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# **EXPERIMENT 6**

**AIM:** Nested queries and Complex queries

## **THEORY:**

A Subquery or Inner query or Nested query is a query within another SQL

query and embedded within the WHERE clause.

A subquery is used to return data that will be used in the main query as a condition to

further restrict the data to be retrieved.

Subqueries can be used with the SELECT, INSERT, UPDATE, and DELETE

statements along with the operators like =, <, >, >=, <=, IN, BETWEEN etc.

## **SYNTAX:**

```
SELECT column_name [, column_name ]  
FROM table1 [, table2 ]  
WHERE column_name OPERATOR  
(SELECT column_name [, column_name ]  
FROM table1 [, table2 ]  
[WHERE])
```

Q1. display Fname of employee taking maximum salary

```
select Fname from employee where Salary = (select  
max(Salary) from employee)
```

**Success** 1:45 PM  
1 rows 0.284 seconds

Explore SQL **Data** Chart Export ▾ 🔗

Fname
James

Q2.display second largest salary from employee table

```
SELECT Salary FROM (SELECT Salary FROM Employee ORDER BY salary DESC LIMIT 2) AS Emp ORDER BY salary LIMIT 1;
```

**Success** 1:51 PM  
1 rows 0.499 seconds

Explore SQL **Data** Chart Export ▾ 🔗

Salary
43000

Q3.display fname of employee taking second largest salary

```
SELECT Fname, MAX(salary) AS salary FROM employee WHERE salary < (SELECT MAX(salary) FROM employee);
```

**Success** 1:55 PM  
1 rows 0.457 seconds

Explore SQL **Data** Chart Export ▾ 🔗

Fname	salary
John	43000

Q4. select fname and address of all the employees who work for 'Research' department

```
SELECT FNAME, Address
FROM (EMPLOYEE JOIN DEPARTMENT ON DNO = DNUMBER)
WHERE DNAME = 'RESEARCH';
```

Success 2:01 PM  
4 rows 0.632 seconds

Explore SQL Data Chart Export ▾ 🔗

	FNAME	Address
	John	731 Fondren, Houston TX
	Franklin	638 Voss, Houston TX
	Joyce	5631 Rice, Houston TX
	Ramesh	975 Fire Oak, Humble TX

Q5. display name of employees whose salary is greater than the salary of all the employees in department 5

```
select Fname, Lname from employee where Salary > ALL(Select Salary from employee where DNO = 5);
```

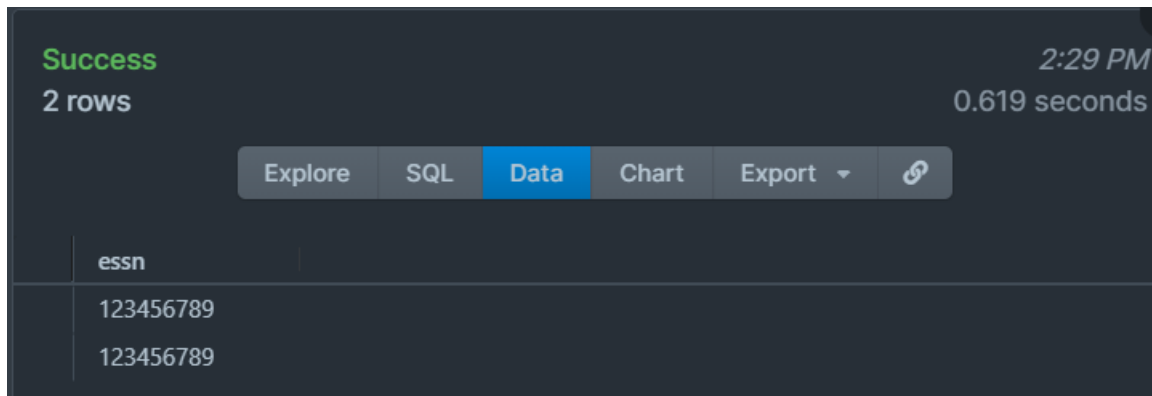
Success 2:04 PM  
2 rows 0.66 seconds

Explore SQL Data Chart Export ▾ 🔗

	Fname	Lname
	James	Borg
	Jennifer	Wallace

Q6. select ssn of employee who work on the same (project, hours) combination that employee 'john smith' works on

```
select Essn from works_on where (Pno, Hours) in (select Pno, Hours from works_on where essn in (select Ssn from employee where Fname='John' and Lname='Smith'));
```

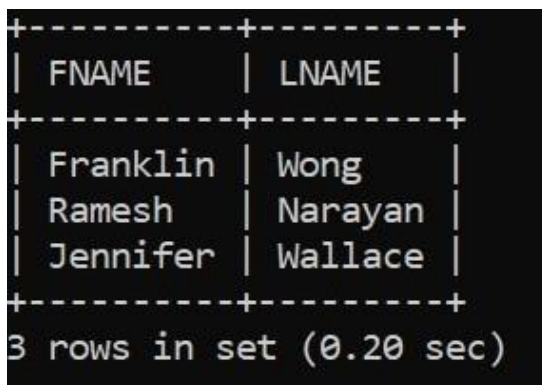


The screenshot shows a database interface with a dark theme. At the top left, it says "Success" in green and "2 rows" below it. At the top right, it shows the time "2:29 PM" and the execution time "0.619 seconds". Below this is a navigation bar with buttons: "Explore", "SQL", "Data" (which is highlighted in blue), "Chart", "Export" (with a dropdown arrow), and a link icon. Below the navigation bar is a table with one column labeled "essn". The table contains two rows, both with the value "123456789".

essn
123456789
123456789

Q7. retrieve the name of each employee whose salary is greater than his own departments average salary.

```
Select E.FNAME, E.LNAME FROM employee E where E.SALARY > (SELECT AVG(SALARY) FROM EMPLOYEE S WHERE E.DNO=S.DNO);
```



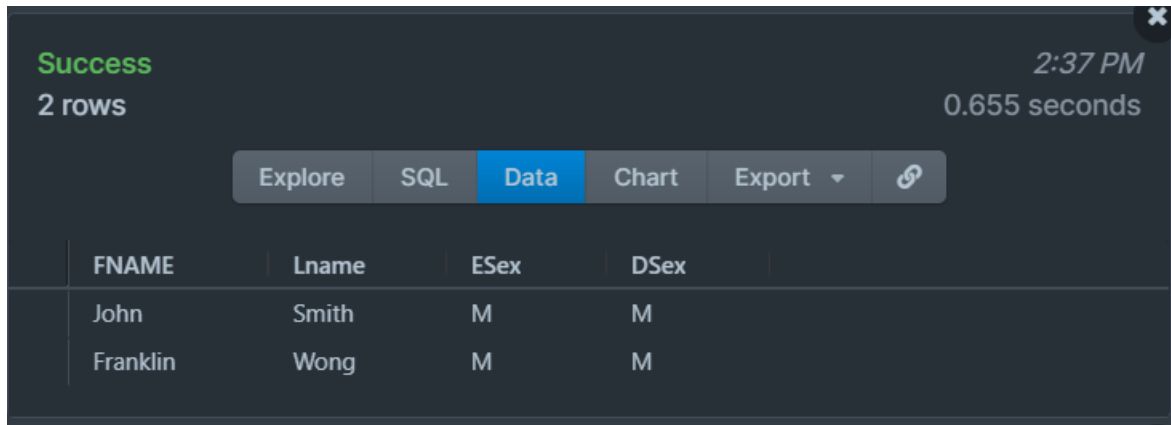
The screenshot shows a terminal window with a query result. The result is a table with two columns: "FNAME" and "LNAME". The table contains three rows of data: Franklin Wong, Ramesh Narayan, and Jennifer Wallace. Below the table, it says "3 rows in set (0.20 sec)".

FNAME	LNAME
Franklin	Wong
Ramesh	Narayan
Jennifer	Wallace

Q8. retrieve the name of each employee who has dependent with the same gender as the employee itself.

```
SELECT FNAME, Lname, Employee.Sex AS ESex, dependent.Sex AS DSex
```

```
FROM EMPLOYEE, DEPENDENT WHERE SSN=ESSN AND Employee.Sex=Dependent.Sex;
```



The screenshot shows a database interface with a dark theme. At the top, it says "Success" in green and "2 rows" in white. On the right, it shows the time "2:37 PM" and the execution time "0.655 seconds". Below this is a navigation bar with buttons: "Explore", "SQL", "Data" (highlighted in blue), "Chart", "Export" (with a dropdown arrow), and a link icon. The main area displays a table with the following data:

FNAME	Lname	ESex	DSex
John	Smith	M	M
Franklin	Wong	M	M

**CONCLUSION:** Database is searched for various nested and correlated queries.