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Project ID: 39

Project title: BIT Staff Quarters Portal

Component	Tech stack
Backend	Spring Boot
Frontend	React Js
Database	MySQL
API	

Implementation Timeline

Phase	Deadline		Status
Stage 1	01/04/2024		Approved
Stage 2			Not started
Stage 3			Not started
Stage 4			Not started
Stage 5			Not started

1. Introduction:

1.1 Purpose of this Document:

The purpose of this document is to define the requirements for the development of the BIT Staff Quarters Portal. It outlines the functionalities, interfaces, performance requirements, and constraints of the software system.

1.2 Scope of this Document:

This document details the functional and non-functional requirements of the BIT Staff Quarters Portal. It provides a comprehensive overview of the project's objectives, development cost, and time required.

1.3 Overview:

The BIT Staff Quarters Portal is a customized web application aimed at managing staff quarters' operations efficiently. It includes modules for user authentication, registration, profile management, inmate details, complaint registration, guest check-in, inmate checkout, and admin functionalities.

2. General Description:

2.1 Objective:

The objective of the BIT Staff Quarters Portal is to streamline the management of staff quarters by providing a centralized platform for staff members to manage their details, register complaints, and facilitate guest check-ins.

2.2 User Characteristics:

The primary users of the portal include staff members residing in BIT staff quarters, administrators responsible for managing the quarters, and support staff involved in maintenance and security operations.

2.3 Features and Benefits:

- User-friendly interface for easy navigation and interaction.

- Secure authentication mechanism to protect user data.

- Efficient management of inmate and guest details.

- Streamlined complaint registration process.

- Customizable admin interfaces for different user roles.

2.4 User Community:

The user community comprises staff members, administrators, and support staff associated with BIT staff quarters.

3. Functional Requirements:

3.1 Authentication Component:

- ❖ 3.1.1 Login Form:

- ❖ Username and password fields for user authentication.

- ❖ Forgot password functionality with OTP verification.

- ❖ 3.1.2 Registration Form:

- ❖ Form for new user registration with required details.

3.2 Profile Component:

- ❖ 3.2.1 Display Profile:

- ❖ Display user details in an organized manner.

- ❖ 3.2.2 Edit Profile:

- ❖ Option to edit user profile information.

3.3 Inmate Details Component:

- ❖ 3.3.1 Manage Family Members:

- ❖ Add, edit, or delete family members' details.

3.4 Complaint Registration Component:

- ❖ 3.4.1 Complaint Form:

- ❖ Dropdown menu for selecting complaint types.

- ❖ Form fields for entering complaint details.

3.5 Guest Check-in Component:

- ❖ 3.5.1 Guest Registration Form:

- ❖ Form for entering guest details and check-in/out dates.

3.6 Inmate Checkout Component:

- ❖ 3.6.1 Checkout Form:

- ❖ Form for entering checkout date for family members.

3.7 Admin Components

- ❖ 3.7.1 Role-Based Views:

- ❖ Separate views/components for different admin roles.

- ❖ Display relevant data based on the admin's role.

4. Interface Requirements:

The software interfaces include:

- Front-end interface developed using React.js.

- Back-end interface developed using Java with Spring Boot.

- Database interfaces for MySQL.

- API interfaces including OpenAPI, SOAP APIs, and RESTful APIs.

5. Performance Requirements:

The performance requirements of the BIT Staff Quarters Portal include:

- Response Time: The system should respond to user actions within 2 seconds under normal load conditions.

- Throughput: The system should handle a minimum of 100 concurrent user sessions without a significant

  decrease in performance.

- Memory Usage: The application should not exceed 500 MB of memory usage during peak usage.

- Error Rate: The maximum acceptable error rate for critical functionalities such as authentication and data

  retrieval is 1%.

6. Design Constraints:

The design constraints for the BIT Staff Quarters Portal are as follows:

- Technology Stack: The system must be developed using React.js for the front end, Java with Spring

  Boot for the back end,MySQL for the database, and integrated with OpenAPI, SOAP APIs, and

RESTful APIs.

- Scalability: The architecture should be designed to accommodate future scalability requirements without significant redesign.

- Security: The system must adhere to security standards to protect sensitive user data and prevent unauthorized access.

- Compatibility: The application should be compatible with modern web browsers such as Chrome, Firefox, and Safari.

7. Non-Functional Attributes:

The non-functional attributes required for the BIT Staff Quarters Portal include:

- Security: Implement encryption techniques to ensure data security and user privacy.

- Portability: The application should be deployable on various platforms without significant modifications.

- Reliability: Ensure high system availability and minimal downtime through robust error handling and recovery mechanisms.

- Reusability: Design components and modules in a modular and reusable manner to facilitate future development and maintenance.

- Data Integrity: Implement data validation and integrity checks to maintain the accuracy and consistency of stored data.

- Scalability Capacity: The system architecture should support horizontal and vertical scalability to accommodate increasing user loads.

8. Preliminary Schedule and Budget:

The preliminary schedule and budget for the development of the BIT Staff Quarters Portal are as follows:

- Development Time: Estimated development time is 6 months.

- Budget: The initial budget for the project is $100,000, inclusive of development costs, testing, and deployment.

9. Appendices

- References: List of sources and references used during the requirement gathering phase.

- Definitions: Definitions of specific terms, acronyms, and abbreviations used throughout the document.

FLOWCHART:

```
Start
  │
  ▼
Login page
User or Admin enters login/password.
  │
  ▼
User Login info correct? ──(Correct)──► Correct ──────────────► User Functionalities
  │                                                                    │
  │(Incorrect)                                                         ├──► Profile
  ▼                                      Admin Login ──► Quarters In-Charge    1. name
Incorrect                                    │                │              2. age
  │                                          │                ▼              3. Department
  ▼                                          │          1. manages user roles and permissions.   4. E-mail Id
Password Reset page                          │          2. view reports and statistics           5. Aadhar Number or Pan Number
User enters login/password.                  │          3. manage system settings                6. Quarters Number
  │                                          │                                                    7. Quarters Check-in Date
  ▼                                          ▼                                                    8. Contact Number
Email matches DB? ──(Matches DB)──► Matches DB    Non Technical(Assistance for Cleaning)          9. Permanent Address
  │                                          │
  │(Doesn't match DB)                        │              Security In-charge
  ▼                                          │                    │
Doesn't match DB                             │                    ▼
  │                                          │          Relevant Data Related to this Security Admin
  ▼                                          ▼
Re-enter Email Address page        1. Total Complaint Registered
User re-enters email address.      2. Total Complaint in Progress(he can make the complaints in Progress)
  │                                3. No of Complaints Completed by Today
  ▼
Email matches DB? ──(Matches DB)──► Matches DB          End
  │
  │(Doesn't match DB)
  ▼
Doesn't match DB
  │
  ▼
Registration page
Register a new account.
```

Check Your Inbox page
Reset email sent. User clicks link to reset.

Enter A New Password page
User enters a new password.

Confirmation page
Success message. User redirected to Login.

Guest Details
The User or Quarters Admin Given guest Details Present in This Page

Complaint Registration
ask details from the user such us name, mobile no, quarters no, availability time and with the complaint description.

Inmate Details
User or Quarters Admin Given Inmate Details present in this page.

End

End