', 150.00);
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Orders (customer_id, order_date, total_amount) VALUES
    -> (1, '2025-09-01', 1980.00),
    -> (2, '2025-09-02', 700.00),
    -> (3, '2025-09-03', 230.00);
Query OK, 3 rows affected (0.02 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql>
mysql> INSERT INTO OrderDetails (order_id, product_id, quantity) VALUES
    -> (1, 1, 1), -- Laptop
    -> (1, 2, 1), -- Phone
    -> (2, 2, 1), -- Phone
    -> (3, 3, 1), -- Shoes
    -> (3, 4, 1); -- Watch
Query OK, 5 rows affected (0.01 sec)
```