**Solution for Problem 1: Basic Subquery**

SELECT Name

FROM Employees

WHERE Salary > (SELECT AVG(Salary) FROM Employees);

**Solution for Problem 2: Subquery with Aggregate Function**

SELECT d.DepartmentName

FROM Departments d

JOIN Employees e ON d.DepartmentID = e.DepartmentID

GROUP BY d.DepartmentName

HAVING SUM(e.Salary) > (SELECT AVG(total\_salary) FROM (SELECT SUM(Salary) AS total\_salary FROM Employees GROUP BY DepartmentID) AS dept\_salary);

**Solution for Problem 3: Subquery in FROM Clause**

SELECT d.DepartmentName, max\_salary

FROM Departments d

JOIN (SELECT DepartmentID, MAX(Salary) AS max\_salary FROM Employees GROUP BY DepartmentID) AS max\_salaries

ON d.DepartmentID = max\_salaries.DepartmentID;

**Solution for Problem 4: Correlated Subquery**

SELECT e1.Name, e1.Salary

FROM Employees e1

WHERE e1.Salary = (SELECT MAX(e2.Salary) FROM Employees e2 WHERE e2.DepartmentID = e1.DepartmentID);

**Solution for Problem 5: Subquery with IN Operator**

SELECT Name

FROM Employees

WHERE DepartmentID IN (SELECT DepartmentID FROM Employees GROUP BY DepartmentID HAVING COUNT(\*) >= 3);

**Solution for Problem 6: Subquery with EXISTS**

SELECT d.DepartmentName

FROM Departments d

WHERE EXISTS (SELECT 1 FROM Employees e WHERE e.DepartmentID = d.DepartmentID AND YEAR(e.HireDate) > 2020);

**Solution for Problem 7: Subquery with JOINs**

SELECT e.Name

FROM Employees e

JOIN (SELECT AVG(Salary) AS avg\_salary FROM Employees WHERE DepartmentID = (SELECT DepartmentID FROM Departments WHERE DepartmentName = 'Human Resources')) AS avg\_hr\_salary

ON e.Salary > avg\_hr\_salary.avg\_salary;