FULLSTACK-II PROJECT

(2021-2022)

ONLINE CHAT APPLICATION

REPORT

Institute of Engineering & Technology

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<u>ACKNOWLEDGMENT</u>

In the name of God, most Beneficent and the most Merciful. Praise be to God, the Cherisher and Sustainer of the worlds, who gave us strength, determination, staying power and ability to complete this work. We are thankful to Almighty God for helping us in each and every step.

This project required lot of work, patience and dedication. Still, implementation would not have been possible, if we did not have a support of many individuals and Team members. Therefore, we would like to extend our sincere gratitude to all of them.

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May God reward all of them for their continuous support, for helping us sincerely, and putting all their efforts in this whole time period of our project

Anshika Gupta, Astha Kharya, Pari Gupta

<u>ABSTRACT</u>

Chatting is now-a-days very useful to express our ideas as well as receive others ideas on any topic. Chats reflect the recent trends of the society. Sometimes, it is possible to meet eminent people in chatting and have their advice.

Chatting is a method of using technology to bring people and ideas together despite of the geographical barriers. The technology has been available for years but the acceptance was quite recent. Our project is an example of a chat server. It is made up of two applications –

The client application which runs on the user's web browser and server application runs on any hosting servers on the network. To start chatting clients should get connected to server where they can do private and group chat. Security measures were taken during the lastone.

__CONTENT__

__INTRODUCTION__

The "Online Chat Application" has been developed to override the problem prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. This system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

Online chat may refer to any kind of communication over the Internet that offers a real-time transmission of text messages from sender to receiver. Chat messages are short in order to enable other participants to respond quickly

No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Online Chat Application can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help the organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Chat Application. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. These systems will ultimately allow you to better manage resources.

Motivation:

The evolution of the internet technologies had benefit people to accessing to the web easily. More and more services provide by this internet All of this can be virtualize thank to the technologies. Communication between people using the internet becomes part of their daily life. People used to communicate with each other's using the online chat system to transfer their messages. Traditionally, when people need to communicate with others they will have a face to face conversation to deliver the message, same goes to the education field. It is strongly encourage that student seeking for academic assistance from the lecturer when they face difficulties. Most often happening is when the exam arein the corner and or assignment due date. The traditional way to have a consultation is student make an email appointment with the lecturer and the lecturer accepted the appointment or lecturer is free and available at his room or lecturer consultation hour. However, this communication solution might be not convenient and not efficient due to some issue that happen before the consultation started. The consultation session can be realized in another similar way using an onlinesolution.

There are few issue might be arise when the student want to have consultation with the lecturer using the traditional method which is making appointment and meet at a lecturer room to having the communication.

Student or lecturer are not available in the school-

Sometime, the lecturer and student might have some personal issue and cannot come to school. For example the lecturer has to outstation for some important works and the outstation will take a period of time. Also student cannot come to school because they are not available in the area that near to the school. During this period of time, if a student wanted to have a consultation session with their teacher, they cannot meet the respective teacher in the university which causes the student delay their studies progress.

Bunch of email have to filter-

Most often lecturer mailbox will be full of emails. Lecturer have to manually filter out which emails is regarding the consultation requests. It will require the lecturer efforts in filtering the emails. In the filtering process, lecturer might be missed out the emails regarding the consultation.

Queue issue regarding the appointment-

Sometime human error can be easily made by the lecturer. The lecturer need to be extremely caution when scheduled the consultation session. It is possible lecturer forget and scheduled two consultation session at the same time. If it is happen, two students will came at the same time. Based on first come first serve, the second student has to wait for the first student to finish his consultation session then finally his turn. It is possible the second student have to wait for a longer time if the first student requires lot of times with thelecturer.

Fail to recall about theconsultation-

It is human nature that forgets some stuff from time to time. So student or lecturer has totally forgotten about there will be a consultation sessionlater.

Therefore, the above issue can be enhanced using an online consultation solution.

Objective:

The objective of the project is to develop an instant messaging solution to enable users to seamlessly communicate with each other. The project should be very easy to use enabling even a novice person to use it. In order to make this chat application complete web support needs to be provided. This chat application manages all the information about Chat Profile, Chat User, Chat History, and Group Chat. An efficient application for chat is the basic objective of this project and the purpose of the project is to build an application to reduce the manual work for managing the Chat Profile, Chat User, and Chat History. It tracks all the details about the Chat History, Group Chat, and Smiles Chat.
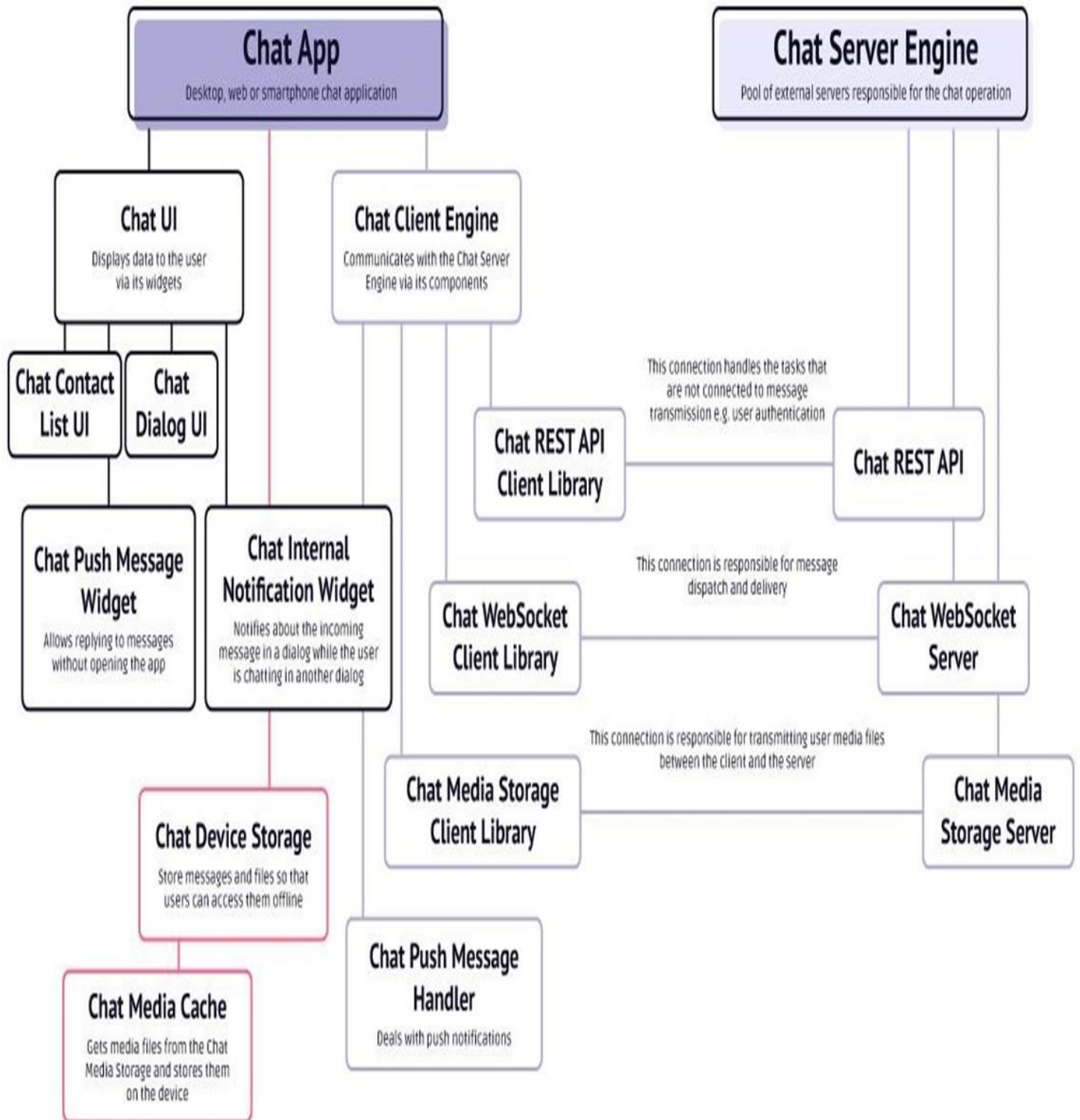
REQUIREMENT SPECIFICATION

Hardware Requirements

- **Processor**: Intel i5
- **Operating System**: Windows 10
- **RAM**: 4GB
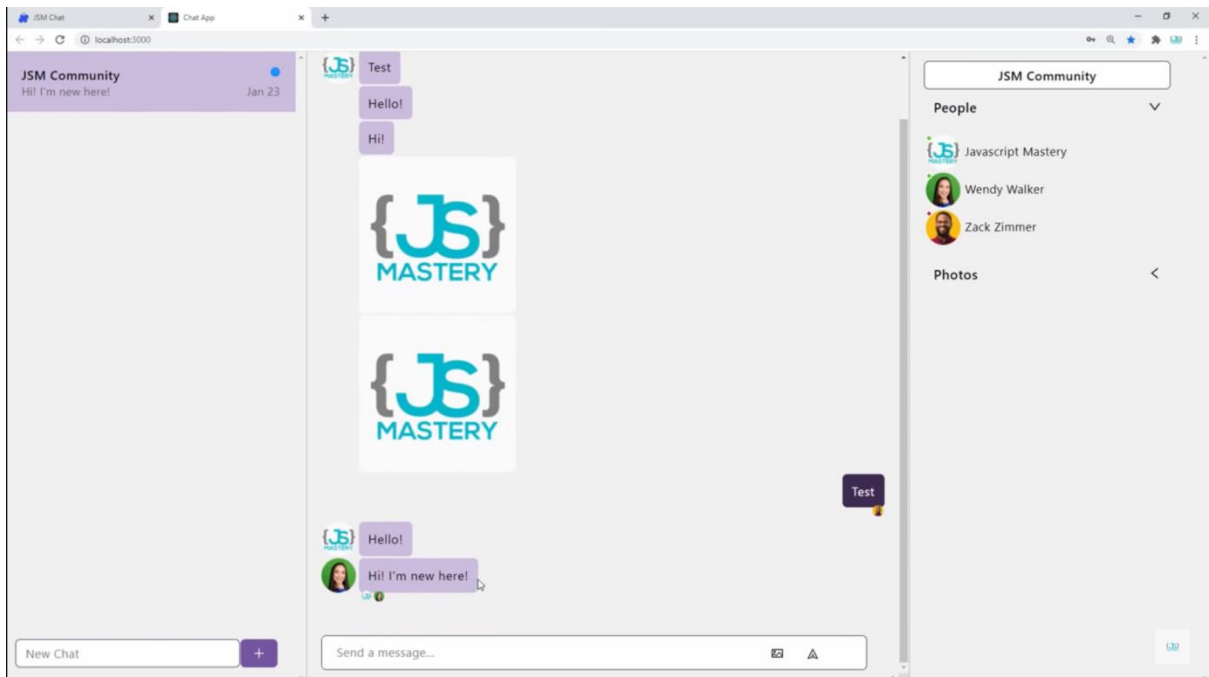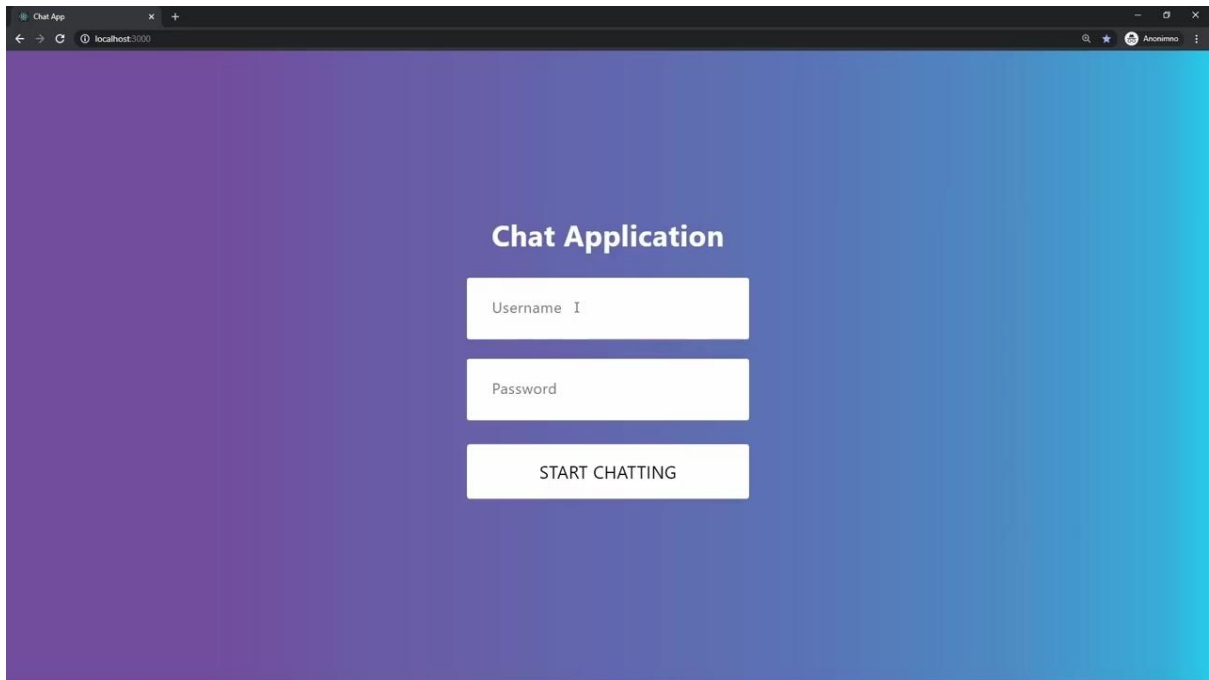- **Hardware Devices**: Computer System

Software Requirements

- **Web technologies**: React JS
- **Web Server**: Chat Server Engine
- **Web browser**: Chrome or Firefox
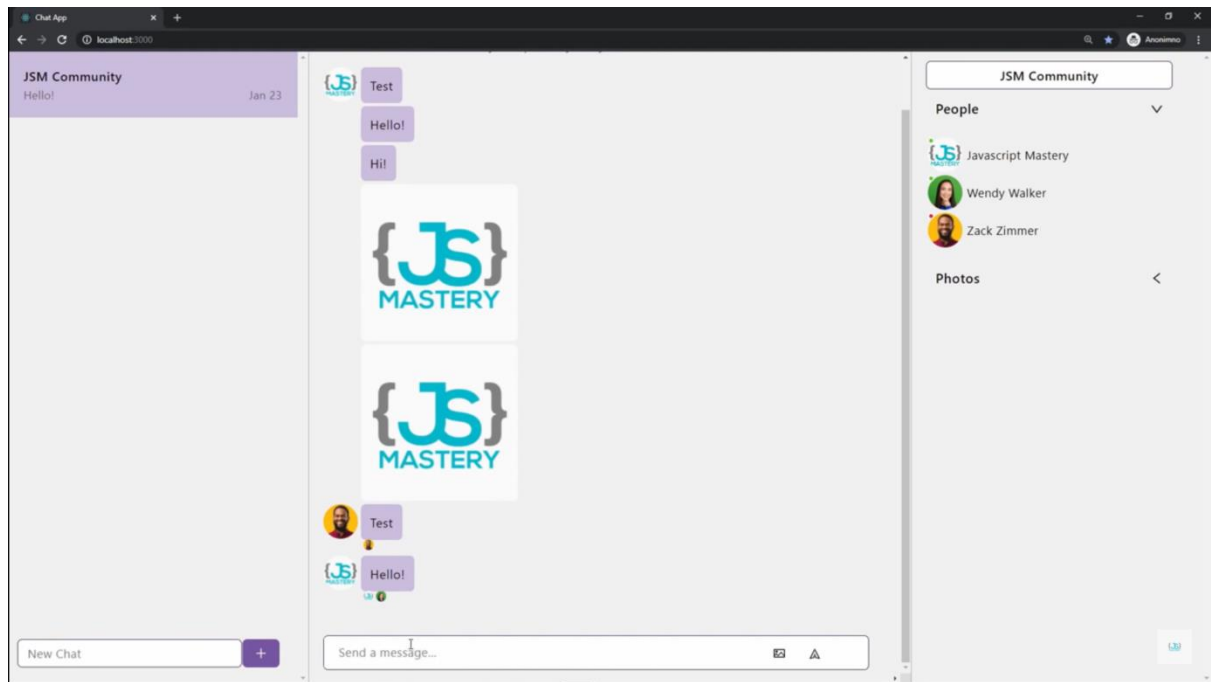- **Tools**: Visual Studio code

PROJECT DESIGN

SCREENSHOTS

IMPLEMENTATION

Implementation Details-

To design and implement this project we plan that the Chat Application consists of two major parts-

- **Chat App** or **client part**, which is a Web chat application. Build on react
- **Chat Server Engine** or **server part**, which is a pool of external servers responsible for the chat operation. This is the place where all the chat magic happens.

Both parts contain various components that communicate to each other and bring the chat into action.

Chat App or Client Side

Chat App is the other major part of the chat Architecture, the one that users directly interact with. It's split into two separate root components:

- **Chat Client Engine**(fig 5.2)handles all the Communication with the Chat Server Engine via its internalcomponents:ChatRESTAPI Client Library and Chat Web Socket Client Library.

- **Chat UI** displays data to users: **Chat Contact List UI**, **Chat DialogUI**

Component:

Components are the building blocks of any React app andatypicalReactappwillhavemanyofthese. A component is a JavaScript class or function that optionally accepts inputs i.e. properties(props) and returns a React element that describes how a sectionof the UI (User Interface) shouldappear.

App.js is the starting point of our React app. A **package.json**file(fig.5.3):
- lists the packages your project dependson
- specifies versions of a package that yourproject can use.
- makes your build reproducible, and thereforeeasier to share with otherdevelopers.
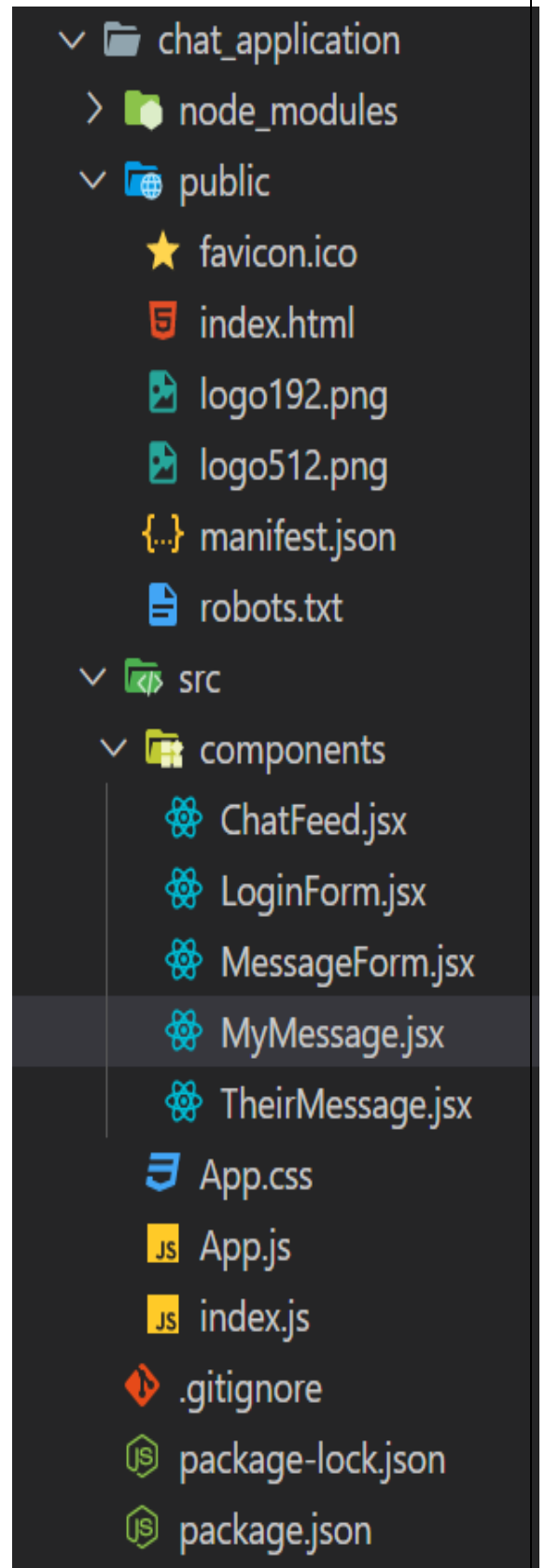
A **package.json**file may look similar to this:

Figure 5.2 Client-Side Structure Tree

```
{
  "name": "chat_application",
  "version": "0.1.0",
  "private": true,
  "dependencies": {
    "@ant-design/icons": "^4.6.2",
    "@testing-library/jest-dom": "^5.12.0",
    "@testing-library/react": "^11.2.6",
    "@testing-library/user-event": "^12.8.3",
    "axios": "^0.21.1",
    "react": "^17.0.2",
    "react-chat-engine": "^1.8.11",
    "react-dom": "^17.0.2",
    "react-scripts": "4.0.3",
    "web-vitals": "^1.1.1"
  },
  ▷ Debug
  "scripts": {
    "start": "react-scripts start",
    "build": "react-scripts build",
    "test": "react-scripts test",
    "eject": "react-scripts eject"
  },
```

Figure 5.3 Package.json file of Client-side

LIMITATIONS

- This project is to create chat application with server and user to enable the user to chat with each others.
- To develop an instant messaging solution to enable users to seamlessly communicate with each other.
- The project should be very easy to use enabling even a novice person to useit.
- This project can play an important role in organizational field where employees can connect throughLAN.

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- The main purpose of this project is to provide multi chatting functionality throughnetwork.

<u>CONCLUSION</u>

There is always a room for improvements in any apps. Right now, we are just dealing with text communication. There are several chat apps which serve similar purpose as this project, but these apps were rather difficult to use and provide confusing interfaces. A positive first impression is essential in human relationship as well as in human computer interaction. This project hopes to develop a chat service Web app with high quality user interface.

<u>FUTURE SCOPE</u>

Chat Server Application is going to be text communication software, it will be able to communicate between two computers. Companies would like to have communication software wherein they can communicate instantly with their organization. The limitation of this application is it does not support audio conversations, to overcome this limitation we are concurrently working on developing better technologies. The fact that the software uses an internal network setup within the organization makes it very secure from outside attacks.

We are planning to keep managing the project and improving it based on user feedback. In future we may be extended to include features such as-

- We will add some more categories in ourwebsite.
- We'll try to make it more user friendly than it isnow.
- We'll try to improve itsquality.
- We'll work on another feature in our app like Voice Message, Video Message, Audio Call, Video Call, Group Call.

<u>REFERENCES</u>

https://reactjs.org/docs/getting-started.html,

https://chatengine.io

www.youtube.com

www.github.com

www.betalabs.com

www.w3school.com