mysql> CREATE DATABASE CompanyDB;

Query OK, 1 row affected (0.02 sec)

mysql> USE CompanyDB;

Database changed

mysql>

mysql> CREATE TABLE Employees (

-> employee\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> name VARCHAR(100),

-> department\_id INT,

-> salary DECIMAL(10, 2)

-> );

Query OK, 0 rows affected (0.06 sec)

mysql>

mysql> CREATE TABLE Departments (

-> department\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> department\_name VARCHAR(100)

-> );

Query OK, 0 rows affected (0.06 sec)

mysql>

mysql> CREATE TABLE Managers (

-> manager\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> name VARCHAR(100)

-> );

Query OK, 0 rows affected (0.07 sec)

mysql>

mysql> CREATE TABLE Tasks (

-> task\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> task\_name VARCHAR(100)

-> );

Query OK, 0 rows affected (0.05 sec)

mysql>

mysql> CREATE TABLE EmployeeTasks (

-> employee\_id INT,

-> task\_id INT,

-> PRIMARY KEY (employee\_id, task\_id),

-> FOREIGN KEY (employee\_id) REFERENCES Employees(employee\_id),

-> FOREIGN KEY (task\_id) REFERENCES Tasks(task\_id)

-> );

Query OK, 0 rows affected (0.06 sec)

mysql>

mysql> INSERT INTO Departments (department\_name) VALUES ('HR'), ('Finance'), ('IT'), ('Sales');

Query OK, 4 rows affected (0.01 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql>

mysql> INSERT INTO Employees (name, department\_id, salary) VALUES

-> ('John Doe', 1, 6000),

-> ('Jane Smith', 2, 4500),

-> ('Robert Brown', 3, 7000),

-> ('Emily Davis', 4, 3500);

Query OK, 4 rows affected (0.01 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql>

mysql> INSERT INTO Managers (name) VALUES

-> ('John Doe'),

-> ('Michael Johnson'),

-> ('Sarah Lee');

Query OK, 3 rows affected (0.00 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql>

mysql> INSERT INTO Tasks (task\_name) VALUES

-> ('Task A'), ('Task B'), ('Task C');

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql>

mysql> INSERT INTO EmployeeTasks (employee\_id, task\_id) VALUES

-> (1, 1),

-> (1, 2),

-> (2, 1),

-> (3, 3);

Query OK, 4 rows affected (0.01 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql>

mysql> SELECT \* FROM Employees WHERE salary > 5000;

+-------------+--------------+---------------+---------+

| employee\_id | name | department\_id | salary |

+-------------+--------------+---------------+---------+

| 1 | John Doe | 1 | 6000.00 |

| 3 | Robert Brown | 3 | 7000.00 |

+-------------+--------------+---------------+---------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT name, salary FROM Employees;

+--------------+---------+

| name | salary |

+--------------+---------+

| John Doe | 6000.00 |

| Jane Smith | 4500.00 |

| Robert Brown | 7000.00 |

| Emily Davis | 3500.00 |

+--------------+---------+

4 rows in set (0.00 sec)

mysql>

mysql> SELECT Employees.name, Departments.department\_name

-> FROM Employees

-> INNER JOIN Departments ON Employees.department\_id = Departments.department\_id;

+--------------+-----------------+

| name | department\_name |

+--------------+-----------------+

| John Doe | HR |

| Jane Smith | Finance |

| Robert Brown | IT |

| Emily Davis | Sales |

+--------------+-----------------+

4 rows in set (0.00 sec)

mysql>

mysql> SELECT name FROM Employees

-> UNION

-> SELECT name FROM Managers;

+-----------------+

| name |

+-----------------+

| John Doe |

| Jane Smith |

| Robert Brown |

| Emily Davis |

| Michael Johnson |

| Sarah Lee |

+-----------------+

6 rows in set (0.00 sec)

mysql>

mysql> SELECT name FROM Employees

-> INTERSECT

-> SELECT name FROM Managers;

+----------+

| name |

+----------+

| John Doe |

+----------+

1 row in set (0.00 sec)

mysql>

mysql> SELECT name FROM Employees

-> EXCEPT

-> SELECT name FROM Managers;

+--------------+

| name |

+--------------+

| Jane Smith |

| Robert Brown |

| Emily Davis |

+--------------+

3 rows in set (0.00 sec)

mysql>

mysql> SELECT \* FROM Employees, Departments;

+-------------+--------------+---------------+---------+---------------+-----------------+

| employee\_id | name | department\_id | salary | department\_id | department\_name |

+-------------+--------------+---------------+---------+---------------+-----------------+

| 4 | Emily Davis | 4 | 3500.00 | 1 | HR |

| 3 | Robert Brown | 3 | 7000.00 | 1 | HR |

| 2 | Jane Smith | 2 | 4500.00 | 1 | HR |

| 1 | John Doe | 1 | 6000.00 | 1 | HR |

| 4 | Emily Davis | 4 | 3500.00 | 2 | Finance |

| 3 | Robert Brown | 3 | 7000.00 | 2 | Finance |

| 2 | Jane Smith | 2 | 4500.00 | 2 | Finance |

| 1 | John Doe | 1 | 6000.00 | 2 | Finance |

| 4 | Emily Davis | 4 | 3500.00 | 3 | IT |

| 3 | Robert Brown | 3 | 7000.00 | 3 | IT |

| 2 | Jane Smith | 2 | 4500.00 | 3 | IT |

| 1 | John Doe | 1 | 6000.00 | 3 | IT |

| 4 | Emily Davis | 4 | 3500.00 | 4 | Sales |

| 3 | Robert Brown | 3 | 7000.00 | 4 | Sales |

| 2 | Jane Smith | 2 | 4500.00 | 4 | Sales |

| 1 | John Doe | 1 | 6000.00 | 4 | Sales |

+-------------+--------------+---------------+---------+---------------+-----------------+

16 rows in set (0.00 sec)

mysql>

mysql> SELECT e.name

-> FROM Employees e

-> WHERE NOT EXISTS (

-> SELECT t.task\_id

-> FROM Tasks t

-> WHERE NOT EXISTS (

-> SELECT \*

-> FROM EmployeeTasks et

-> WHERE et.employee\_id = e.employee\_id AND et.task\_id = t.task\_id

-> )

-> );

Empty set (0.00 sec)

mysql> CREATE TABLE Products (

-> product\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> product\_name VARCHAR(100),

-> original\_price DECIMAL(10, 2),

-> discount\_price DECIMAL(10, 2),

-> price DECIMAL(10, 2),

-> discount DECIMAL(10, 2),

-> tax DECIMAL(5, 2)

-> );

Query OK, 0 rows affected (0.08 sec)

mysql>

mysql> CREATE TABLE Orders (

-> order\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> product\_name VARCHAR(100),

-> unit\_price DECIMAL(10, 2),

-> quantity INT

-> );

Query OK, 0 rows affected (0.06 sec)

mysql>

mysql> CREATE TABLE Sales (

-> sale\_id INT AUTO\_INCREMENT PRIMARY KEY,

-> employee\_id INT,

-> sales\_amount DECIMAL(10, 2),

-> number\_of\_sales INT,

-> product\_name VARCHAR(100),

-> unit\_price DECIMAL(10, 2),

-> quantity\_sold INT

-> );

Query OK, 0 rows affected (0.07 sec)

mysql>

mysql> INSERT INTO Products (product\_name, original\_price, discount\_price, price, discount, tax) VALUES

-> ('Product A', 100.00, 80.00, 90.00, 10.00, 5.00),

-> ('Product B', 150.00, 130.00, 140.00, 15.00, 8.00);

Query OK, 2 rows affected (0.02 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql>

mysql> INSERT INTO Orders (product\_name, unit\_price, quantity) VALUES

-> ('Product A', 90.00, 10),

-> ('Product B', 140.00, 5);

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql>

mysql> INSERT INTO Sales (employee\_id, sales\_amount, number\_of\_sales, product\_name, unit\_price, quantity\_sold) VALUES

-> (1, 2000.00, 10, 'Product A', 90.00, 10),

-> (2, 700.00, 5, 'Product B', 140.00, 5);

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql>

mysql> ALTER TABLE Employees ADD bonus DECIMAL(10, 2);

Query OK, 0 rows affected (0.05 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> UPDATE Employees SET bonus = 500; -- Example bonus amount

Query OK, 4 rows affected (0.01 sec)

Rows matched: 4 Changed: 4 Warnings: 0

mysql>

mysql> SELECT name, salary, bonus, (salary + bonus) AS total\_compensation

-> FROM Employees;

+--------------+---------+--------+--------------------+

| name | salary | bonus | total\_compensation |

+--------------+---------+--------+--------------------+

| John Doe | 6000.00 | 500.00 | 6500.00 |

| Jane Smith | 4500.00 | 500.00 | 5000.00 |

| Robert Brown | 7000.00 | 500.00 | 7500.00 |

| Emily Davis | 3500.00 | 500.00 | 4000.00 |

+--------------+---------+--------+--------------------+

4 rows in set (0.00 sec)

mysql>

mysql> SELECT product\_name, original\_price, discount\_price, (original\_price - discount\_price) AS savings

-> FROM Products;

+--------------+----------------+----------------+---------+

| product\_name | original\_price | discount\_price | savings |

+--------------+----------------+----------------+---------+

| Product A | 100.00 | 80.00 | 20.00 |

| Product B | 150.00 | 130.00 | 20.00 |

+--------------+----------------+----------------+---------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT order\_id, product\_name, unit\_price, quantity, (unit\_price \* quantity) AS total\_cost

-> FROM Orders;

+----------+--------------+------------+----------+------------+

| order\_id | product\_name | unit\_price | quantity | total\_cost |

+----------+--------------+------------+----------+------------+

| 1 | Product A | 90.00 | 10 | 900.00 |

| 2 | Product B | 140.00 | 5 | 700.00 |

+----------+--------------+------------+----------+------------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT employee\_id, sales\_amount, (sales\_amount / number\_of\_sales) AS average\_sale

-> FROM Sales;

+-------------+--------------+--------------+

| employee\_id | sales\_amount | average\_sale |

+-------------+--------------+--------------+

| 1 | 2000.00 | 200.000000 |

| 2 | 700.00 | 140.000000 |

+-------------+--------------+--------------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT product\_name, price, discount, tax,

-> ((price - discount) + (price - discount) \* tax / 100) AS final\_price

-> FROM Products;

+--------------+--------+----------+------+--------------+

| product\_name | price | discount | tax | final\_price |

+--------------+--------+----------+------+--------------+

| Product A | 90.00 | 10.00 | 5.00 | 84.00000000 |

| Product B | 140.00 | 15.00 | 8.00 | 135.00000000 |

+--------------+--------+----------+------+--------------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT name, salary, bonus

-> FROM Employees

-> WHERE (salary + bonus) > 5000;

+--------------+---------+--------+

| name | salary | bonus |

+--------------+---------+--------+

| John Doe | 6000.00 | 500.00 |

| Robert Brown | 7000.00 | 500.00 |

+--------------+---------+--------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT product\_name, unit\_price, quantity\_sold, (unit\_price \* quantity\_sold) AS total\_revenue

-> FROM Sales

-> ORDER BY total\_revenue DESC;

+--------------+------------+---------------+---------------+

| product\_name | unit\_price | quantity\_sold | total\_revenue |

+--------------+------------+---------------+---------------+

| Product A | 90.00 | 10 | 900.00 |

| Product B | 140.00 | 5 | 700.00 |

+--------------+------------+---------------+---------------+

2 rows in set (0.00 sec)

mysql>

mysql> SELECT product\_name,

-> SUM(unit\_price \* quantity\_sold) AS total\_revenue,

-> AVG(unit\_price \* quantity\_sold) AS average\_revenue

-> FROM Sales

-> GROUP BY product\_name;

+--------------+---------------+-----------------+

| product\_name | total\_revenue | average\_revenue |

+--------------+---------------+-----------------+

| Product A | 900.00 | 900.000000 |

| Product B | 700.00 | 700.000000 |

+--------------+---------------+-----------------+

2 rows in set (0.00 sec)