Project Title : Bank Employee Management System for Venkatesh Multistate Bank, Tasgaon . Branch

Project Guide : Ms. Manasi Shirurkar

Project Partners:

|  |  |  |
| --- | --- | --- |
| No | Name | Roll No |
|  | Vivek Santosh Kamble | 2401084 |
|  | Ajay Ashok Aldar | 2401003 |

**1. Project Title**

**Bank Employee Management System For Venkatesh Multistate Bank, Tasgaon Branch**

**2. Project Scope**

The **Bank Employee Management System** is a web-based platform designed for **Venkatesh Multistate Bank, Tasgaon Branch**, built using the **MERN (MongoDB, Express.js, React.js, Node.js) stack**. The system streamlines employee management by providing **secure authentication, attendance tracking, task assignment, and administrative oversight**. The project ensures efficient bank operations by integrating **real-time attendance monitoring, task management, and performance tracking** within a centralized interface.

**3. User Requirements**

**3.1 Employees**

* Register with an **email and password**.
* Verify accounts through **email confirmation**.
* Maintain and **update personal and professional profiles**.
* Mark **attendance using biometric (photo-based) verification**(Tentative).
* View **attendance history and task assignments**.
* Complete assigned tasks within **set deadlines**.
* See Notifications.

**3.2 Administrators**

* Log in using **OTP-based authentication**.
* View **real-time employee attendance status**.
* Assign, monitor, and manage **employee tasks**.
* Modify, delete, or update **employee records**.
* Generate **reports on employee performance and attendance**.
* Notify Individual Employee Through Message.

**4. Modules Specifications**

**4.1 User Authentication & Verification**

* Employee **registration with email verification**.
* OTP-based **admin login for enhanced security**.

**4.2 Employee Profile Management**

* **Personal details**: Full Name, Mobile, DOB, Gender, Address, Email.
* **Professional details**: Branch, Department, Job Role, Employee ID, Joining Date.
* Ability to **modify and update profile data**.

**4.3 Attendance Management**

* **Live photo-based biometric attendance** verification (Tentitive).
* Attendance is restricted **between 10:00 AM and 11:30 AM**.
* **Calendar-based attendance visualization** with weekends auto-excluded.

**4.4 Task Management**

* **Admin assigns daily tasks** with deadlines.
* Employees can **view and track task completion**.
* **Deferred tasks can be scheduled** for later execution.
* **Performance dashboard** to track task efficiency.

**4.5 Administrative Dashboard**

* **Overview of total employees and attendance statistics**.
* **Employee profile and task management**.
* **Daily reports with task completion analytics**.

**4.6 Backend Infrastructure & Database**

* **MongoDB schema** includes users, Employee, Attendance, Task, and Admin collections.
* **RESTful API (Node.js + Express.js)** endpoints for data handling.

**4.7 Frontend Development (React.js)**

* **Employee dashboard**: Attendance tracking, task management, performance analytics.
* **Admin dashboard**: Attendance and task oversight, profile management.

**4.8 Security & Access Control**

* **JWT authentication for employees**.
* **OTP-based login for admins**.
* **Role-Based Access Control (RBAC) to segregate user permissions**.
* **Data encryption to protect sensitive information**.

**5. Technology to be Used**

**Frontend:**

* **React.js** (for interactive UI components)
* **CSS** (for UI styling)
* **Tailwind CSS** (for modern UI styling)

**Backend:**

* **Node.js + Express.js** (for REST API development)
* **MongoDB (NoSQL Database)** (for secure data storage)

**Authentication & Security:**

* **JWT (JSON Web Token) Authentication** (for secure employee login)
* **OTP Verification (Email-based)** (for admin access)
* **BCrypt.js** (for password hashing)

**Additional Libraries & Tools:**

* **Mongoose (for MongoDB object modeling)**
* **Nodemailer (for sending OTP emails)**