Solution of quiz Section D

# Task 1: Employee Management Database Operations

1. **Table Creation with Constraints:**

CREATE TABLE EmployeeRecords ( EmployeeID INTEGER PRIMARY KEY, FirstName VARCHAR(50), LastName VARCHAR(50), Department VARCHAR(100), Salary DECIMAL(10,2) CHECK (Salary >= 0) );

1. **Data Insertion with Transactions:**

BEGIN TRANSACTION; INSERT INTO EmployeeRecords (EmployeeID, FirstName, LastName, Department, Salary) VALUES (101, 'John', 'Doe', 'Finance', 50000.00), (102, 'Jane', 'Smith', 'HR', 60000.00), (103, 'Alice', 'Johnson', 'IT', 70000.00), (X, 'YourFirstName', 'YourLastName', 'YourDepartment', YourSalary); COMMIT;

1. **Adding and Deleting Columns with Constraints:**

ALTER TABLE EmployeeRecords ADD HireDate DATE ;

ALTER TABLE EmployeeRecords DROP COLUMN HireDate;

1. **Employees with Longest Last Names:**

SELECT FirstName, LastName FROM EmployeeRecords WHERE LEN(LastName) = (SELECT MAX(LEN(LastName)) FROM EmployeeRecords);

1. **Average Salary by Department:**

SELECT Department, AVG(Salary) AS AverageSalary FROM EmployeeRecords GROUP BY Department;

1. **Salary Increment:**

UPDATE EmployeeRecords SET Salary = Salary \* 1.10 WHERE Department = 'IT';

1. **Employee Count by Department:**

SELECT Department, COUNT(EmployeeID) AS EmployeeCount FROM EmployeeRecords GROUP BY Department;

# Task 2: Online Retail Database Operations

1. **Retrieve Customer Orders:**

SELECT c.FirstName, c.LastName, o.OrderID, o.TotalAmount FROM Customers c JOIN Orders o ON c.CustomerID = o.CustomerID;

1. **Most Expensive Order:**

SELECT OrderID, TotalAmount, OrderDate FROM Orders WHERE TotalAmount = (SELECT MAX(TotalAmount) FROM Orders);

1. **Product Categories:**

SELECT DISTINCT Category FROM Products;

1. **Average Order Value:**

SELECT AVG(TotalAmount) AS AverageOrderValue FROM Orders;

1. **Order Details:**

SELECT o.OrderDate, p.ProductName, oi.Quantity, oi.UnitPrice FROM Orders o JOIN OrderItems oi ON o.OrderID = oi.OrderID JOIN Products p ON oi.ProductID = p.ProductID;

1. **Customer Order Count:**

SELECT c.FirstName, c.LastName, COUNT(o.OrderID) AS OrderCount FROM Customers c LEFT JOIN Orders o ON c.CustomerID = o.CustomerID GROUP BY c.FirstName, c.LastName;

1. **Total Revenue by Product Category:**

SELECT p.Category, SUM(oi.Quantity \* oi.UnitPrice) AS TotalRevenue FROM Products p JOIN OrderItems oi ON p.ProductID = oi.ProductID GROUP BY p.Category;

1. **Recent Orders:**

SELECT TOP 5 OrderID, OrderDate, TotalAmount FROM Orders ORDER BY OrderDate DESC;