



BANNARI AMMAN INSTITUTE OF TECHNOLOGY

An Autonomous Institution Affiliated to Anna University - Chennai, Accredited by NAAC with A+ Grade Sathyamangalam –
638401 Erode District, Tamil Nadu, India

Software Requirement Specification(SRS)

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| Name | Jamuna R |
| Roll no | 7376222CB118 |
| Department | COMPUTER SCIENCE AND BUSINESS SYSTEMS |
| Seat no | 26 |
| Project ID | 26 |
| Problem Statement | Indoor Location Tracking App for BIT campus |

1. Introduction

1.1. Purpose:

The purpose of the indoor location tracking app for the BIT campus is to provide users with real-time location information within campus buildings, facilitating navigation and resource location. It aims to enhance campus safety, streamline logistics, and improve overall efficiency for students, staff, and visitors. Additionally, the app will offer personalized notifications and services tailored to the user's needs and preferences.

1.2. Scope of Project:

- This app holds the potential to revolutionize resource allocation by offering real-time insights into the utilization of campus spaces. By tracking the movement of individuals within buildings, administrators can optimize classroom schedules, allocate office spaces more effectively, and repurpose underutilized areas, ultimately leading to more efficient use of resources and improved campus management.
- Administrators possess complete control, granting them the authority to access all features and make modifications as needed. This authority encompasses the ability to adjust settings, manage user accounts, and oversee all aspects of the application's operation.

2. System Overview:

2.1. Users:

1. Students and Faculty:

The app enables them to efficiently navigate campus buildings, locate classrooms, offices, and facilities in real-time, and receive personalized notifications and event updates based on their current location.

2. Admins:

They can manage the app's functionalities, monitor and analyze user movement patterns within campus. The app empowers administrators to streamline campus operations, enhance safety measures, and provide better services to students and faculty.

2.2. Features:

1. Login and registration :

Students, Faculty and Administrators can register for an account or login with their existing account. Differentiated login interfaces for students and admins.

2. Map view:

Interactive map interface displaying the layout of campus buildings, classrooms, offices, and facilities. Zoom and pan functionalities for detailed exploration.

3.Go Directions:

Ability to input destinations and receive step-by-step directions within campus buildings. Option to choose between walking routes.

4. Menu Bar:

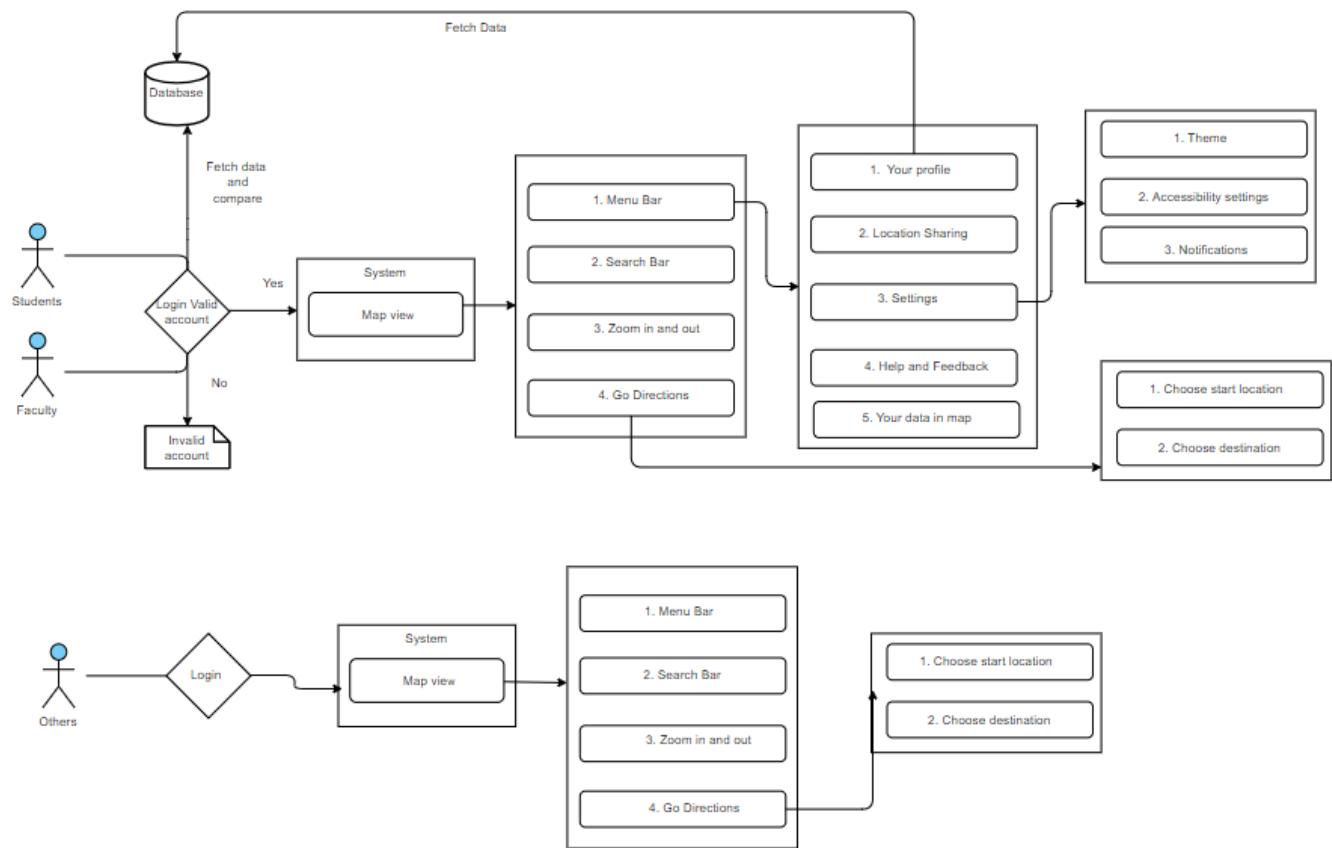
Convenient access to key features via a menu bar. Contains options for Profile, Settings, Location Sharing, and your data. Users can view and update their personal information. Access to user-specific settings and preferences like map display options. Options for users to share their current location with friends or contacts.

5. Admin Access:

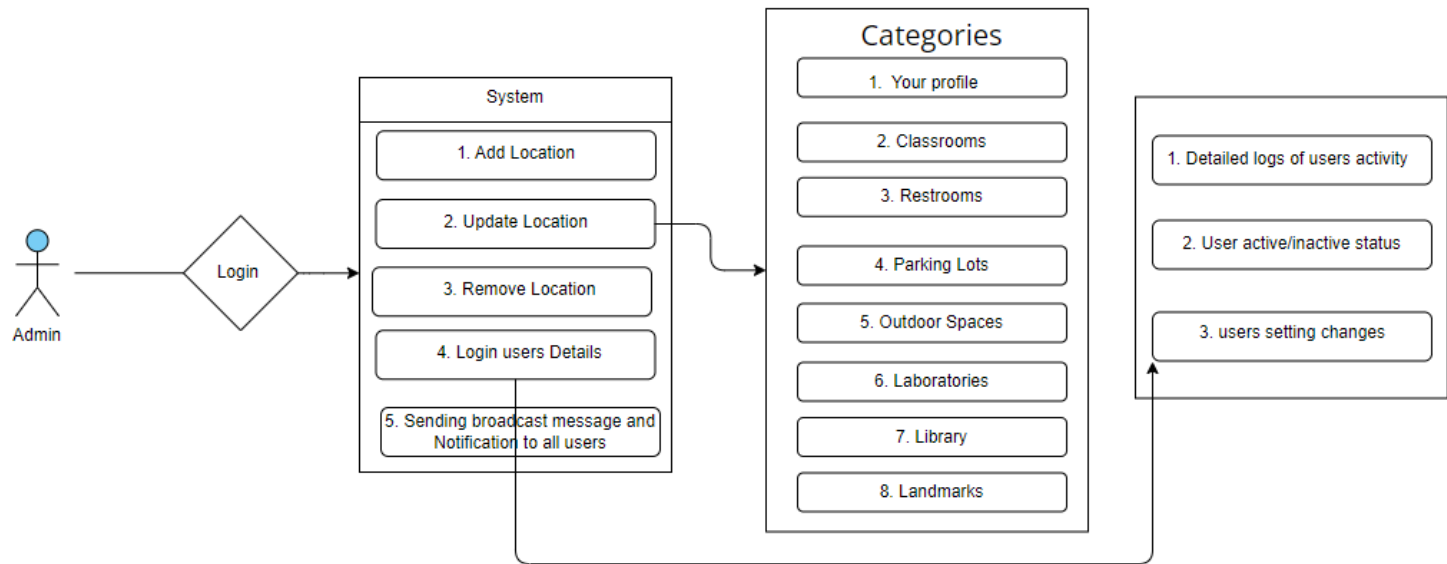
Ability for administrators to add new location to the map database. Features to modify existing location details such as names or descriptions. Capability to delete outdated or incorrect location entries. Access to information about user's login activities and usage statistics. Admin can send targeted messages or notifications to users regarding

campus updates, events, or emergencies.

User's interface



Admin interface



3. System Requirements Specification:

3.1 Functional Requirements:

- **User Management:**

- Students and Faculty can register and login.
- Admins have access control with an analytical dashboard and dedicated features .

- **Map Interface:**

- Provide an interactive map of the campus buildings, floors, and rooms. Users Should be able to zoom in/out and pan across the map easily.
- Include search features for finding specific locations or services within the campus.

- **Event Notifications:**

- Students receive the notifications about upcoming events, classes, seminars, or Campus alerts.

- **Integration with Campus systems:**

- Integrate with the campus management system to access information about schedules, courses, and events.

- **Feedback and Reporting:**

- Enable users to provide feedback about the app and report issues or Inaccuracies in the location data.

- **Admin Dashboard:**

- Provide an administrators interface for managing campus maps, Locations, user accounts, and notification.
- Include analytics tools to track app usage and user engagement.

3.2. Non-Functional Requirements:

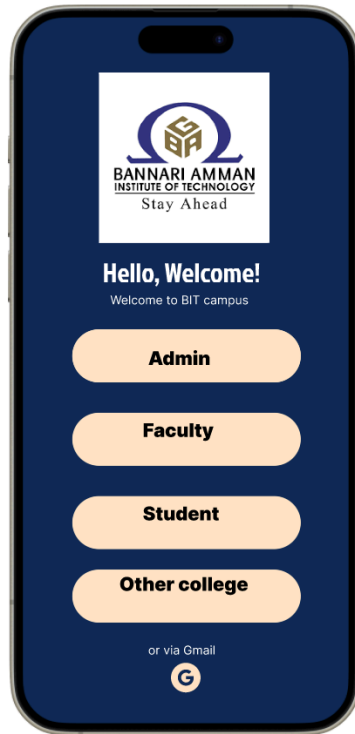
- **Performance:** The app should respond to user actions within a maximum of 1 second under normal load conditions. The system should support a minimum of 100 location updates per second during peak usage periods.
- **Security:** All sensitive data, including user credentials and location information, should be encrypted during transmission and storage.
- **Usability:** The app should be easy to navigate and use, with clear instructions and intuitive interface elements. Support multiple languages and cultural preferences to accommodate users from diverse backgrounds.
- **Reliability:** The system should be available 99.9% of the time, excluding scheduled maintenance. Ensure that location data remains accurate and consistent at all times, with minimal risk of corruption or loss.
- **Scalability:** The system architecture should support horizontal scaling to accommodate increases in user demand by adding more servers or resources. The system should also be able to vertically scale to handle larger workloads on individual servers if necessary.

Stack:

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|-----------|---------------------------------|
| Front End | React.js |
| Backend | Java with spring boot |
| Data Base | PostgreSQL, MySQL |
| API | OpenAPI, SOAP APIs, RESTful API |

Prototype of the Project:

1. Home Page



2. Login Form

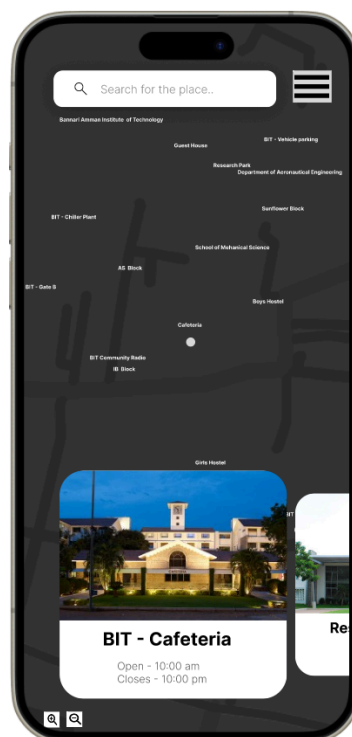


3. Register form

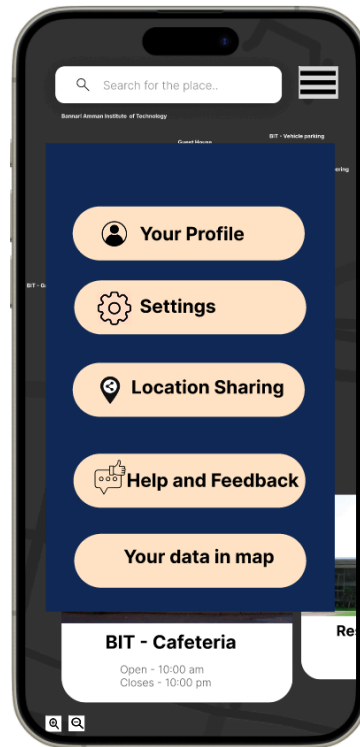


A smartphone screen displaying a registration form on a dark blue background. The form consists of four orange rounded rectangular input fields for 'Name', 'roll no', 'Email', and 'Password'. Below these fields is a light blue rounded rectangular button labeled 'Register'. Underneath the button is a link that says 'Click here to Login'.

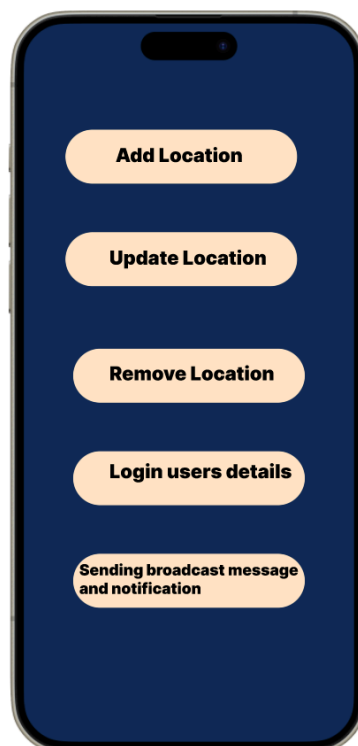
4. Map view



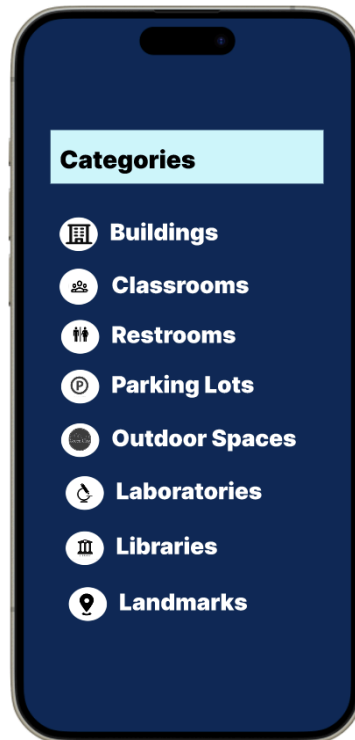
5. Menu bar



6. Admin page



7. Admin Access



8. User's Profile

