UG Program in Computer Engineering

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WEB DESIGN LAB

A Mini Project Report on Chat Application

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CHAPTER 1: ABSTRACT

Teleconferencing or Chatting, is a method of using technology to bring people and ideas together despite geographical barriers. The technology has been available for years but the acceptance was quite recent. Our project is an example of a chat server(Mapaish). It is made up of 2 applications: the client application, which runs on the user's Web Browsers and server application, which runs on PHP server. To start chatting, the client should register with our platform where they can do private and group chat. Security measures like SQL injection were taken care of while doing this project.

CHAPTER 2: INTRODUCTION

Communication is a means for people to exchange messages. It has started since the beginning of human existence. Distant communication began as early as the 18th century with the introduction of television, telegraph and then telephony. Interestingly enough, telephone communication stands out as the fastest growing technology, from fixed line to mobile wireless, from voice call to data transfer.

The emergence of computer network and telecommunication technologies bears the same objective, that is to allow people to communicate. Chatting is a method of using technology to bring people and ideas together despite geographical barriers. The technology has been available for years but the acceptance was quite recent.

We created **MAPAISH**, a chat server, that runs on any modern web browser and needs to be hosted on a PHP server. To start chatting, the user should register and login to our chat application where they can do group and private chatting.

PROBLEM DEFINITION:

This project is to create a chat application with a server and users to enable the users to chat with each other. To develop an instant messaging solution to enable users to seamlessly communicate with each other. The project should be user friendly to use, enabling even a novice person to use it.

CHAPTER 3: HARDWARE AND SOFTWARE REQUIREMENT

Hardware Interface:

- Personal Computer
- 128 MB minimum RAM Required
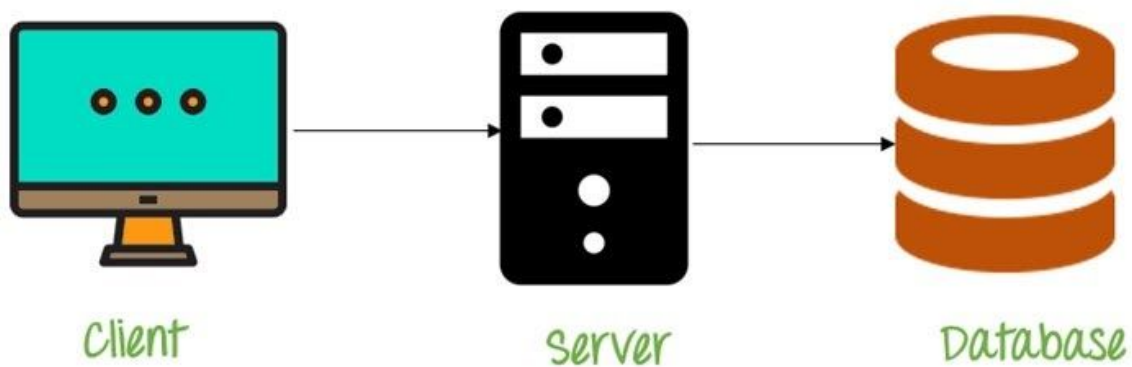- Internet or LAN Connections

Software Requirement:

- Modern Browser
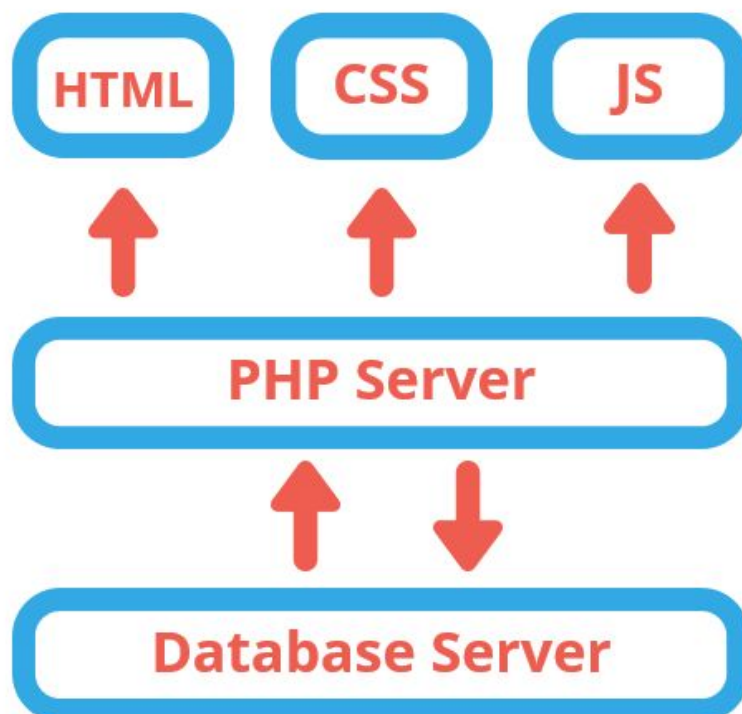- PHP server
- Database Server

CHAPTER 4: DESIGN
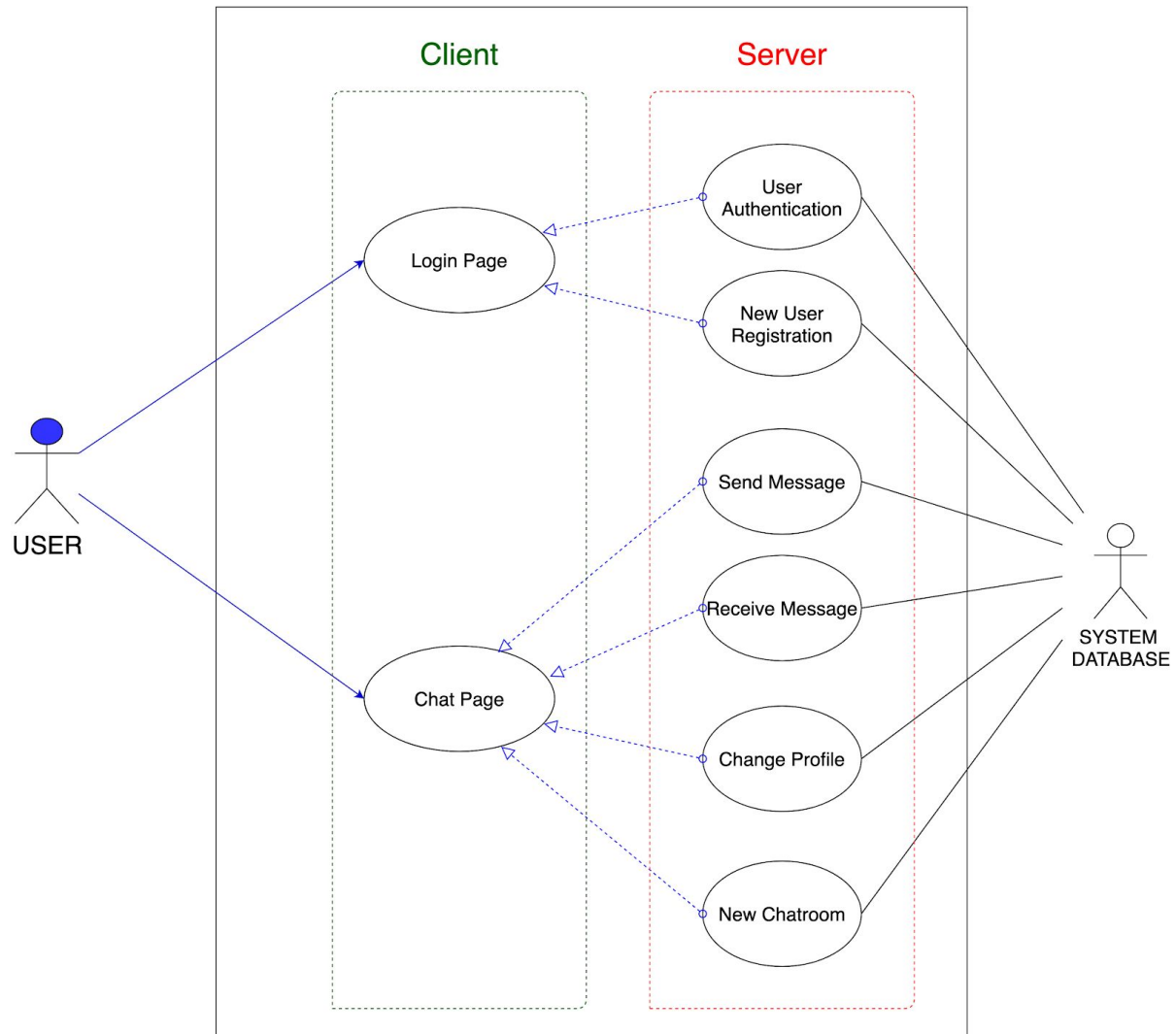
The application follows a 3-tier architecture

1. Presentation layer (your PC, Tablet, Mobile, etc.)
2. Application layer (PHP server)
3. Database Server (MySQL, MariaDB)

Technology Stack:

Use Cases:

Client:

The user needs to register on Mapaish. The user then needs to login to access the chatroom, where he can chat privately or in a group. The login and registration form validation is done using **jQuery** library for **Javascript**, **PHP** and **Database**. Duplicate usernames, and E-Mail IDs are validated against the database using AJAX and PHP. When the user logins, the user session is created to uniquely identify the user. The user can customise his profile with picture, status and display name. The client sends requests to the PHP server for sending

messages or receiving new messages, which then checks the Database and sends the responses to the client.

Modules:

1. **Login/Register Validation (Login/Registration Page)**
    1.1.   Client side validation is done using jQuery and server side validation is done using AJAX, PHP and database.
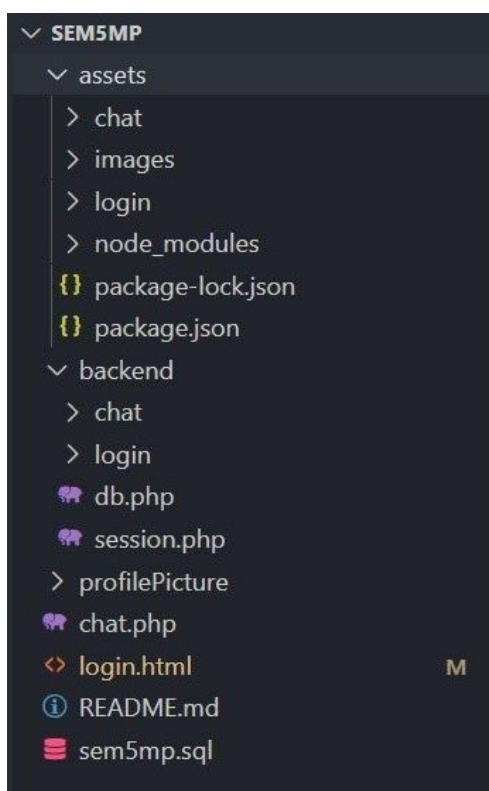
2. **Left Pane (Chat Page)**
    2.1.   It shows the recent contacts you've sent messages to.
    2.2.   On the top left it shows the user the profile picture.
    2.3.   Chat Menu
        ■ For new Chat/Group
    2.4.   Hamburger Menu
        ■ Options to change user profile.
    2.5.   Search button to filter contacts.

3. **RightPane (Chat Page)**
    3.1.   It displays the main UI where the users can send and receive their messages.
    3.2.   Hamburger Menu (only for group chats)
        ■ Options to change group settings.

Server/Host:

```
∨ SEM5MP
  ∨ assets
    > chat
    > images
    > login
    > node_modules
    {} package-lock.json
    {} package.json
  ∨ backend
    > chat
    > login
    🐘 db.php
    🐘 session.php
    > profilePicture
  🐘 chat.php
  <> login.html                M
  ⓘ README.md
  🗄 sem5mp.sql
```

Admins needs to host the website on a PHP server like Xampp or a PHP supported web hosting platform.

Assets folder holds Javascript and CSS files. Javascript and CSS libraries like Bootstrap are also included in this folder.

Backend directory includes all the PHP script.

Database Schema:

The SQL file in the project needs to be imported in MySQL/MariaDB Database server.
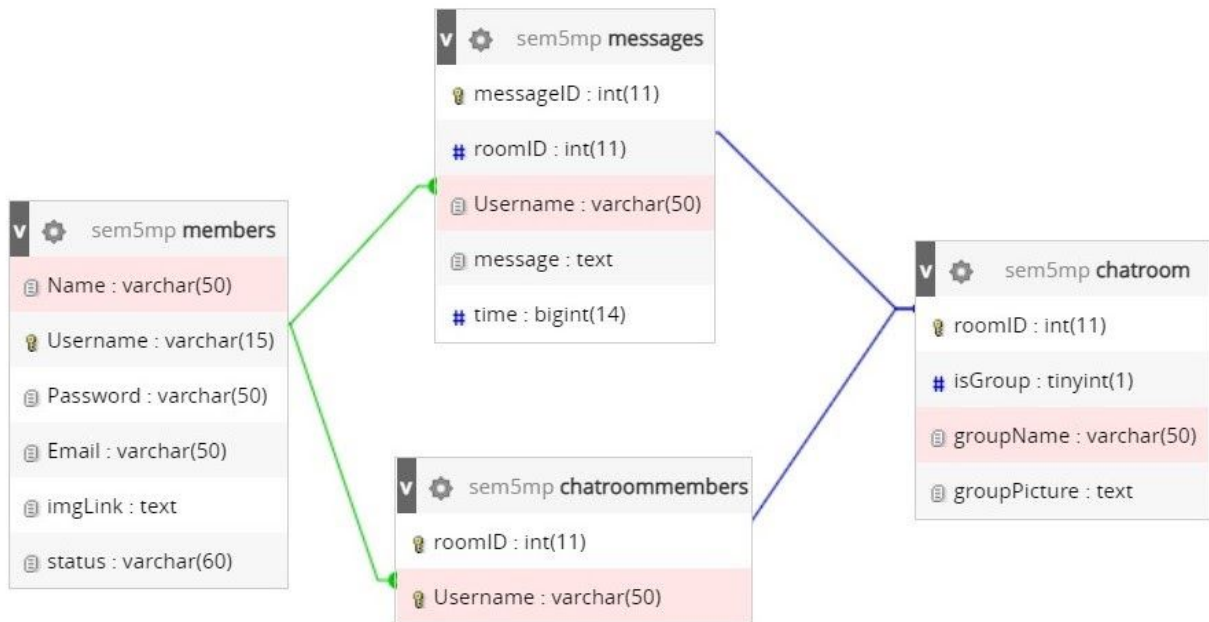
CHAPTER 5: RESULTS

Registration Tab:

Register Validation:

1. All the fields are required to be entered correctly.

2. Username cannot be a duplicate one.

3. Email address format is validated using regex.

4. Passwords must contain a minimum eight characters, at least one letter and one number. Passwords are also validated using regex.
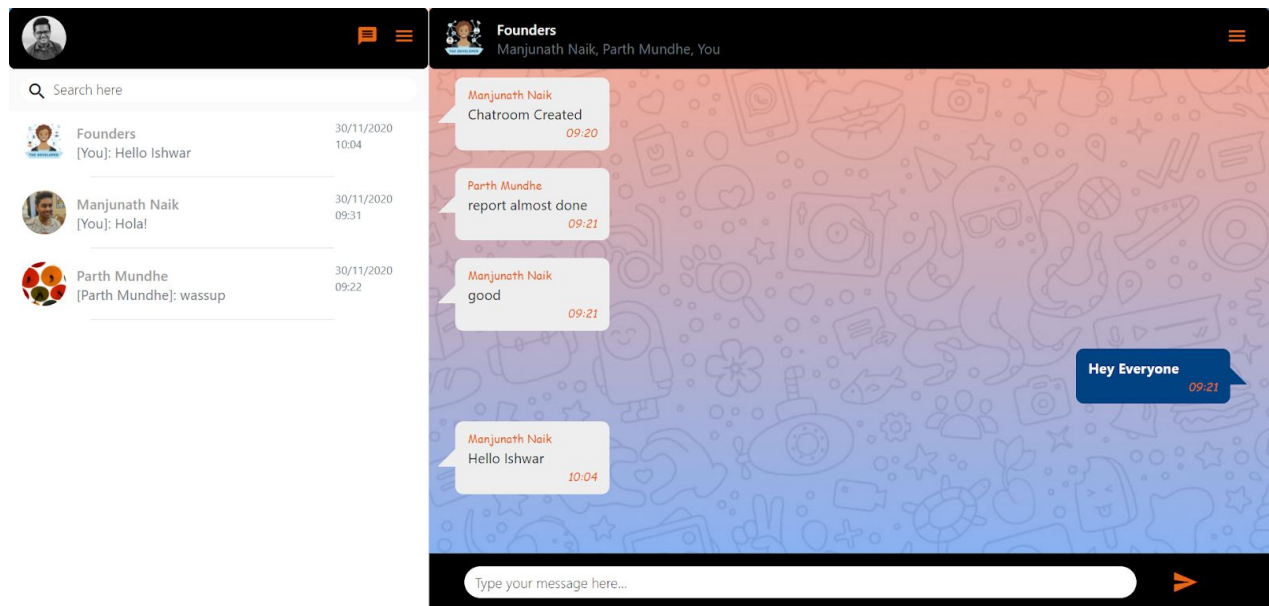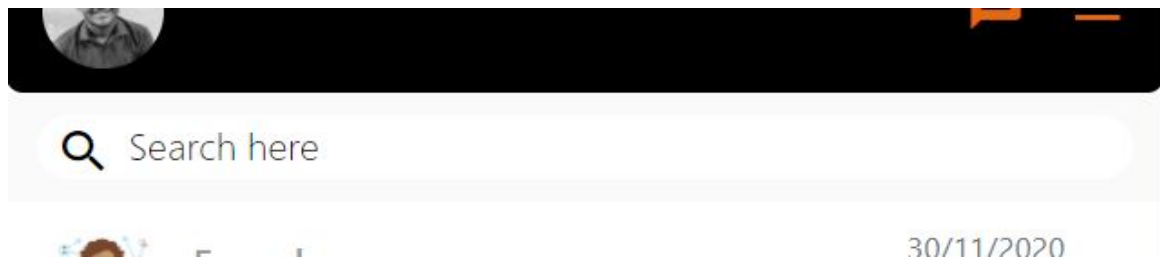
Chat Room:

Left Pane:
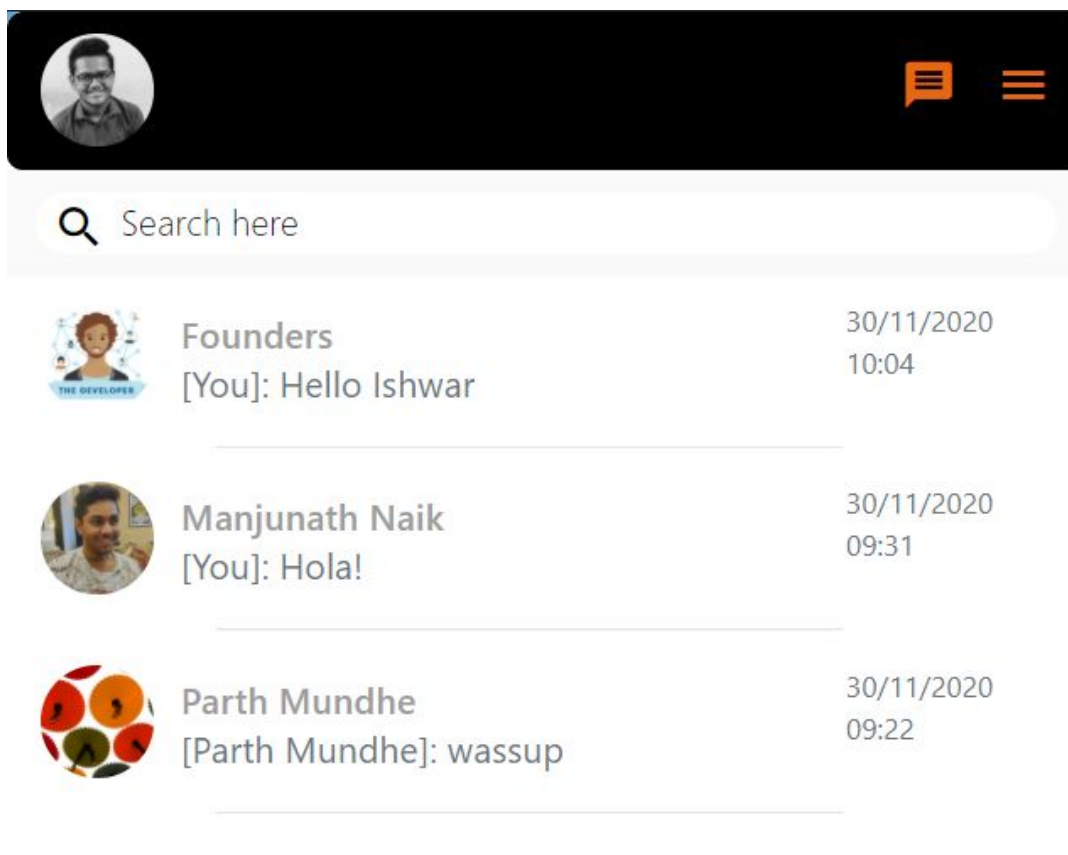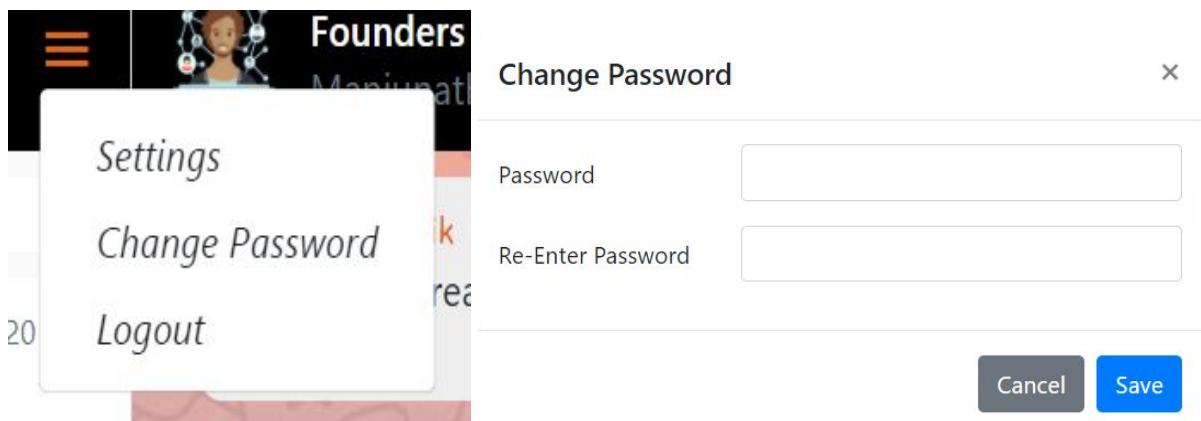
Search: Search field filters Chat Room

Hamburger Menu Button:

Message Button:

Right Pane:

Message Field:

Hamburger Menu Button for Group Chat:
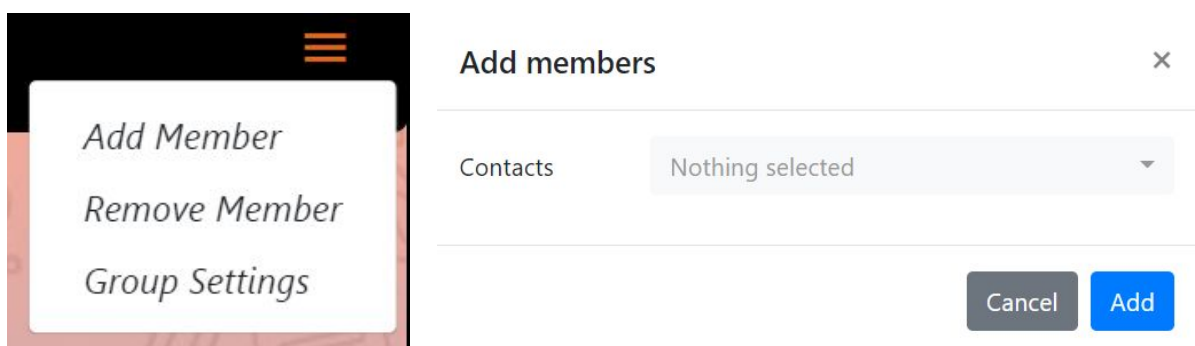
Remove members   ✕

Contacts   Ishwar Palav   ▼

Select All	Deselect All

Manjunath Naik

Ishwar Palav   ✔

Parth Mundhe

Manjunath Nai...
Hello Ishwar...

Group Settings   ✕

Group Name   Founders

Group Picture

THE DEVELOPER   **Remove Picture**

Choose Image   Browse

Cancel   Save

CHAPTER 6: CONCLUSION

Chatting is a very commonly used activity among the people nowadays. Generally users use the instant messaging services to communicate with other individual users. In our project we have provided many enhanced features for a chat application.

An appetite for one-to-one or small group communication: Social networks act primarily as broadcast tools built around news feeds filled with friends, family, and acquaintances. In contrast, messengers allow people to talk privately with the people they most care about.

The chat application is so aimed that the people could have a better experience of chatting. It has the potential to attract more and more users to interact and connect.

CHAPTER 7: REFERENCES

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2. https://developer.mozilla.org/en-US/docs/Glossary/jQuery

3. https://material-ui.com/getting-started/installation/

4. https://www.w3schools.com/

5. https://mariadb.com/kb/en/documentation/

6. https://www.php.net/docs.php