Implementation Document

for

ClubZen IITK

Version 2.0

Prepared by

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Course: CS253

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CONTENTS II

REVISIONS II

Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.0	Tiny Coders	Implementation of the software	20/03/22
2.0	Tiny Coders	Updation	28/03/22

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	Every browser supports HTML and it is very easy to use.
			CSS	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 as to make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
			JS	JavaScript is very fast because it can be run immediately within the client-side browser. Unless outside resources are required,

				JavaScript is unhindered by network calls to a backend server. Also it is easy to implement.
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. It also provides a lot of plugins which aid in development and testing.	Node.js	Applications written in Node.js require fewer files and less code compared to those with different languages for front-end and back-end.
Libraries	Lombok	Java library to reduce boilerplate code significantly and easily**.**	ReactJS	ReactJS allows developers to utilize individual components of an application on both client-side and the server-side. It is also easier to update and manage due to its modular structure.
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	
Build System	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.	Node.js and npm	NPM (a node package manager), Node's package ecosystem, is the largest and the fastest growing software registry in the world. It provides numerous libraries and reusable templates.

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.

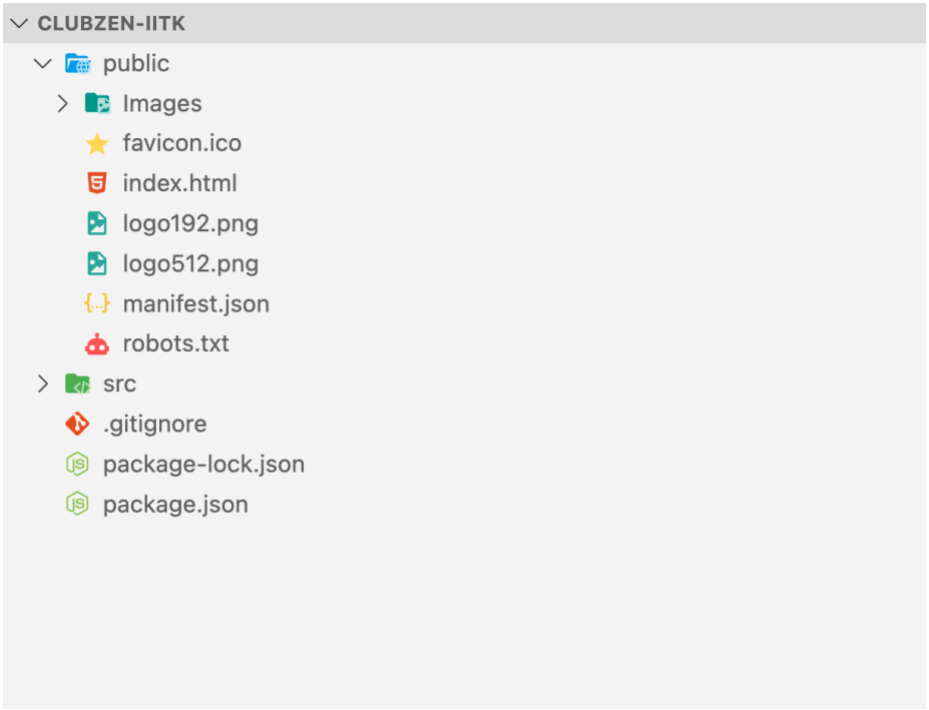
For the Front-end Part,

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.

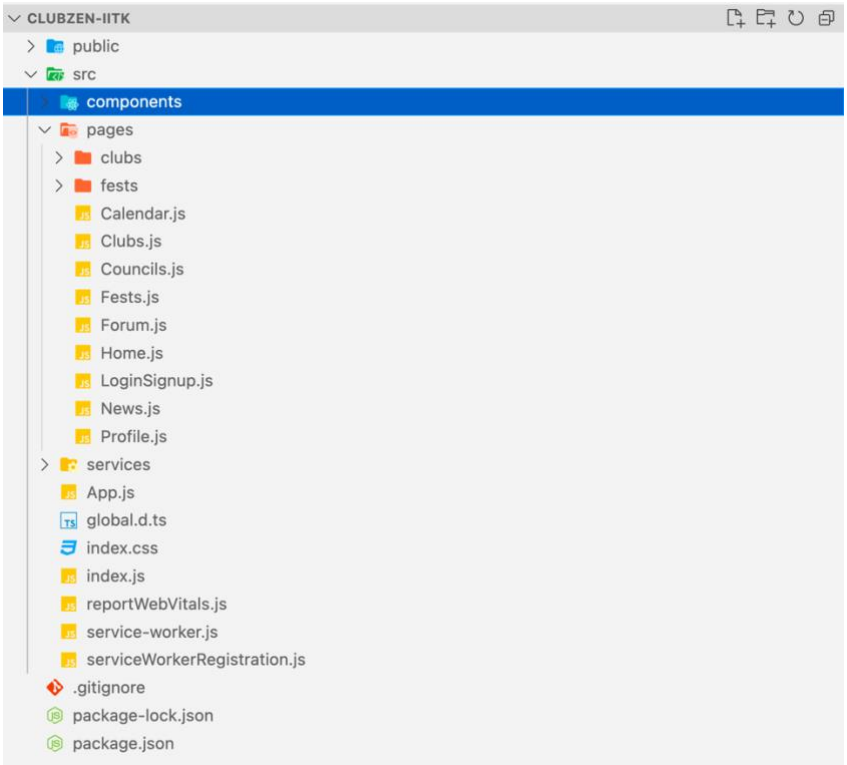
Codebase Navigation

FrontEnd

The Front-end code is present in “/Interface Design/clubzen-iitk/”. The “src” folder contains all the React source code files. The “public” folder includes whatever is rendered at the web browser.



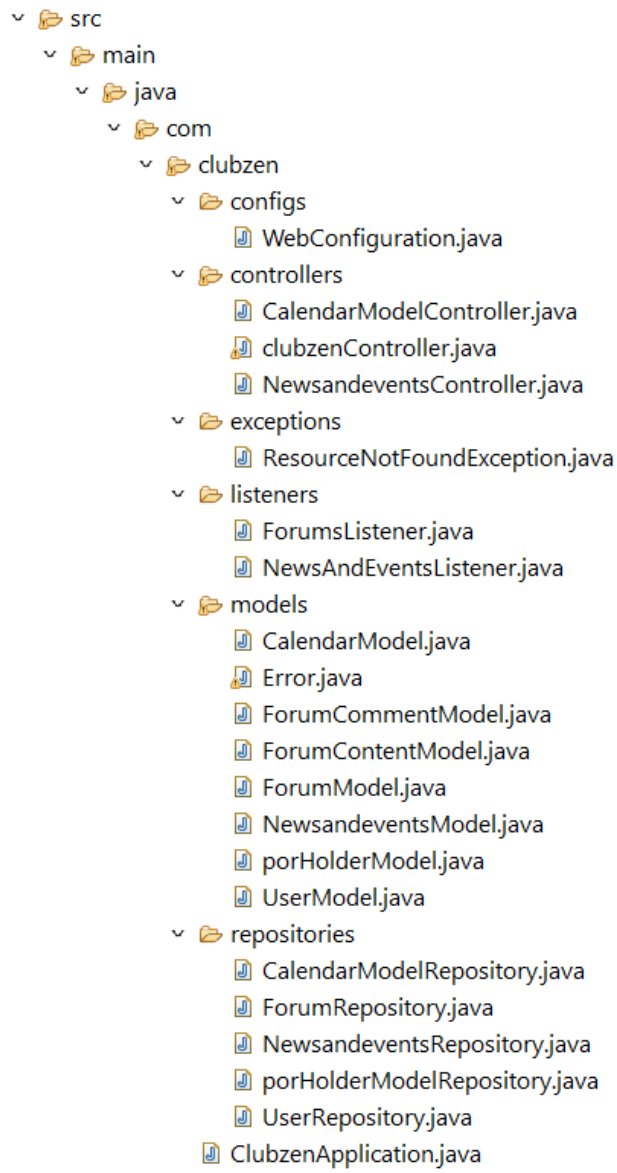

CLUBZEN-IITK
public
src
components
authentication
calendar
clubs
council_fest
festivals
forum
home
misc
newsevents
Footer.css
Footer.js
Links.styled.js
MainPageLayout.js
Navs_white.css
Navs_white.js
Navs.css
Navs.js
pages
services
App.js
global.d.ts
index.css
index.js
reportWebVitals.js
service-worker.js
serviceWorkerRegistration.js
.gitignore
package-lock.json
package.json


CLUBZEN-IITK
public
src
components
pages
clubs
fests
Calendar.js
Clubs.js
Councils.js
Fests.js
Forum.js
Home.js
LoginSignup.js
News.js
Profile.js
services
App.js
global.d.ts
index.css
index.js
reportWebVitals.js
service-worker.js
serviceWorkerRegistration.js
.gitignore
package-lock.json
package.json

BackEnd

The Back-end code is present in “/Backend Units”. The individual folders contain the source codes of the individual units. The “clubzen” unit is the integration of all the units into one single unit. The “src” folder in every unit folder contains the source code files individually. However, the “sample data” folder contains some sample data fetched from the MongoDB database to be used for demonstration purposes.

The src folders’ basic structure is divided into models, repositories, exceptions, controllers, listeners, configurations, etc. The below image makes it more clear.



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 IITK users login based access to different sections not available to guest users based on their roles.
Calendar/News	Completed	Give some publishing rights to managers of the Clubs, so that they can directly post news related to their Clubs.
News and Events	Completed	We plan on further optimizing the design of the news and events section.
PoR Holders' directory	Completed	At present, modification of this data by an admin user is not allowed. We plan on providing this option based on 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 are developing a forums section, wherein all the users can post their queries and also comment on other user's queries. The Backend implementation for this has been completed.
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