Microsoft Windows [Version 10.0.19045.3208] (c) Microsoft Corporation. All rights reserved. C:\Users\HP>mysql -u root -p Enter password: Welcome to the MySQL monitor. Commands end with ; or \g. Your MySQL connection id is 32 Server version: 5.5.5-10.4.28-MariaDB mariadb.org binary distribution Copyright (c) 2000, 2023, Oracle and/or its affiliates. Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners. Type 'help;' or '\h' for help. Type '\c' to clear the current input statement. mysql> create database Customers -> ; Query OK, 1 row affected (0.00 sec) mysql> use Customers; Database changed mysql> CREATE TABLE Customers ( -> customer\_id INT PRIMARY KEY, -> name VARCHAR(100), -> city VARCHAR(100) -> ); Query OK, 0 rows affected (0.23 sec) mysql> CREATE TABLE Orders ( -> order\_id INT PRIMARY KEY, -> customer\_id INT, -> order\_date DATE, -> amount DECIMAL(10,2), -> FOREIGN KEY (customer\_id) REFERENCES Customers(customer\_id) -> ); Query OK, 0 rows affected (0.26 sec) mysql> CREATE TABLE Products ( -> product\_id INT PRIMARY KEY, -> product\_name VARCHAR(100), -> price DECIMAL(10,2) -> ); Query OK, 0 rows affected (0.22 sec) mysql> CREATE TABLE OrderDetails ( -> 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 (0.55 sec) mysql> INSERT INTO Customers VALUES -> (1, 'Alice', 'New York'), -> (2, 'Bob', 'Los Angeles'), -> (3, 'Charlie', 'Chicago'), -> (4, 'Diana', 'New York'); Query OK, 4 rows affected (0.06 sec) Records: 4 Duplicates: 0 Warnings: 0 mysql> INSERT INTO Orders VALUES -> (101, 1, '2024-12-01', 250.00), -> (102, 1, '2025-01-15', 175.00), -> (103, 2, '2025-02-10', 300.00), -> (104, 3, '2025-03-05', 450.00), -> (105, 1, '2025-04-01', 120.00); Query OK, 5 rows affected (0.14 sec) Records: 5 Duplicates: 0 Warnings: 0 mysql> INSERT INTO Products VALUES -> (201, 'Laptop', 800.00), -> (202, 'Mouse', 20.00), -> (203, 'Keyboard', 50.00), -> (204, 'Monitor', 200.00); Query OK, 4 rows affected (0.06 sec) Records: 4 Duplicates: 0 Warnings: 0 mysql> INSERT INTO OrderDetails VALUES -> (101, 201, 1), -> (101, 202, 2), -> (102, 203, 1), -> (103, 204, 2), -> (104, 201, 1), -> (105, 202, 3); Query OK, 6 rows affected (0.63 sec) Records: 6 Duplicates: 0 Warnings: 0 mysql> mysql> SELECT name, city -> FROM Customers -> WHERE city = 'New York' -> ORDER BY name; +-------+----------+ | name | city | +-------+----------+ | Alice | New York | | Diana | New York | +-------+----------+ 2 rows in set (0.00 sec) mysql> SELECT city, COUNT(\*) AS customer\_count -> FROM Customers -> GROUP BY city; +-------------+----------------+ | city | customer\_count | +-------------+----------------+ | Chicago | 1 | | Los Angeles | 1 | | New York | 2 | +-------------+----------------+ 3 rows in set (0.00 sec) mysql> SELECT o.order\_id, c.name, o.order\_date -> FROM Orders o -> INNER JOIN Customers c ON o.customer\_id = c.customer\_id; +----------+---------+------------+ | order\_id | name | order\_date | +----------+---------+------------+ | 101 | Alice | 2024-12-01 | | 102 | Alice | 2025-01-15 | | 103 | Bob | 2025-02-10 | | 104 | Charlie | 2025-03-05 | | 105 | Alice | 2025-04-01 | +----------+---------+------------+ 5 rows in set (0.00 sec) mysql> SELECT o.order\_id, c.name -> FROM Orders o -> LEFT JOIN Customers c ON o.customer\_id = c.customer\_id; +----------+---------+ | order\_id | name | +----------+---------+ | 101 | Alice | | 102 | Alice | | 105 | Alice | | 103 | Bob | | 104 | Charlie | +----------+---------+ 5 rows in set (0.00 sec) mysql> SELECT o.order\_id, c.name -> FROM Orders o -> RIGHT JOIN Customers c ON o.customer\_id = c.customer\_id; +----------+---------+ | order\_id | name | +----------+---------+ | 101 | Alice | | 102 | Alice | | 105 | Alice | | 103 | Bob | | 104 | Charlie | | NULL | Diana | +----------+---------+ 6 rows in set (0.00 sec) mysql> SELECT name -> FROM Customers -> WHERE customer\_id IN ( -> SELECT customer\_id -> FROM Orders -> GROUP BY customer\_id -> HAVING COUNT(order\_id) > 2 -> ); +-------+ | name | +-------+ | Alice | +-------+ 1 row in set (0.00 sec) mysql> SELECT c.name, SUM(o.amount) AS total\_spent -> FROM Customers c -> JOIN Orders o ON c.customer\_id = o.customer\_id -> GROUP BY c.name; +---------+-------------+ | name | total\_spent | +---------+-------------+ | Alice | 545.00 | | Bob | 300.00 | | Charlie | 450.00 | +---------+-------------+ 3 rows in set (0.00 sec) mysql> SELECT AVG(amount) AS avg\_order\_amount -> FROM Orders; +------------------+ | avg\_order\_amount | +------------------+ | 259.000000 | +------------------+ 1 row in set (0.00 sec) mysql> CREATE VIEW customer\_spending AS -> SELECT c.customer\_id, c.name, SUM(o.amount) AS total\_spent -> FROM Customers c -> JOIN Orders o ON c.customer\_id = o.customer\_id -> GROUP BY c.customer\_id, c.name; Query OK, 0 rows affected (0.04 sec) mysql> CREATE INDEX idx\_customer\_city ON Customers(city); Query OK, 0 rows affected (0.38 sec) Records: 0 Duplicates: 0 Warnings: 0 mysql> CREATE INDEX idx\_order\_date ON Orders(order\_date); Query OK, 0 rows affected (0.37 sec) Records: 0 Duplicates: 0 Warnings: 0 mysql> SELECT name, total\_spent -> FROM customer\_total\_spending -> WHERE city = 'New York' -> ^C mysql> ^C mysql> SELECT cs.name, cs.total\_spent -> FROM customer\_spending cs -> JOIN Customers c ON cs.customer\_id = c.customer\_id -> WHERE c.city = 'New York' -> ORDER BY cs.total\_spent DESC; +-------+-------------+ | name | total\_spent | +-------+-------------+ | Alice | 545.00 | +-------+-------------+ 1 row in set (0.00 sec) mysql>