**Exercise 1: Ranking and Window Functions**

**Step 1: Create Tables**

CREATE TABLE Categories (

CategoryID INT PRIMARY KEY,

CategoryName VARCHAR(100)

);

CREATE TABLE Products (

ProductID INT PRIMARY KEY,

ProductName VARCHAR(100),

Price DECIMAL(10, 2),

CategoryID INT,

FOREIGN KEY (CategoryID) REFERENCES Categories(CategoryID)

);

**Step 2: Insert Sample Data**

INSERT INTO Categories (CategoryID, CategoryName) VALUES

(1, 'Electronics'),

(2, 'Books'),

(3, 'Clothing');

INSERT INTO Products (ProductID, ProductName, Price, CategoryID) VALUES

(1, 'Smartphone', 800.00, 1),

(2, 'Laptop', 1200.00, 1),

(3, 'Tablet', 600.00, 1),

(4, 'Smartwatch', 600.00, 1),

(5, 'Novel A', 15.00, 2),

(6, 'Novel B', 25.00, 2),

(7, 'Collector Edition', 25.00, 2),

(8, 'T-shirt', 20.00, 3),

(9, 'Jacket', 60.00, 3),

(10, 'Sneakers', 60.00, 3),

(11, 'Cap', 10.00, 3);

**Step 3: Ranking Query**

SELECT

c.CategoryName,

p.ProductName,

p.Price,

ROW\_NUMBER() OVER (PARTITION BY c.CategoryID ORDER BY p.Price DESC) AS RowNum,

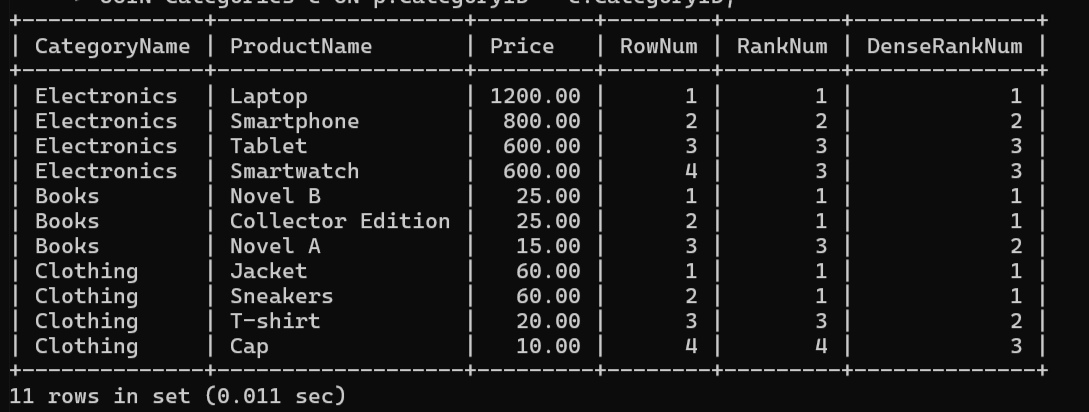
RANK() OVER (PARTITION BY c.CategoryID ORDER BY p.Price DESC) AS RankNum,

DENSE\_RANK() OVER (PARTITION BY c.CategoryID ORDER BY p.Price DESC) AS DenseRankNum

FROM Products p

JOIN Categories c ON p.CategoryID = c.CategoryID;

**Output:**

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