

2580153

Iyappa ganesh

## **CAPSTONE PROJECT WRITEUP**

Sprint 1:

### **1. Requirement Gathering & Analysis:**

- Identify and document the functional and non-functional requirements of the Aadhar Card application.
- Analyze the needs of both the admin and user portals to ensure all necessary features are captured.

### **2. System Design:**

- Create a detailed system architecture that outlines the structure and interactions between frontend and backend components.
- Define the database schema, API endpoints, and user interfaces.

### **3. System Setup:**

- Set up the development environment, including installing necessary software and tools.
- Configure the IDEs for both frontend (Angular) and backend (Spring Boot).

### **4. System Configuration:**

- Configure the database (MySQL) and integrate it with the Spring Boot application.
- Establish initial project structure and configurations for version control.

Sprint 2:

### **1. Configure GitHub:**

- Set up a repository on GitHub to track and manage project versions.
- Connect the local development environment to the GitHub repository.

### **2. Frontend Development with Angular:**

- Initiate the development of the Angular frontend.
- Implement user interfaces for registration, login, Aadhar application, and other relevant features.

- Commit the initial frontend code to the GitHub repository.
3. **Backend Development with Spring Boot:**
    - Begin developing the backend using Spring Boot, JPA, and Hibernate.
    - Establish API endpoints for user registration, Aadhar application, and admin functionalities.
    - Connect the frontend to the backend to ensure seamless data flow.
    - Commit the initial backend code to the GitHub repository.
  4. **Database Configuration:**
    - Create the necessary tables in the MySQL database.
    - Configure the application.properties file to link the Spring Boot application with the database.
  5. **Sprint Review:**
    - Verify the connection between frontend and backend.
    - Identify and fix any issues or bugs.
    - Confirm that the application is functional at this stage.

Sprint 3:

1. **Angular Component Development:**
  - Develop different Angular components for each module (e.g., registration, Aadhar application, admin functionalities).
  - Implement Angular services to handle data communication with the backend.
2. **Backend Implementation:**
  - Create controllers, beans, and repositories in Eclipse for handling various operations.
  - Develop backend logic for admin approval, Aadhar issuance, and other functionalities.
3. **Integration Testing:**
  - Run both the frontend and backend applications.
  - Address any bugs or issues identified during integration.
  - Verify that the complete system is operational.
4. **Backend Validation:**
  - Implement backend validation for mobile numbers and password length.

- Ensure that the authentication on the home page matches the Aadhar mobile number with the password.

#### **5. Sprint Review:**

- Perform a comprehensive review of the integrated application.
- Document any improvements or modifications needed.

### **Sprint 4:**

#### **1. Automation Testing with Selenium and TestNG:**

- Develop automated tests for the application using Selenium and TestNG.
- Verify the correctness of user and admin workflows.

#### **2. CI/CD Pipeline with Jenkins:**

- Set up a CI/CD pipeline using Jenkins for continuous integration and deployment.
- Automate the deployment process to GitHub and the hosting environment.

#### **3. Deploy on AWS EC2:**

- Deploy the application on an AWS EC2 instance.
- Ensure the application is accessible and functional on the live environment.

#### **4. Documentation:**

- Document all activities, including snapshots of each sprint's progress.
- Create user guides and technical documentation for future reference.

#### **5. Sprint Review and Finalization:**

- Conduct a final sprint review.
- Address any last-minute issues or improvements.
- Confirm the completion of all deliverables.