EMPLOYEE MANAGEMENT SYSTEM

PROJECT REPORT

Submitted by

AVULA SOWMYA(B200444)

GANGINENI ANUSHA(B200816)

KANUKUNTLA NAVYA(B201082)

Of

Bachelor of Technology

Under the guidance of

Mrs.NAGAMANI

Asst. Prof. CSE, RGUKT BASAR

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES

BASAR, NIRMAL (DIST.),

TELANGANA – 504107

ABSTRACT

Employee management system is an application based system, having applications developed, one for employers to manage employee details and another for employees to mark their attendance. Every organisation whether government or private uses an information system to store data of their staff. However, in India it is found that many small scale industries use pen and paper to keep a record. However, there are many advanced technology systems available that can do this work but they all are costly for these low level industries. This paper discusses making a system for solving problems for them at a cheaper cost. This system will mark attendance of each employee calculate the salary of them at the end of month. It also calculates overtime and total working hours of each employee. As in small scale each company has their own holidays preference and variable week off for employees, so all this power is given to the employer to manage holidays and week days of each employee separately. It saves lots of time and has no error in paycalculation hence preventing clashes between HR Team and employees. So that both employer and employee can focus on their work to develop their company.

Contents

1 Introduction **4**
- 1.1 Aim of the project . . . 4
- 1.2 Objective . . . 4
- 1.3 Scope of the project . . . 4
- 1.4 Overview of Project . . . 5
- 1.5 References . . . 5

2 Design and Implimentation **6**
- 2.1 USECASE DIAGRAM FOR USER: . . . 6
- 2.2 USECASE DIAGRAM FOR ADMIN: . . . 7
- 2.3 Data Flow Diagram . . . 8

3 Requirements Gathering: **10**
- 3.1 Implementation with Spring Boot . . . 10
- 3.2 Integration and Testing . . . 10

4 External interfaces Requirements **11**
- 4.1 User interface . . . 11
- 4.2 Hardware Interface Requirements . . . 11
- 4.3 Communication Interfaces . . . 11

5 Functional Requirements **12**
- 5.1 Employee information management . . . 12
- 5.2 Attendance and Time Management . . . 12
- 5.3 Recruitment and Onboarding . . . 12

6 Non-Functional Requirements for Employee Management System **13**
- 6.1 performance . . . 13
- 6.2 Scalability: . . . 13
- 6.3 Reliability . . . 13
- 6.4 Usability . . . 13
- 6.5 Security . . . 13

7 SOFTWARE AND HARDWARE REQUIREMENTS **14**
- 7.1 HARDWARE REQUIREMENTS: . . . 14
- 7.2 SOFTWARE REQUIREMENTS: . . . 14
- 7.3 PHP TOOLS: . . . 14
- 7.4 ANDROID TOOLS: . . . 14

8 CONCLUSION **15**

1 Introduction

In today's fast-paced business environment, effective employee management is crucial for organizational success. An Employee Management System (EMS) is a comprehensive software solution designed to streamline and enhance the processes involved in managing an organization's workforce. This system facilitates efficient tracking of employee records, performance evaluations, payroll management, and benefits administration, all while ensuring compliance with labor regulations.

1.1 Aim of the project

- The goal of Employee Management System is help to attracting, developing, and retaining employees and also by managing them effectively.
- It aims to achieve a fit between managing the organization's employees and the overall strategic direction of the organization. EMS planning deals with recognizing and fulfilling the employee needs of an organization.
- In order to meet the effectiveness objective of management control, the Admin/HR plan should be formulated in such a way that it conforms to the organizational strategies and corporate plans.
- At the micro level, the organization needs to do career planning for employees and succession planning for key positions in the organization.
- At a macro level, the organization needs to carry out workforce (manpower) planning and salary planning.
- The nature of the HR planning process is primarily dependent upon the organizational size and the hierarchical structure within the organization

1.2 Objective

- Employee is the backbone of the company so employee management system is very helpful this organization.
- This system also manages a company employee details, salary details, leave details, salary increment details.

1.3 Scope of the project

EMPLOYEE PROFILES:

- Employees will have access to their personal profiles and will be able to edit their details.

PROJECT AND TASK MANAGEMENT:

- Assigns tasks and projects to Employees assign a project team and keep track of the progress.

RECRUITMENT PROCESS:

- The admin will add an employee and a default password and Employee id will generated and sent to the new employees email the HR manager will then have the ability to add an employees information to the Database

1.4 Overview of Project

The Employee Management System (EMS) project aims to develop a comprehensive software solution that centralizes and automates various HR functions, enhancing the overall management of an organization's workforce. This system is designed to streamline processes, improve efficiency, and foster a positive workplace environment.

1.5 References

Newman, William Hsummer, Charles E. and Warren, E, 1974.TheProcess of Management: Concepts, Behaviour and Practice, Prentice Hall of India; New Delhi.

2 Design and Implimentation

2.1 USECASE DIAGRAM FOR USER:

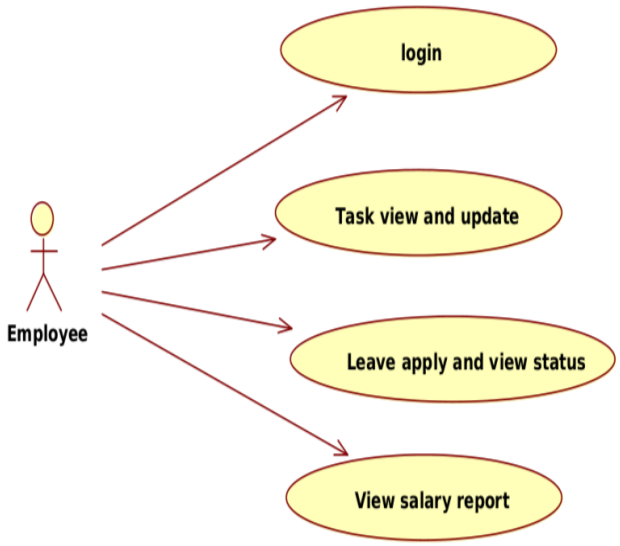

Figure 1: Use Case Diagram

2.2 USECASE DIAGRAM FOR ADMIN:

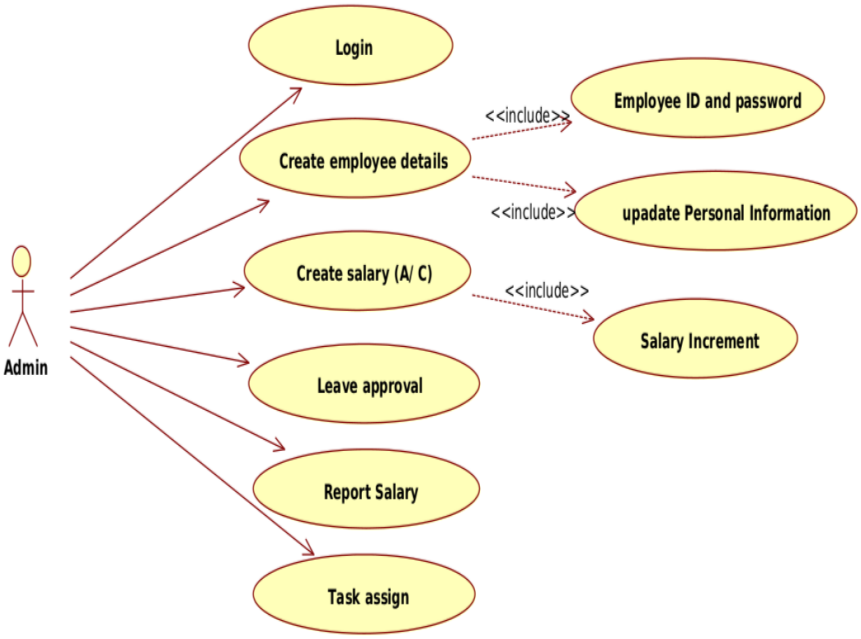

Figure 2: Use Case Diagram

2.3 Data Flow Diagram

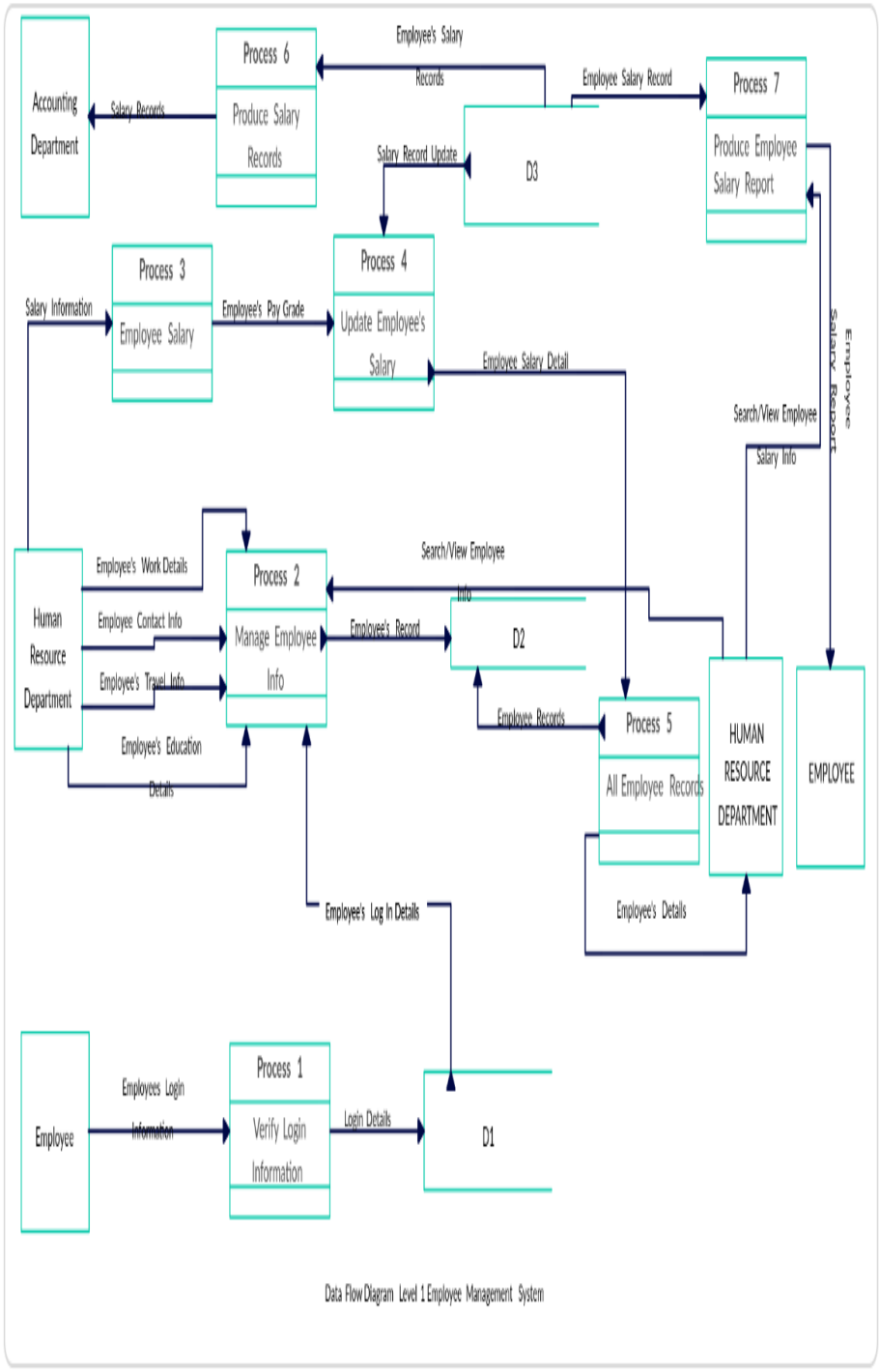

Figure 3: Data Flow Diagram

3 Requirements Gathering:

Define the functional and non-functional requirements of the employee management system (EMS). This includes features such as employee CRUD operations, attendance tracking, leave System Architecture: Design the architecture of the system, considering scalability, maintainability, and security.

- Use a layered architecture approach (e.g., MVC pattern) where Spring Boot acts as the backbone.
- Identify components like controllers, services, repositories (for database interaction), and DTOs (Data Transfer Objects).
- Database Design: Design the database schema using relational or NoSQL databases like MySQL, PostgreSQL, MongoDB, etc., depending on the requirements.

3.1 Implementation with Spring Boot

- Setting up Spring Boot Project: Initialize a Spring Boot project using Spring Initializr or a similar tool.
- Implementing Controllers: Create RESTful APIs using Spring MVC controllers to handle HTTP requests for employee operations (e.g., create, read, update, delete).
- Service Layer: Implement service classes to encapsulate business logic, validate input, and interact with repositories.
- Repository Layer: Define repository interfaces extending JpaRepository (for Spring Data JPA) or using Spring Data MongoDB to handle database operations.
- Security: Implement security measures using Spring Security to authenticate and authorize users, ensuring access control to sensitive employee data.
- Validation: Implement input validation using annotations or custom validators to ensure data integrity.
- Error Handling: Implement global exception handling to manage exceptions and provide meaningful error messages to clients.

3.2 Integration and Testing

- Unit Testing: Write unit tests for controllers, services, and repositories using tools like JUnit and Mockito to ensure each component works as expected.

4 External interfaces Requirements

The External Interface Requirements specify how the Employee Management System will interact with external systems, software, and users. These interfaces ensure smooth data exchange, compatibility, and integration with third-party tools, platforms, and devices.

4.1 User interface

The system must provide a user-friendly interface that is accessible to different categories of users, including HR administrators, managers, and employees.

4.2 Hardware Interface Requirements

The system should interface with specific hardware devices to ensure compatibility with external systems and tools.

4.3 Communication Interfaces

The EMS will need to communicate with external systems, users, and devices using standard communication protocols.

5 Functional Requirements

5.1 Employee information management

- Add Employee: Ability to create a new employee record with personal details (name, address, phone number, email, date of birth, etc.).
- Edit Employee: Modify existing employee records, such as updating contact information or job role.
- View Employee: Ability to view all the details of an employee, including personal, job, and performance-related data.
- Delete Employee: Remove an employee from the system when they leave the company.
- Search Employee: Search for employees by various attributes such as name, ID, department, etc.

5.2 Attendance and Time Management

- Clock In/Clock Out: Employees can record their attendance by clocking in and out.
- Leave Management: Manage employee leave requests, approvals, and balances for various types of leave (sick, vacation, etc.).
- Attendance Tracking: Track attendance records daily, weekly, and monthly, with the ability to generate reports.
- Work Hours Management: Track total hours worked by each employee, including overtime.
- Holiday Management: Ability to define public holidays and custom holidays for each department.

5.3 Recruitment and Onboarding

- Job Posting: Post new job openings, track applications, and candidate status.
- Candidate Management: Store and manage candidate details, resumes, and interview notes.
- Offer Management: Manage the process of generating and sending offer letters to selected candidates.

6 Non-Functional Requirements for Employee Management System

6.1 performance

- Page load times must be under 2 seconds for optimal user experience.
- The system shouldR support at least 100 concurrent users without noticeable degradation in response time

6.2 Scalability:

- The system should be scalable to accommodate a growing number of employees, with the capacity to handle up to 10,000 records efficiently.

6.3 Reliability

- The system should have an uptime of 99.5
- Backup processes must be implemented to prevent data loss.

6.4 Usability

- The interface should be intuitive, allowing users to navigate with minimal training.
- Help documentation should be readily available within the application.

6.5 Security

- User data must be encrypted to protect sensitive information.
- Role-based access control should be implemented to restrict access based on user roles.

7 SOFTWARE AND HARDWARE REQUIREMENTS

7.1 HARDWARE REQUIREMENTS:

- Processor : intel 3
- Motherboard : intel 915gvsr chipset board
- Ram : 4 gb ddr2 ram
- Hard disk drive: 500 gb

7.2 SOFTWARE REQUIREMENTS:

- Front end : html5, css3, bootstrap
- Back end : php, mysql
- Control end.

7.3 PHP TOOLS:

- xampp-win32-5.5.19-0-VC11

7.4 ANDROID TOOLS:

- Android Emulator
- xampp-win32-5.5.19-0-VC11
- Android Studio

8 CONCLUSION

- The database of this system can also easily be ported in any other standard database with nominal change.
- The manager of office used to spare lot of time even after the normal office hours either at home or office for preparation of daily/weekly report and other necessary record.
- Now with the help of this system, the manager has the information on his finger tips and can easily prepare a record based on their requirements apart from daily/weekly report.
- Finally, we can say that this system will not only automate the process but save the valuable time of the office manager, which can be well utilized by this institute.
- This will be an additional advantage and management of man power based on their free time from his normal duty.