EXPERIMENT - 02

AIM: Department-Course Subquery and Access Control

THEORY:

- A subquery is a SELECT statement embedded within another query. It executes first and provides a result that the outer query uses—often within the WHERE clause—to filter data dynamically.
 For example, you can retrieve all employees working in the same department as 'John' without separately identifying his department.
- Access control in databases ensures security by defining what
 actions users can perform. Administrators use the GRANT
 command to provide permissions like SELECT or UPDATE, and the
 REVOKE command to withdraw them. This mechanism helps
 prevent unauthorized access and maintains data integrity.

SQL QUERIES:

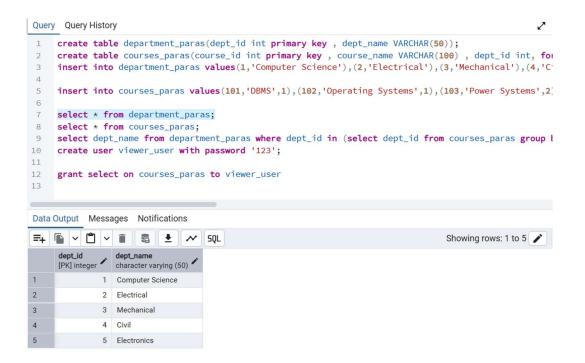
1. To create two tables- Departments and courses: create table department_paras(dept_id int primary key, dept_name VARCHAR(50)); create table courses_paras(course_id int primary key, course_name VARCHAR(100), dept_id int, foreign key(dept_id) REFERENCES department_paras(dept_id));

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

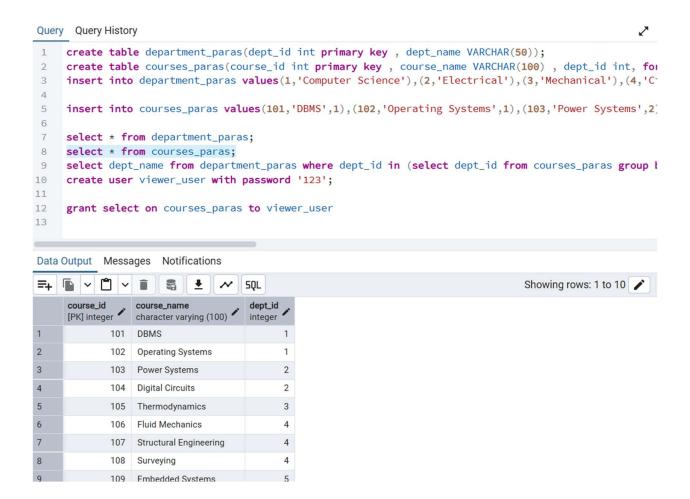
insert into department_paras values(1,'Computer
Science'),(2,'Electrical'),(3,'Mechanical'),(4,'Civil'),(5,'Electronics
');

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

select * from department_paras;



select * from courses paras;



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

select dept_name from department_paras where dept_id in (select dept_id from courses_paras group by dept_id having count(course_name)>2);



 Grant SELECT Access on Courses Table Using DCL create user viewer_user with password '123';

grant select on courses_paras to viewer_user



CONCLUSION: Subqueries enhance query flexibility by allowing dynamic data filtering based on results from other queries. **Access control** is essential for database security, ensuring that only authorized users can view or modify data.