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 - 5

Aim: As a database administrator for a global bank, you are responsible for managing and analyzing employee and customer data stored in the bank's database. Your tasks involve using SQL functions to manipulate and retrieve critical information efficiently. These operations ensure seamless data communication and compliance with bank regulations.

Constraints

- **Not Null Constraints: Critical fields like names and salaries must not be null.**
- **Unique Constraints: Ensure integrity of fields like Job_ID.**
- **Check Constraints: Validate positive salary values.**

The bank maintains the following schemas:

1. JobProfile Table: Stores details of employees and their job roles.

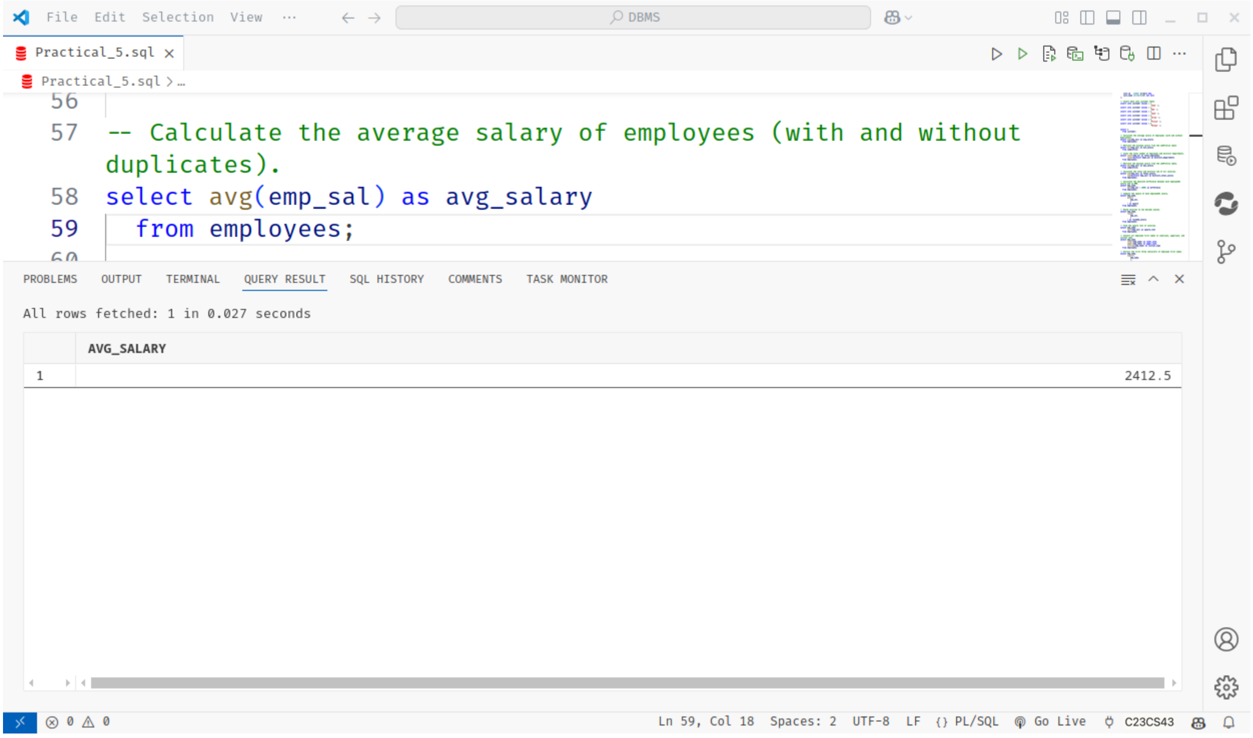
- **Emp_ID (Primary Key)**
- **Emp_Name (Not Null)**
- **Emp_Salary (Not Null, Check: Greater than zero)**
- **Job_ID (Unique)**
- **Department**

2. Customer Table: Stores customer details.

- **Cust_ID (Primary Key)**

- **Cust_Name (Not Null)**

1. Calculate the average salary of employees (with and without duplicates)

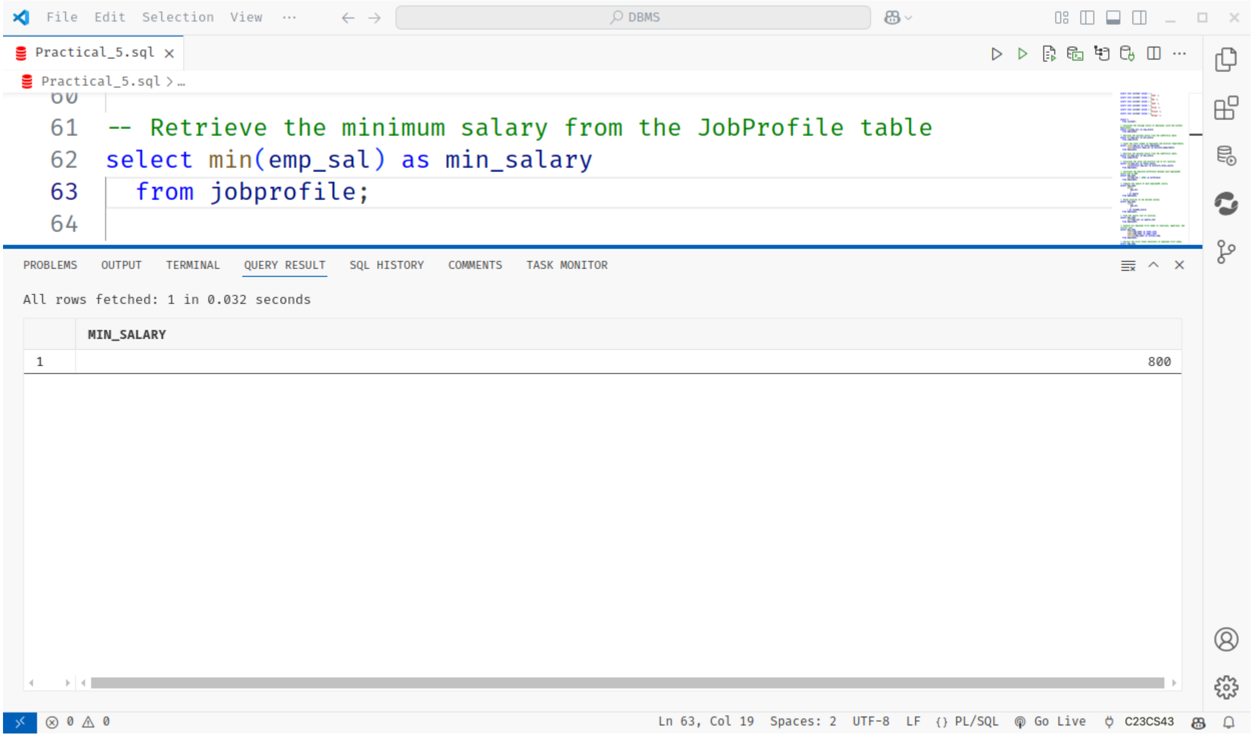


```
-- Calculate the average salary of employees (with and without duplicates).
select avg(emp_sal) as avg_salary
  from employees;
```

All rows fetched: 1 in 0.027 seconds

	AVG_SALARY
1	2412.5

2. Retrieve the minimum salary from the JobProfile table.

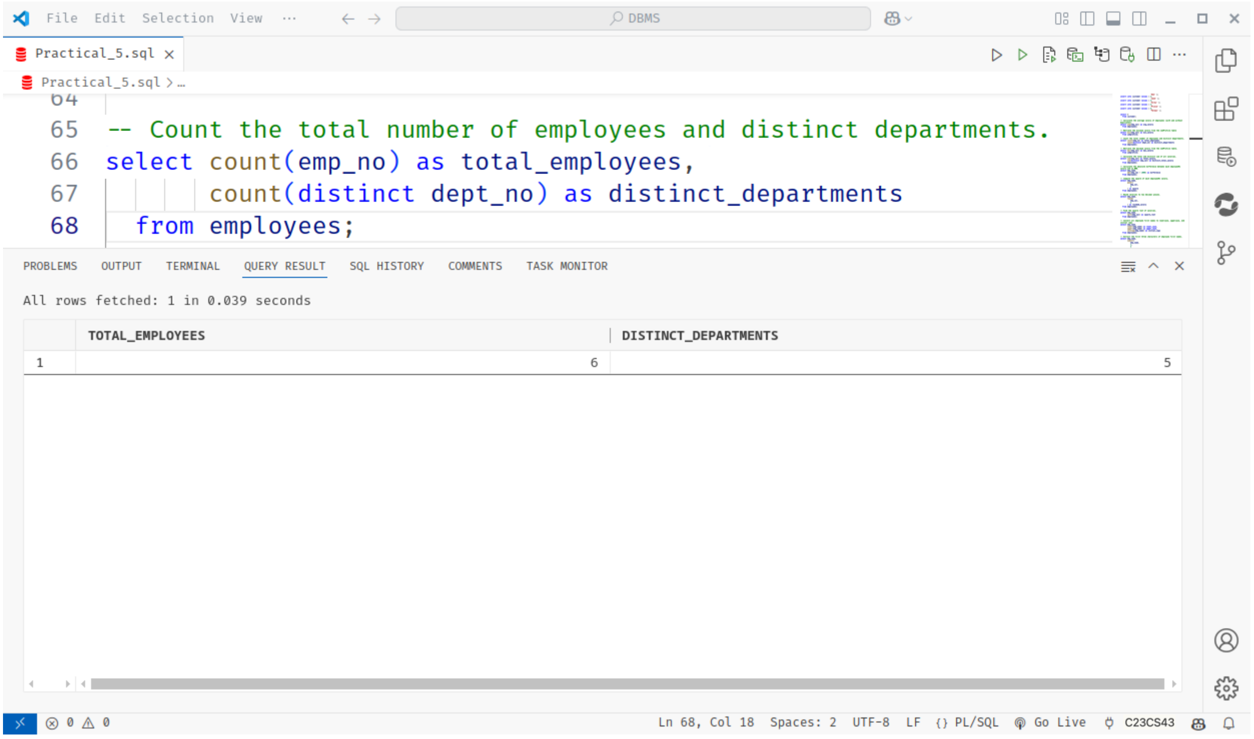


```
-- Retrieve the minimum salary from the JobProfile table
select min(emp_sal) as min_salary
  from jobprofile;
```

All rows fetched: 1 in 0.032 seconds

	MIN_SALARY
1	800

3. Count the total number of employees and distinct departments.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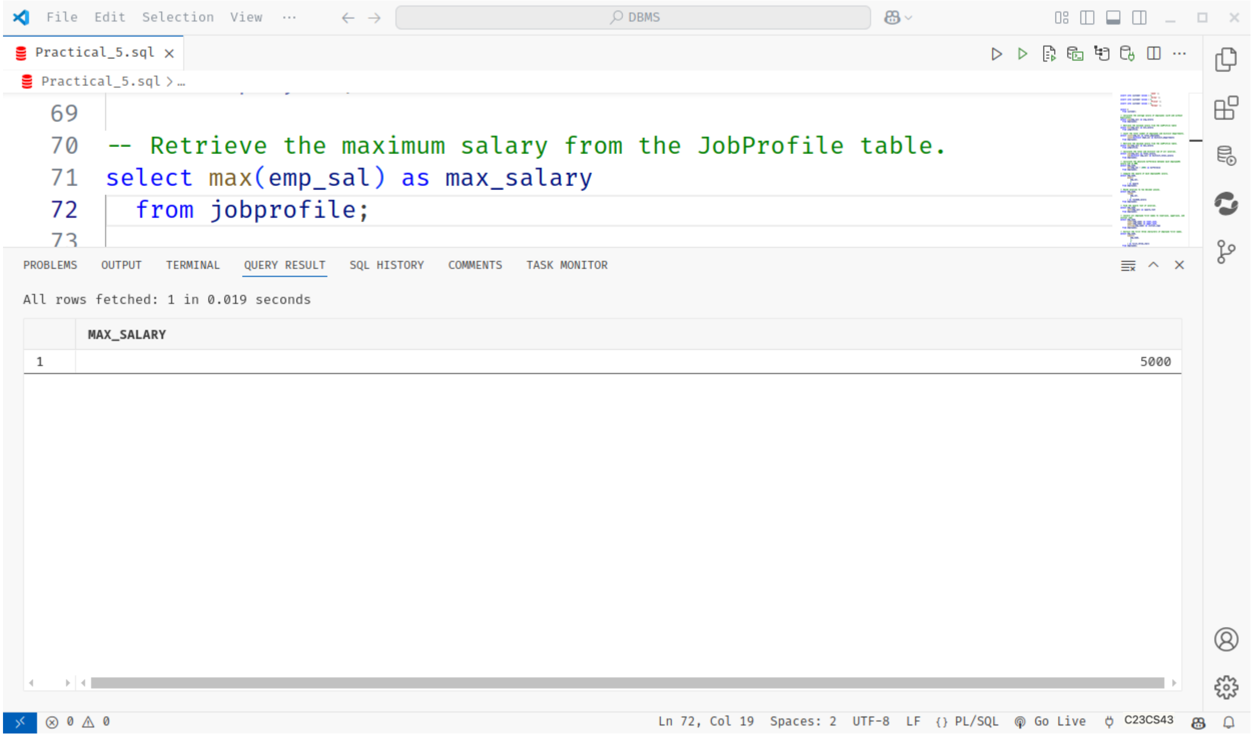
```sql
-- Count the total number of employees and distinct departments.
select count(emp_no) as total_employees,
       count(distinct dept_no) as distinct_departments
  from employees;
```

```
All rows fetched: 1 in 0.039 seconds
```

	TOTAL_EMPLOYEES	DISTINCT_DEPARTMENTS
1	6	5

4. Retrieve the maximum salary from the JobProfile table.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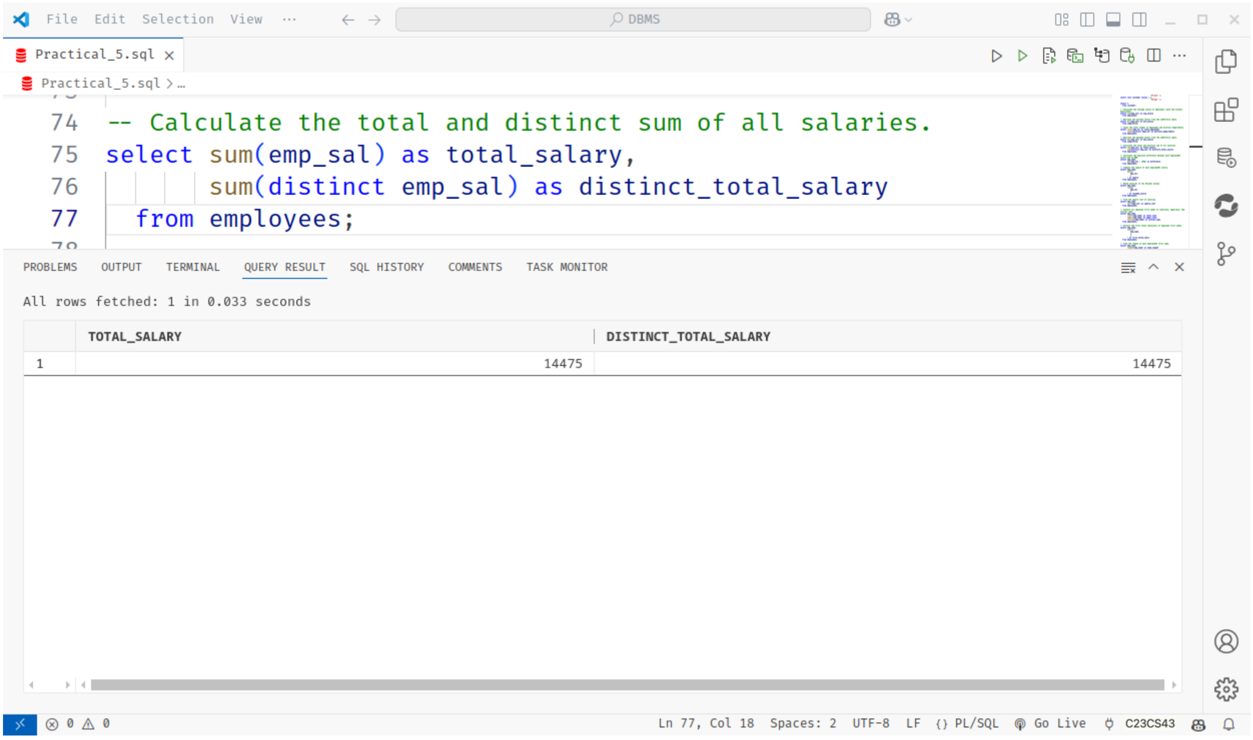
```sql
-- Retrieve the maximum salary from the JobProfile table.
select max(emp_sal) as max_salary
  from jobprofile;
```

```
All rows fetched: 1 in 0.019 seconds
```

	MAX_SALARY
1	5000

5. Calculate the total and distinct sum of all salaries.

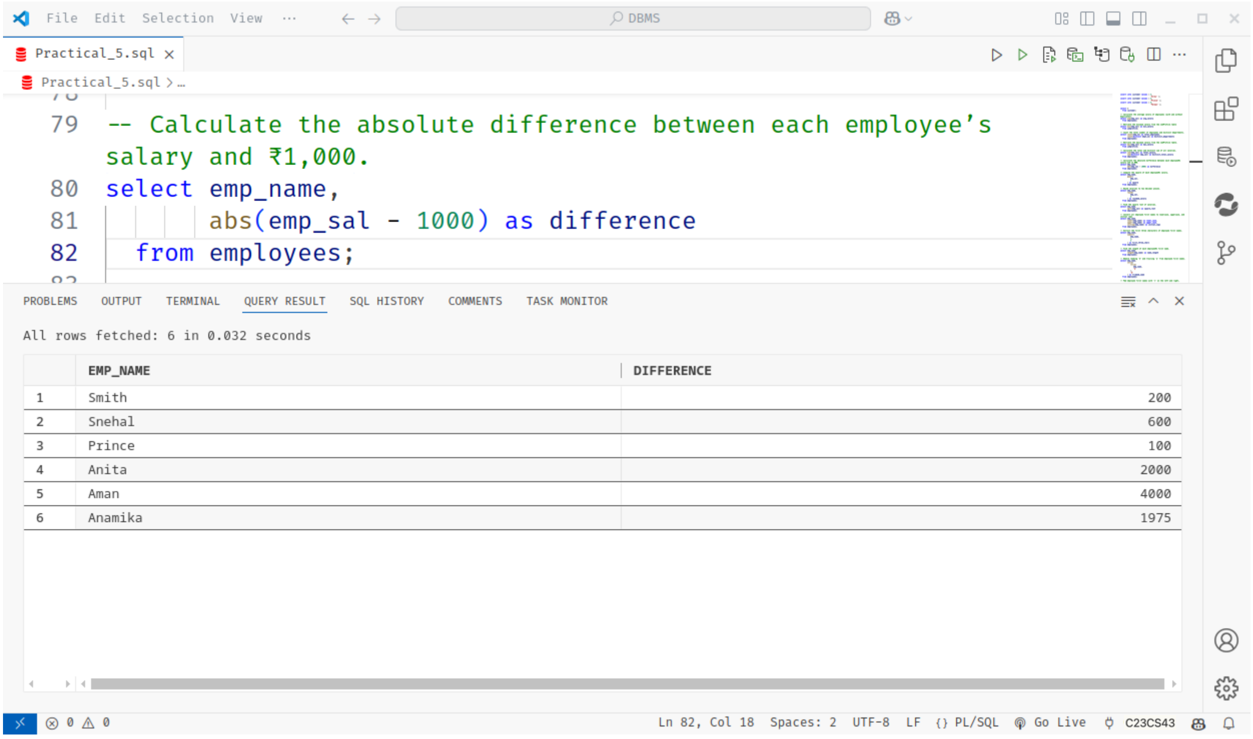


```
-- Calculate the total and distinct sum of all salaries.
select sum(emp_sal) as total_salary,
       sum(distinct emp_sal) as distinct_total_salary
  from employees;
```

All rows fetched: 1 in 0.033 seconds

	TOTAL_SALARY	DISTINCT_TOTAL_SALARY
1	14475	14475

6. Calculate the absolute difference between each employee’s salary and ₹1,000.

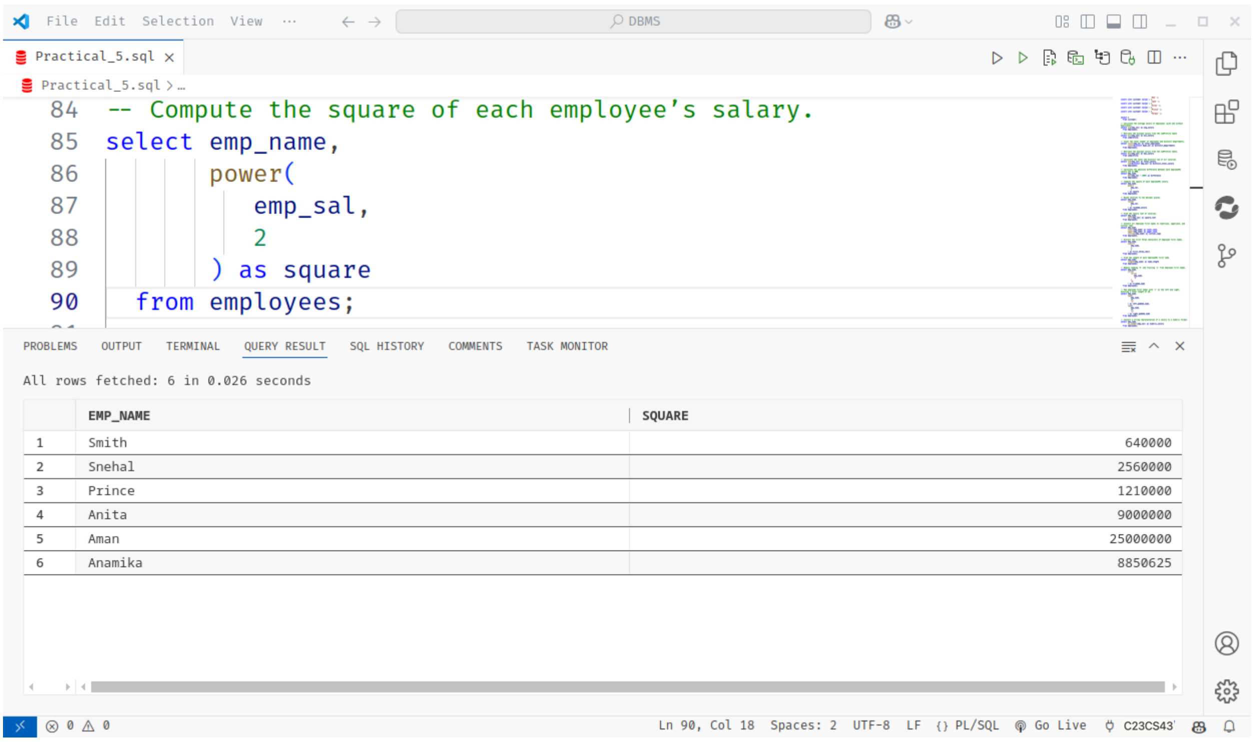


```
-- Calculate the absolute difference between each employee’s
salary and ₹1,000.
select emp_name,
       abs(emp_sal - 1000) as difference
  from employees;
```

All rows fetched: 6 in 0.032 seconds

	EMP_NAME	DIFFERENCE
1	Smith	200
2	Snehal	600
3	Prince	100
4	Anita	2000
5	Aman	4000
6	Anamika	1975

7. Compute the square of each employee’s salary.



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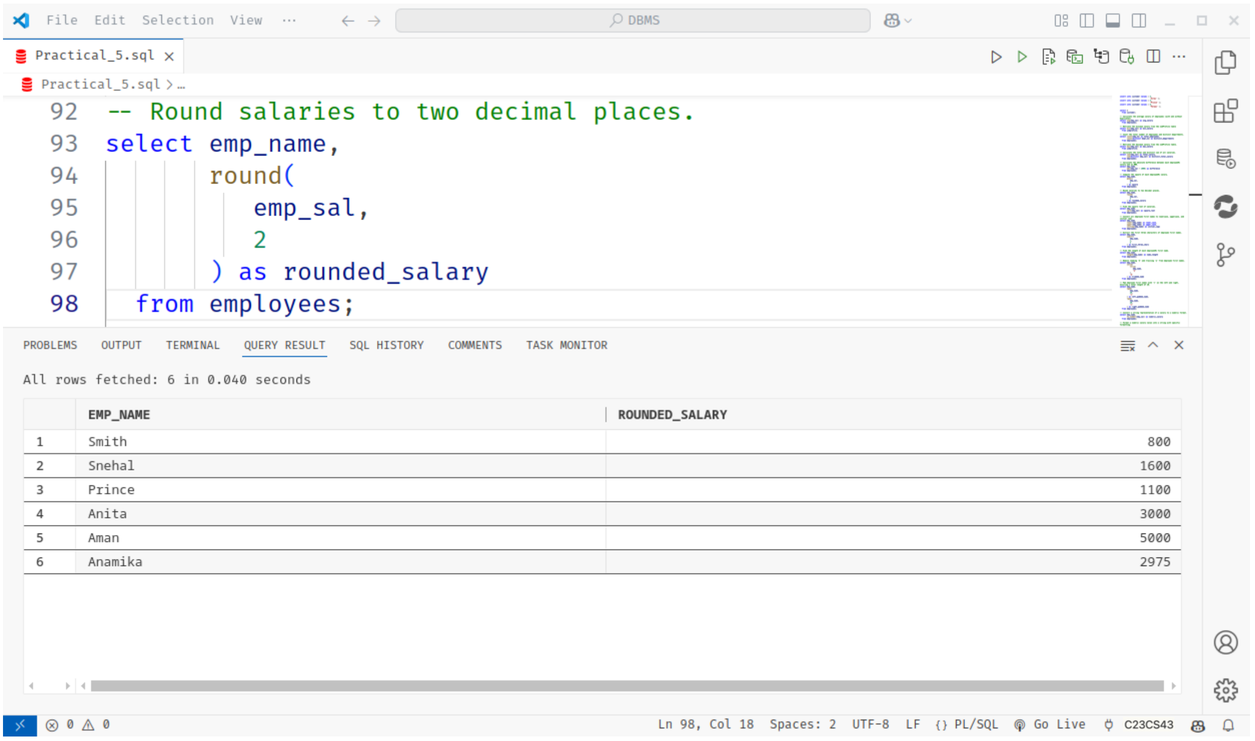
```
-- Compute the square of each employee’s salary.
select emp_name,
       power(
         emp_sal,
         2
       ) as square
  from employees;
```

```
All rows fetched: 6 in 0.026 seconds
```

	EMP_NAME	SQUARE
1	Smith	640000
2	Snehal	2560000
3	Prince	1210000
4	Anita	9000000
5	Aman	25000000
6	Anamika	8850625

8. Round salaries to two decimal places.



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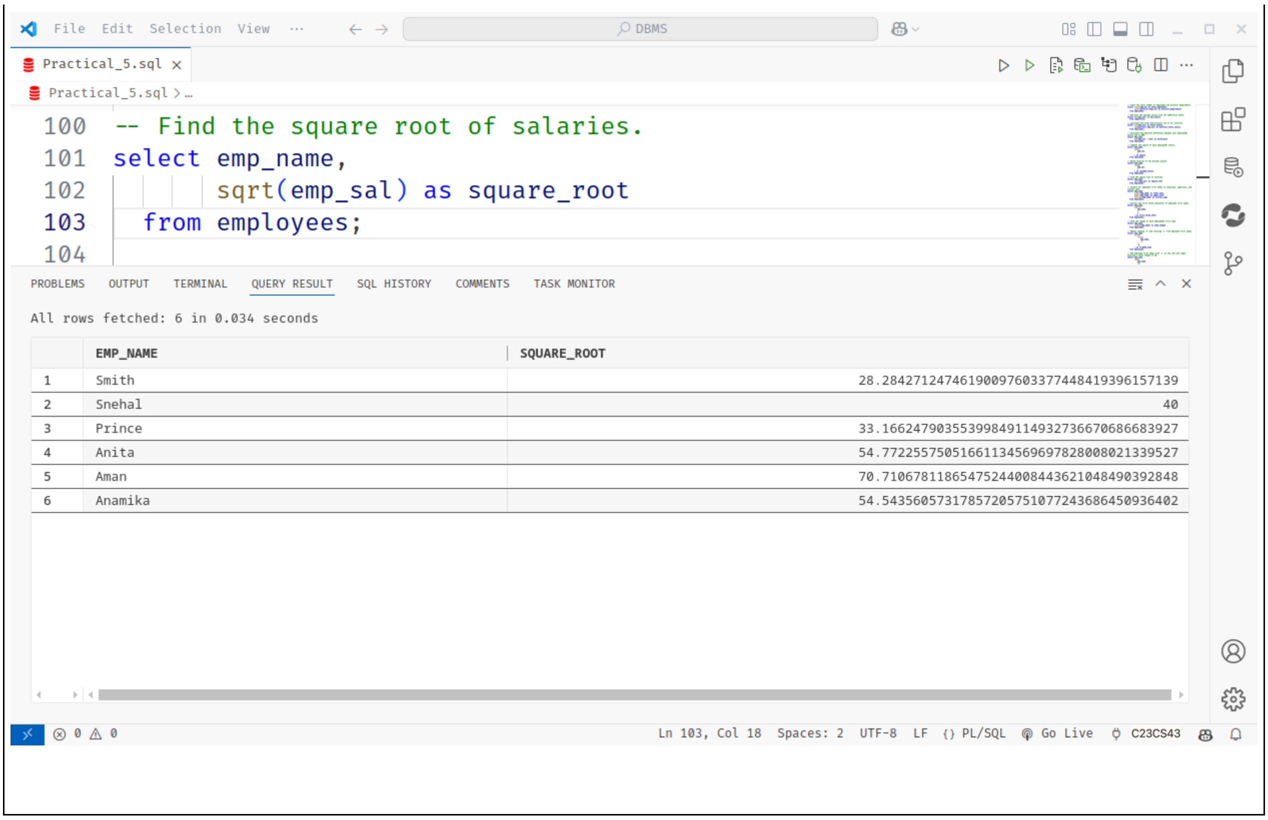
```
-- Round salaries to two decimal places.
select emp_name,
       round(
         emp_sal,
         2
       ) as rounded_salary
  from employees;
```

```
All rows fetched: 6 in 0.040 seconds
```

	EMP_NAME	ROUNDED_SALARY
1	Smith	800
2	Snehal	1600
3	Prince	1100
4	Anita	3000
5	Aman	5000
6	Anamika	2975

9. Find the square root of salaries.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```sql
-- Find the square root of salaries.
select emp_name,
      sqrt(emp_sal) as square_root
  from employees;
```

All rows fetched: 6 in 0.034 seconds

	EMP_NAME	SQUARE_ROOT
1	Smith	28.284271247461900976033774484193961571 39
2	Snehal	40
3	Prince	33.166247903553998491149327366706866839 27
4	Anita	54.772255750516611345696978280080213395 27
5	Aman	70.710678118654752440084436210484903928 48
6	Anamika	54.543560573178572057510772436864509364 02