Project Title

Employee Payroll & Attendance Management System (SQL Project)

SQL Project using MySQL & Workbench

Presented By

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GitHub Link

Project Overview

This project is a relational database management system built using MySQL, designed to manage employees, departments, attendance, and payroll efficiently. It demonstrates core database concepts such as tables, relationships, foreign keys, constraints, stored procedures, triggers, and views.

Features

- Employee management with full details
- Department management
- Attendance tracking (Present / Absent / Leave)
- Payroll management with auto-calculated net salary
- Reports and queries (department-wise salary summaries, attendance summaries, highest- paid employees, monthly payroll reports)
- Stored procedures for automation
- Triggers for automatic calculations
- Views for simplified reporting
- Optional read-only HR users

Database Schema

Tables:

- Departments – Department details
- Employees – Employee details linked to Departments
- Attendance – Daily attendance linked to Employees
- Payroll – Monthly payroll linked to Employees

Relationships:

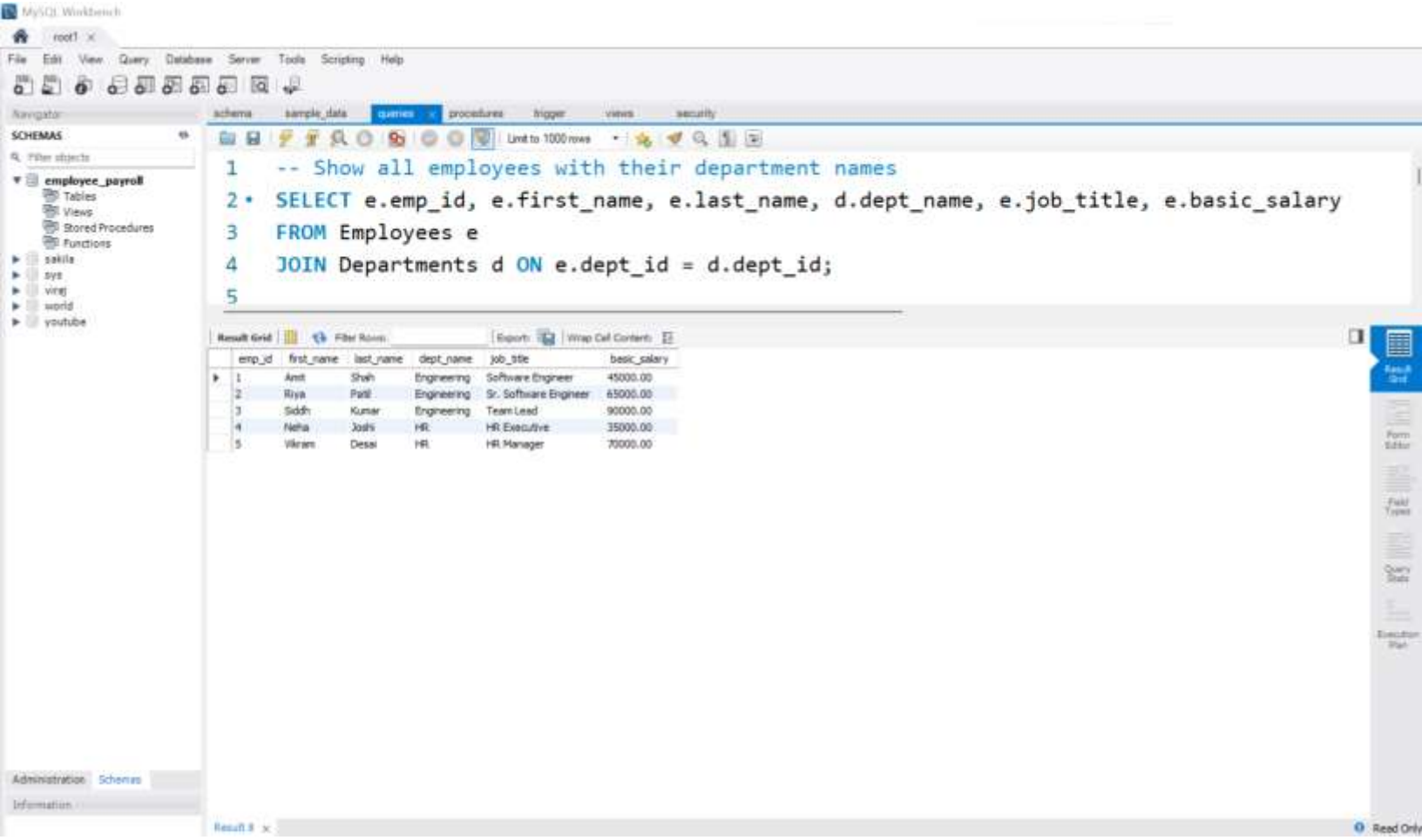
- One Department → Many Employees
- One Employee → Many Attendance Records
- One Employee → Many Payroll Records

Setup & Installation

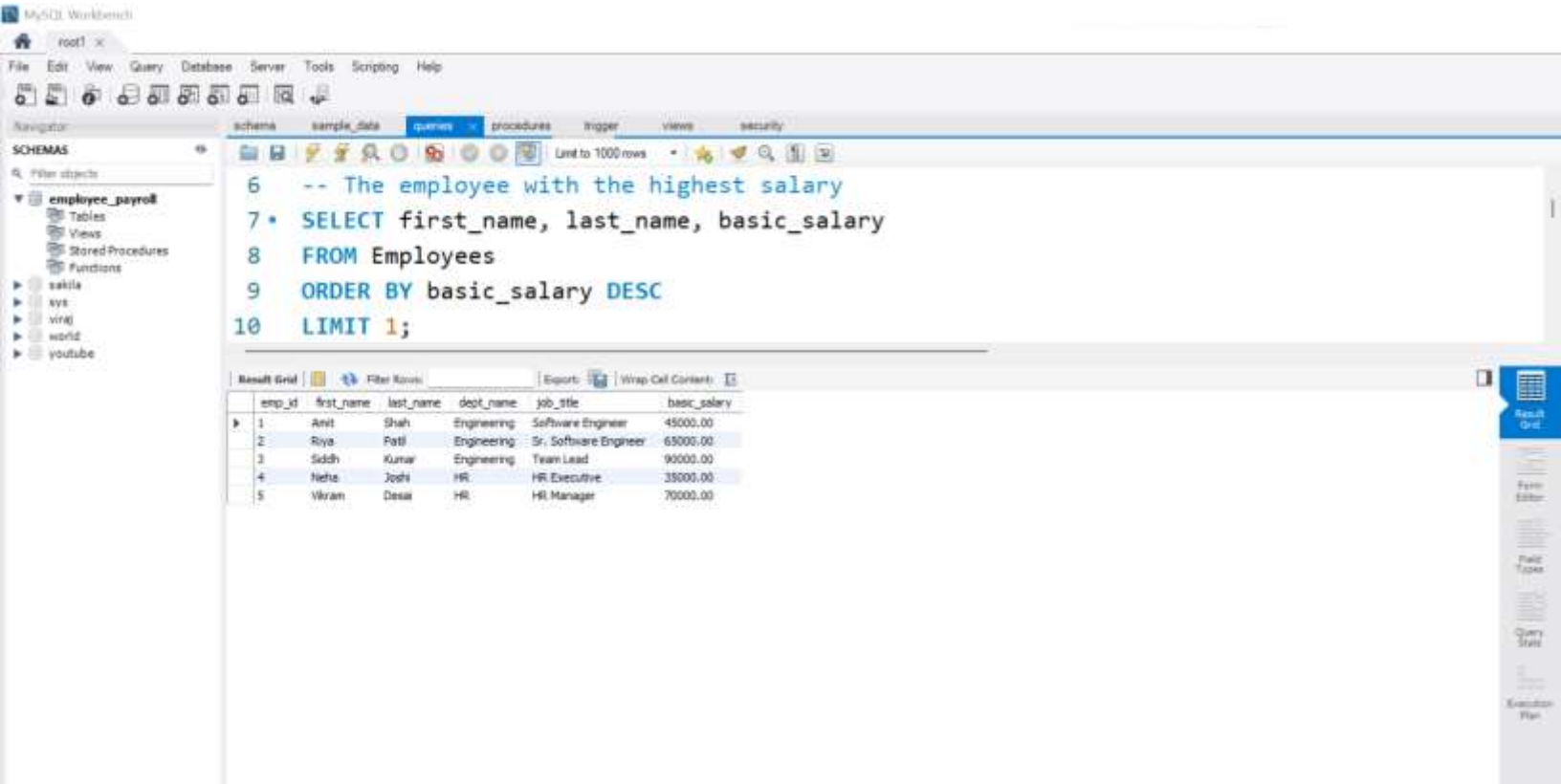
1. Install MySQL 8.0 and MySQL Workbench
2. Create database:
   CREATE DATABASE employee_payroll; USE employee_payroll;
3. Create all tables (Departments, Employees, Attendance, Payroll) with foreign keys
4. Insert sample data.
5. Create stored procedures, triggers, and views.
6. Run queries to test reports.

1.SQL Basic Queries

1. Show all employees with their department names :-



2. The employee with the highest salary :-



3.Department wise average salary :-

```
-- Department-wise average salary
SELECT d.dept_name, AVG(e.basic_salary) AS avg_salary
FROM Employees e
JOIN Departments d ON e.dept_id = d.dept_id
GROUP BY d.dept_name;
```

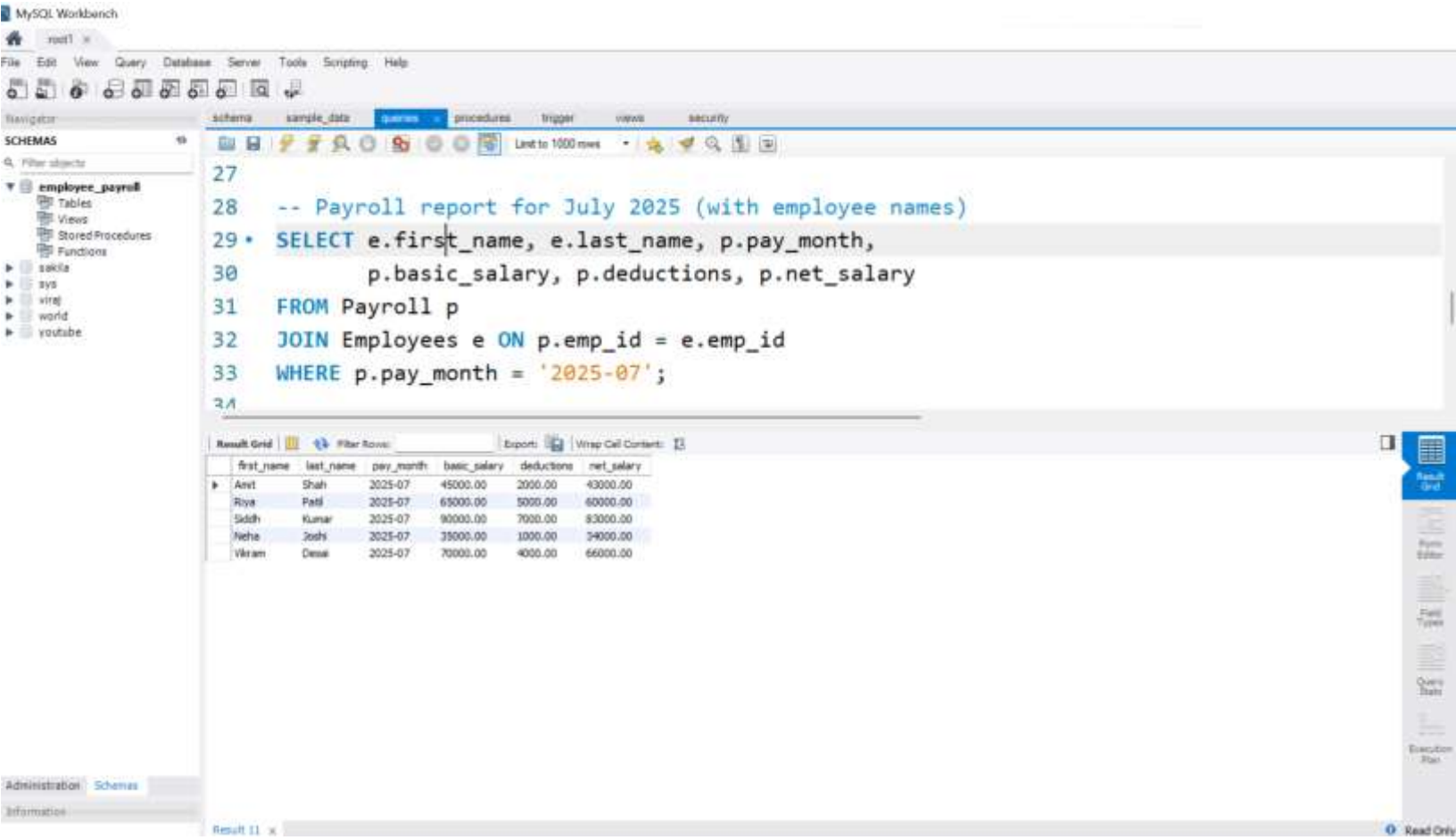
dept_name	avg_salary
Engineering	66666.666667
HR	52500.000000

4.Attendance summary for each employee :-

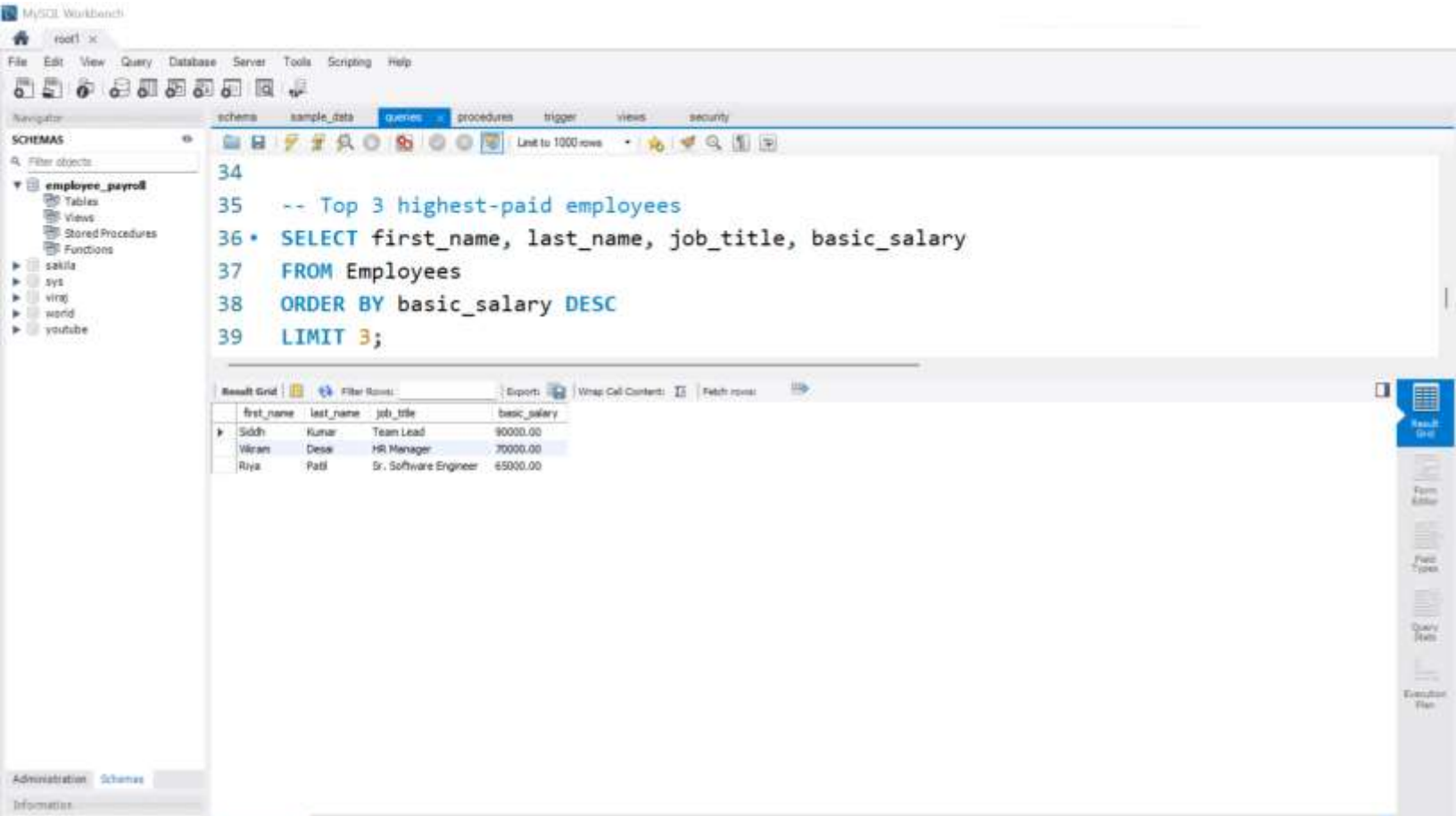
```
-- Attendance summary for each employee (Present/Absent/Leave count)
SELECT e.emp_id, e.first_name, e.last_name,
       SUM(a.status='Present') AS Present_Days,
       SUM(a.status='Absent') AS Absent_Days,
       SUM(a.status='Leave') AS Leave_Days
FROM Attendance a
JOIN Employees e ON a.emp_id = e.emp_id
GROUP BY e.emp_id, e.first_name, e.last_name;
```

emp_id	first_name	last_name	Present_Days	Absent_Days	Leave_Days
1	Amit	Shah	6	0	0
2	Riya	Patil	5	1	0
3	Siddh	Kumar	6	0	0
4	Neha	Joshi	5	0	1
5	Vikram	Desai	6	0	0

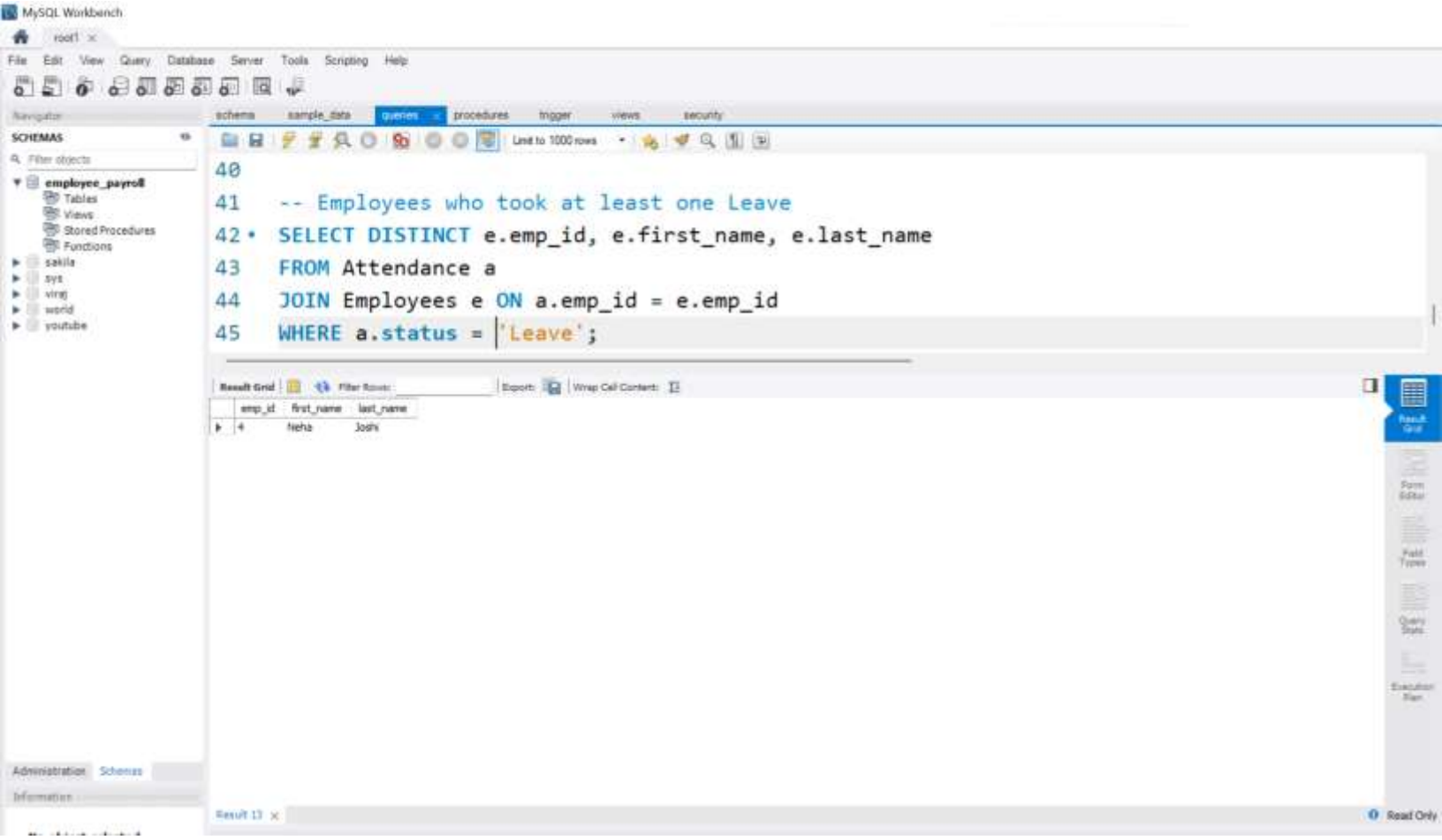
5. Payroll report for July 2025 :-



6. Top 3 highest paid employees :-



7. Employees who took at least one leave :-



2.PROCEDURES

1.Procedure to get monthly payroll for all employees :-

```
-- Procedure to get monthly payroll for all employees
DELIMITER $$
CREATE PROCEDURE GetMonthlyPayroll(IN month_year VARCHAR(7))
BEGIN
    SELECT e.emp_id, e.first_name, e.last_name,
           p.basic_salary, p.deductions, p.net_salary
    FROM Payroll p
    JOIN Employees e ON p.emp_id = e.emp_id
    WHERE p.pay_month = month_year;
END $$
DELIMITER ;

CALL GetMonthlyPayroll('2025-07');
```

emp_id	first_name	last_name	basic_salary	deductions	net_salary
1	Amit	Shah	45000.00	2000.00	43000.00
2	Riya	Patil	65500.00	5000.00	60000.00
3	Siddh	Kumar	90000.00	7000.00	83000.00
4	Neha	Joshi	35000.00	1000.00	34000.00
5	Vikram	Desai	70000.00	4000.00	66000.00

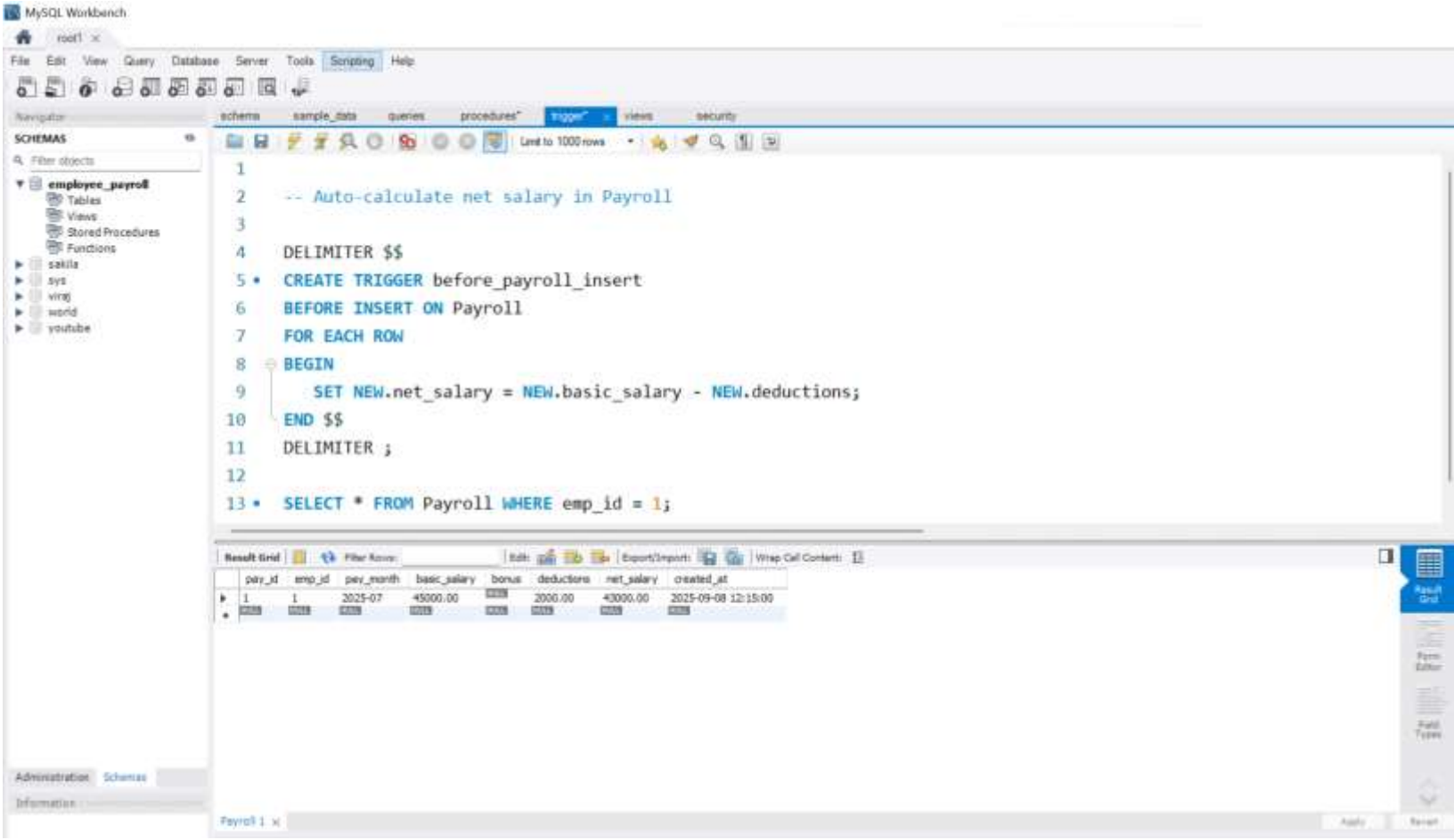
2.Procedure to add attendance in bulk :-

```
-- Procedure to add attendance in bulk (for one date)
DELIMITER $$
CREATE PROCEDURE MarkAttendance(IN att_date DATE, IN default_status VARCHAR(10))
BEGIN
    INSERT INTO Attendance (emp_id, att_date, status)
    SELECT emp_id, att_date, default_status
    FROM Employees;
END $$
DELIMITER ;

CALL MarkAttendance('2025-07-06','Present');
```

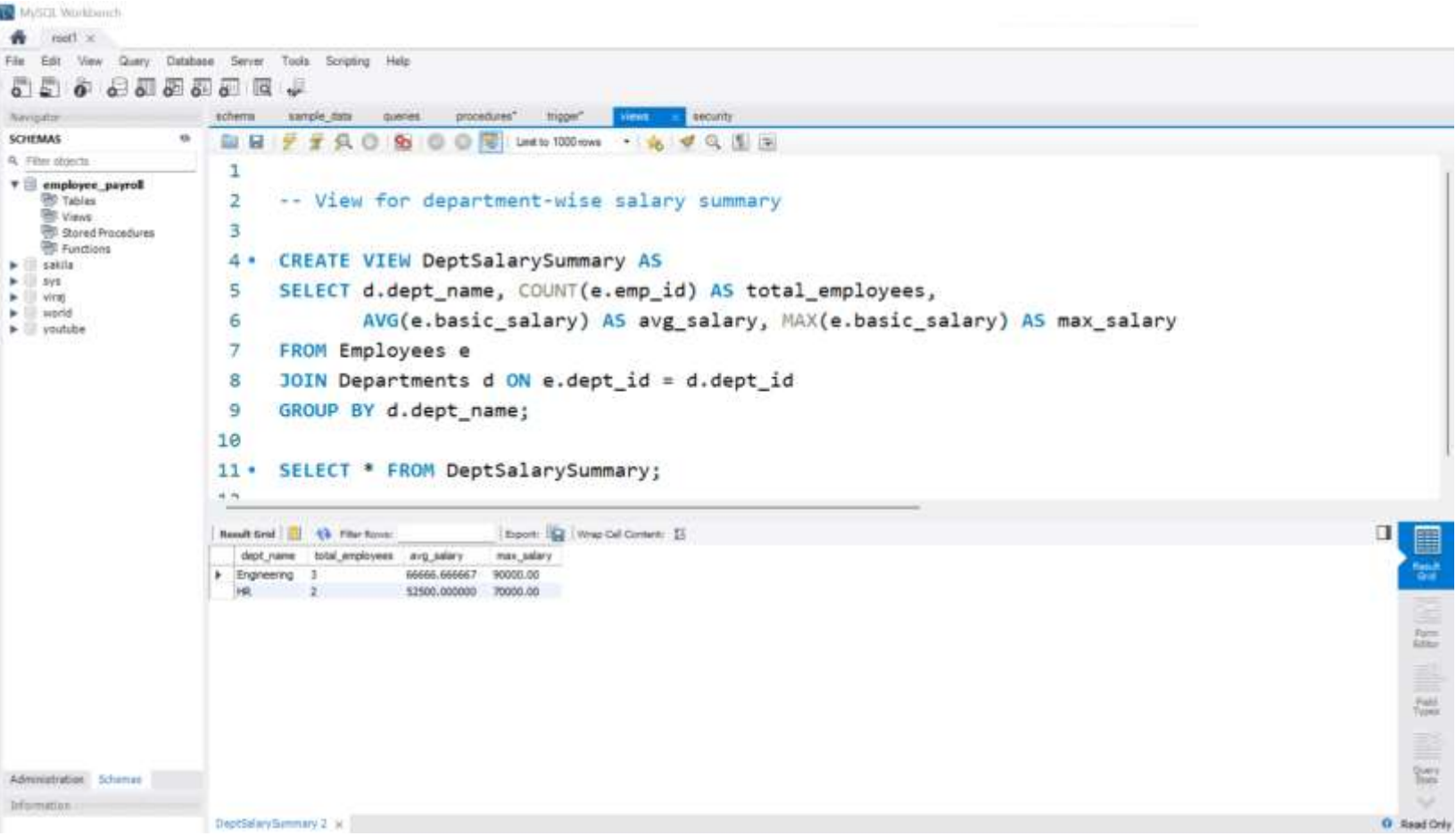
3.TRIGGER

1.Create a trigger to auto calculate net salary in payroll :-



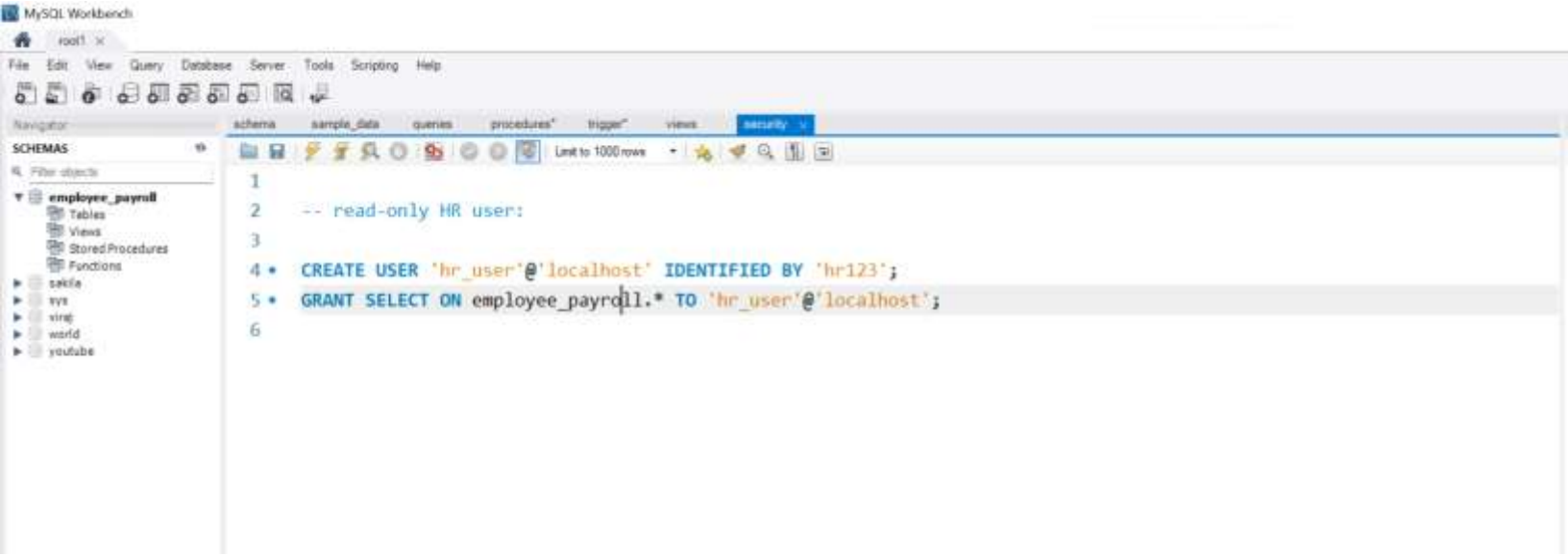
4.VIEW

View for department wise salary summary :-



5.SECURITY

Create a read only HR user :-



Sample Queries

List employees with department:

```
SELECT e.first_name, e.last_name, d.dept_name FROM Employees e
JOIN Departments d ON e.dept_id = d.dept_id;
```

Department-wise average salary:

```
SELECT d.dept_name, AVG(e.basic_salary) AS avg_salary FROM Employees e
JOIN Departments d ON e.dept_id = d.dept_id GROUP BY
d.dept_name;
```

Attendance summary:

```
SELECT e.first_name, e.last_name, SUM(status='Present') AS
    Present_Days, SUM(status='Absent') AS Absent_Days
FROM Attendance a
JOIN Employees e ON a.emp_id = e.emp_id GROUP BY e.emp_id;
```

Monthly payroll report (stored procedure):

```
CALL GetMonthlyPayroll('2025-07');
```

Advanced Features

- Stored Procedures: Automate bulk attendance marking and payroll generation
- Triggers: Auto-calculate net salary
- Views: Department salary summary
- Referential Integrity: Foreign keys prevent invalid data

Tools & Technologies

- MySQL 8.0
- MySQL Workbench
- SQL scripts for table creation, sample data, stored procedures, triggers, and views

Conclusion

The Employee Payroll & Attendance Management System successfully streamlines HR operations by integrating employee, department, attendance, and payroll management into a single MySQL database. With stored procedures, triggers, and views, it ensures automation, accuracy, and efficiency.