

## **Intern Assignment**

This project offers you the opportunity to gain practical experience in developing an enterprise application for a real-world scenario. Focus on understanding the unique requirements and implement the solution. Don't hesitate to seek guidance from mentors or domain experts to ensure the success of the project. Good luck and enjoy the journey of building impactful software!

### **Project Guidelines**

#### **1. Software Objective**

Develop a web-based application that fulfills the requirements outlined below.

#### **2. Technology Stack**

Utilize Spring Boot for the backend, Angular TypeScript for the frontend, and MySQL for the database.

#### **3. UI Design**

Design intuitive and user-friendly interfaces, incorporating appropriate fonts, colors, and images to enhance the user experience.

#### **4. Functionality**

Implement the required functionality outlined in the project story.

#### **5. Scalability and Maintainability**

Ensure the application is designed with scalability and maintainability in mind for future enhancements.

#### **6. Testing**

Perform thorough testing of both frontend and backend functionalities to ensure a robust and bug-free application.

## Instructions

### 1. GUI Design

Use a consistent design language throughout the application.  
Choose fonts and colors that align with the application's theme and enhance readability.  
Incorporate relevant images or icons to improve visual appeal.

### 2. Database Integration

Establish a MySQL database to store and manage application data.  
Ensure proper connectivity between the backend application and the database.  
Design database schema considering data integrity and efficiency.

### 3. Frontend Development

Develop frontend components using Angular TypeScript, adhering to best practices and standards.  
Implement responsive design to ensure compatibility across various devices and screen sizes.  
Utilize Angular features such as modules, components, services, and routing for efficient development.

### 4. Backend Development

Implement backend functionality using Spring Boot, following RESTful principles for API design.  
Handle HTTP requests and responses appropriately, maintaining security and validation measures.  
Utilize Spring Boot features such as dependency injection, and data access mechanisms for efficient backend development.

### 5. Security

Implement authentication and authorization mechanisms to secure the application.  
Employ best practices for password storage, data encryption, and prevention of common security vulnerabilities such as SQL injection and cross-site scripting (XSS).

### 6. Version Control

Utilize version control systems like Git to track changes and collaborate effectively.  
Maintain clear commit messages and branching strategies for efficient code management.

## **Proposed Project**

### **Project Description**

Develop a Call Center Management System tailored for Mobitel (PVT) Ltd to streamline customer support operations. The system should facilitate efficient handling of customer inquiries and ticket management.

### **Features**

#### **1. User Authentication**

Implement secure login functionality for agents, skilled agents, and administrators to access the system with appropriate authentication measures.

#### **2. Role-based Access Control**

Define roles and permissions to restrict access to sensitive information and functionalities based on user roles (e.g., agent, skilled agent, administrator).

#### **3. Ticket Creation**

Enable agents to create tickets for customer inquiries, specifying details such as issue type, priority, description, and customer information.

#### **4. Ticket Assignment**

Allow administrators to assign tickets to skilled agents based on priority.

#### **5. Ticket Tracking**

Implement functionality to list tickets and ability to view based on status (e.g., pending, completed, hold).

#### **6. Customer Information Management**

Provide a centralized repository for storing and managing customer information, including contact details.

### **Additional Requirements**

- Ensure the application implements with the best coding practices.
- Implement robust error handling and recovery mechanisms to maintain system stability and reliability.
- Conduct thorough testing, including unit tests, and integration tests to validate the functionality and performance of the system.