# EMPLOYEE PAYROLL SYSTEM

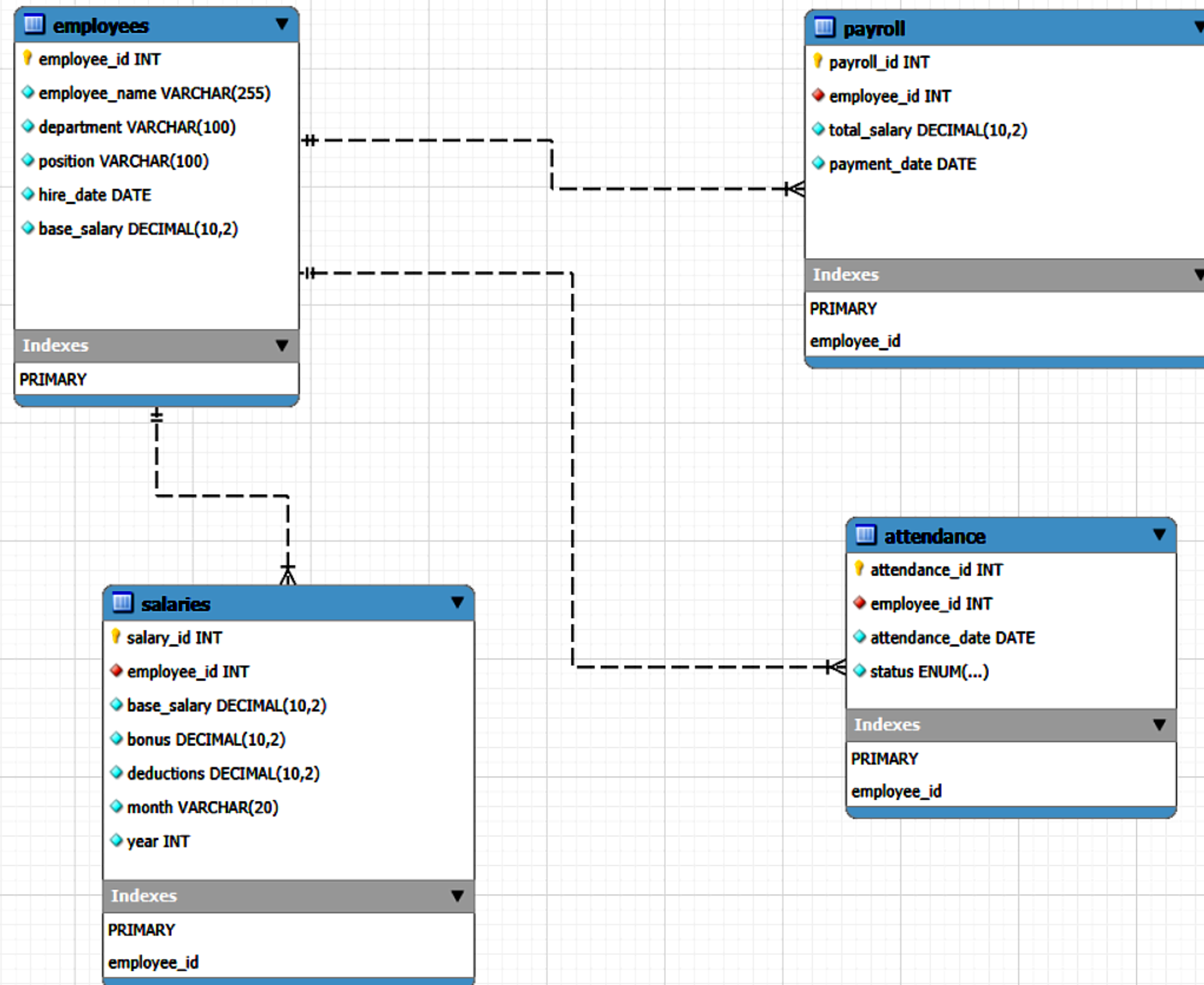PRESENTED BY MIHIR UGHADE

# INTRODUCTION

An Employee Payroll System is a software solution designed to automate and manage the financial records of employees. This system allows for efficient handling of salary payments, deductions, bonuses, taxes, and other payroll-related transactions. It simplifies the payroll process by ensuring accuracy, transparency, and timely payment to employees, reducing the likelihood of human errors associated with manual payroll management.

# OBJECTIVES

- Update Payroll Records.

- Generate Pay Slips.

- Generate Payroll Reports.

# EER DIAGRAM

**employees**
- 🔑 employee_id INT
- 🔷 employee_name VARCHAR(255)
- 🔷 department VARCHAR(100)
- 🔷 position VARCHAR(100)
- 🔷 hire_date DATE
- 🔷 base_salary DECIMAL(10,2)

**Indexes**
- PRIMARY

**payroll**
- 🔑 payroll_id INT
- 🔴 employee_id INT
- 🔷 total_salary DECIMAL(10,2)
- 🔷 payment_date DATE

**Indexes**
- PRIMARY
- employee_id

**salaries**
- 🔑 salary_id INT
- 🔴 employee_id INT
- 🔷 base_salary DECIMAL(10,2)
- 🔷 bonus DECIMAL(10,2)
- 🔷 deductions DECIMAL(10,2)
- 🔷 month VARCHAR(20)
- 🔷 year INT

**Indexes**
- PRIMARY
- employee_id

**attendance**
- 🔑 attendance_id INT
- 🔴 employee_id INT
- 🔷 attendance_date DATE
- 🔷 status ENUM(...)

**Indexes**
- PRIMARY
- employee_id

# MYSQL SCHEMA DESIGN

```sql
-- Create Database
CREATE DATABASE Emp_Payroll_System;

USE Emp_Payroll_System;


-- Create Employees Table
CREATE TABLE Employees (
    employee_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    employee_name VARCHAR(255) NOT NULL,
    department VARCHAR(100) NOT NULL,
    position VARCHAR(100) NOT NULL,
    hire_date DATE NOT NULL,
    base_salary DECIMAL(10 , 2 ) NOT NULL
);
```

```sql
-- Create Attendance Table
CREATE TABLE Attendance (
    attendance_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    employee_id INT NOT NULL,
    attendance_date DATE NOT NULL,
    status ENUM('Present', 'Absent', 'Leave') NOT NULL,
    FOREIGN KEY (employee_id)
        REFERENCES Employees (employee_id)
        ON DELETE CASCADE
);
```

```sql
-- Create Salaries Table
CREATE TABLE Salaries (
    salary_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    employee_id INT NOT NULL,
    base_salary DECIMAL(10 , 2 ) NOT NULL,
    bonus DECIMAL(10 , 2 ) NOT NULL,
    deductions DECIMAL(10 , 2 ) NOT NULL,
    month VARCHAR(20) NOT NULL,
    year INT NOT NULL,
    FOREIGN KEY (employee_id)
        REFERENCES Employees (employee_id)
        ON DELETE CASCADE
);
```

```sql
-- Create Payroll Table
CREATE TABLE Payroll (
    payroll_id INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    employee_id INT NOT NULL,
    total_salary DECIMAL(10 , 2 ) NOT NULL,
    payment_date DATE NOT NULL,
    FOREIGN KEY (employee_id)
        REFERENCES Employees (employee_id)
        ON DELETE CASCADE
);
```

# KEY INSIGHTS FROM THE PAYROLL SYSTEM

## Employee Salary Trends

- The highest salary is 58,000 (Maintenance Manager).
- The lowest salary is 30,000 (Sales Executive).
- Employees in managerial positions earn significantly higher than specialists or executives.

## Attendance & Absenteeism Patterns

- 3 out of 10 employees were absent on September 1st, 2025.
- 2 employees were on leave, which may indicate planned absences.
- Attendance tracking is crucial for payroll calculations to avoid overpayment or salary deductions.

## Payroll & Salary Processing

- Payroll calculations are dynamic, considering base salary, bonuses, and deductions.
- Example: An employee earning 50,000 with a 5,000 bonus and 1,000 deduction gets a final salary of 53,000.
- Automating payroll can reduce human errors and ensure accurate salary processing.

## Deductions & Bonus Trends

- The average bonus across employees is around 3,500.
- Deductions are consistent at 1,000, meaning salary variations are mainly due to bonuses.
- Introducing performance-based bonuses could help in employee motivation and retention.

## Department-Wise Salary Insights

- Maintenance & Operations departments have the highest salaries.
- Sales & Marketing roles have lower base salaries but can be improved with commission-based incentives.

# Questions Based on the Employee Payroll System Code

**1.) Database Structure:**

What are the key tables used in the Employee Payroll System, and how are they related?

**2.)Data Integrity:**

How does the use of foreign keys ensure data consistency in the payroll system?

**3.) Payroll Processing:**

How is the total salary calculated for an employee, and which factors affect it?

**4.) Attendance Management:**

How does the system track employee attendance, and how can HR generate an attendance summary?

**5.) Employee Management:**

What SQL query would you use to increase an employee's base salary by 10%?

**6.)Performance & Deductions:**

How can the system identify employees with the most leaves or deductions in a given month?

**7.) Reporting & Insights:**

Which query generates a yearly salary report, and what insights can be derived from it?

**8.) Error Handling & Constraints:**

Why does deleting an employee with an existing attendance record result in an error (Error Code: 1451), and how can this be resolved?