



## 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

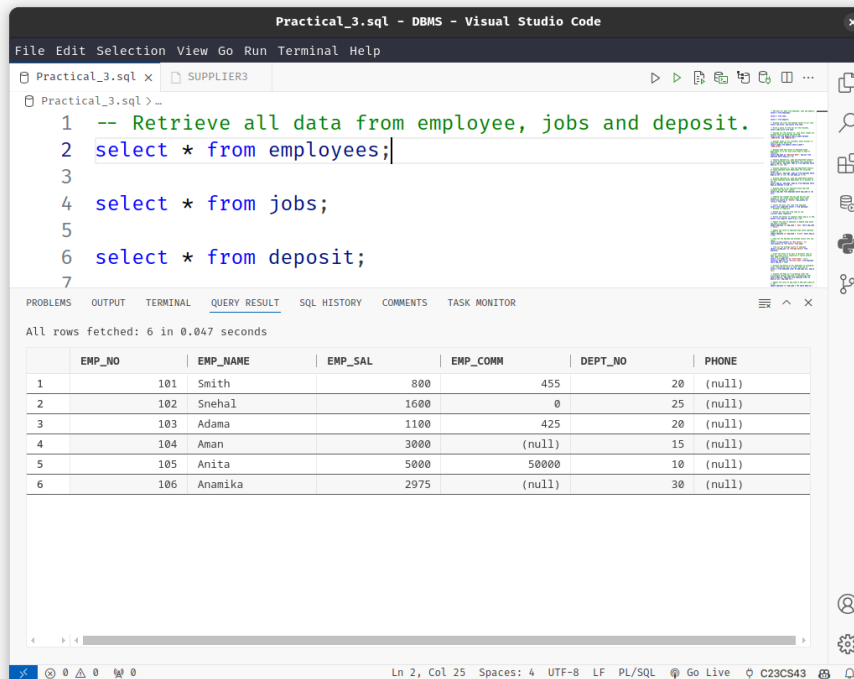
#### Practical - 3

**Aim:** Global Trust Bank is expanding its operations and requires a robust database management system to efficiently manage its employees, job profiles, customers' accounts, and loan information. The bank has laid out specific requirements and constraints to ensure data integrity, uniqueness, and completeness. Perform Data Definition Language (DDL) commands and change the existing schema as per given information.

#### 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 all data from employees, jobs and deposit.

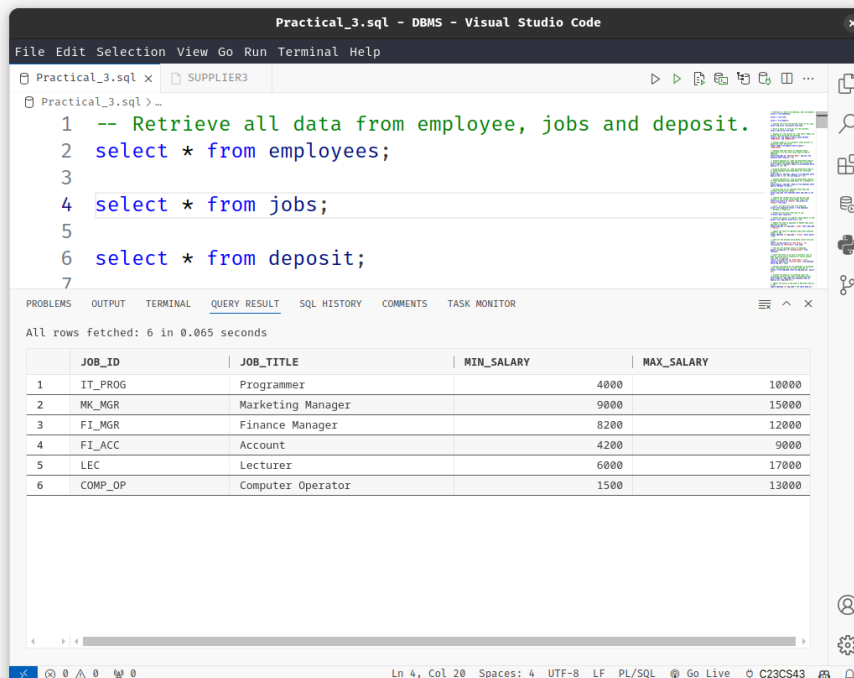


The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
1 -- Retrieve all data from employee, jobs and deposit.
2 select * from employees;
3
4 select * from jobs;
5
6 select * from deposit;
7
```

The 'QUERY RESULT' tab is active, displaying the results of the first query. It shows 6 rows fetched in 0.047 seconds. The table has 7 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	455	20	(null)
2	102	Snehal	1600	0	25	(null)
3	103	Adama	1100	425	20	(null)
4	104	Aman	3000	(null)	15	(null)
5	105	Anita	5000	50000	10	(null)
6	106	Anamika	2975	(null)	30	(null)

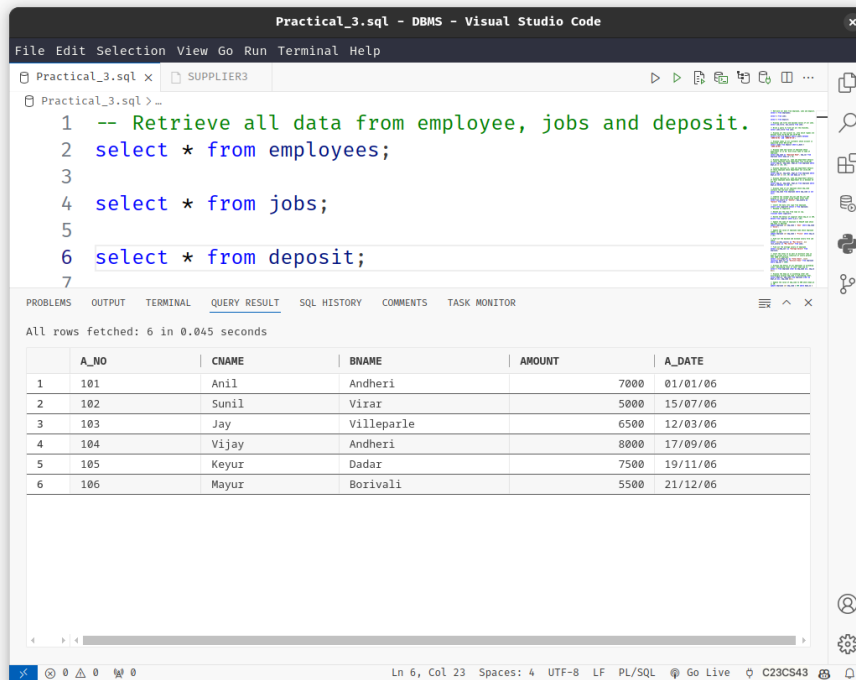


The screenshot shows the Visual Studio Code interface with the same file 'Practical\_3.sql'. The editor contains the same SQL code as the previous screenshot.

```
1 -- Retrieve all data from employee, jobs and deposit.
2 select * from employees;
3
4 select * from jobs;
5
6 select * from deposit;
7
```

The 'QUERY RESULT' tab is active, displaying the results of the second query. It shows 6 rows fetched in 0.065 seconds. The table has 5 columns: JOB\_ID, JOB\_TITLE, MIN\_SALARY, and MAX\_SALARY.

	JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY
1	IT_PROG	Programmer	4000	10000
2	MK_MGR	Marketing Manager	9000	15000
3	FI_MGR	Finance Manager	8200	12000
4	FI_ACC	Account	4200	9000
5	LEC	Lecturer	6000	17000
6	COMP_OP	Computer Operator	1500	13000



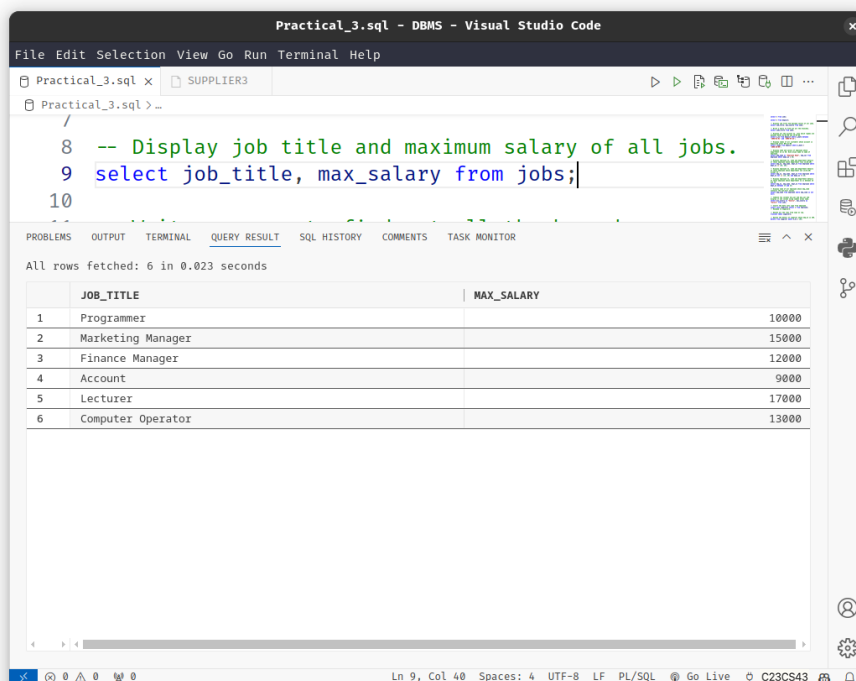
```
1 -- Retrieve all data from employee, jobs and deposit.
2 select * from employees;
3
4 select * from jobs;
5
6 select * from deposit;
7
```

PROBLEMS OUTPUT TERMINAL QUERY RESULT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 6 in 0.045 seconds

	A_NO	CNAME	BNAME	AMOUNT	A_DATE
1	101	Anil	Andheri	7000	01/01/06
2	102	Sunil	Virar	5000	15/07/06
3	103	Jay	Villeparle	6500	12/03/06
4	104	Vijay	Andheri	8000	17/09/06
5	105	Keyuz	Dadar	7500	19/11/06
6	106	Mayuz	Borivali	5500	21/12/06

2. Display job title and maximum salary of all jobs.



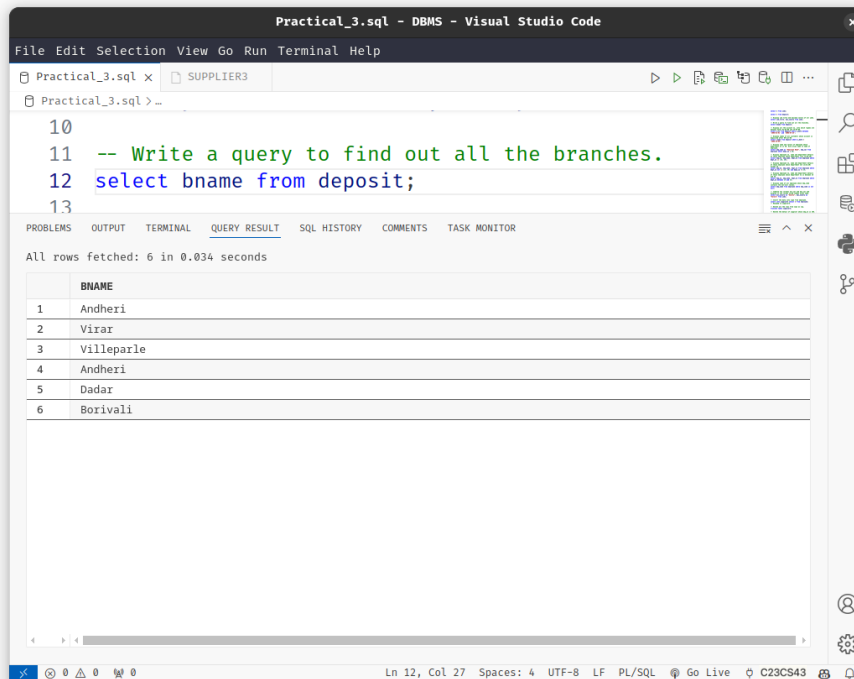
```
8 -- Display job title and maximum salary of all jobs.
9 select job_title, max_salary from jobs;
10
```

PROBLEMS OUTPUT TERMINAL QUERY RESULT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 6 in 0.023 seconds

	JOB_TITLE	MAX_SALARY
1	Programmer	10000
2	Marketing Manager	15000
3	Finance Manager	12000
4	Account	9000
5	Lecturer	17000
6	Computer Operator	13000

3. Write a query to find out all the branches.



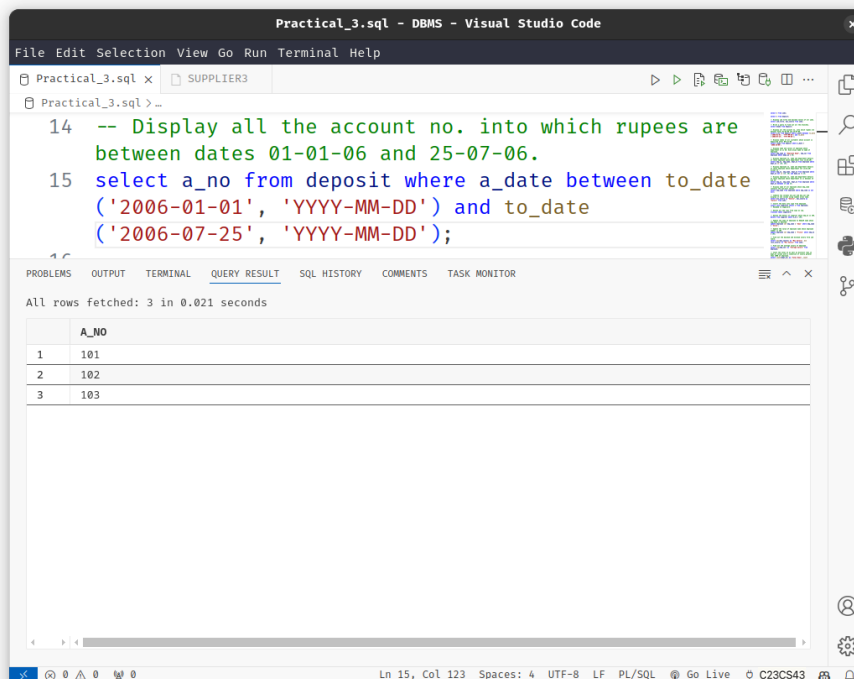
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
10
11 -- Write a query to find out all the branches.
12 select bname from deposit;
13
```

The 'QUERY RESULT' tab is active, displaying the results of the query. It shows 6 rows fetched in 0.034 seconds. The results are as follows:

	BNAME
1	Andheri
2	Virar
3	Villeparle
4	Andheri
5	Dadar
6	Borivali

4. Display all the account numbers into which rupees are between dates 01-01-06 and 25-07-06.



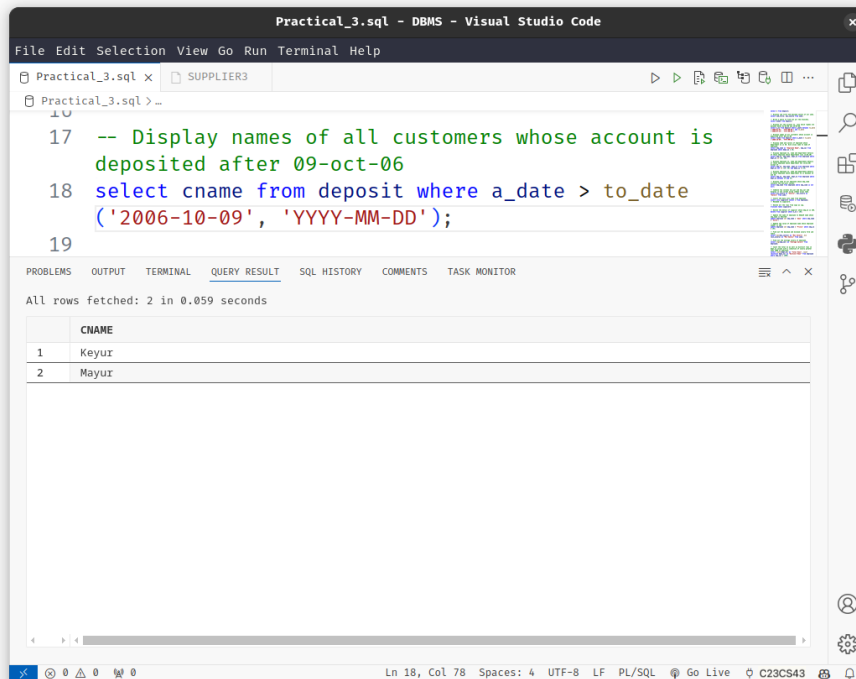
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
14 -- Display all the account no. into which rupees are
15 -- between dates 01-01-06 and 25-07-06.
16 select a_no from deposit where a_date between to_date
17 ('2006-01-01', 'YYYY-MM-DD') and to_date
18 ('2006-07-25', 'YYYY-MM-DD');
```

The 'QUERY RESULT' tab is active, displaying the results of the query. It shows 3 rows fetched in 0.021 seconds. The results are as follows:

	A_NO
1	101
2	102
3	103

5. Display names of all customers whose account is deposited after 09-oct-06.



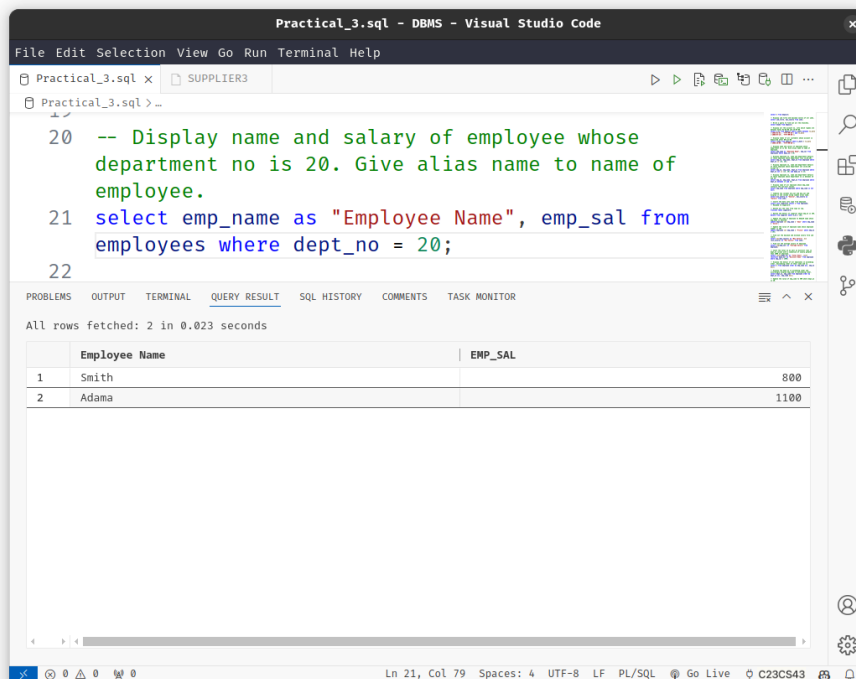
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
17 -- Display names of all customers whose account is
18   deposited after 09-oct-06
19   select cname from deposit where a_date > to_date
   ('2006-10-09', 'YYYY-MM-DD');
```

The 'QUERY RESULT' tab is active, showing the results of the query. It indicates that all rows were fetched in 0.059 seconds. The results are displayed in a table with two columns: 'CNAME' and 'EMP\_NO'.

	CNAME	EMP_NO
1	Keyur	1000
2	Mayur	1001

6. Display name and salary of employee whose department number is 20. Give alias name to name of employee.



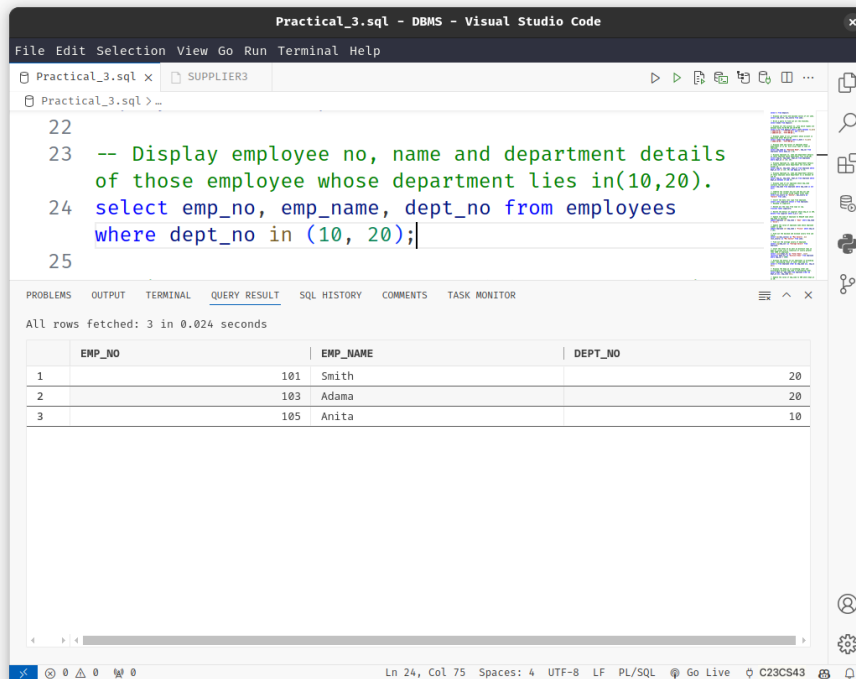
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
20 -- Display name and salary of employee whose
21   department no is 20. Give alias name to name of
22   employee.
   select emp_name as "Employee Name", emp_sal from
   employees where dept_no = 20;
```

The 'QUERY RESULT' tab is active, showing the results of the query. It indicates that all rows were fetched in 0.023 seconds. The results are displayed in a table with two columns: 'Employee Name' and 'EMP\_SAL'.

	Employee Name	EMP_SAL
1	Smith	800
2	Adama	1100

7. Display employee no, name and department details of those employees whose department lies in(10,20).



```

22
23 -- Display employee no, name and department details
24 -- of those employee whose department lies in(10,20).
25 select emp_no, emp_name, dept_no from employees
   where dept_no in (10, 20);

```

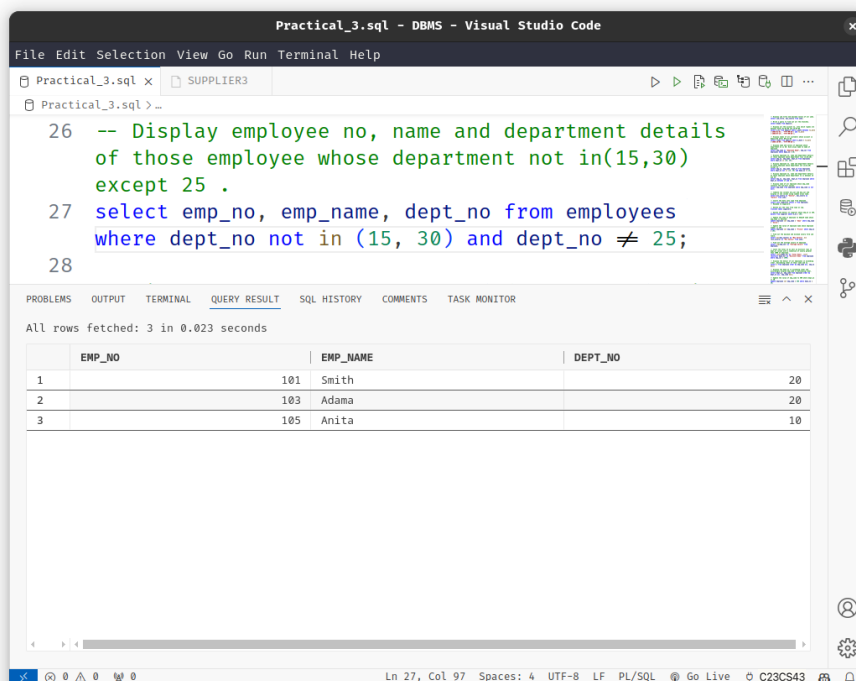
PROBLEMS OUTPUT TERMINAL QUERY RESULT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 3 in 0.024 seconds

	EMP_NO	EMP_NAME	DEPT_NO
1	101	Smith	20
2	103	Adama	20
3	105	Anita	10

Ln 24, Col 75 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43

8. Display employee no, name and department details of those employees whose department not in(15,30) except 25 .



```

26 -- Display employee no, name and department details
27 -- of those employee whose department not in(15,30)
28 -- except 25 .
   select emp_no, emp_name, dept_no from employees
   where dept_no not in (15, 30) and dept_no ≠ 25;

```

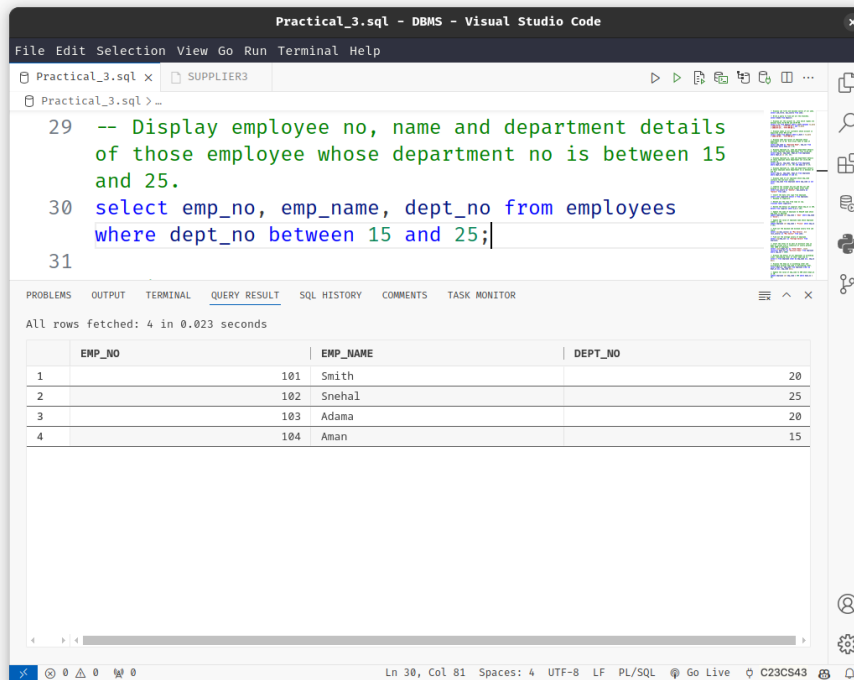
PROBLEMS OUTPUT TERMINAL QUERY RESULT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 3 in 0.023 seconds

	EMP_NO	EMP_NAME	DEPT_NO
1	101	Smith	20
2	103	Adama	20
3	105	Anita	10

Ln 27, Col 97 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43

9. Display employee no, name and department details of those employees whose department no is between 15 and 25.



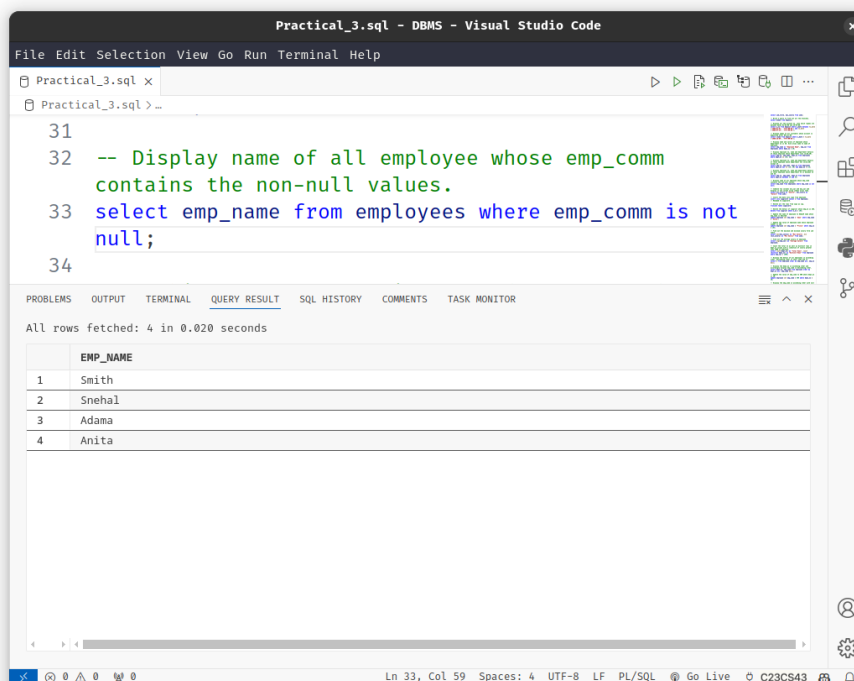
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
29 -- Display employee no, name and department details
30 of those employee whose department no is between 15
31 and 25.
32 select emp_no, emp_name, dept_no from employees
33 where dept_no between 15 and 25;
```

The 'QUERY RESULT' tab is active, displaying the results of the query. The message 'All rows fetched: 4 in 0.023 seconds' is shown above the table. The table has four columns: EMP\_NO, EMP\_NAME, and DEPT\_NO. The data is as follows:

	EMP_NO	EMP_NAME	DEPT_NO
1	101	Smith	20
2	102	Snehal	25
3	103	Adama	20
4	104	Aman	15

10. Display name of all employees whose emp\_comm contains the non-null values.



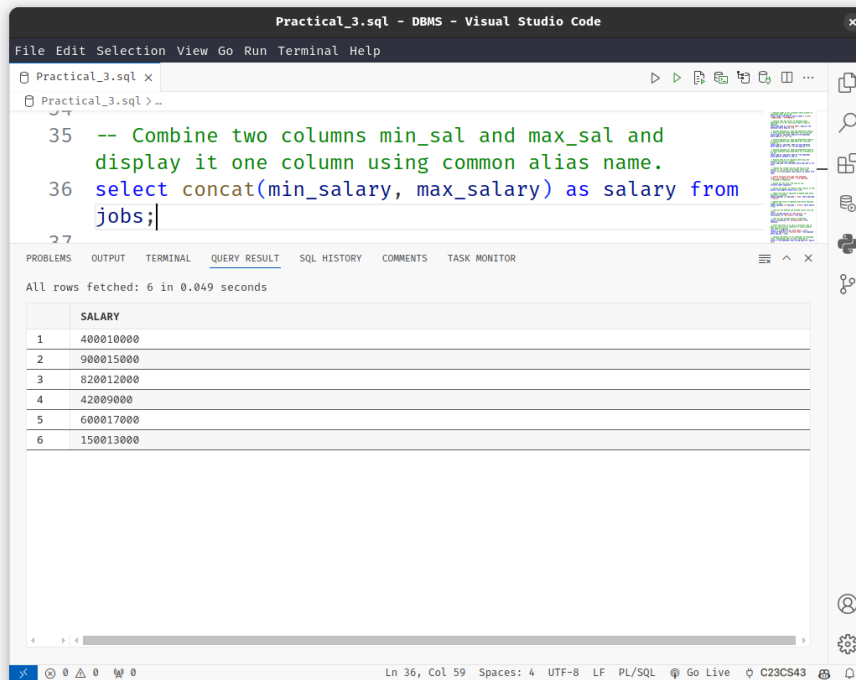
The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
31
32 -- Display name of all employee whose emp_comm
33 contains the non-null values.
34 select emp_name from employees where emp_comm is not
35 null;
```

The 'QUERY RESULT' tab is active, displaying the results of the query. The message 'All rows fetched: 4 in 0.020 seconds' is shown above the table. The table has one column: EMP\_NAME. The data is as follows:

	EMP_NAME
1	Smith
2	Snehal
3	Adama
4	Anita

11. Combine two columns min\_sal and max\_sal and display it one column using a common alias name.



```
35 -- Combine two columns min_sal and max_sal and
36 select concat(min_salary, max_salary) as salary from
    jobs;
```

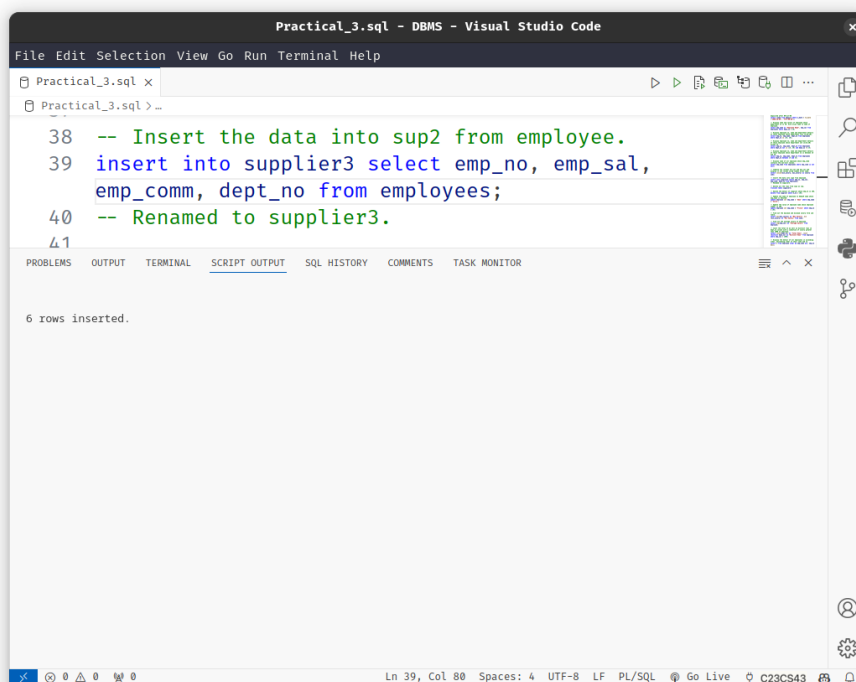
PROBLEMS OUTPUT TERMINAL QUERY RESULT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 6 in 0.049 seconds

	SALARY
1	400010000
2	900015000
3	820012000
4	42009000
5	600017000
6	150013000

Ln 36, Col 59 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43

12. Insert the data into sup2 from the employee.



```
38 -- Insert the data into sup2 from employee.
39 insert into supplier3 select emp_no, emp_sal,
40 emp_comm, dept_no from employees;
41 -- Renamed to supplier3.
```

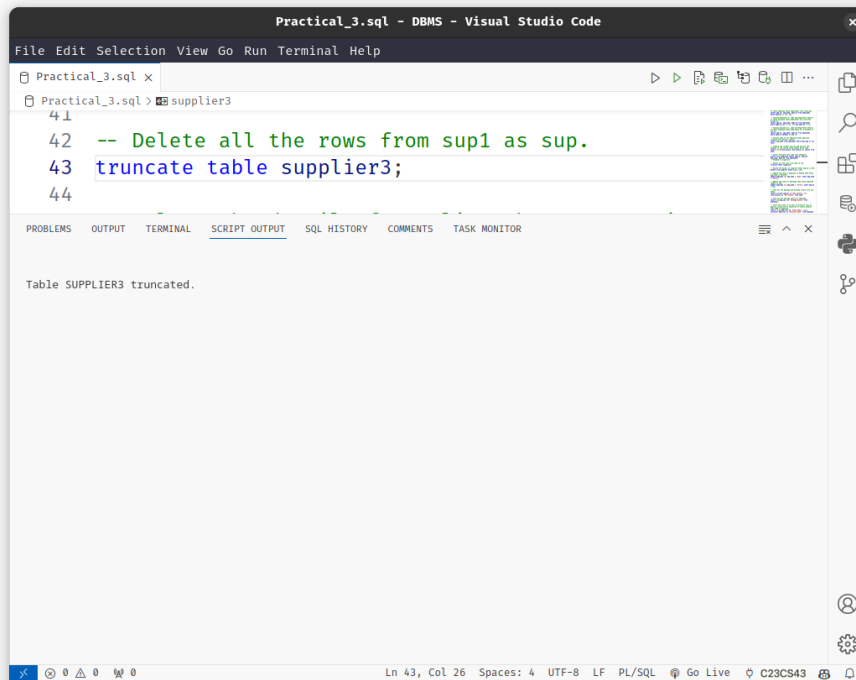
PROBLEMS OUTPUT TERMINAL SCRIPT OUTPUT SQL HISTORY COMMENTS TASK MONITOR

6 rows inserted.

Ln 39, Col 80 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43

13. Delete all the rows from sup1 as sup.



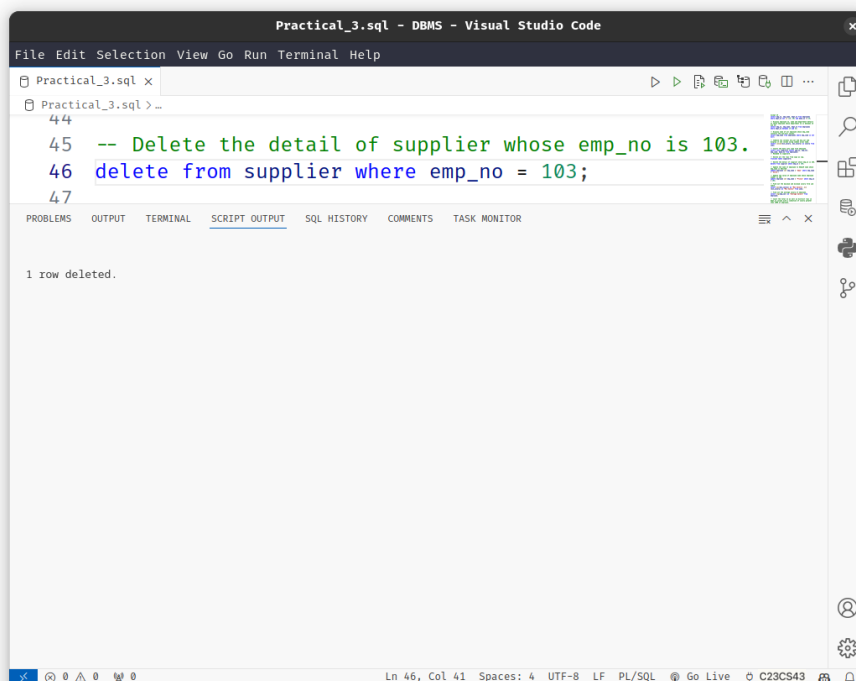


The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The code editor contains the following SQL statements:

```
41  
42 -- Delete all the rows from sup1 as sup.  
43 truncate table supplier3;  
44
```

The 'SCRIPT OUTPUT' panel at the bottom displays the result: 'Table SUPPLIER3 truncated.' The status bar at the bottom indicates the cursor is at line 43, column 26.

14. Delete the details of the supplier whose emp\_no is 103.

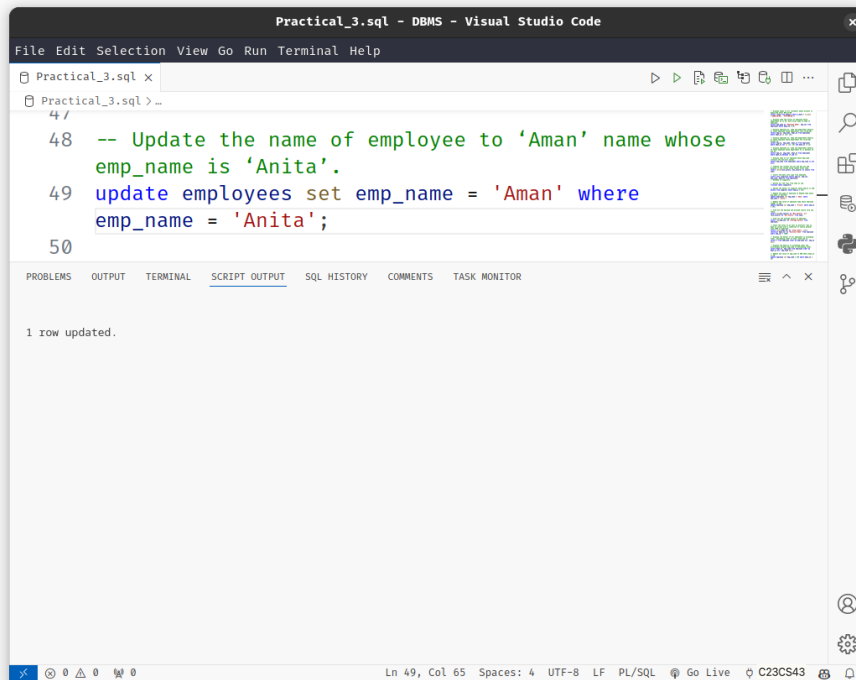


The screenshot shows the Visual Studio Code interface with the same file 'Practical\_3.sql'. The code editor contains the following SQL statements:

```
44  
45 -- Delete the detail of supplier whose emp_no is 103.  
46 delete from supplier where emp_no = 103;  
47
```

The 'SCRIPT OUTPUT' panel at the bottom displays the result: '1 row deleted.' The status bar at the bottom indicates the cursor is at line 46, column 41.

15. Update the name of the employee to 'Aman' name whose emp\_name is 'Anita'.



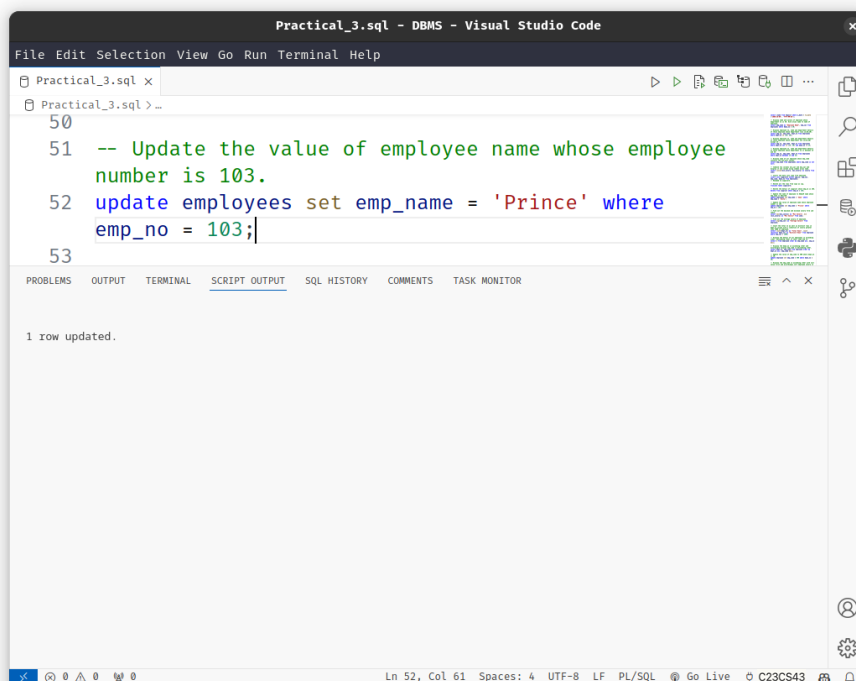
```
Practical_3.sql - DBMS - Visual Studio Code
File Edit Selection View Go Run Terminal Help
Practical_3.sql x
Practical_3.sql >...
47
48 -- Update the name of employee to 'Aman' name whose
   emp_name is 'Anita'.
49 update employees set emp_name = 'Aman' where
   emp_name = 'Anita';
50

PROBLEMS OUTPUT TERMINAL SCRIPT OUTPUT SQL HISTORY COMMENTS TASK MONITOR

1 row updated.

Ln 49, Col 65 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43
```

16. Update the value of the employee name whose employee number is 103.



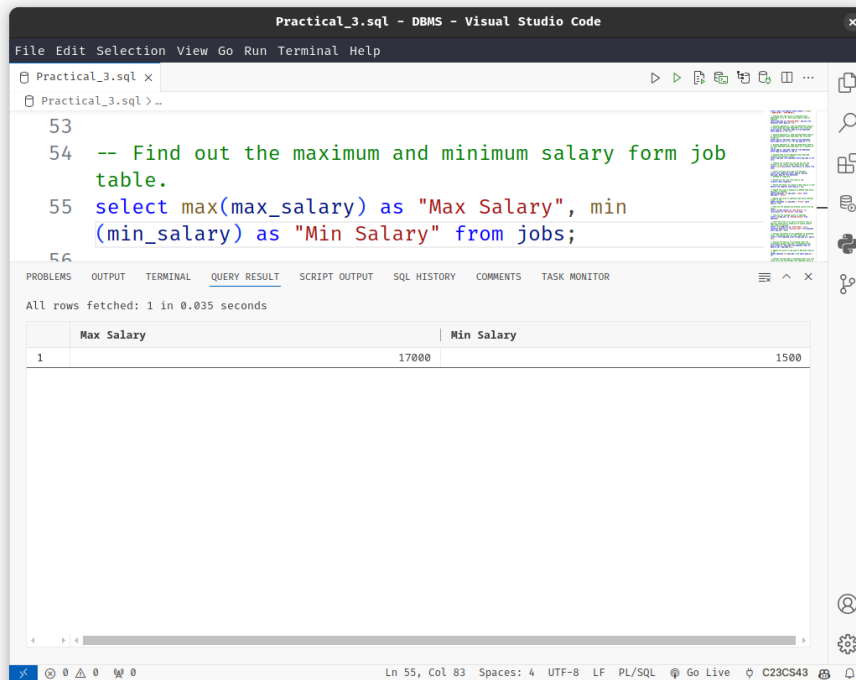
```
Practical_3.sql - DBMS - Visual Studio Code
File Edit Selection View Go Run Terminal Help
Practical_3.sql x
Practical_3.sql >...
50
51 -- Update the value of employee name whose employee
   number is 103.
52 update employees set emp_name = 'Prince' where
   emp_no = 103;
53

PROBLEMS OUTPUT TERMINAL SCRIPT OUTPUT SQL HISTORY COMMENTS TASK MONITOR

1 row updated.

Ln 52, Col 61 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43
```

17. Find out the maximum and minimum salary form the job table.



The screenshot shows the Visual Studio Code editor with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
53
54 -- Find out the maximum and minimum salary form job
   table.
55 select max(max_salary) as "Max Salary", min
   (min_salary) as "Min Salary" from jobs;
```

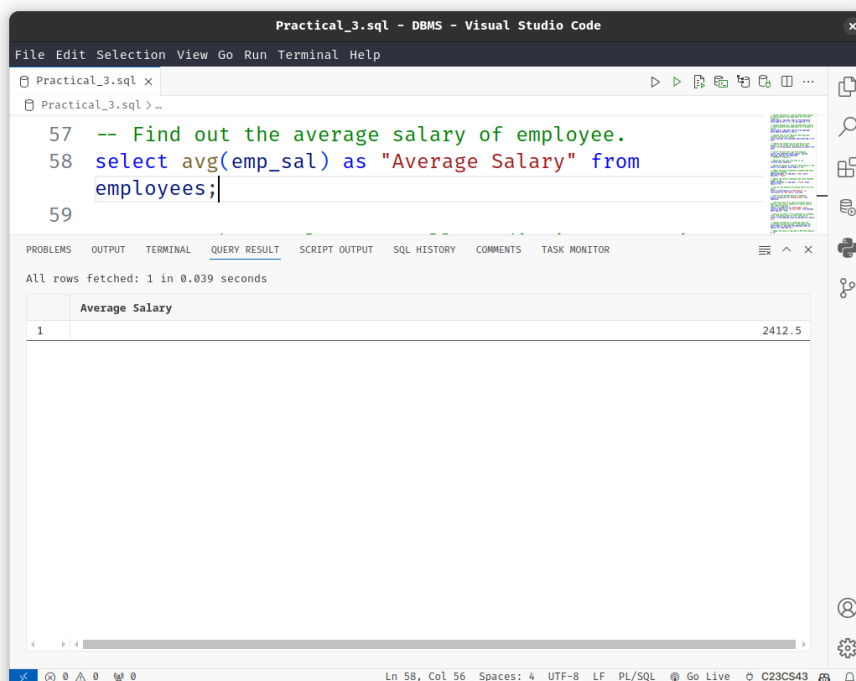
The 'QUERY RESULT' panel at the bottom shows the execution results:

All rows fetched: 1 in 0.035 seconds

	Max Salary	Min Salary
1	17000	1500

The status bar at the bottom indicates the cursor is at line 55, column 83.

18. Find out the average salary of an employee.



The screenshot shows the Visual Studio Code editor with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
57 -- Find out the average salary of employee.
58 select avg(emp_sal) as "Average Salary" from
   employees;
59
```

The 'QUERY RESULT' panel at the bottom shows the execution results:

All rows fetched: 1 in 0.039 seconds

	Average Salary
1	2412.5

The status bar at the bottom indicates the cursor is at line 58, column 56.

19. Count the total no as well as distinct rows in the dept\_no column with a condition of salary greater than 1000 of employees.

```

60 -- Count the total no as well as distinct rows in
61 dept_no column with a condition of salary greater
62 than 1000 of employee.
61 select count(dept_no) as "Total Rows", count
62 (distinct dept_no) as "Distinct Rows" from employees
63 where emp_sal > 1000;

```

PROBLEMS OUTPUT TERMINAL QUERY RESULT SCRIPT OUTPUT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 1 in 0.040 seconds

	Total Rows	Distinct Rows
1	5	5

Ln 61, Col 119 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43

20. Display the details of all employees in ascending order, descending order of their name and no.

```

62
63 -- Display the detail of all employees in ascending
64 order, descending order of their name and no.
65 select * from employees order by emp_name asc,
66 emp_no desc;

```

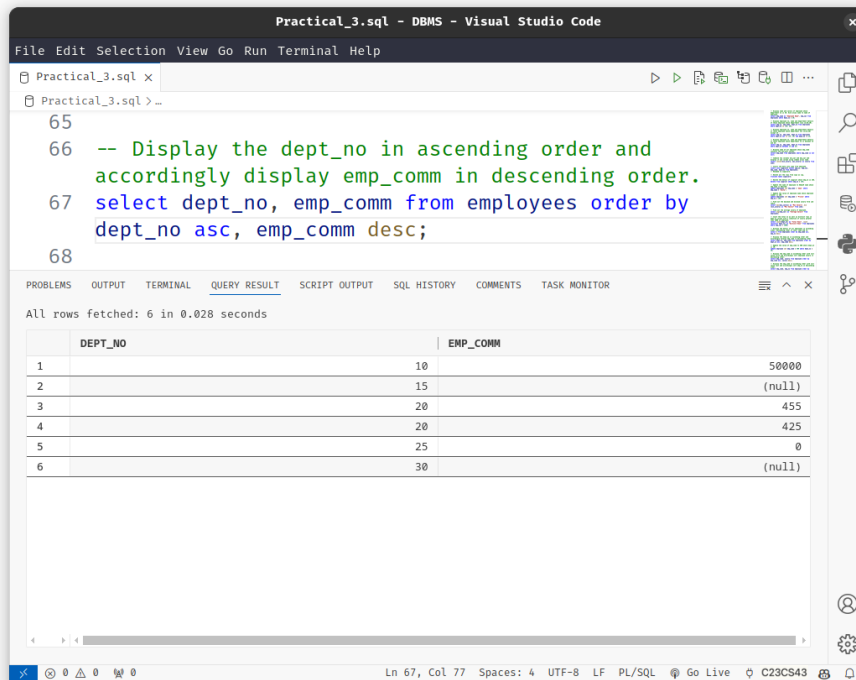
PROBLEMS OUTPUT TERMINAL QUERY RESULT SCRIPT OUTPUT SQL HISTORY COMMENTS TASK MONITOR

All rows fetched: 6 in 0.062 seconds

	EMP_NO	EMP_NAME	EMP_SAL	EMP_COMM	DEPT_NO	PHONE
1	105	Aman	5000	50000	10	(null)
2	104	Aman	3000	(null)	15	(null)
3	106	Anamika	2975	(null)	30	(null)
4	103	Prince	1100	425	20	(null)
5	101	Smith	800	455	20	(null)
6	102	Snehal	1600	0	25	(null)

Ln 64, Col 60 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43

21. Display the dept\_no in ascending order and accordingly display emp\_comm in descending order.



The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

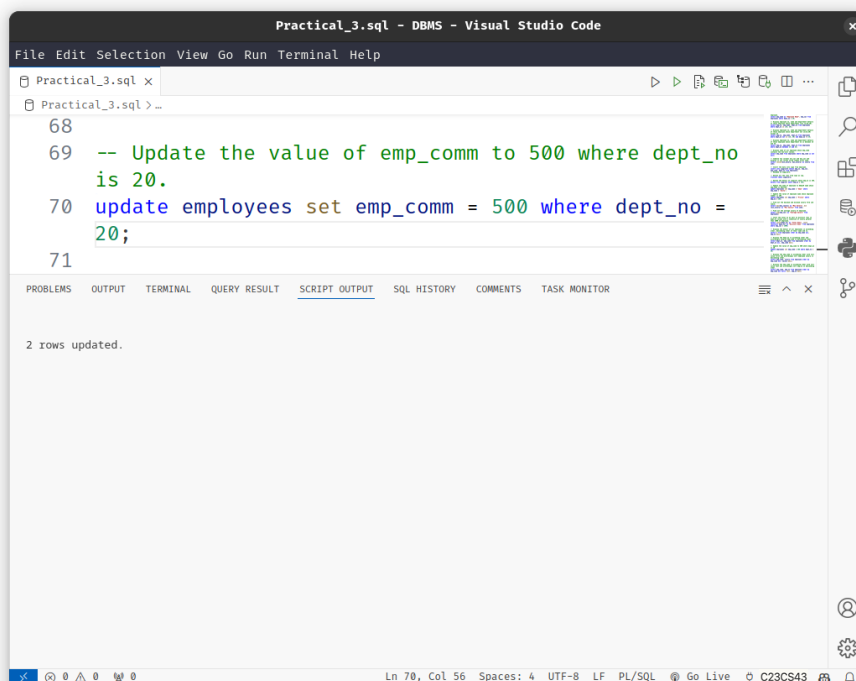
```
65
66 -- Display the dept_no in ascending order and
67    accordingly display emp_comm in descending order.
68 select dept_no, emp_comm from employees order by
    dept_no asc, emp_comm desc;
```

The 'QUERY RESULT' tab is active, displaying the following table:

	DEPT_NO	EMP_COMM
1	10	50000
2	15	(null)
3	20	455
4	20	425
5	25	0
6	30	(null)

The status bar at the bottom indicates 'Ln 67, Col 77 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43'.

22. Update the value of emp\_comm to 500 where dept\_no is 20.



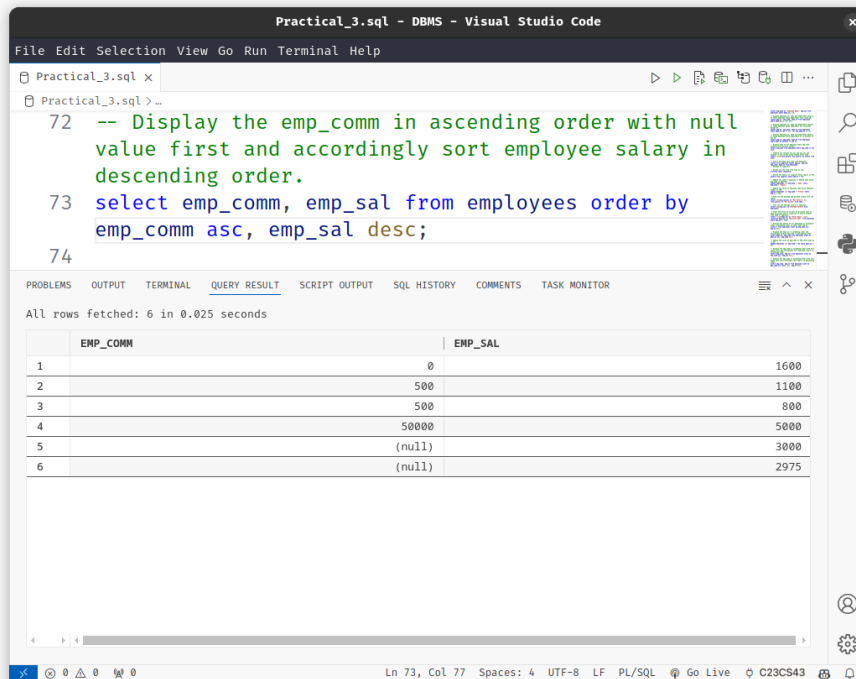
The screenshot shows the Visual Studio Code interface with the same file 'Practical\_3.sql'. The editor contains the following SQL code:

```
68
69 -- Update the value of emp_comm to 500 where dept_no
70    is 20.
71 update employees set emp_comm = 500 where dept_no =
    20;
```

The 'SCRIPT OUTPUT' tab is active, displaying the message: '2 rows updated.'

The status bar at the bottom indicates 'Ln 70, Col 56 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43'.

23. Display the emp\_comm in ascending order with null value first and accordingly sort employee salary in descending order.



The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

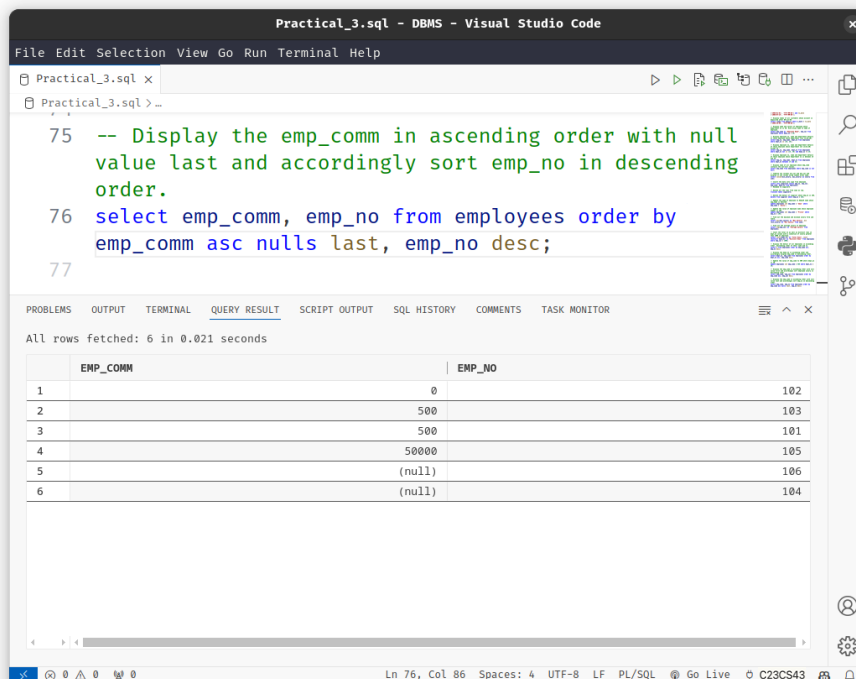
```
72 -- Display the emp_comm in ascending order with null
73 select emp_comm, emp_sal from employees order by
74 emp_comm asc, emp_sal desc;
```

The 'QUERY RESULT' tab is active, displaying the results of the query. The message 'All rows fetched: 6 in 0.025 seconds' is shown above the table. The table has two columns: 'EMP\_COMM' and 'EMP\_SAL'.

	EMP_COMM	EMP_SAL
1	0	1600
2	500	1100
3	500	800
4	50000	5000
5	(null)	3000
6	(null)	2975

The status bar at the bottom indicates 'Ln 73, Col 77 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43'.

24. Display the emp\_comm in ascending order with null value last and accordingly sort emp\_no in descending order.



The screenshot shows the Visual Studio Code interface with a file named 'Practical\_3.sql'. The editor contains the following SQL code:

```
75 -- Display the emp_comm in ascending order with null
76 select emp_comm, emp_no from employees order by
77 emp_comm asc nulls last, emp_no desc;
```

The 'QUERY RESULT' tab is active, displaying the results of the query. The message 'All rows fetched: 6 in 0.021 seconds' is shown above the table. The table has two columns: 'EMP\_COMM' and 'EMP\_NO'.

	EMP_COMM	EMP_NO
1	0	102
2	500	103
3	500	101
4	50000	105
5	(null)	106
6	(null)	104

The status bar at the bottom indicates 'Ln 76, Col 86 Spaces: 4 UTF-8 LF PL/SQL Go Live C23CS43'.