**Exercise 1:** Ranking and Window Functions

Goal: Use ROW\_NUMBER(), RANK(), DENSE\_RANK(), OVER(), and PARTITION BY.

Scenario:

Find the top 3 most expensive products in each category using different ranking functions.

Steps:

1. Use ROW\_NUMBER() to assign a unique rank within each category.

2. Use RANK() and DENSE\_RANK() to compare how ties are handled.

3. Use PARTITION BY Category and ORDER BY Price DESC.

Code:

SELECT \* FROM (

SELECT ProductID, ProductName, Category, Price,

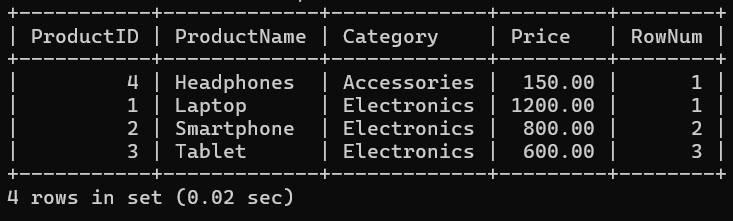
ROW\_NUMBER() OVER(PARTITION BY Category ORDER BY Price DESC) AS RowNum

FROM Products

) AS RankedProducts

WHERE RowNum <= 3;

Output:



**Exercise 1:** Create a Stored Procedure

Goal: Create a stored procedure to retrieve employee details by department.

Steps:

1. Define the stored procedure with a parameter for DepartmentID.

2. Write the SQL query to select employee details based on the DepartmentID.

3. Create a stored procedure named `sp\_InsertEmployee` with the following code:

CREATE PROCEDURE sp\_InsertEmployee

@FirstName VARCHAR(50),

@LastName VARCHAR(50),

@DepartmentID INT,

@Salary DECIMAL(10,2),

@JoinDate DATE

AS

BEGIN

INSERT INTO Employees (FirstName, LastName, DepartmentID, Salary, JoinDate)

VALUES (@FirstName, @LastName, @DepartmentID, @Salary, @JoinDate);

END;

Code:

DELIMITER $$

CREATE PROCEDURE sp\_InsertEmployee(

IN FirstName VARCHAR(50),

IN LastName VARCHAR(50),

IN DepartmentID INT,

IN Salary DECIMAL(10,2),

IN JoinDate DATE

)

BEGIN

INSERT INTO Employees (FirstName, LastName, DepartmentID, Salary, JoinDate)

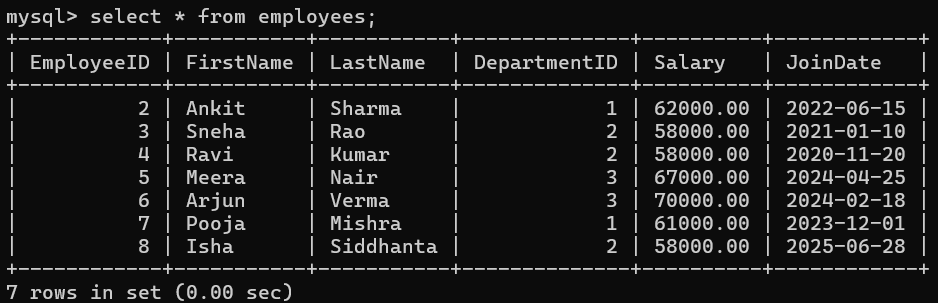
VALUES (FirstName, LastName, DepartmentID, Salary, JoinDate);

END $$

DELIMITER ;

Output:





**Exercise 5:** Return Data from a Stored Procedure

Goal: Create a stored procedure that returns the total number of employees in a

department.

Steps:

1. Define the stored procedure with a parameter for DepartmentID.

2. Write the SQL query to count the number of employees in the specified department.

3. Save the stored procedure by executing the Stored procedure content.

DELIMITER $$

mysql>

mysql> CREATE PROCEDURE sp\_CountEmployeesInDepartment(IN dept\_id INT)

-> BEGIN

-> SELECT COUNT(\*) AS TotalEmployees

-> FROM Employees

-> WHERE DepartmentID = dept\_id;

-> END $$

Query OK, 0 rows affected (0.02 sec)

mysql>

mysql> DELIMITER ;

Output:

