# SOFTWARE REQUIREMENT FOR BIT STAFF QUARTERS PORTAL

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| **PROBLEM STATEMENT** | **BIT STAFF QUARTERS PORTAL** |

## PROBLEM STATEMENT: BIT STAFF QUARTERS PORTAL:

A customized portal needs to be created for BIT staff quarters which includes inmate & their family members details, check in & check out form, Complaint registration form, Garden Cleaning form, Faculties in & out details during GP.

## STACK:

| COMPONENT | TECH STACK |
|---|---|
| FRONT END | Angular (JS Framework) |
| BACK END | Express.js (Web framework for Node.js)<br>Node.js (JavaScript runtime environment) |
| DATABASE | MongoDB (NOSQL Database) |
| API | REST Ful API / GraphQL APIs |

**PROGRESS - TIMELINE:**

| Phase | Deadline | Status | Notes |
|---|---|---|---|
| **Stage 1** | **03/04/2024** | **In Progress** | **Planning and requirement Gathering** |
| **Stage 2** | | **Not Started** | **Design and Prototyping** |
| **Stage 3** | | **Not Started** | **DB Designing** |
| **Stage 4** | | **Not Started** | **Backend Implementation** |
| **Stage 5** | | **Not Started** | **Testing & Implementation** |
| **Stage 6** | | **Not Started** | **Deployment** |

# 1. INTRODUCTION:

## 1.1 PURPOSE:

The purpose of developing a customized portal for the BIT staff quarters using the MEAN stack is to establish a centralized platform that efficiently manages various aspects of the staff living experience. The key objectives of this portal include:

- Inmate and Family Member Details: The portal will maintain detailed profiles of the staff members residing in the quarters, as well as their family members, to ensure comprehensive record-keeping and easy access to relevant information.
- Check-in and Check-out Forms: The portal will streamline the process of checking in and out of the staff quarters.
- Complaint Registration: The portal will include a dedicated module for staff members to register complaints, ensuring efficient tracking and resolution of issues within the quarters.

- Faculty In and Out Details during General Permission: The portal will track the movement of faculty members during general permission, providing a centralized system to monitor their presence and availability.

By integrating these key functionalities, the customized portal will enhance operational efficiency, improve communication, and foster a user-friendly experience for the BIT staff and their families residing in the quarters.

## 1.2 Technology Stack:

- **Frontend:** Angular for a dynamic and responsive user interface.
- **Backend:** Node.js with Express for server-side logic; Python could also be considered for its robustness in handling data.
- **Database**: MongoDB depending on the requirement for scalability and data structure flexibility.
- **API**: REST Ful API / GraphQL APIs

# 2. STACK OVERVIEW:

### 2.1 MongoDB:

The MongoDB database is a crucial component of the MEAN stack for the BIT staff quarters portal. It will be used to store the detailed profiles of inmates, their family members, and the in-out details of faculties during general permission. MongoDB's flexible, document-oriented data model is well-suited for managing the diverse information required for this application.

### 2.2 Express.js:

Express.js, the web application framework for Node.js, will handle the server-side logic of the BIT staff quarters portal. It will process the check-in/check-out forms, manage the complaint registration system, and coordinate the garden cleaning requests. Express.js will provide a robust set of features to build the RESTful API that powers the portal's functionality.

### 2.3 Angular:

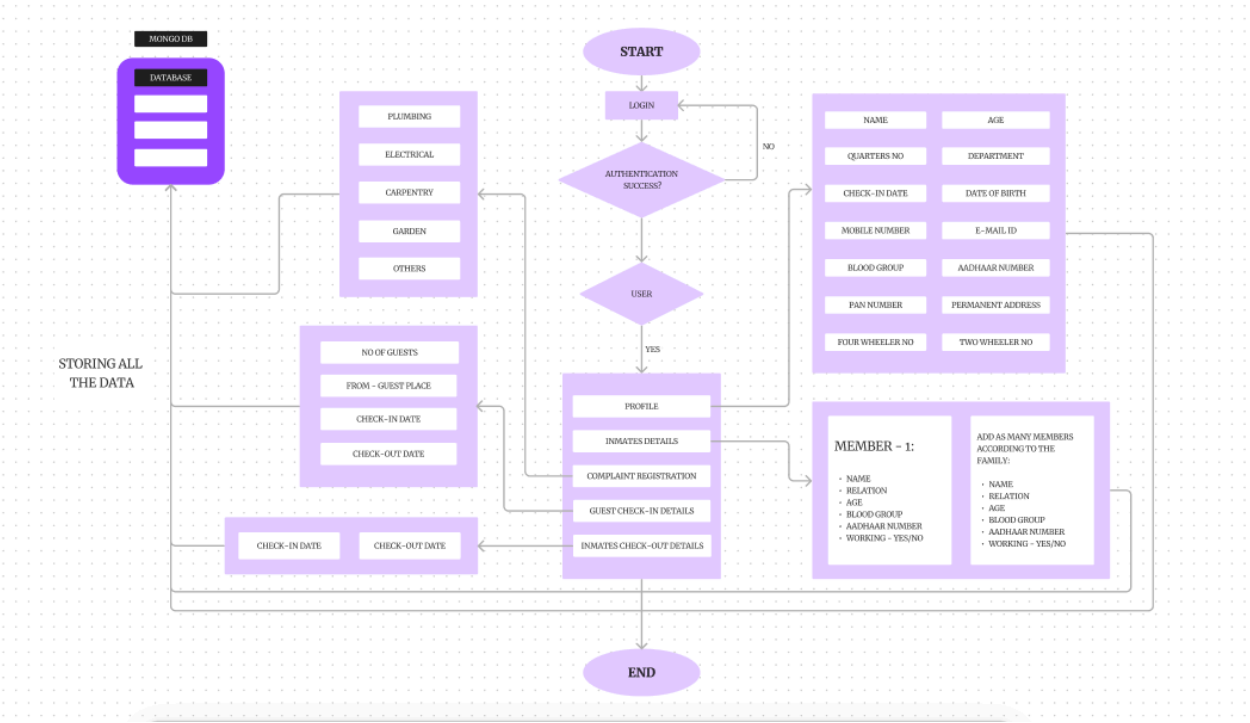
As the client-side framework, Angular will be responsible for creating the responsive and interactive user interface of the BIT staff quarters portal. Angular's powerful features, such as data binding, routing, and modular architecture, will enable the development of a seamless and user-friendly experience for the staff and residents. The Angular framework will integrate with the Express.js-powered backend to deliver a cohesive and efficient web application.

### 2.4 Node.js:

Node.js, the JavaScript runtime built on Chrome's V8 JavaScript engine, will serve as the foundation for the server-side components of the BIT staff quarters portal. It will provide the necessary infrastructure to run the Express.js application and handle server-side operations, such as processing API requests and interacting with the MongoDB database.

By leveraging the strengths of the MEAN stack, the development team can create a comprehensive and scalable portal that meets the specific requirements of the BIT staff quarters, including inmate and family member details, check-in/check-out forms, complaint registration, and faculty in-out tracking during general permission.

## FLOW CHART OF USER:




## FLOW CHART OF ADMIN: