Practical 7

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Aim: Exercise 3: Search conditions, Summary queries, Sub- queries.

Theory:

A Subquery or Inner query or a 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
  FROM table_name
  WHERE column_name expression operator
  (SELECT COLUMN_NAME from TABLE_NAME   WHERE ...);
```

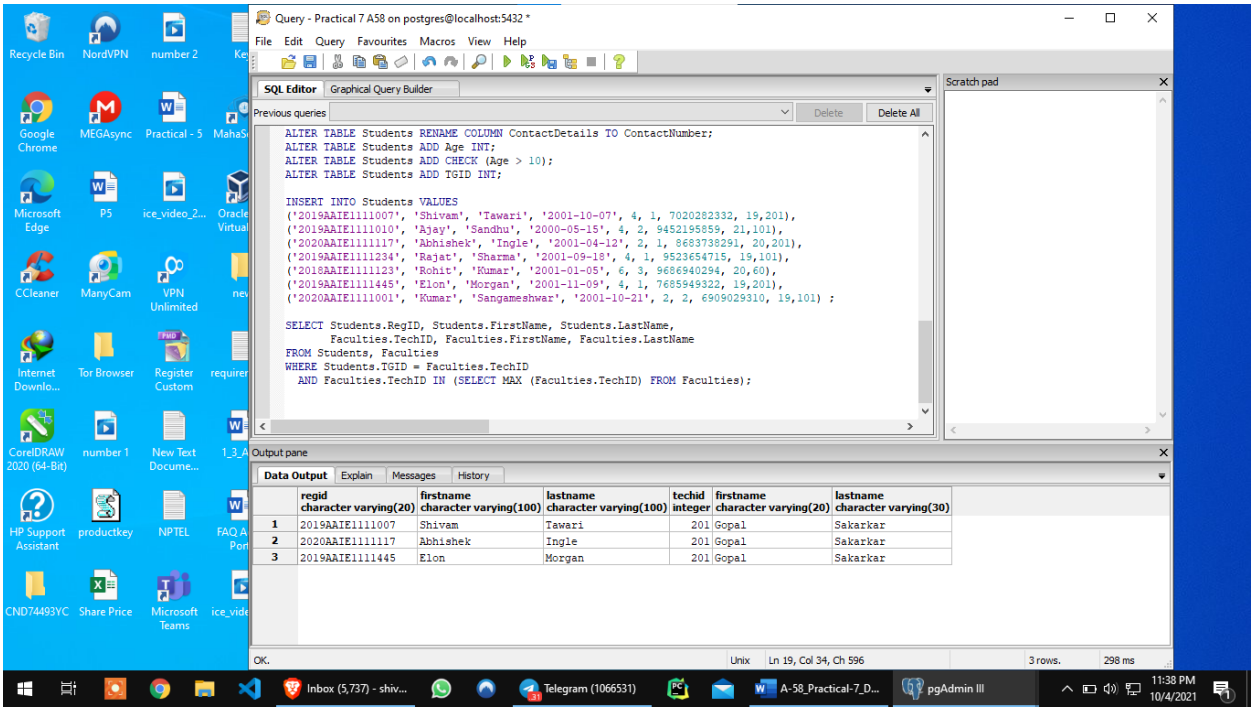
Subqueries are used as search conditions in order to filter results.
They specify the conditions for the rows returned from the containing query's select-list, a query expression, or the subquery itself.

Program/Queries:

SQL Script 1:

```
SELECT Students.RegID, Students.FirstName, Students.LastName,
      Faculties.TechID, Faculties.FirstName, Faculties.LastName
FROM Students, Faculties
WHERE Students.TGID = Faculties.TechID
  AND Faculties.TechID IN (SELECT MAX (Faculties.TechID) FROM Faculties);
```

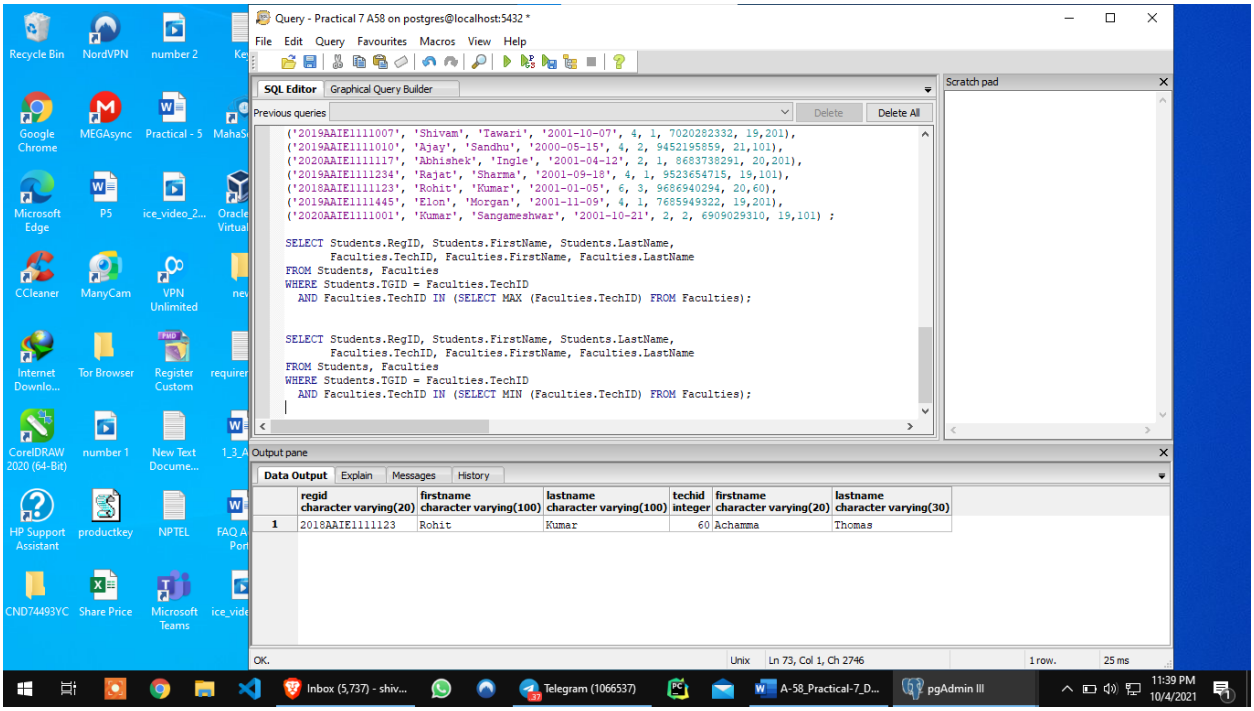
Output 1:



SQL Script 2:

```
SELECT Students.RegID, Students.FirstName, Students.LastName,
      Faculties.TechID, Faculties.FirstName, Faculties.LastName
FROM Students, Faculties
WHERE Students.TGID = Faculties.TechID
  AND Faculties.TechID IN (SELECT MIN (Faculties.TechID) FROM Faculties);
```

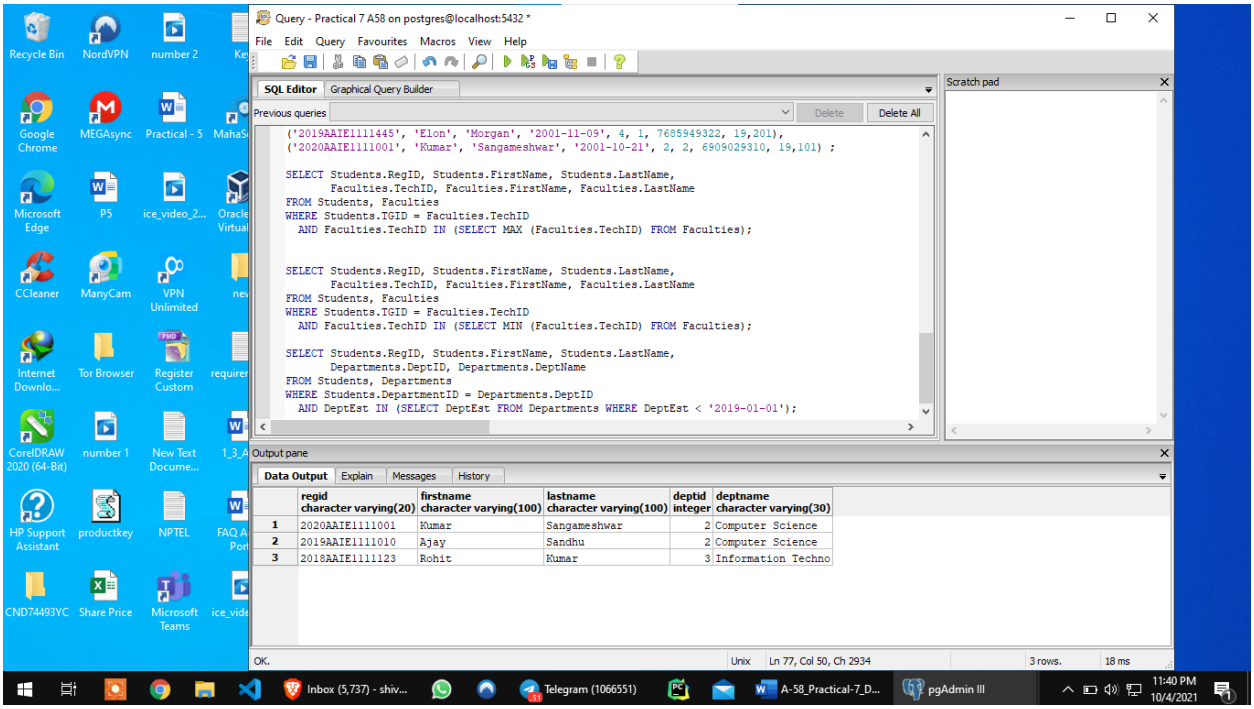
Output 2:



SQL Script 3:

```
SELECT Students.RegID, Students.FirstName, Students.LastName,
      Departments.DeptID, Departments.DeptName
FROM Students, Departments
WHERE Students.DepartmentID = Departments.DeptID
  AND DeptEst IN (SELECT DeptEst FROM Departments WHERE DeptEst < '2019-01-01');
```

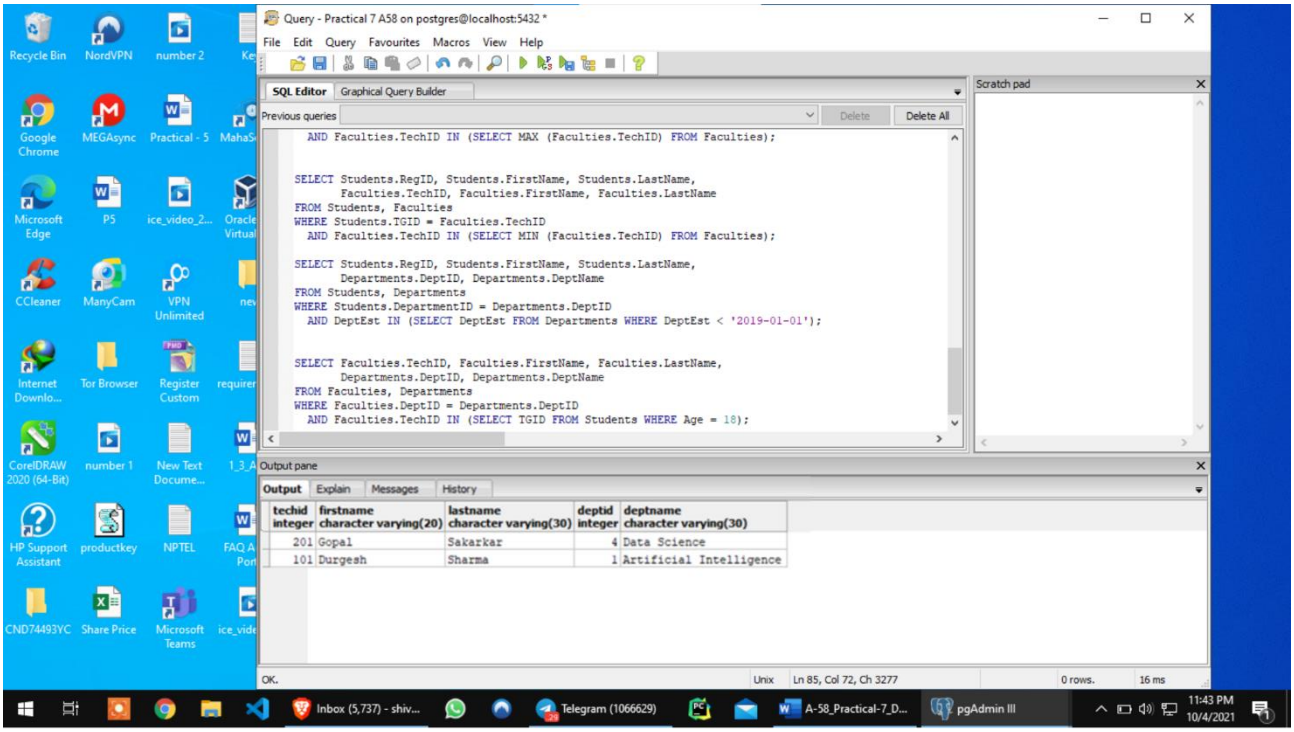
Output 3:



SQL Script 4:

```
SELECT Faculties.TechID, Faculties.FirstName, Faculties.LastName,
      Departments.DeptID, Departments.DeptName
FROM Faculties, Departments
WHERE Faculties.DeptID = Departments.DeptID
  AND Faculties.TechID IN (SELECT TGID FROM Students WHERE Age = 18);
```

Output 4:



Conclusion: Hence, we have retrieved data from SQL Subquery on multiple tables and use of Subquery Operation on various tables has been performed.