Employee & Project Management SQL Case Study

Author: [Your Name]

Date: [Month, Year]

# 1. Objective

The objective of this project is to design and query a database that simulates an organization’s employee and project management system. The goal is to demonstrate SQL skills in data modeling, querying, and generating business insights.

# 2. Business Scenario

A mid-sized company needs to track employees, their departments, and the projects they work on. Management requires insights into salaries, employee workload, and departmental performance.

# 3. Database Design

Schema/ER Diagram: [Insert diagram screenshot here]

Tables:

- Employees: stores employee details like name, hire date, salary.

- Departments: department details.

- Projects: project details like start and end dates.

- EmployeeProjects: many-to-many mapping of employees to projects.

# 4. Data Preparation

Mention how you created sample data. Example: '20 employees across 4 departments were inserted, along with 5 projects.'

# 5. Business Questions & Queries

For each question, include the following structure:

Question: [Business Question]

SQL Query:  
[SQL code snippet here]

Result (sample): [Insert screenshot or table here]

Insight: [Write interpretation here]

# 6. Advanced SQL Features (Optional)

Examples:

- CTE: Ranking employees by salary within department.

- Window Function: Calculate running totals.

- Stored Procedure/View: Reusable query for employee-project assignments.

# 7. Conclusion

This case study demonstrated how SQL can be used to model a real-world HR and project management system, insert and manage data, and derive meaningful insights. Queries included joins, aggregations, subqueries, and window functions, reflecting strong SQL analytical skills suitable for business problem-solving.