

A Report on Internship

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This project is a full-stack **Visitor Management System (VMS)** designed to streamline and secure the process of tracking visitors entering and exiting a facility. It consists of a Python-based backend API and a React-based frontend application that work together to provide a comprehensive solution for managing visitor data, approvals, and reporting.

Project Overview

The system is built to replace traditional paper-based visitor logs with an efficient, digital platform. It allows employees and security personnel to manage the entire visitor lifecycle, from pre-registration (entry creation) to approval by the host employee, and finally, to checkout. The application is role-based, ensuring that users only have access to the functionalities relevant to their responsibilities.

Core Functionalities

The application's functionalities are divided based on user roles (ADMIN, HR, SECURITY, USER), providing a secure and organized workflow.

Backend (API - `main.py`)

The backend is a robust REST API built with the **FastAPI** framework and connects to a **MySQL** database. Its key responsibilities include:

- **Authentication:** Secure user login with employee IDs and passwords. It features password hashing and a mechanism to lock accounts after five failed login attempts.
- **User Management:** Admins and HR can create, view, lock, and unlock user accounts. A master password is required to lock or unlock privileged accounts (Admin, HR) for added security.
- **Role-Based Access Control (RBAC):** A sophisticated permissions system restricts access to specific API endpoints based on the logged-in user's role. For example, only users with `CREATE_VISITOR_ENTRY` permission (like SECURITY) can create new visitor entries.
- **Visitor Entry Management:**
 1. Creates new visitor entries with detailed information, including name, contact details, ID proof, purpose of visit, and host employee details.
 2. Supports adding multiple "fellow visitors" under a single main entry.
 3. Automatically generates a unique `card_no` for each visitor entry based on the date and sequence.
- **Approval Workflow:**
 1. When a visitor entry is created, it is marked as 'Pending' (P).
 2. The designated host employee (or an Admin) can then 'Approve' (A) or 'Reject' (R) the visit.

- **Visitor Checkout:** Security personnel can check out approved visitors, which records their exit time.
- **Reporting:** The API can generate three types of reports:
 1. **Daily Report:** A summary of total, approved, pending, rejected, and checked-out visitors for a specific date.
 2. **30-Day Summary:** An aggregate view of visitor statistics over the last 30 days.
 3. **Frequent Visitors:** A list of visitors who have visited more than once in the last 90 days.
- **Master Data:** Provides endpoints to fetch master data like visitor categories, purposes of visit, and ID types from the database to populate dropdowns in the frontend.

Frontend (App.js)


The frontend is a dynamic and responsive single-page application built with **React**. It provides an intuitive user interface for interacting with the backend API.

- **User-Friendly Interface:** The UI is organized into a dashboard with a sidebar for navigation, allowing users to easily access different modules based on their permissions.
- **Login and Session Management:**
 - Provides a secure login form.
 - Handles failed login attempts by displaying user-friendly error messages and attempts remaining.
 - Implements an inactivity timer that automatically logs the user out after 15 minutes of idle time.
 - Ensures that the session is cleared when the browser tab is closed, enhancing security.
- **Component-Based Views:**
 - **New Visitor Entry:** A detailed form for security personnel to register new visitors. It includes real-time validation for mobile numbers and a lookup feature to verify the host employee's mobile number.
 - **View/Manage Users:** A table view for Admins/HR to see all registered users, their roles, and their status (Active/Locked). They can perform lock/unlock actions directly from this view.
 - **Approve Visitors:** A dedicated view for employees to see visitors pending their approval. They can approve or reject entries with a single click.
 - **Checkout Visitor:** A list of all currently active (checked-in) visitors, allowing security to easily check them out.
 - **View Visitors:** A comprehensive log of all visitor entries with filtering options by status (Approved, Rejected, Pending) and date range.
- **Modals and Alerts:** Uses modals for critical actions like confirming user locks or entering a reason for visitor rejection. Alerts provide clear feedback to the user on the success or failure of an operation.

How It Works

1. A user (e.g., an Admin, HR, Security, or regular Employee) logs in with their credentials.
2. Based on the user's role, the frontend displays a specific set of options in the sidebar (e.g., a Security guard sees "New Visitor Entry" and "Checkout Visitor," while a standard employee sees "Approve Visitors").
3. A security guard creates a new visitor entry, filling in the visitor's details and the mobile number of the employee they are meeting (the host).
4. The entry is saved with a "Pending" status. The host employee receives a notification (implicitly, by checking their dashboard) and can view the pending request.
5. The host approves or rejects the visitor. If approved, the visitor is officially checked in.
6. Security can view all currently checked-in visitors in the "Active Visitors" list.
7. When the visitor leaves, the security guard finds them in the active list and clicks "Checkout" to record the exit time.
8. Admins and Security can generate reports to analyze visitor traffic and patterns.

Images



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INNOVATIVE TEXTILE SOLUTIONS

VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

All Visitors

Checkout Visitor

View Reports

New Visitor

Visitor Entries


All

dd-mm-yyyy

dd-mm-yyyy

CARD NO	VISITOR NAME	HOST NAME	STATUS	ENTRY TIME	EXIT TIME
20250705-001	Simran	HR Manager	Pending	7/5/2025, 12:16:52 PM	Pending
20250704-001	Aditya	Het	Approved	7/4/2025, 1:59:37 PM	Inside
20250703-001	Ram	Het	Approved	7/3/2025, 2:47:32 PM	7/3/2025, 8:47:15 PM
20250702-003	Prachi	Het	Rejected	7/2/2025, 3:44:36 PM	Rejected
20250702-002	Shushant	HR Manager	Rejected	7/2/2025, 10:52:55 AM	Rejected
20250702-001	ABC	Regular User	Approved	7/2/2025, 10:51:33 AM	7/2/2025, 3:32:50 PM
20250701-003	122frf	Regular User	Rejected	7/1/2025, 4:44:02 PM	Rejected

Logout



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VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

All Visitors

Checkout Visitor

View Reports

New Visitor


Pending Visitor Approvals

Simran (GrowX)
Purpose: Meeting | Host: HR Manager

Approve

Reject

Logout



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VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

Checkout Visitor

View Reports


New Visitor

Active Visitors (Inside Premises)

Aditya (Card: 20250704-001)
Approved at: 7/4/2025, 2:03:01 PM

Checkout

Logout

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VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

All Visitors

Checkout Visitor

View Reports

New Visitor

Create New User

Employee ID
ADMIN001

Employee Name

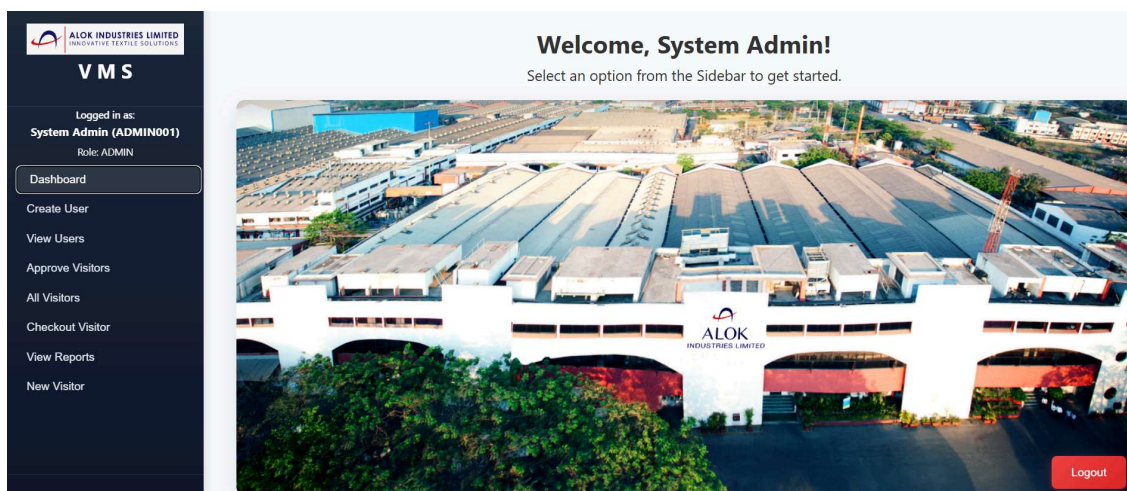
Mobile Number


Password

User Role
USER

Create User

Logout



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VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

All Visitors

Checkout Visitor

View Reports

New Visitor

New Visitor Entry

Host Employee Mobile

Visitor Name

Visitor Mobile

Visitor Email (Optional)

Representing (Optional)

ID Type
Aadhar Card

ID Number


Purpose of Visit
Audit

Visitor Category
Client

Fellow Visitors (Optional)
0

Create Entry

Logout



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VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

All Visitors

Checkout Visitor

View Reports

New Visitor

Reports

Daily Report


05-07-2025

Generate Report

Daily Report for 2025-07-05

- Total Entries: 1
- Approved: 0
- Pending: 1
- Rejected: 0
- Checked Out: 0

Logout



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VMS

Logged in as:
System Admin (ADMIN001)
Role: ADMIN

Dashboard

Create User

View Users

Approve Visitors

All Visitors

Checkout Visitor

View Reports

New Visitor

Manage Users

EMP ID	NAME	ROLE	STATUS	ACTIONS
IT001	Akshay	USER	Active	Lock
MR001	Het	USER	Active	Lock
HR_MAIN	HR Manager	HR	Active	Lock
IT003	IT_User	USER	Active	Lock
HR001	Prachi	USER	Active	Lock
IT002	Pravin	USER	Active	Lock

Logout