Employee Salary & Leave Management System End-to-End Design Document

1. System Overview

This application helps manage employees, salary calculation, advances, overtime, leaves, and monthly salary communication via SMS. The system is designed for transparency with date-wise details.

2. Technology Stack

Frontend: React JS (Axios, React Router)

Backend: Spring Boot (Java), Spring Data JPA

Database: MySQL

Notification: SMS Gateway

3. High Level Architecture

React UI communicates with Spring Boot REST APIs. Backend handles business logic, stores data in MySQL, and sends SMS through an SMS gateway.

4. UI Screens (React JS)

1 Login Screen (Admin access)
2 Dashboard (Overview of employees & salary)
3 Employee Management (Add/Edit/Deactivate)
4 Advance Salary Management (Date-wise)
5 Leave Management (Paid/Unpaid)
6 Overtime Management
7 Monthly Salary Generation & Preview
8 Salary History & SMS Resend

5. Core Business Rules

1 Employee identified uniquely by mobile number
2 Advance salary allowed anytime with date
3 Overtime calculated date-wise
4 Unpaid leaves deduct salary
5 PF deducted as per configured percentage
6 Final salary SMS includes full date-wise breakup

6. Salary Calculation Formula

Final Salary = Base Salary + Overtime − Advances − PF − Leave Deduction

7. Monthly Salary SMS Content

The SMS sent to employee contains base salary, date-wise advances, date-wise leaves, date-wise overtime, PF deduction, and final payable amount.

8. Backend Modules

1. Employee Service
2. Advance Service
3. Leave Service
4. Overtime Service
5. Salary Calculation Service
6. SMS Notification Service

9. Deployment

Frontend can be deployed on Netlify/Vercel. Backend on AWS EC2/Render with MySQL database.

10. Future Enhancements

1. Employee self-login
2. Payslip PDF download
3. WhatsApp notifications
4. Role-based access control