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

Project Guide : Ms. Manasi Shirurkar

External Guide :

Project Partners:

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## 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.

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## 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.
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## 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.
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## 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)