



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Experiment-1

Student Name: Misal Saini

Branch: CSE

Semester: 5th

Subject Name: ADBMS

UID: 23BCS13467

Section/Group: KRG-2B

Date of Performance: 28-07-25

Subject Code: 23CSP-333

1. Aim:

a.) Department-Course Subquery and Access Control

- 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.

dept_id	dept_name
1	Biology
2	Civil Engineering
3	Chemistry
4	Statistics
5	EVS

course_id	Course_name	dept_id
101	Genetics	1
102	MicroBiology	1
103	Structural Analysis	2
104	Organic Chemistry	3
106	Climate Change	5
107	Cell Biology	1



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

2. Objective:

- To understand how to use JOINS in SQL.
- To understand the basic SQL Queries.
- To learn how to use Sub-Queries in SQL.

3. DBMS Script:

-- Department table

```
CREATE TABLE Department (  
    dept_id INT PRIMARY KEY,  
    dept_name VARCHAR(100)  
);
```

-- Course table with a foreign key to Department

```
CREATE TABLE Course (  
    course_id INT PRIMARY KEY,  
    course_name VARCHAR(100),  
    dept_id INT,  
    FOREIGN KEY (dept_id) REFERENCES Department(dept_id)  
);
```

-- Insert into Department

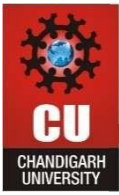
```
INSERT INTO Department (dept_id, dept_name) VALUES  
(1, 'Biology'),  
(2, 'Civil Engineering'),  
(3, 'Chemistry'),  
(4, 'Statistics'),  
(5, 'Environmental Science');
```

-- Insert into Course

```
INSERT INTO Course (course_id, course_name, dept_id) VALUES  
(101, 'Genetics', 1),  
(102, 'Microbiology', 1),  
(103, 'Structural Analysis', 2),  
(104, 'Organic Chemistry', 3),  
(106, 'Climate Change', 5);  
(107, 'Cell Biology', 1);
```

-- Departments with more than 2 courses

```
SELECT dept_name  
FROM Department  
WHERE dept_id IN (  
    SELECT dept_id  
    FROM Course  
    GROUP BY dept_id  
    HAVING COUNT(course_id) > 2  
);
```



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

```
-- Grant SELECT access  
GRANT SELECT ON Course TO readonly_user;
```

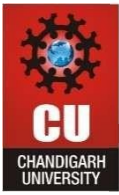
OUTPUT:

dept_name

Biology

4. Learning Outcomes:

- You will be able to write basic SQL queries.
- You will learn to perform JOINS in SQL.
- You will understand how to implement Sub-Queries.



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.