SRS DOCUMENT FOR PHASE END PROJECT VACCINATION CENTER

Introduction

1.1 Purpose

The purpose of this document is to provide a detailed overview of the requirements for the development of a vaccination center management application. This document outlines the functional and non-functional requirements, system features, and constraints of the application.

1.2 Scope

The vaccination center management application aims to facilitate the efficient distribution of vaccines to all citizens of India. The application will allow users to add citizens to the database, track vaccination status, manage vaccination centers, and map citizens to specific centers.

1.3 Stakeholders

- Government of India
- Citizens of India
- Development Team

System Overview

The vaccination center management application will be a full-stack web-based system built using Java, Spring Boot, Spring Data JPA, Spring MVC, and MySQL database. The application will have multiple layers, including the Entity Layer, Repository Layer, Service Layer, and Controller Layer.

System Features

3.1 User Management

- User Login: Users can log in to the application using their credentials.

3.2 Citizen Management

- Add Citizens: Users can add citizens' data to the MySQL database.
- Retrieve Citizens: Users can retrieve all citizens' data.
- Retrieve Specific Citizen: Users can retrieve the data of a specific citizen using their ID.
- Update Citizen: Users can update a citizen's data.
- Delete Citizen: Users can delete a specific citizen's data using their ID.

3.3 Vaccination Center Management

- Add Vaccination Center: Users can add a vaccination center to the MySQL database.
- Retrieve Vaccination Centers: Users can retrieve all vaccination centers' data.
- Retrieve Specific Vaccination Center: Users can retrieve the data of a specific vaccination center using its ID.
- Update Vaccination Center: Users can update a vaccination center's data.

- Delete Vaccination Center: Users can delete a specific vaccination center's data using its ID.

3.4 Mapping Citizens to Vaccination Centers

- Map Citizens: Users can map citizens to specific vaccination centers.
- Retrieve Citizens Associated with Center: Users can retrieve all citizens associated with a specific vaccination center.

3.5 Vaccination Status Tracking

- Track Vaccination Status: Users can track the vaccination status of all citizens in the country.

3.6 Vaccination-center Application configuration

- User needs to go to the project directory and in address path needs to type "**cmd**" to open the command prompt for the particular project.
- User needs to type command "**mvn clean package**" to build the necessary target file and **root.war** file.
- After build successful, User needs to copy the **root.war** file to the Apache Tomcat 10.1.9(i.e latest version) into its **webapps** directory.
- User needs to go inside the bin directory and type "**cmd**" in address path to open the command prompt for the particular bin directory of the Tomcat.
- User needs to type command "**catalina.bat run**" to initialize the respective tomacat server for the vaccination center application.
- If User wants to change the port number for any application requirements, then User needs to go inside the **Apache Tomcat 10.1.9** inside **conf** folder and open **server.xml** file and change the port no accordingly.
- After all configuration and server startup, User needs to go to the local browser and type **http://localhost:8080/** (We have replaced the port no 8080 to 8086 according to our requirements)

3.7 Algorithm

1. Start the Vaccination Center App.

2.Set up the necessary project structure and development environment.

3.Initialize the user interface and display the login/register page.

4.Create a user registration functionality:

- Accept user details such as name, email, and password.
- Validate the input data.
- Store the user information securely in a database.

5.Develop user login functionality:

- Prompt the user to enter their login credentials.
- Verify the entered credentials against the stored user data.
- Grant access to the authenticated user.

6.Implement vaccination center management:

- Allow administrators to list existing vaccination centers.
- Provide an option to add a new vaccination center by entering relevant details.
- Enable administrators to edit existing vaccination center information.
- Allow administrators to delete vaccination centers.

7.Create citizen registration functionality:

- Accept citizen details such as name, age, and contact information.
- Validate the input data.
- Store the citizen information in a database.

8. Implement citizen management:

- Allow administrators to list registered citizens.
- Provide an option to add a new citizen by entering relevant details.
- Enable administrators to edit existing citizen information.
- Allow administrators to delete citizens.

9. Implement vaccination details management:

- Provide a way for administrators to update the vaccination status of citizens.
- Store the vaccination details securely in the database.

10. Enhance the user interface:

- Apply appropriate styling to create an aesthetically pleasing interface.
- Ensure the app is responsive and compatible with different devices.

11. Implement form validation and error handling:

- Validate user inputs and display error messages for invalid data.
- Handle exceptions and display meaningful error messages to the user.

12. Perform thorough testing:

- Test all the implemented functionalities to ensure they work as expected.
- Identify and fix any bugs or issues encountered during testing.

13. Write comprehensive documentation:

14. Complete the Vaccination Center App project.

Non-Functional Requirements

4.1 Performance

- The application should be able to handle a large number of concurrent users without significant performance degradation.
- Response times for API endpoints should be optimized to ensure a smooth user experience.

4.2 Security

- User login and authentication should be secure to prevent unauthorized access.
- User data and confidential information should be encrypted and protected.

4.3 Reliability

- The application should be highly reliable and available to users at all times.
- Data integrity should be maintained, and appropriate backup and recovery mechanisms should be in place.

4.4 Scalability

- The application should be scalable to accommodate an increasing number of users and vaccination centers.

Constraints

- The application must be developed using Java, Spring Boot, Spring Data JPA, Spring MVC, and MySQL database technologies.
- The development should be completed within the allocated time frame.
- Documentation and Deliverables
- Source code repository (e.g., GitHub) containing the application code.
- API documentation detailing the available endpoints and their usage.
- User manual describing how to use the application.

Conclusion

This Software Requirements Specification (SRS) document outlines the requirements for the development of a vaccination center management application. It provides an overview of the system features, constraints, and non-functional requirements. The application aims to efficiently manage the distribution of vaccines to all citizens of India while ensuring security, reliability, and scalability.