Experiment 1.2

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Branch: BE-CSE **Section/Group: KRG-3B**
Semester: 5 **Date of performance: 25-07-2025**
Subject name: ADBMS **Subject code: 23CSP-333**

Problem Statement:

Department-Course Subquery and Access Control

1. Design normalized tables for departments and the courses they offer, maintaining a foreign key relationship.
2. Insert five departments and at least ten courses across those departments.
3. Use a subquery to count the number of courses under each department.
4. Filter and retrieve only those departments that offer more than two courses.
5. Grant SELECT-only access on the courses table to a specific user.
6. Ensure a foreign key relationship from the book to its respective author.
7. Insert at least three records in each table.
8. Perform an INNER JOIN to link each book with its author using the common author ID.
9. Select the book title, author name, and author's country.

Code:

```
DROP TABLE IF EXISTS TBL_EMPLOYEE;


CREATE DATABASE KRG_3B
USE KRG_3B
```

```
CREATE TABLE Employee_tbl (
    EmpId INT PRIMARY KEY,
    EmpName VARCHAR(100),
    Designation VARCHAR(100),
    Salary INT
);
CREATE TABLE department (
    DeptId INT PRIMARY KEY,
    DeptName VARCHAR(100),
    EmpId INT,
    FOREIGN KEY (EmpId) REFERENCES Employee_tbl(EmpId)
);

INSERT INTO Employee_tbl (EmpId, EmpName, Designation, Salary) VALUES
(1, 'Jyoti', 'Software Engineer', 70000),
(2, 'Rohit', 'Data Analyst', 60000),
(3, 'Sneha', 'UI/UX Designer', 55000),
(4, 'Ankit', 'HR Manager', 65000);

INSERT INTO department (DeptId, DeptName, EmpId) VALUES
(101, 'IT', 1),
(102, 'Analytics', 2),
(103, 'Design', 3),
(104, 'HR', 4);


SELECT * FROM Employee_tbl
```

SELECT * FROM department

```
27    (101, 'IT', 1),
28    (102, 'Analytics', 2),
29    (103, 'Design', 3),
30    (104, 'HR', 4);
31
32
33    SELECT * FROM Employee_tbl
34    SELECT * FROM department
```

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Results Messages

	EmpId	EmpName	Designation	Salary
1	1	Jyoti	Software Engineer	70000
2	2	Rohit	Data Analyst	60000
3	3	Sneha	UI/UX Designer	55000
4	4	Ankit	HR Manager	65000

	DeptId	DeptName	EmpId
1	101	IT	1
2	102	Analytics	2
3	103	Design	3
4	104	HR	4

-- INNER JOIN

SELECT Employee_tbl.*, department.*

FROM Employee_tbl

INNER JOIN department

ON Employee_tbl.EmpId = department.EmpId

```
36  -- INNER JOIN
37  SELECT Employee_tbl.*, department.*
38  FROM Employee_tbl
39  INNER JOIN department
40  ON Employee_tbl.EmpId = department.EmpId
41
42  -- Specific Fields with Aliases
43  SELECT
44    E.Designation,
45    E.EmpName,
46    D.DeptName
47  FROM Employee_tbl AS E
```

90 % 13 0

Results Messages

	EmpId	EmpName	Designation	Salary	DeptId	DeptName	EmpId
1	1	Jyoti	Software Engineer	70000	101	IT	1
2	2	Rohit	Data Analyst	60000	102	Analytics	2
3	3	Sneha	UI/UX Designer	55000	103	Design	3
4	4	Ankit	HR Manager	65000	104	HR	4

```
SELECT
  E.Designation,
  E.EmpName,
  D.DeptName
FROM Employee_tbl AS E
INNER JOIN department AS D
ON E.EmpId = D.EmpId
```

```
41
42  -- Specific Fields with Aliases
43  SELECT
44    E.Designation,
45    E.EmpName,
46    D.DeptName
47  FROM Employee_tbl AS E
48  INNER JOIN department AS D
49  ON E.EmpId = D.EmpId
50
51  -- LEFT OUTER JOIN
52  SELECT Employee_tbl.*, department.*
53  FROM Employee_tbl
```

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Results Messages

	Designation	EmpName	DeptName
1	Software Engineer	Jyoti	IT
2	Data Analyst	Rohit	Analytics
3	UI/UX Designer	Sneha	Design
4	HR Manager	Ankit	HR

-- LEFT OUTER JOIN

SELECT Employee_tbl.*, department.*

FROM Employee_tbl

LEFT OUTER JOIN department

ON Employee_tbl.EmpId = department.EmpId

```
50
51  -- LEFT OUTER JOIN
52  SELECT Employee_tbl.*, department.*
53  FROM Employee_tbl
54  LEFT OUTER JOIN department
55  ON Employee_tbl.EmpId = department.EmpId
56
57  -- RIGHT OUTER JOIN
58  SELECT Employee_tbl.*, department.*
59  FROM Employee_tbl
```

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Results Messages

	EmpId	EmpName	Designation	Salary	DeptId	DeptName	EmpId
1	1	Jyoti	Software Engineer	70000	101	IT	1
2	2	Rohit	Data Analyst	60000	102	Analytics	2
3	3	Sneha	UI/UX Designer	55000	103	Design	3
4	4	Ankit	HR Manager	65000	104	HR	4

-- RIGHT OUTER JOIN

SELECT Employee_tbl.*, department.*

FROM Employee_tbl

RIGHT OUTER JOIN department

ON Employee_tbl.EmpId = department.EmpId

```
56
57      -- RIGHT OUTER JOIN
58      SELECT Employee_tbl.*, department.*
59      FROM Employee_tbl
60      RIGHT OUTER JOIN department
61      ON Employee_tbl.EmpId = department.EmpId
62
63      -- FULL OUTER JOIN
64      SELECT Employee_tbl.*, department.*
65      FROM Employee_tbl
```

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Results Messages

	EmpId	EmpName	Designation	Salary	DeptId	DeptName	EmpId
1	1	Jyoti	Software Engineer	70000	101	IT	1
2	2	Rohit	Data Analyst	60000	102	Analytics	2
3	3	Sneha	UI/UX Designer	55000	103	Design	3
4	4	Ankit	HR Manager	65000	104	HR	4

-- FULL OUTER JOIN

SELECT Employee_tbl.*, department.*

FROM Employee_tbl

FULL OUTER JOIN department

ON Employee_tbl.EmpId = department.EmpId

```
64      SELECT Employee_tbl.*, department.*
65      FROM Employee_tbl
66      FULL OUTER JOIN department
67      ON Employee_tbl.EmpId = department.EmpId
68
69      -- EMPLOYEE & MANAGER JOIN (Self Join with Department)
70      SELECT
71        E1.EMP_NAME AS [EMPLOYEE NAME],
72        E2.EMP_NAME AS [MANAGER NAME],
73        E1.DEPT AS [EMPLOYEE_DEPT],
74        E2.DEPT AS [MANAGER_DEPT]
```

90 % 13 0

Results Messages

	EmpId	EmpName	Designation	Salary	DeptId	DeptName	EmpId
1	1	Jyoti	Software Engineer	70000	101	IT	1
2	2	Rohit	Data Analyst	60000	102	Analytics	2
3	3	Sneha	UI/UX Designer	55000	103	Design	3
4	4	Ankit	HR Manager	65000	104	HR	4

```
-- EMPLOYEE & MANAGER JOIN (Self Join with Department)
SELECT
  E1.EMP_NAME AS [EMPLOYEE NAME],
  E2.EMP_NAME AS [MANAGER NAME],
  E1.DEPT AS [EMPLOYEE_DEPT],
  E2.DEPT AS [MANAGER_DEPT]
FROM EMPLOYEE AS E1
LEFT OUTER JOIN EMPLOYEE AS E2
ON E1.MANAGER_ID = E2.EMP_ID
```