

# PROJECT-4 (MySQL)

**Project Title:** HR and Project Management Database Analysis

**Project Overview:** This project involves creating and analyzing a database named "employees" that includes tables related to employee records, data science team details, and project information. The dataset encompasses employee demographics, roles, experience levels, salaries, ratings, and project assignments across various departments and countries. The objective is to derive insights into employee performance, departmental dynamics, project statuses, and to facilitate efficient HR management and project oversight.

## **Database Schema:**

- **empl\_record\_table:** Contains detailed employee records including ID, name, gender, role, department, experience, country, continent, salary, employee rating, manager ID, and project ID.
- **data\_science\_team:** Focuses specifically on the data science team members, highlighting their roles, departments, experience levels, countries, and continents.
- **project\_table:** Provides information on projects including project ID, name, domain, start and closure dates, development quarter, and status.

## **Tasks and Analysis:**

1. **Data Upload and Initial Query:**
  - Creation of the "employees" database and uploading tables such as "empl\_record\_table", "data\_science\_team", and "project\_table".
2. **Employee Data Analysis:**

- Extracting basic employee details such as ID, first name, last name, gender, and department.
- Filtering employees based on performance ratings outside the range of 2 to 4.

### **3. Departmental Analysis:**

- Concatenating first and last names to display full names of employees in the Finance department.
- Determining the count of employees who manage other employees within the organization.

### **4. Departmental Insights:**

- Identifying employees from the Healthcare and Finance departments using UNION.
- Analyzing maximum employee ratings within each department using window functions.

### **5. Salary and Role Analysis:**

- Determining minimum and maximum salaries for each role within the organization.
- Categorizing employees based on their experience into different data scientist roles.

### **6. View and Procedure Creation:**

- Creating a view to list high-salaried employees earning more than \$6000.
- Defining a stored procedure to retrieve experienced employees with more than 3 years of experience.

### 7. **Function Creation:**

- Designing a deterministic function to assign job profiles based on employee experience levels.

### 8. **Indexing and Performance Optimization:**

- Creating an index on the "FIRST\_NAME" column of the "empl\_record\_table" to enhance query performance.
- Explaining and optimizing queries to retrieve records efficiently.

### 9. **Bonus Calculation:**

- Calculating bonuses based on a 5% incentive on employee salaries multiplied by their ratings.

### 10. **Geographical Analysis:**

- Computing average salaries across different continents and countries.

**Conclusion:** This project showcases the utilization of SQL for managing human resources and project data effectively. By analyzing employee demographics, performance metrics, departmental dynamics, and project statuses, the project aims to provide insights that aid in strategic decision-making, resource allocation, and performance evaluation. The structured approach to database management and analysis ensures that the organization can optimize its human capital and project outcomes efficiently.

Through SQL queries, views, procedures, functions, and indexing strategies, this project demonstrates the application of database principles to HR management and project oversight, emphasizing the

importance of data-driven insights in organizational decision-making processes.