Project Report

Employee Management and Attendance Tracker

Introduction

The Employee Management and Attendance Tracker is a SQL-based system to manage employee information, departments, roles, and attendance. It enables HR teams to analyze attendance, working hours, and punctuality.

Abstract

The project focuses on building a relational schema with tables for employees, departments, roles, and attendance. It includes queries for monthly reports, late arrivals, and leave tracking. Triggers and functions automate tasks such as late marking and work hour calculations.

Tools Used

- MySQL
- MySQL Workbench (for queries and ER diagram)

Steps Involved

1. Designed schema for departments, roles, employees, and attendance.
2. Created tables with constraints and relationships.
3. Inserted sample data for employees and attendance.
4. Wrote queries for attendance summary, late arrivals, and work hours.
5. Added trigger and function for automation.

Trigger:

- Name: mark_late
- Purpose: Auto mark **Late** if CheckIn > 09:15 AM.
    - ⇨ CREATE TRIGGER mark_late BEFORE INSERT ON Attendance

FOR EACH ROW

IF NEW.CheckIn > '09:15:00' THEN

SET NEW.Status = 'Late';

    END IF;

Function:

- Name: TotalWorkHours

- Purpose: Calculate total working hours of an employee in a given month.

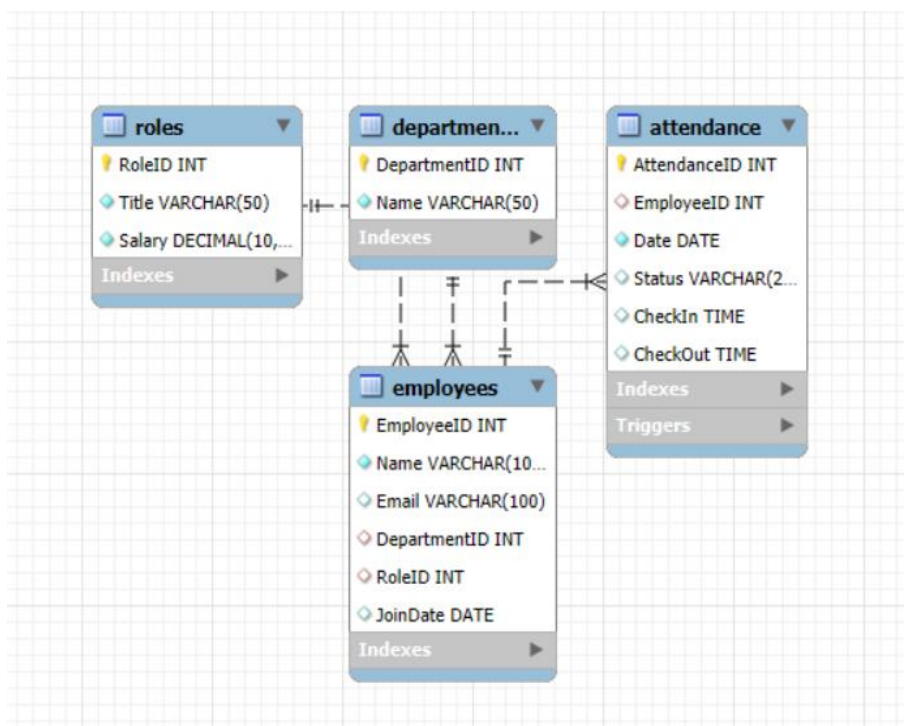   ⇨ CREATE FUNCTION TotalWorkHours(emp_id INT, month_no INT)

    RETURNS INT

    SELECT SUM(TIMESTAMPDIFF(HOUR, CheckIn, CheckOut))

    FROM Attendance

    WHERE EmployeeID = emp_id AND MONTH(Date)=month_no;

ER Diagram

Conclusion

The system simplifies attendance management and provides accurate reports for HR. It can be extended to include salary slips, shift management, and biometric attendance.