

Assignment: Build a Visitor Pass Management System (MERN)

Objective

Develop a Visitor Pass Management System using the MERN stack (MongoDB, Express, React, Node.js). The system should allow organizations to register, issue, and verify visitor passes digitally.

Problem Statement

Many offices and institutions still rely on manual visitor entry registers. This project aims to digitize the visitor management process, enabling features like pre-registration, QR-code based passes, and secure check-in/check-out.

Core Requirements

User Roles

- Admin: Manages system, staff, and analytics
- Security/Frontdesk: Issues passes, scans visitors in/out
- Employee/Host: Can invite or approve visitors
- Visitor: Can pre-register, view digital pass

Features

1. Authentication & Authorization (JWT, role-based)
2. Visitor Registration (details + photo)
3. Appointments / Pre-Registration (invite, approve, notify)
4. Pass Issuance (QR code + PDF badge)
5. Check-In / Check-Out (QR scan logs)
6. Notifications (Email/SMS)
7. Dashboard & Reports (search, filter, export)

Technical Requirements

Backend: Express + MongoDB with JWT, QR code, PDF, email, SMS integration.

Frontend: React with Router, forms, QR scanner, dashboard UI.

Database: MongoDB with collections for Users, Visitors, Appointments, Passes, CheckLogs.

Deliverables

1. Source Code in GitHub
2. Setup Guide in README.md
3. Demo Data (seed script)
4. Screenshots / Demo Video

Evaluation Criteria

Criteria	Description	Marks
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Functionality	Features implemented as per requirements	40
Code Quality	Clean, modular, documented code	20
UI/UX	Usability, clarity of design	20
Extra Features	Bonus implementations like multi-location, audit logs	10
Presentation	README, screenshots, video demo	10
Total		100

Bonus Challenges

- Add OTP-based verification
- Multi-organization support
- Deploy with Docker + Nginx
- Analytics dashboard

Submission

Deadline: 2 weeks from assignment date.

Deliverables: GitHub repo link + short demo video