

**UDHNA CITIZEN COMMERCE COLLEGE & S.P.B. COLLEGE
OF BUSINESS ADMINISTRATION & SMT. DIWALIBEN
HARJIBHAI GONDALIA COLLEGE OF BCA AND I.T.**

**Bachelor of Computer Applications
(BCA) Programme**

Minor Project Report

Partial Fulfillment of

BCA Sem.-V

A.Y. 2023-24

Project Title: PAYROLL MANAGEMENT SYSTEM

Submitted By:

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- *Prof. Swapnil Patil*

Acknowledgement

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Date:



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Payroll-Central

Payroll Management System

1. Introduction:

1.1. Project description:

A payroll management system is a software application that automates the process of calculating and paying employee salaries. It typically involves keeping track of employee hours worked, calculating taxes and deductions, and generating pay checks. Payroll management systems can save businesses time and money by eliminating the need for manual calculations and processing.

This project will develop a payroll management system for a small business. The system will be designed to be easy to use and affordable. It will also be scalable so that it can be used by businesses of all sizes

1.2. Project Profile:

- Project Title: Payroll-Central
- Project Description: It is a payroll management system web application created in ReactJS and Nodejs.
- Project Duration: 2 months
- Project Team Members: Kishore Sunchu, Jyoti Dwivedi, Rupa Chauhan
- Project Status: completed



2. Environment Description:

2.1. Hardware and Software Requirements:

Follows are the Hardware requirements of the project:

- Processor: Intel Core i5
- SSD: 512GB
- RAM: 8GB

Follows are the Software requirements of the project:

- Windows 7 or higher
- MongoDB Compass
- NodeJs
- Visual Studio Code
- Google Chrome Developer Options

2.2. Technologies Used:

The Technology which are used in the project is as follows:

- **Fronted:**
 - ReactJS
 - Tailwind CSS
 - Material UI
- **Backend:**
 - NodeJs
 - Express
 - MongoDB
 - Mongoose



3. System Analysis and Planning:

3.1.Existing System and its Drawbacks:

Follows are the existing system for payroll management systems:

- greytHR
- Keke HR
- HROne
- Workday HCM

Drawbacks of above system:

- High cost: The cost of implementing and maintaining can be high, especially for small business
- Inflexibility: Traditional payroll system are often inflexibility and can be difficult to adapt changes in employee information or company policies.
- Difficult to scale: Manual payroll system can be difficult to scale as a company grows.

3.2.Feasibility Study:

- Technical feasibility: Is the system technically feasible to develop and implement?
- Financial feasibility: Can organization afford to develop and implement the system?
- Market feasibility: Is there a demand for the system in the marketplace?
- Operational feasibility: Can the organization effectively use the system?

3.3.Requirement Gathering and Analysis:

- Payroll compliance: The system must be able to calculate and deduct all applicable taxes.
- Expense management: The system must be able to track and manage employee expense.
- Dashboard and reporting: The system must provide a dashboard with real-time data on payroll, expenses, and other financial information.



4. Proposed System:

4.1. Scope:

- To develop a user-friendly and efficient payroll management system that automates the process of calculating and disbursing employee salaries, bonuses, and deductions.
- To ensure compliance with all relevant tax laws and regulations.
- To provide accurate and timely payroll reports to management.
- To improve the efficiency of the HR department by freeing up time to focus on other tasks.
- To improve employee satisfaction by ensuring that they are paid accurately and on time.

4.2. Project modules:

The system comprises of 2 major modules with their sub-modules as follows:

- I. Admin
- II. Employee

4.3. Module Vise objectives/functionalities Constraints:

Admin:

- Login: Admin can login into system.
- Add Employee: Admin can add employee.
- Employee Details: Admin can view all employee details.
- Change Details: Admin can change the details of employees.
- Change Status: Admin can change the status of the employee.
- Generate Payroll: Admin can generate payslip for employees

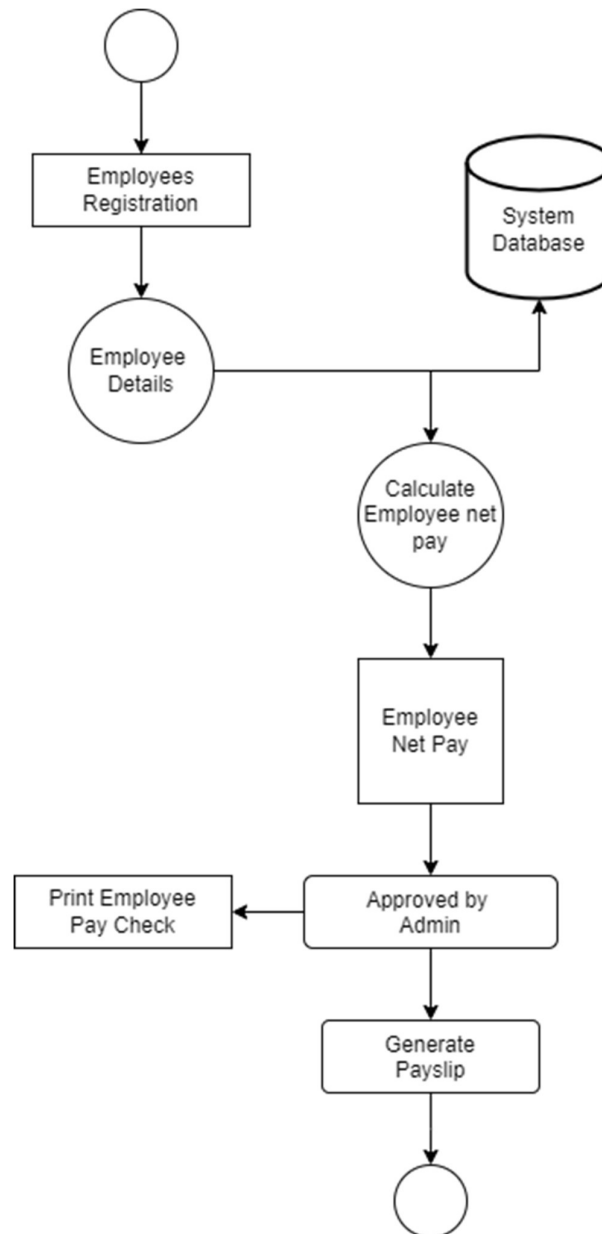
Employee:

- Login: Employee can login in his profile.
- Profile: Employee view his profile details.
- Change Details: Employee can change his limited details.
- Generate Payroll: Employee can generate payslip for themselves.



5. Detail Planning:

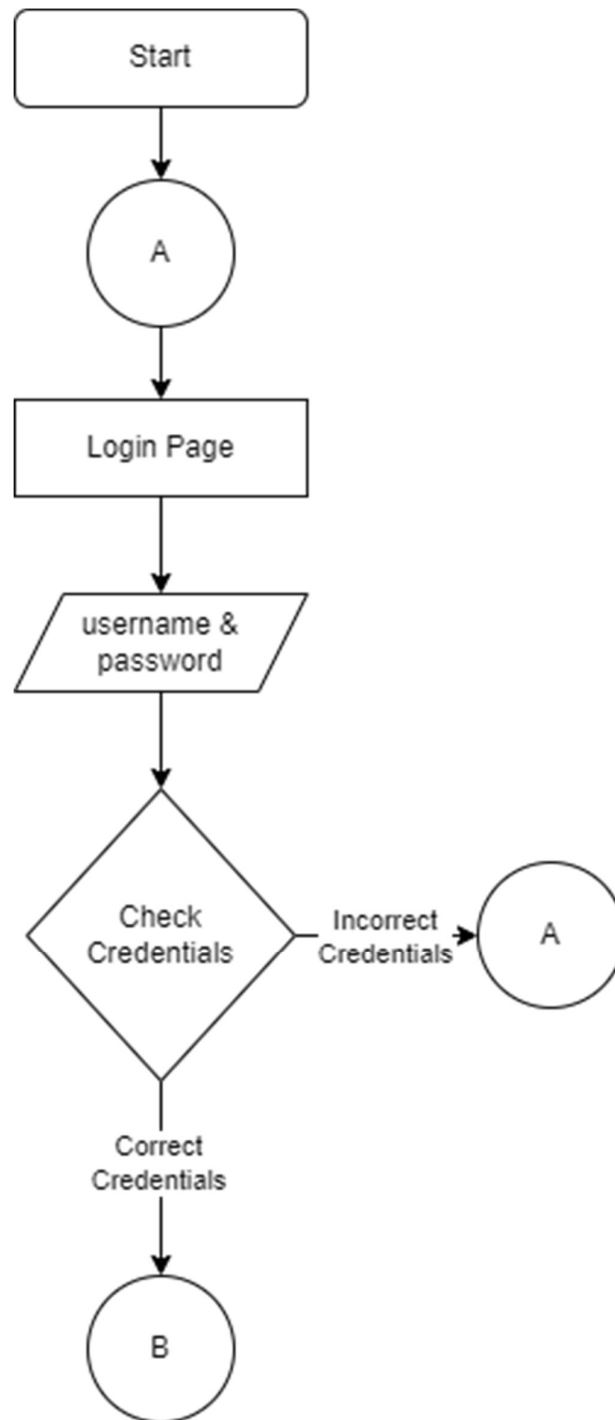
5.1. Data Flow Diagram / UML:

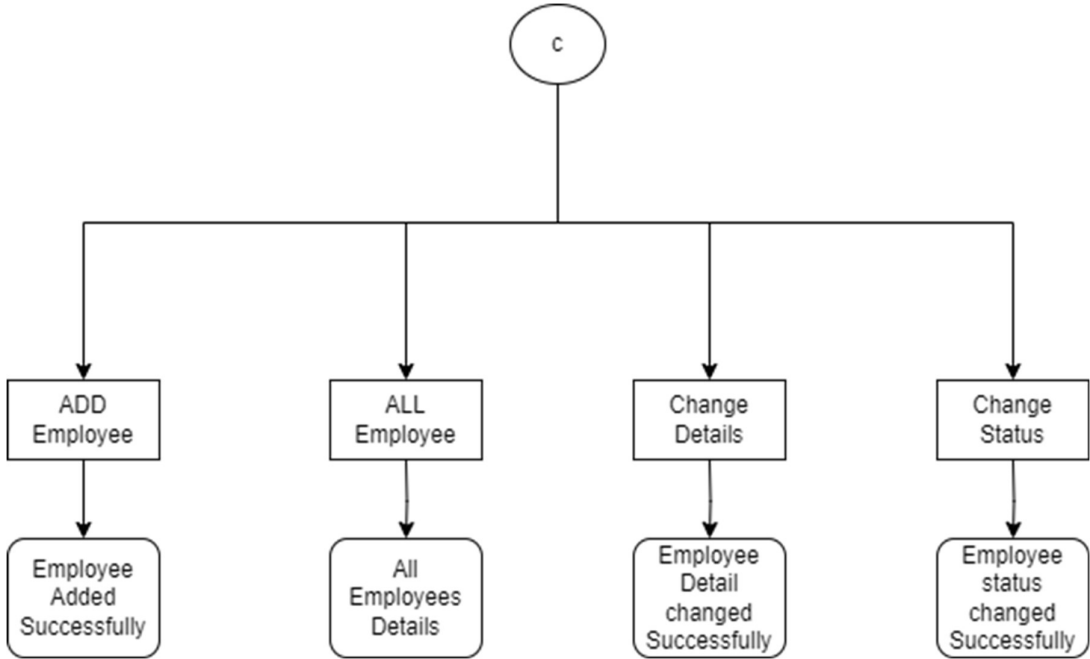
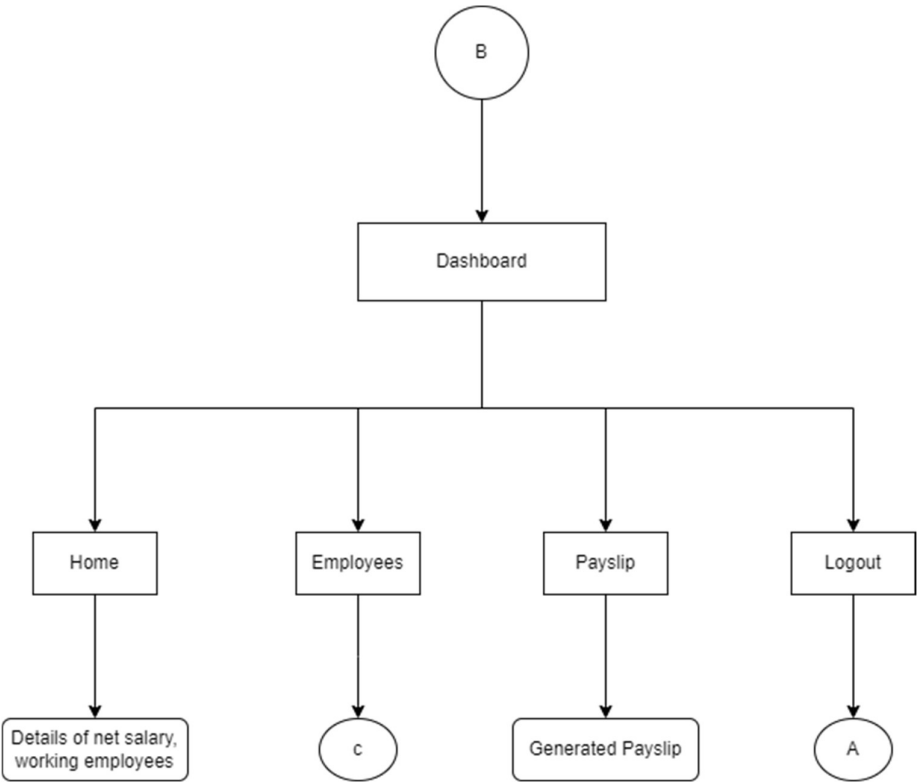




5.2. Process Specification / Activity Flow Diagram:

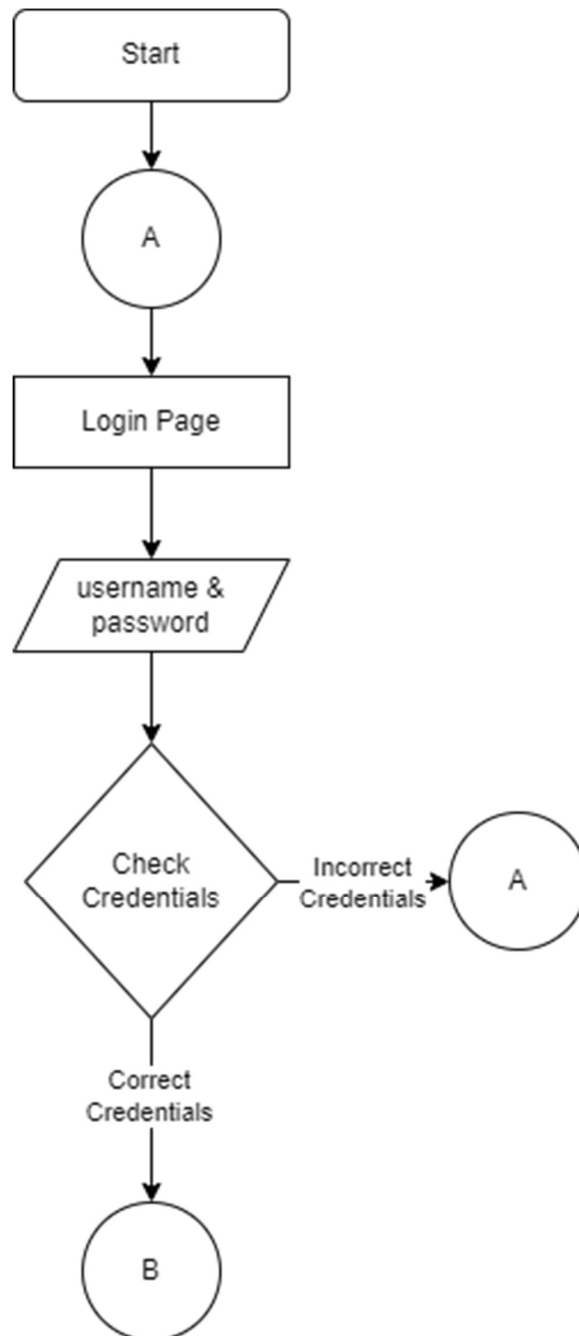
- Admin:



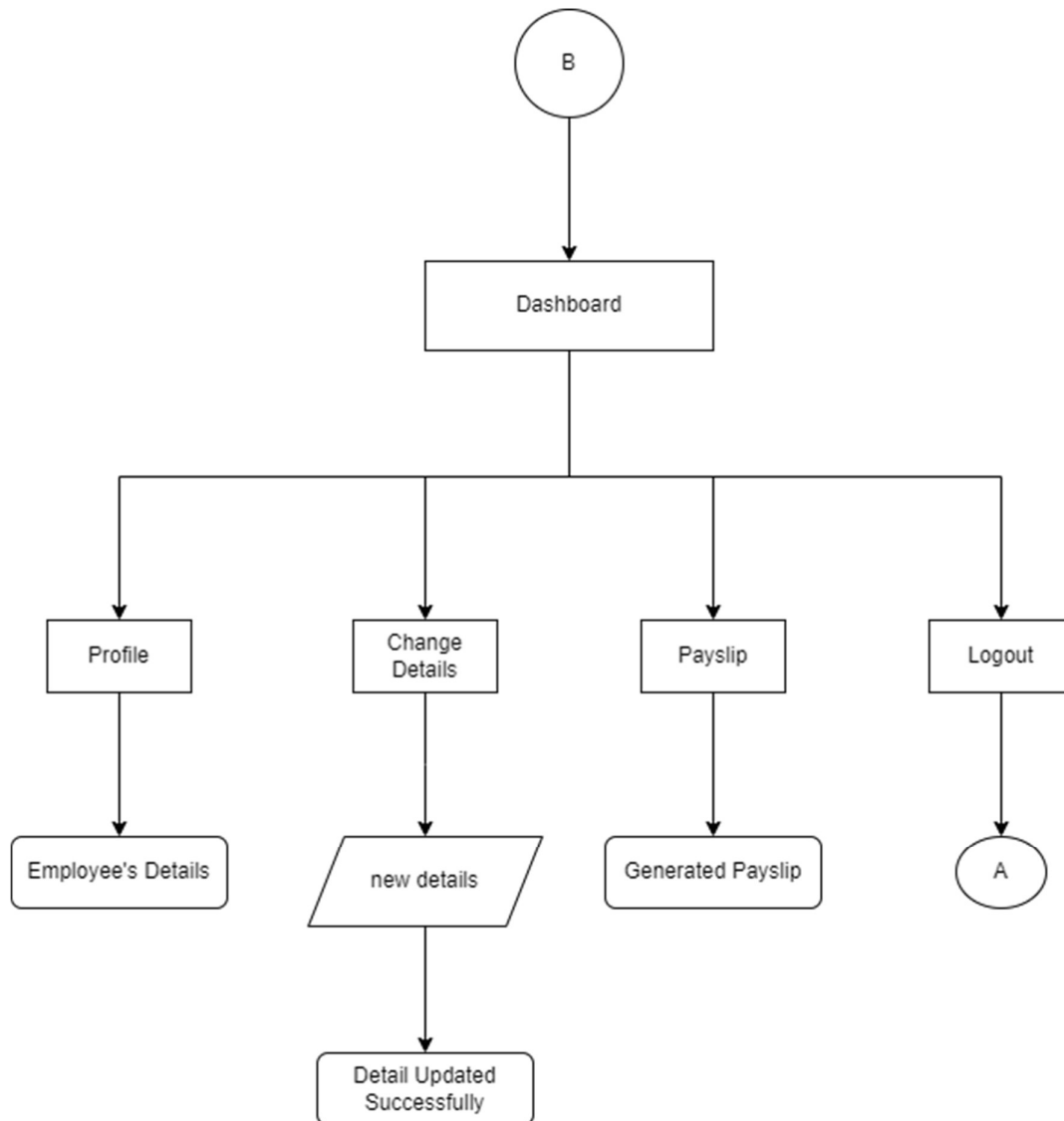




- Employees:



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5.3. Data Dictionary:

Table name: Admin

Field Name	Data Type	Description
Id	Integer	Unique identifier for admin
Username	String	Name of the admin
Email	String	Email address of admin
Password	String	Pass code to login into the system

Table name: Employees

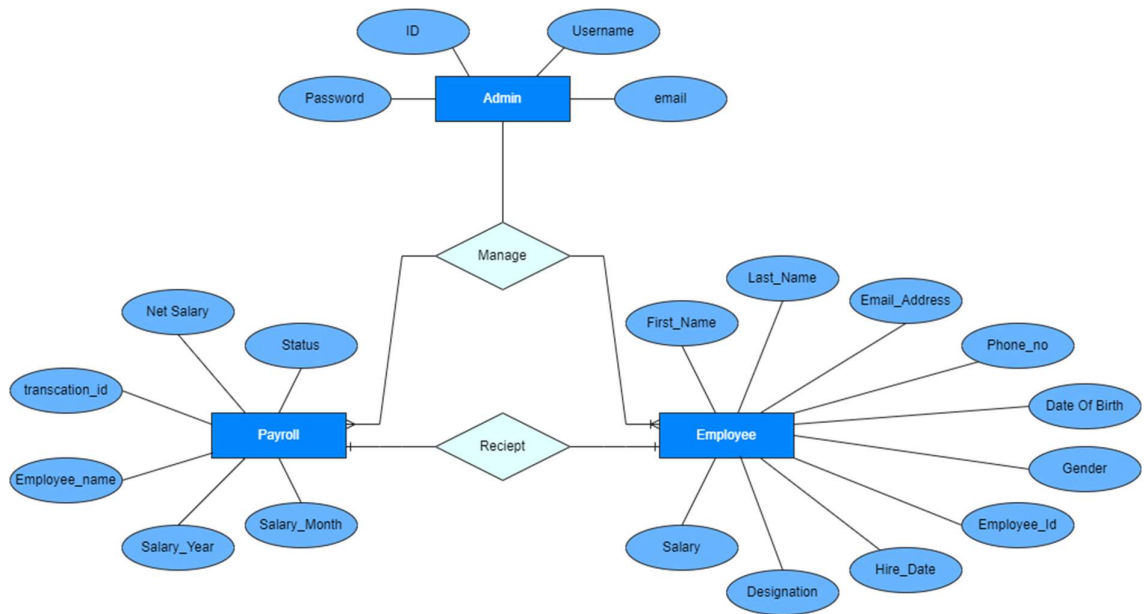
Field Name	Data Type	Description
Employee id	Integer	Unique Identifier for each employee
First Name	String	First name of the employee
Last Name	String	Last name of the employee
Email address	String	Email address of the employee
Phone No.	Integer	Contact No. of the employee
Date of Birth	Date	Birth date of the employee
Gender	String	Gender of the employee
Hire Date	Date	Hiring date of the employee
Designation	String	Designation of the employee
Salary	Integer	Salary of the employee

Table name: Pay-slips

Field Name	Data Type	Description
Transaction id	Integer	Unique id for each transaction
Salary month	Date	Month of salary month
Salary year	Date	Year of salary year
Employee id	Integer	Employee id for references to the employee
Net salary	Integer	Total salary of the employee
Status	Integer	Status of the salary (paid/unpaid)



5.4.Entity-Relationship Diagram / Class Diagram:





6. System Desing:

6.1. Database design:

- Admin Table:

This table stores the basic information about admin, such as id unique identifier, name for login purpose, email, password for login into the system.

- Employees Table:

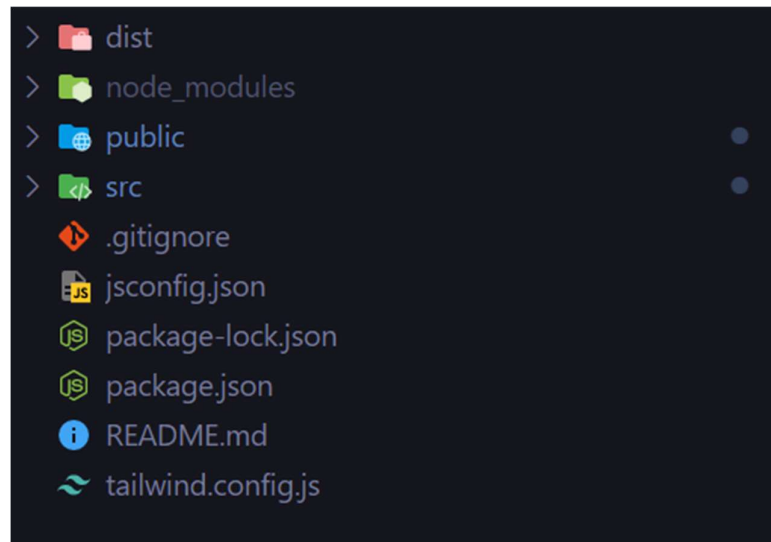
This table stores the basic information about each employee, such as employee id, first and last name, email address, phone number, gender, date of birth, joining and hiring date of the employee, designation of the employee and the salary of the employee

- Payslip Table:

This table stores the information about pay-slips, such as transaction id, month of the salary is given, year of the salary is given, employee name, net salary of employee and status of payment.

6.2. Directory Structure:

Project folders:



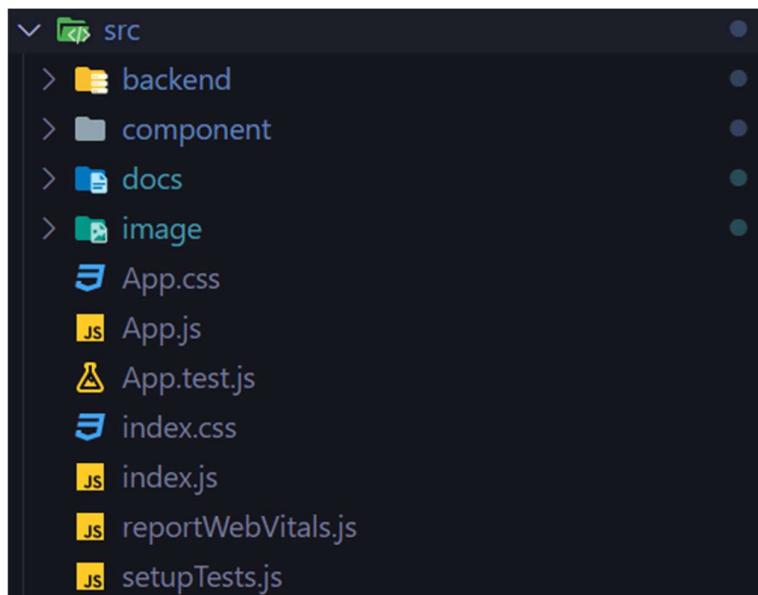
PAYROLL MANAGEMENT SYSTEM



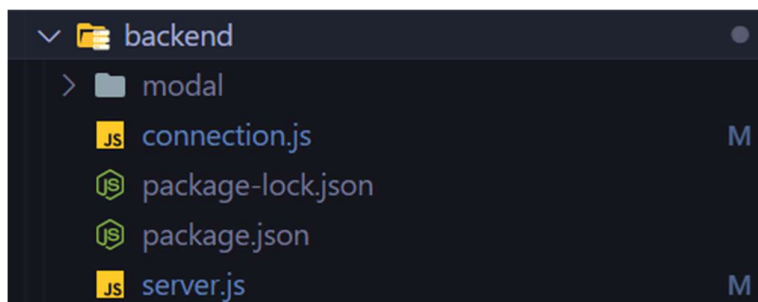
Public folders:



Src folders:



Backend folders:





6.3. Input Design:

- Login page:

A login page with a dark background and blue wavy accents on the left and right sides. In the center is a dark gray box with the title "Sign in to your account". Below the title are two input fields labeled "Username" and "Password". A blue "Sign in" button is positioned below the password field. At the bottom of the box, it says "← Welcome to Payroll Central →".

- Employee Registration Form:

A screenshot of the "Employee Registration" form in a web application. The interface has a dark theme. On the left is a sidebar with a "Payroll" logo and navigation links: "Home", "Employees", and "Payroll". At the bottom of the sidebar is a "Log out" button. The main content area has a top bar with "Welcome, Admin" on the right and four action buttons: "Add Employees +", "All Employees 👤", "Change Details ✎", and "Remove Employees -". Below these is the "Employee Registration" title. The form is divided into two sections: "Personal Details" and "Office Details". The "Personal Details" section includes fields for "First name", "Last name", an email field with "@gmail.com" pre-filled, a phone number field with "+91 9876543210" pre-filled, a "Date Of Birth" field, and a "Gender" dropdown menu. The "Office Details" section includes a field with "11004" pre-filled, a "Date Of Joining" field, and a "Designation" field.



- Employee Change Information Form (Admin Side):

- Employee Active or Inactive Status Change Form:

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- Change Information Form (Employee Side):

Payroll

Welcome, Kishore

Change Information

Personal Details

kishoresunchu@gmail.com

9876543210

1101

Cancel Submit

Log out

6.4. Output design:

Admin Dashboard – Home page:

Payroll

Welcome, Admin

Total Employees: 6

Employee's Net Pay: ₹531,000

Payment Date: 30/9/2023

Pay here ↓

View Details & Pay

Expenses :

Employee Salary	1 Month ago	₹531,000
Taxes	2 Weeks ago	₹12,000
Health Insurance	2 days ago	₹66,000

₹1,154,280

₹ Current Balance

₹561,020

₹ Total Deductions

Log out



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Admin Dashboard – Employees

Payroll

Home

Employees

Payroll

Log out

Welcome, Admin

Add Employees +

All Employees

Change Details

Remove Employees

Employee Id	First Name	Last Name	Email	Phone	Gender	Designation	Salary
11001	kishore	sunchu	kishoresunchu@gmail.com	9876543210	Male	Developer	27000
11002	Jyoti	Dwivedi	djyoti436@gmail.com	9876543210	Female	Developer	27000
11003	Rupa	Chauhan	rupachauhan@gmail.com	9876543210	Female	Developer	27000
11004	test	lastest	lastest@gmail.com	987654321	Male	Manager	150000
11005	ayush	varma	vayush798@gmail.com	9876543210	Male	Developer	150000
11006	sanju	pandey	sanju123@gmail.com	9876543210	Male	Developer	150000
11007	komal	patil	komalpatil@gmail.com	9876543210	Female	Developer	150000

Admin Dashboard – Payroll

Payroll

Home

Employees

Payroll

Log out

Welcome, Admin

PayrollCentral

214, Navsari Main Road, opp.
Swarna Narayan Temple, Harinagar, Udhna

Payslip

Pay Date

Pay Type

Payroll No.

30/9/2023

Monthly

#1101251

Employees

: 7

Total Net Pay

: ₹681000

First Day of Month:

01/8/2023

Last Day of Month:

30/9/2023

Total Days

: 31

Working Days

: 22

Status

: Unpaid

Pay



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Employee Dashboard – Profile

Payroll

Profile

Information

Payslip

Log out

Welcome, Kishore

Welcome,
Kishore Sunchu

Personal Details

Date of birth : 04-12-2003
Email : kishoresunchu@gmail.com
Gender : Male
Phone : 9876543210

Office Details

Employee Id : 11001
Joining Date: 01-11-2011
Designation : Developer
Salary : 27000

Employee Dashboard – Pay-slip

Payroll

Profile

Information

Payslip

Log out

Welcome, Kishore

PayrollCentral

214, Navsari Main Road, opp.
Swami Narayan Temple, Harinagar, Udhna

Payslip

Pay Date	Pay Type	Payroll No.
30/9/2023	Monthly	#1101251

Employee : kishore sunchu
Total Pay : ₹ 27000
First Day of Month: 01/8/2023
Last Day of Month: 30/9/2023
Total Days : 31
Working Days : 22
Status : Unpaid

21



7. Software Testing

1. Data Entry:

Test the data entry fields to make sure they are properly formatted and validated. For example, the phone no field should only accept numeric values and 10-digit number and hire date field should only accept date values.

2. Calculations:

Test the payroll calculations to make sure they are accurate. For example, the system should correctly calculate all employee salary accurately.

3. Security:

Test the security of the payroll system to make sure it is protected from unauthorized access. For example, the system should require users to authenticate themselves before they can access sensitive data.

4. Reports:

Test the payroll reports to make sure they are accurate and easy to read. For example, the system should generate a report that list all employees and their pay stubs for a given period.



8. Limitations and Future Scope of Enhancements:

I. Limitations:

- a. Internet is required
- b. Proper data is needed.

II. Future scope of Enhancements:

- a. Make the system more user-friendly.
- b. Use AI and machine learning.
- c. Automate more tasks
- d. Make the system more secure.
- e. Offer mobile access from website.
- f. Make app for the system.



9. References:

- <https://tailwindcss.com/>
- <https://www.npmjs.com/>
- <https://legacy.reactjs.org/>
- <https://www.mongodb.com/>
- <https://mongoosejs.com/>
- <https://expressjs.com/>
- <https://nodejs.org/en>
- <https://mui.com/>
- <https://aicolors.co/>
- <https://app.haikei.app/>