



## Faculty of Technology and Engineering

Chandubhai S. Patel Institute of Technology (CSPIT)

Department of Computer Science & Engineering

Date:     /     /

### Laboratory Manual

Academic Year	:	2024-25	Semester	:	4
Course code	:	CSE206	Course name	:	DATABASE MANAGEMENT SYSTEM

#### Practical - 4

**Aim:** You are a database administrator for a multinational bank. The bank requires insights and maintenance of its employee and customer databases to ensure data consistency and retrieval of relevant information for various operations. Your tasks involve applying constraints and writing SQL queries to retrieve specific data based on given conditions. Below are the tasks to be performed:

The bank maintains the following schemas:

**Employee Schema**

- Emp\_ID (Primary Key)
- Emp\_Name (Not Null)
- Emp\_Salary (Not Null, Check: Greater than zero)
- Job\_ID (Unique)
- Other attributes you can add as needed.

**Customer Schema • Cust\_ID (Primary Key)**

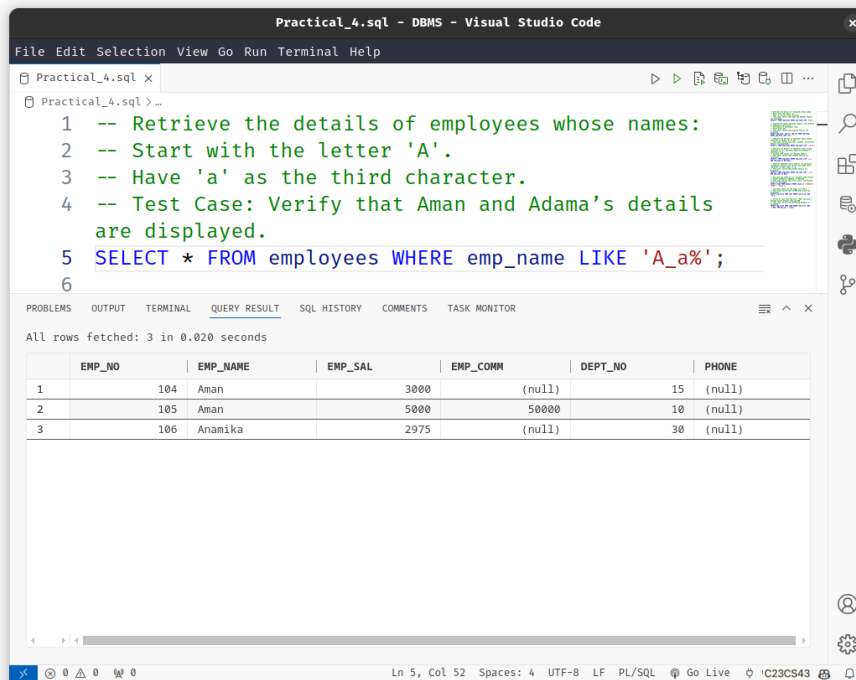
- Cust\_Name (Not Null)
- Branch (Not Null)
- Other attributes you can add as needed.

**Constraints –**

- Not Null Constraints: Ensure critical fields are not null.
- Unique Constraints: Ensure data integrity by limiting column values.
- Check Constraints: Ensure columns have unique values where required.

1. Retrieve the details of employees whose names:

- Start with the letter 'A'.
- Have 'a' as the third character.



The screenshot shows the Visual Studio Code interface with a file named 'Practical\_4.sql'. The editor contains the following SQL query:

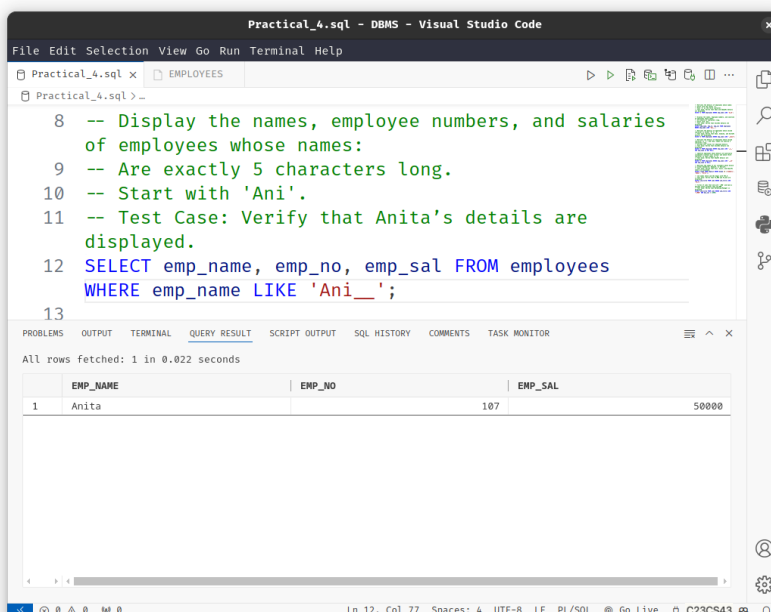
```
1 -- Retrieve the details of employees whose names:
2 -- Start with the letter 'A'.
3 -- Have 'a' as the third character.
4 -- Test Case: Verify that Aman and Adama's details
5 -- are displayed.
6 SELECT * FROM employees WHERE emp_name LIKE 'A_a%';
```

The 'QUERY RESULT' tab is active, showing the results of the query. It indicates that 3 rows were fetched in 0.020 seconds. The results are displayed in a table with the following columns: EMP\_NO, EMP\_NAME, EMP\_SAL, EMP\_COMM, DEPT\_NO, and PHONE.

EMP_NO	EMP_NAME	EMP_SAL	EMP_COMM	DEPT_NO	PHONE
1	104	Aman	3000	(null)	15 (null)
2	105	Aman	5000	50000	10 (null)
3	106	Anamika	2975	(null)	30 (null)

2. Display the names, employee numbers, and salaries of employees whose names:

- Are exactly 5 characters long.
- Start with 'Ani'.



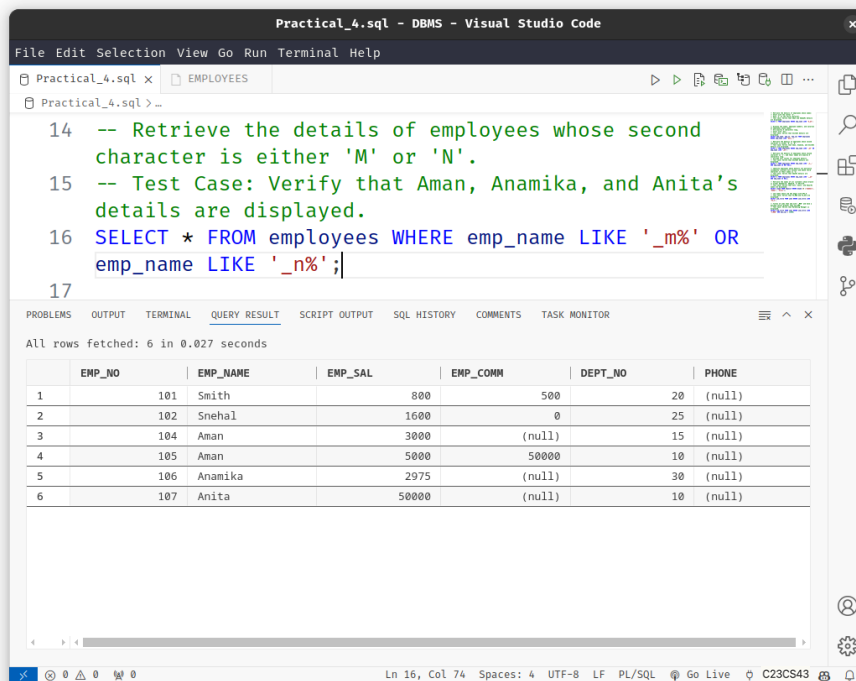
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_4.sql'. The editor contains the following SQL query:

```
8 -- Display the names, employee numbers, and salaries
9 -- of employees whose names:
10 -- Are exactly 5 characters long.
11 -- Start with 'Ani'.
12 -- Test Case: Verify that Anita's details are
13 -- displayed.
14 SELECT emp_name, emp_no, emp_sal FROM employees
15 WHERE emp_name LIKE 'Ani__';
```

The 'QUERY RESULT' tab is active, showing the results of the query. It indicates that 1 row was fetched in 0.022 seconds. The results are displayed in a table with the following columns: EMP\_NAME, EMP\_NO, and EMP\_SAL.

EMP_NAME	EMP_NO	EMP_SAL
Anita	107	50000

## 3. Retrieve the details of employees whose second character is either 'M' or 'N'.



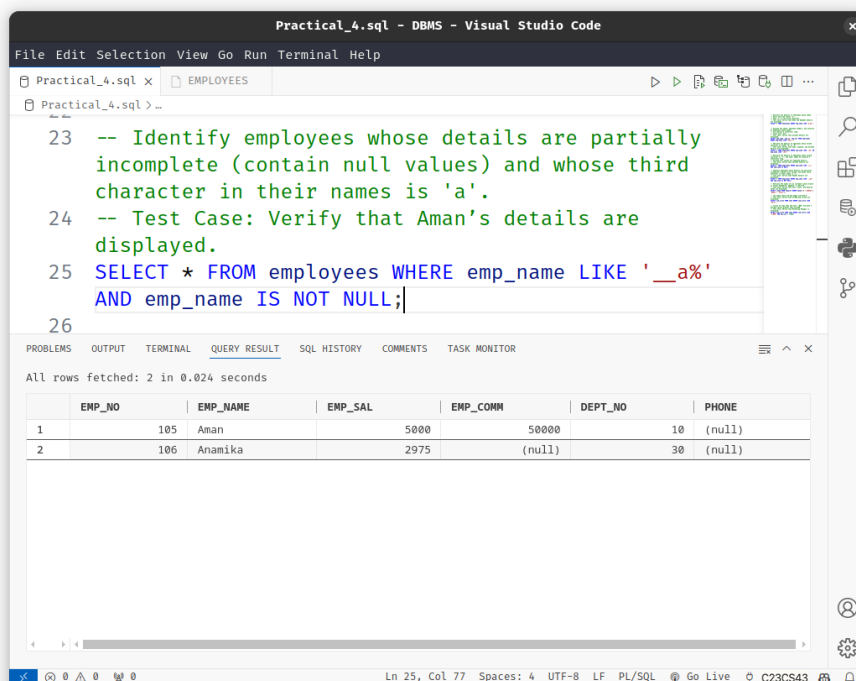
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_4.sql'. The editor contains the following SQL code:

```
14 -- Retrieve the details of employees whose second  
15 -- character is either 'M' or 'N'.  
16 -- Test Case: Verify that Aman, Anamika, and Anita's  
17 -- details are displayed.  
18 SELECT * FROM employees WHERE emp_name LIKE '_m%' OR  
19 emp_name LIKE '_n%';
```

The Query Result panel at the bottom shows the results of the query. It indicates that 6 rows were fetched in 0.027 seconds. The results are displayed in a table with the following columns: EMP\_NO, EMP\_NAME, EMP\_SAL, EMP\_COMM, DEPT\_NO, and PHONE.

EMP_NO	EMP_NAME	EMP_SAL	EMP_COMM	DEPT_NO	PHONE
1	101	Smith	800	500	20 (null)
2	102	Snehal	1600	0	25 (null)
3	104	Aman	3000	(null)	15 (null)
4	105	Aman	5000	50000	10 (null)
5	106	Anamika	2975	(null)	30 (null)
6	107	Anita	50000	(null)	10 (null)

## 4. Identify employees whose details are partially incomplete (contain null values) and whose third character in their names is 'a'.



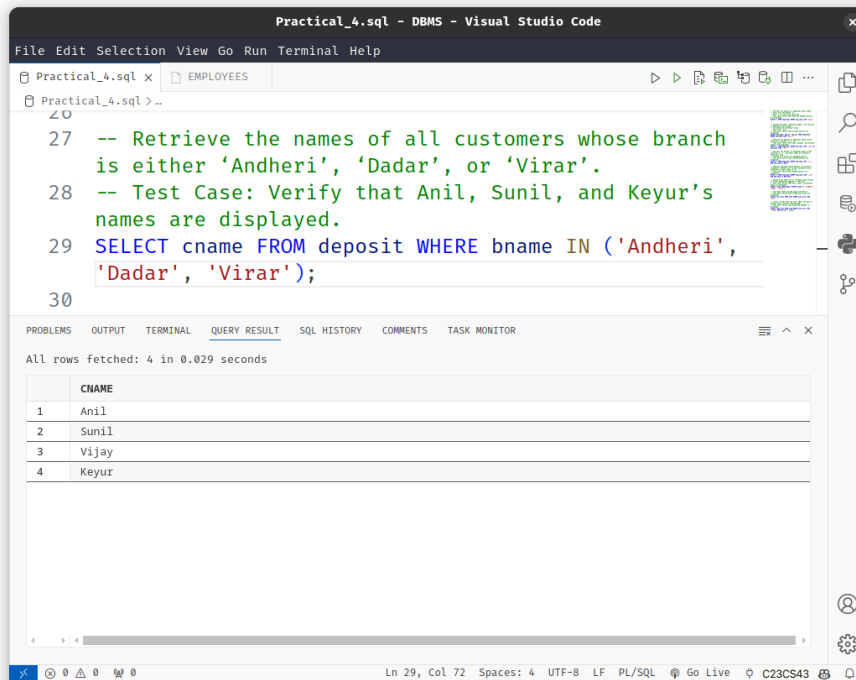
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_4.sql'. The editor contains the following SQL code:

```
23 -- Identify employees whose details are partially  
24 -- incomplete (contain null values) and whose third  
25 -- character in their names is 'a'.  
26 -- Test Case: Verify that Aman's details are  
27 -- displayed.  
28 SELECT * FROM employees WHERE emp_name LIKE '__a%' AND  
29 emp_name IS NOT NULL;
```

The Query Result panel at the bottom shows the results of the query. It indicates that 2 rows were fetched in 0.024 seconds. The results are displayed in a table with the following columns: EMP\_NO, EMP\_NAME, EMP\_SAL, EMP\_COMM, DEPT\_NO, and PHONE.

EMP_NO	EMP_NAME	EMP_SAL	EMP_COMM	DEPT_NO	PHONE
1	105	Aman	5000	50000	10 (null)
2	106	Anamika	2975	(null)	30 (null)

## 5. Retrieve the names of all customers whose branch is either 'Andheri', 'Dadar', or 'Virar'.



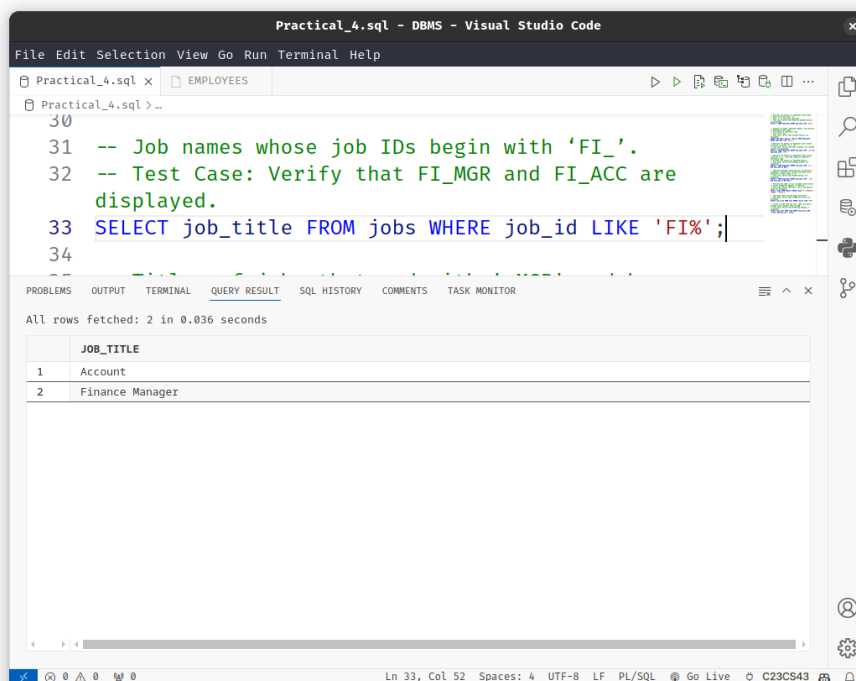
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_4.sql'. The editor contains the following SQL code:

```
27 -- Retrieve the names of all customers whose branch
28 -- is either 'Andheri', 'Dadar', or 'Virar'.
29 -- Test Case: Verify that Anil, Sunil, and Keyur's
30 -- names are displayed.
31 SELECT cname FROM deposit WHERE bname IN ('Andheri',
32 'Dadar', 'Virar');
```

The 'QUERY RESULT' tab is active, showing the results of the query. The message 'All rows fetched: 4 in 0.029 seconds' is displayed. The results are shown in a table with one column, 'CNAME', and four rows:

	CNAME
1	Anil
2	Sunil
3	Vijay
4	Keyur

6. Job names whose job IDs begin with 'FI\_'.



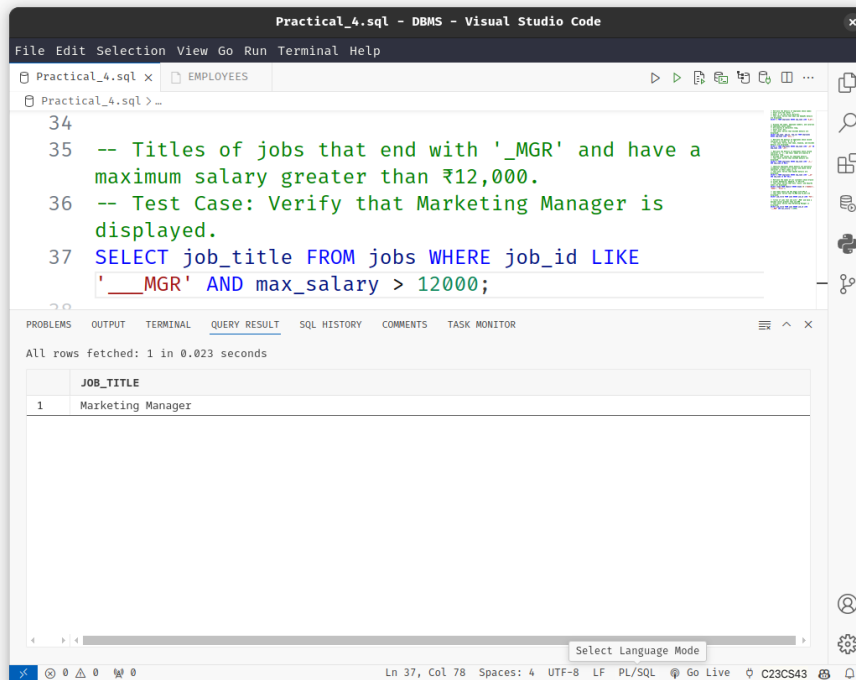
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_4.sql'. The editor contains the following SQL code:

```
30
31 -- Job names whose job IDs begin with 'FI_'.
32 -- Test Case: Verify that FI_MGR and FI_ACC are
33 -- displayed.
34 SELECT job_title FROM jobs WHERE job_id LIKE 'FI%';
```

The 'QUERY RESULT' tab is active, showing the results of the query. The message 'All rows fetched: 2 in 0.036 seconds' is displayed. The results are shown in a table with one column, 'JOB\_TITLE', and two rows:

	JOB_TITLE
1	Account
2	Finance Manager

7. Titles of jobs that end with '\_MGR' and have a maximum salary greater than ₹12,000.



The screenshot shows the Visual Studio Code editor with a file named 'Practical\_4.sql'. The editor contains the following SQL code:

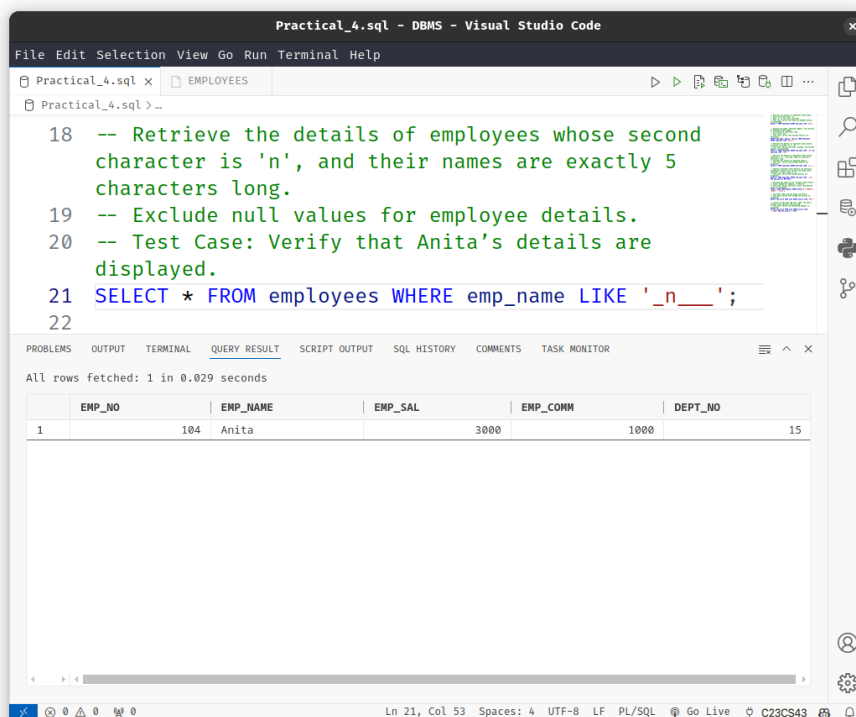
```
34
35 -- Titles of jobs that end with '_MGR' and have a
36 -- maximum salary greater than ₹12,000.
37 -- Test Case: Verify that Marketing Manager is
38 -- displayed.
39 SELECT job_title FROM jobs WHERE job_id LIKE
40 '____MGR' AND max_salary > 12000;
```

The 'QUERY RESULT' tab is active, showing the following result:

JOB_TITLE
Marketing Manager

The status bar at the bottom indicates 'Ln 37, Col 78 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43'.

8. Retrieve the details of employees whose second character is 'n', and their names are exactly 5 characters long.
- Exclude null values for employee details.



The screenshot shows the Visual Studio Code editor with a file named 'Practical\_4.sql'. The editor contains the following SQL code:

```
18 -- Retrieve the details of employees whose second
19 -- character is 'n', and their names are exactly 5
20 -- characters long.
21 -- Exclude null values for employee details.
22 -- Test Case: Verify that Anita's details are
23 -- displayed.
24 SELECT * FROM employees WHERE emp_name LIKE '_n_____';
```

The 'QUERY RESULT' tab is active, showing the following result:

EMP_NO	EMP_NAME	EMP_SAL	EMP_COMM	DEPT_NO
1	104 Anita	3000	1000	15

The status bar at the bottom indicates 'Ln 21, Col 53 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43'.