Experiment 1-B

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Semester: 5th	**Subject Name: ADBMS**
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Aim:

Medium-Level Problem

Problem Title: Department-Course Subquery and Access Control
Procedure (Step-by-Step):

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.

Sample Output Description:

The result shows the names of departments which are associated with more than two courses in the system.
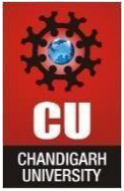
Code:

-- Create Department Table

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

-- Create Course Table

```
CREATE TABLE Course (
```

```sql
    CourseID INT PRIMARY KEY,
    CourseName VARCHAR(100),
    DeptID INT,
    FOREIGN KEY (DeptID) REFERENCES Department(DeptID)
);

-- Insert Departments
INSERT INTO Department VALUES
(1, 'Computer Science'),
(2, 'Physics'),
(3, 'Mathematics'),
(4, 'Chemistry'),
(5, 'Biology');


-- Insert Course
INSERT INTO Course VALUES
(101, 'Data Structures', 1),
(102, 'Operating Systems', 1),
(103, 'Quantum Mechanics', 3),
(104, 'Electromagnetism', 2),
(105, 'Linear Algebra', 3),
(106, 'Calculus', 3),
(107, 'Organic Chemistry', 4),
(108, 'Physical Chemistry', 4),
(109, 'Genetics', 5),
(110, 'Molecular Biology', 5);


SELECT DeptName
FROM Department
WHERE DeptID IN (

SELECT DeptID
FROM COURSE
GROUP BY DeptID
HAVING COUNT(*) > 2
)


-- Step 1: Create Login at server level (run this in the master database)
CREATE LOGIN AMAN
WITH PASSWORD = 'AMAN@04';
```

-- Step 2: Switch to your target database (replace with your actual database name)
USE DB_KRG_3A;

-- Step 3: Create a user for that login inside the current database
CREATE USER AMAN_04 FOR LOGIN AMAN;

-- Step 4: Grant SELECT-only access on the Course table
GRANT SELECT ON Course TO AMAN;

Output: