Experiment 1.2

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Subject Name: ADBMS   **Subject Code: 23CSP-333**

1. **Aim:** Department-Course Subquery and Access Control

2. **Objective:**
   - Design normalized tables for departments and the courses they offer, maintaining a foreign key relationship.
   - Insert five departments and at least ten courses across those departments.
   - Use a subquery to count the number of courses under each department.
   - Filter and retrieve only those departments that offer more than two courses.
   - Grant SELECT-only access on the courses table to a specific user.

3. **Code:**

```
CREATE TABLE Department (
    DeptID INT PRIMARY KEY,
    DeptName VARCHAR(100)
);

CREATE TABLE Course (
    CourseID INT PRIMARY KEY,
    CourseName VARCHAR(100),
    DeptID INT,
    FOREIGN KEY (DeptID) REFERENCES Department(DeptID)
);

INSERT INTO Department (DeptID, DeptName) VALUES
```

```
(1, 'Computer Science'),
(2, 'Mathematics'),
(3, 'Physics'),
(4, 'Chemistry'),
```

```
(5, 'Biology');

INSERT INTO Course (CourseID, CourseName, DeptID) VALUES
(101, 'Data Structures', 1),
(102, 'Database Systems', 1),
(103, 'Operating Systems', 1),
(104, 'Calculus', 2),
(105, 'Linear Algebra', 2),
(106, 'Quantum Mechanics', 3),
(107, 'Electromagnetism', 3),
(108, 'Organic Chemistry', 4),
(109, 'Biochemistry', 5),
(110, 'Genetics', 5);

SELECT DeptName
FROM Department
WHERE DeptID IN (
    SELECT DeptID
    FROM Course
    GROUP BY DeptID
    HAVING COUNT(CourseID) > 2
);
GRANT SELECT ON TBL_COURSE TO 'readonly_user';
```

Output: