Experiment 2

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* Aim:

Department-Course Subquery and Access Control

* Theory:
* A **subquery** is a SELECT statement nested inside another query. It runs first, and its result is used by the outer query, often in the WHERE clause for dynamic filtering. For instance, you could find all employees in the same department as 'John' without first looking up his department.
* **Access control** manages database security by defining user permissions. Administrators use the GRANT command to assign privileges like SELECT or UPDATE on tables and REVOKE to remove them. This prevents unauthorized access and protects data integrity.
* SQL Queries:

1. To create two tables- Departments and courses:

create table departments(dept\_id int primary key,dept\_name varchar(50));

create table courses(course\_id int primary key, course\_name varchar(100), dept\_id int, foreign key(dept\_id) references departments(dept\_id));

1. To insert values into Departments and Courses and display the table:

insert into departments values(1,’Computer Science’),

(2,’Electrical’),(3,’Mechanical’),(4,’Civil’),(5,’Electronics’);

insert into courses values(101,'DBMS',1),(102,'Operating Systems',1),(103,'Power Systems',2),(104,'Digital Circuits',2),(105,'Thermodynamics',3),(106,'Fluid Mechanics',3),(107,'Structural Engineering',3),(108,'Surveying',4),(109,'Embedded Systems',5),(110,'VLSI Design',5);

select \* from departments;

select \* from courses;

1. Retrieve Departments Offering More Than Two Courses Using Subquery:

select dept\_name from departments where dept\_id in (select dept\_id from courses group by dept\_id having count(course\_name)>2);

1. Grant SELECT Access on Courses Table Using DCL

create user viewer\_user with password '123';

grant select on courses to viewer\_user;

* Result:









