Practical 6

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Aim: Exercise 2: Data retrieval from the designed database. e.g. JOINS.

Theory:

Join: A join clause is used to combine rows from two or more tables, based on a related column between them.

Types of joins:

1. Inner join: SELECT column_name(s)
   FROM table1
   INNER JOIN table2
   ON table1.column_name = table2.column_name;

2. Left join: SELECT column_name(s)
   FROM table1
   LEFT JOIN table2
   ON table1.column_name = table2.column_name;

3. Right join: SELECT column_name(s)
   FROM table1
   RIGHT JOIN table2
   ON table1.column_name = table2.column_name;

4. Full join: SELECT column_name(s)
   FROM table1
   FULL OUTER JOIN table2
   ON table1.column_name = table2.column_name
   WHERE condition;

5. Natural join: SELECT *
   FROM table1
   NATURAL JOIN table2;

Program/Queries:

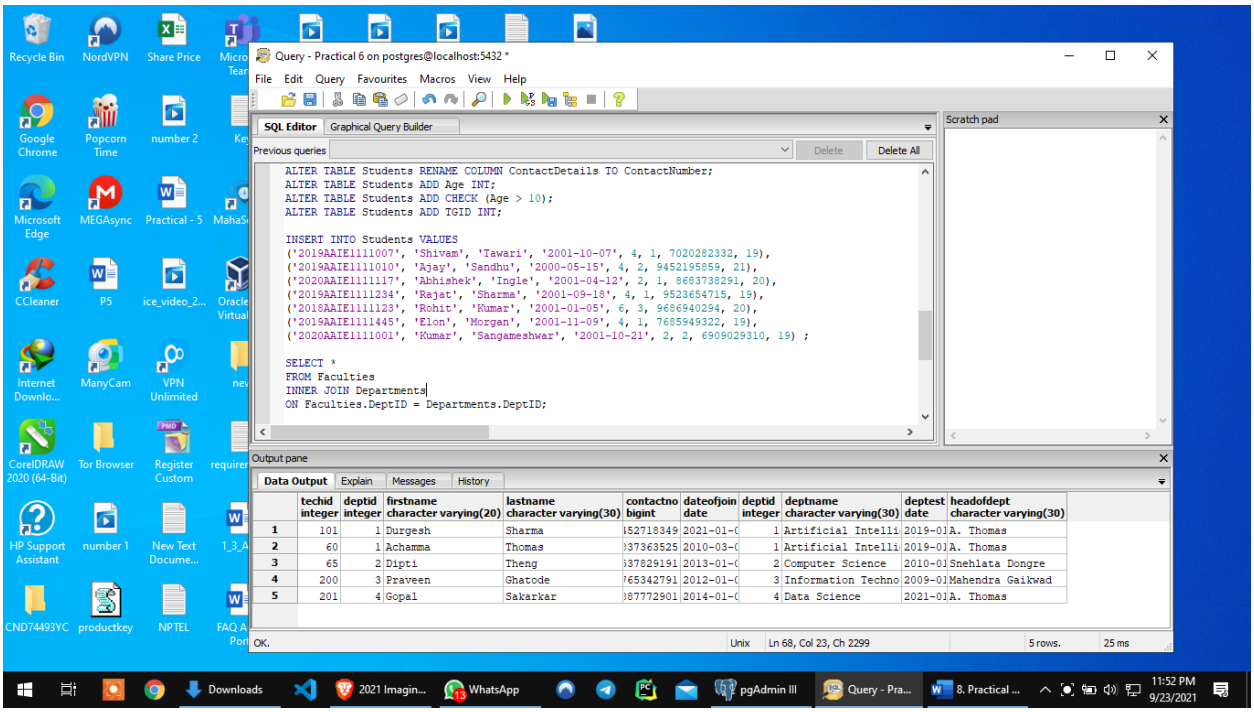
SQL Code followed by Output Screenshot for each table

-- Operation 1: INNER JOIN

SQL Script:

```
SELECT *
FROM Faculties
INNER JOIN Departments
ON Faculties.DeptID = Departments.DeptID;
```

Output:



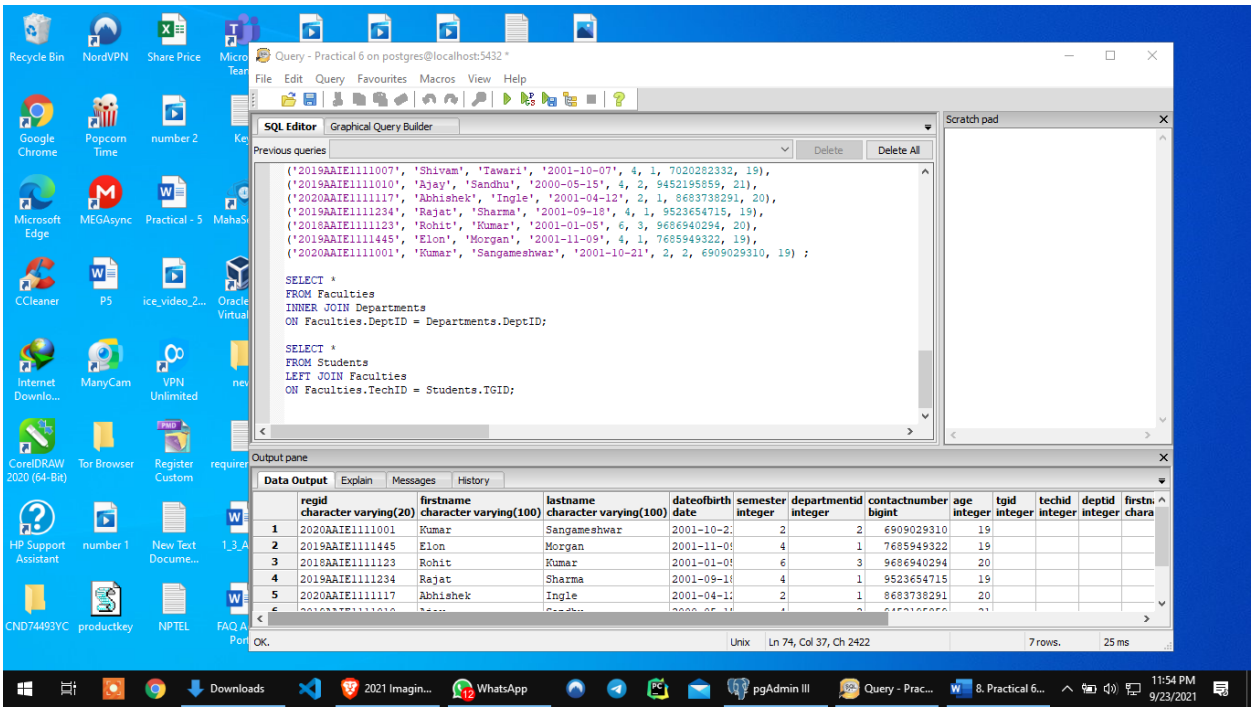
-- Operation 2: LEFT JOIN or LEFT OUTER JOIN

SQL Script:

```
SELECT *
FROM Students
LEFT JOIN Faculties
```

ON Faculties.TechID = Students.TGID;

Output:

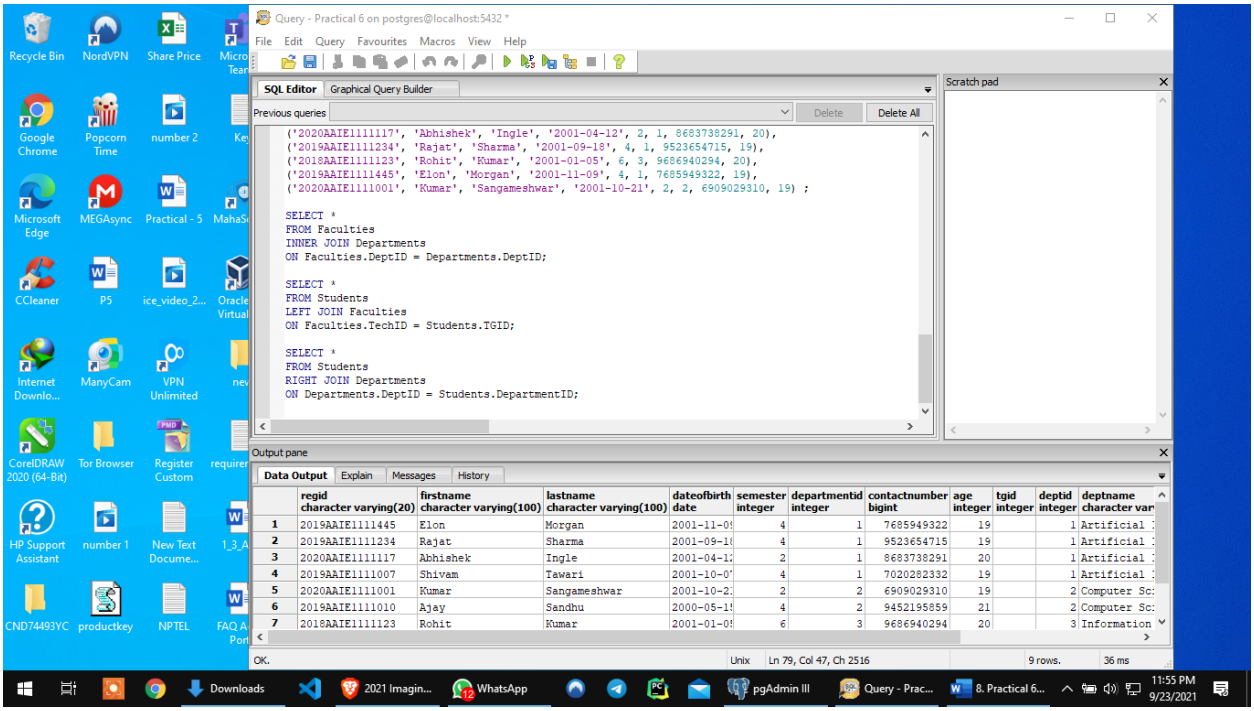


-- Operation 3: RIGHT JOIN or RIGHT OUTER JOIN

SQL Script:

SELECT *
FROM Students
RIGHT JOIN Departments
ON Departments.DeptID = Students.DepartmentID;

Output:

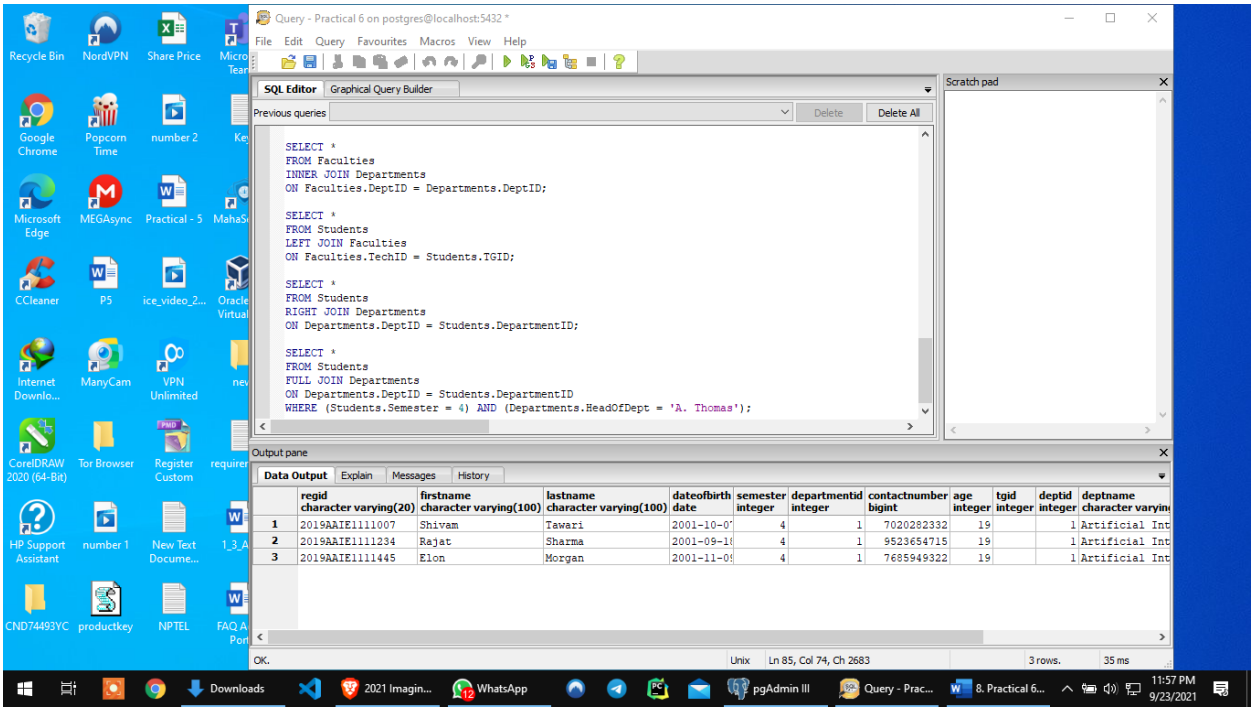


-- Operation 4: FULL JOIN or FULL OUTER JOIN

SQL Script:

```
SELECT *
FROM Students
FULL JOIN Departments
ON Departments.DeptID = Students.DepartmentID
WHERE (Students.Semester = 4) AND (Departments.HeadOfDept = 'A. Thomas');
```

Output:

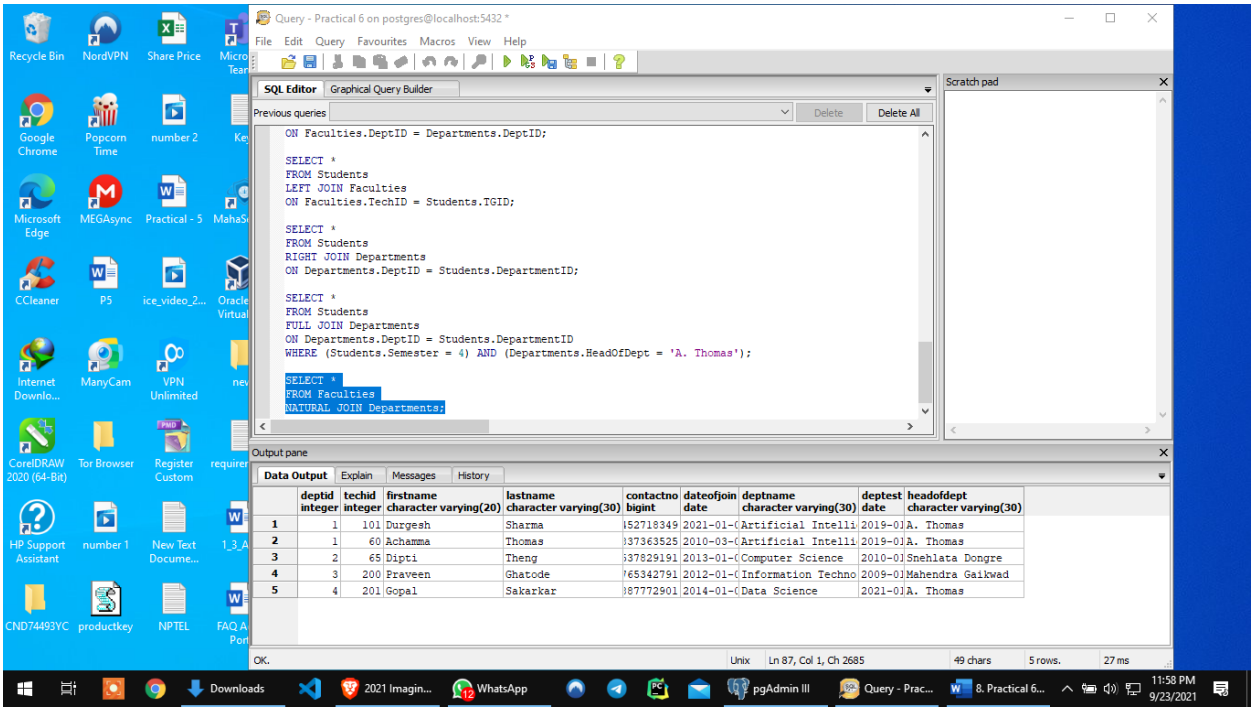


-- Operation 5: NATURAL JOIN

SQL Script:

```
SELECT *
FROM Faculties
NATURAL JOIN Departments;
```

Output:



Conclusion: Hence, we have learnt and performed data retrieval SQL query on multiple tables also leaned use of JOINs Operation on various tables.