# Implementation Document

## for

# ClubZen IITK

**Version 1.0**

**Prepared by**

**Group 12**                    **Group Name: Tiny Coders**

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**Course:**  CS253

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# Revisions

| Version | Primary Author(s) | Description of Version | Date Completed |
|---------|-------------------|------------------------|----------------|
| 1.0 | Tiny Coders | Implementation of the software | 20/03/22 |

# 1  Implementation Details

|  | Back end | Benefits | Front end | Benefits |
|---|---|---|---|---|
| **Programming language** | Java | Compared to C++, Java offers much more flexibility by providing a wide range of frameworks. | HTML, CSS, ReactJS | Every browser supports HTML, and it is straightforward to use.<br><br>CSS saves time as we can write CSS once and then reuse the same sheet in multiple HTML pages. It is also easy to maintain to make a global change, change the style, and all elements in all the web pages will be updated automatically.<br><br>ReactJS allows developers to utilize individual components of an application on both the client-side and the server-side. It is also easier to update and manage due to its modular structure. |
| **Frameworks** | Spring boot | It offers an effortless way to create spring-based applications using Java. It reduces the time and efforts of developers by reducing all the manual work of writing annotations, boilerplate codes and XML configurations.<br>It also provides a lot of plugins that aid in development and testing. | | |
| | Maven | It simplifies the process of project building as Maven can add all the dependencies required for the project automatically by reading the pom file. | | |

| Spring boot dependencies | Spring Security | Configuration support for Java. Comprehensive support for tasks like authentication and authorization. Servlet API integration. | NA |
|---|---|---|---|
| | Spring Data MongoDB | As MongoDB is used as the database system, Spring boot offers this dependency to integrate the backend and database. | |
| | Spring Web | The single spring-boot-starter-web dependency transitively pulls in all dependencies related to web development. | |
| **DBMS** | MongoDB | MongoDB is faster than MySQL due to its ability to handle large amounts of unstructured data when it comes to speed. | NA |

# 2  Codebase

**GitHub Repository** - https://github.com/Shreyasi2002/CS253_Project

## About the Web App

As of now, the front-end and the backend are separate units.

For Back-end Part,

RESTful APIs are deployed on Heroku using GitHub and can be accessed anywhere worldwide.

For the Front-end Part,

The web app source code can be run using **npm** and hosts the main page, login page, clubs page, councils page, festivals page, and calendar page.

## Codebase Navigation

The Front-end code is present in "/Interface Design/clubzen-iitk/." The "src" folder contains all the source code files.

The Back-end code is present in "/Backend Units." The individual folders contain the source codes of the individual units. The "src" folder in every folder includes the source code files individually. However, the "sample data" folder contains some sample data fetched from the MongoDB database for demonstration purposes.

## Installation Requirements

1. Web Browser
2. Node.js
3. npm
4. Maven
5. Tomcat
6. Spring Framework
7. Spring Boot
8. JDK (Java Development Kit)
9. Any Java or Spring IDE (for e.g., IntelliJ, Eclipse, Spring Tools Suite)

## Installation

For Frontend, i.e., website,

1. Navigate to "/Interface Design/clubzen-iitk/".
2. Open Command Line Terminal in this folder.

3. Run the following commands one by one -
4. npm install
5. npm start

The webpage will automatically open in localhost (http://localhost:3000/).

If it doesn't automatically open, the user can open it manually.

For the Back-end part,

1. Navigate to "/Backend Units/{calendar or loginsignup or newsandevents}/."
2. Open Command Line Terminal in this folder.
3. Run the following command one by one (assuming a Tomcat Local server has already been built)
4. mvn clean install
5. mvn spring-boot:run

Now the user can test the APIs on localhost (http://localhost:8080/).

## Test Run

The webpage can be tested using npm as stated in the "Installation" part.

The Backend Units can be tested using POSTMAN or any other API Client.

The links to access the different APIS of different units are -

1. loginsignup - LoginSignup
2. calendar - Calendar
3. newsandevents - NewsAndEvents

# 3  Completeness

| SRS features | Status | Future development plan |
|---|---|---|
| Profile login/registration | Completed | Give users the option to reset their password by authenticating the user with the help of OTP. |
| Calendar/News | Completed | Give some publishing rights to managers of the Clubs, so that they can directly post news related to their Clubs. |
| Events and Workshops | Completed | NA |
| PoR Holders' directory | Completed | At present, all the **users** have the view access of the details of other users (name, email, role). Shortly, we would restrict the viewing access of the details according to the roles. |
| Posting and Reviewing | In progress | We plan to give publishing rights to users, due to which they would be able to post in the respective Clubs section. Also, it would be necessary that the content goes under review first. |
| Forums | In progress | We also are developing a forums section, wherein all the users can post their queries and also comment on other user's queries. |
| Customized notifications | In progress | Through this functionality, a user can select some particular events or clubs of which the user will receive notifications. |
| Achievements and Badges | In progress | This functionality requires all the above functionalities in place to work, so this is in the last priority of the development. |

# Appendix A - Group Log

| Sl. no. | Date | Timings | Venue | Description |
|---------|------|---------|-------|-------------|
| 1 | 04/03/22 | 4 pm - 5 pm | RM building | Discussed how we will carry out the implementation part. |
| 2 | 08/03/2022 | 11 am- 12 pm | Google meet | Meeting with the TA. She discussed the frameworks and resources that we can use for implementation. |
| 3 | 10/03/2022 | 4 pm - 6 pm | Google meet | Planned the work distribution. We divided ourselves into two groups- the frontend and the backend. |
| 4 | 11/03/2022 | 6 pm - 8 pm | Google meet | Gathered the resources for learning various frameworks and languages required for the implementation part |
| 5 | 12/03/22-14/03/22 | — | Online meetings | Worked among the groups separately on frontend and backend |
| 6 | 15/03/2022 | 5 pm - 7 pm | Google Meet | The entire group meet in which we discussed the progress |
| 7 | 16/03/2022-18/03/22 | — | Online meetings | Completed the remaining implementation work |
| 8 | 19/03/22 | 4 pm - 6 pm | Google Meet | Completed the implementation document |
| 9 | 20/03/2022 | 5 pm - 8 pm | RM building | Final review of the implementation document and other tasks |