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Division	**A**
Subject	**Big Data Analytics Lab**
Assignment No	**Four**

4) Postgres shell practice queries

Setup: Sample Table Creation
First, let's create a sample table for practice:

```
CREATE TABLE employees (
    id SERIAL PRIMARY KEY,
    name VARCHAR(100),
    department VARCHAR(50),
    salary NUMERIC(10, 2),
    hire_date DATE
);
```

Inserting Data

1. Insert a single record:

```
INSERT INTO employees (name, department, salary, hire_date)
VALUES ('Alice Smith', 'HR', 60000, '2020-01-15');
```

2. Insert multiple records:

```
INSERT INTO employees (name, department, salary, hire_date)
VALUES
('Bob Johnson', 'IT', 75000, '2019-03-22'),
('Carol Williams', 'Finance', 70000, '2018-07-30');
```

Selecting Data

3. Select all records:

```
SELECT  FROM employees;
```

4. Select specific columns:

```
SELECT name, salary FROM employees;
```

5. Select with a condition:

```
SELECT  FROM employees WHERE department = 'IT';
```

6. Order results:

```
SELECT  FROM employees ORDER BY salary DESC;
```

Updating Data

7. Update a record:

```
UPDATE employees SET salary = salary  1.1 WHERE department = 'HR';
```

8. Update multiple fields:

```
UPDATE employees
SET salary = 80000, department = 'Management'
WHERE name = 'Alice Smith';
```

Deleting Data

9. Delete a record:

```
DELETE FROM employees WHERE name = 'Bob Johnson';
```

10. Delete all records from a specific department:

```
DELETE FROM employees WHERE department = 'Finance';
```

Advanced Queries

11. Count records by department:

```
SELECT department, COUNT() AS employee_count
FROM employees
GROUP BY department;
```

12. Calculate average salary:

```
SELECT AVG(salary) AS average_salary FROM employees;
```

13. Find the highest salary:

```
sql
SELECT MAX(salary) AS highest_salary FROM employees;
```

Conditional Statements

14. Using CASE for salary bands:

```
sql
SELECT name,
      CASE
         WHEN salary < 50000 THEN 'Low'
         WHEN salary BETWEEN 50000 AND 80000 THEN 'Medium'
         ELSE 'High'
      END AS salary_band
FROM employees;
```

Joins (If You Have Another Table)

If you have another table, say departments, you could practice joins:

```
CREATE TABLE departments (
   id SERIAL PRIMARY KEY,
   name VARCHAR(50)
);
```

15. Inner Join Example:

```
sql
SELECT e.name, d.name AS department_name
FROM employees e
INNER JOIN departments d ON e.department = d.name;
```