

PROJECT REPORT

WEB BASED CHATTING APPLICATION (MERN)



COURSE: COMPUTER NETWORKS

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Table of Contents

Abstract	3
System Requirements	3
Functional Requirements	4
Non Functional Requirements	5
Working Demo	6

1. ABSTRACT

When working remotely as part of a globally disbursed crew, we should have a collaborative surroundings. Chat packages play a vital position in supporting us stay related. In assessment to e-mail, chat applications offer fast, real-time communications with colleagues around the globe.

Furthermore, through chat applications we can create communities to interact with for many purpose such as Gaming, Educational Purposes, and for Competitions etc. We have created a web based chatting application where users can create communities with their friends, can talk, and send links to join the room. The access link will be shared via email using Simple Mail Transfer Protocol where users can join room, users will communicate via Socket programming(Web Sockets), Additional feature can be file Transfer using File Transfer Protocol.

2. SYSTEM REQUIREMENTS

The system requirements are divided into mainly two parts

Functional Requirements

The functional requirements of Web based chatting application are:

- **Sign Up:** The user will sign up the account by entering details.

- **Login:** The user will be logged in by using Email and Password, the authorization will be done from the backend.
- **Get User Info:** The User can get his Information from the User Avatar button.
- **Search Users:** The User can search other users through the search bar.
- **Create Single Chats (One-on-One):** The user can create a single chat (Private Room) by searching the user and can chat with them.
- **Create Group Chats:** The user can create a group chat (Public Room) by searching the user, entering chat group name with users greater or equal than 3.
- **Update Group Chats:** The user can add, remove, rename, and leave the group chat.
- **Send Messages:** The user can send the real time messages to other users.
- **Send Email :** Email is sent to users who are added in group chat
- **Send Files:** File links will be shared and they are uploaded on clouinary and user can access them from there.

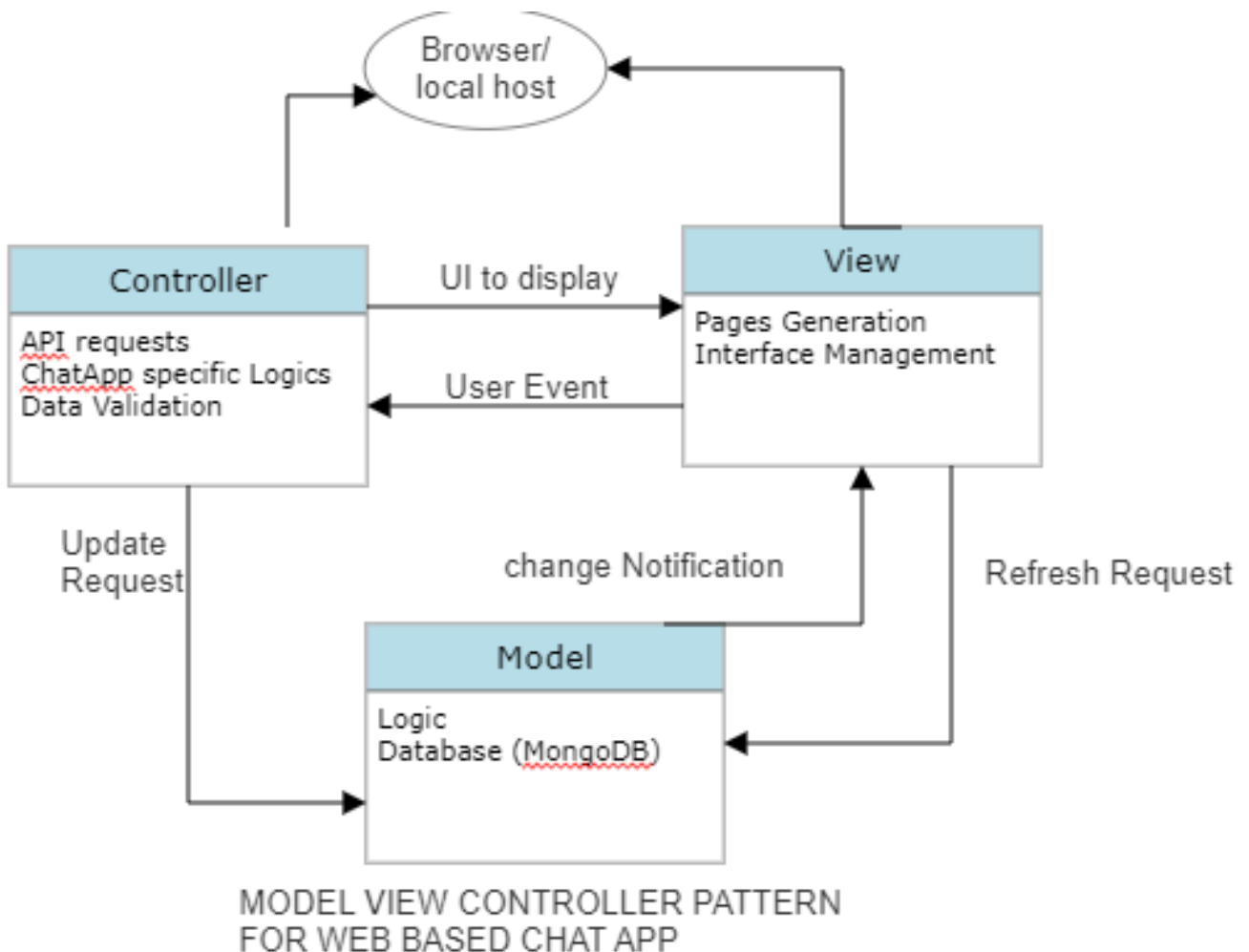
Non - Functional Requirements

The non-functional requirements of Web based chatting application are:

- **Usability:** The user interface is designed by considering the ease of user. It is a friendly and interactive interface.
- **Performance:** Socket.io is used to increase the performance of Chat app.
- **Security:** JWB and Bcrypt is used to store the passwords of users in encrypted format in Database.

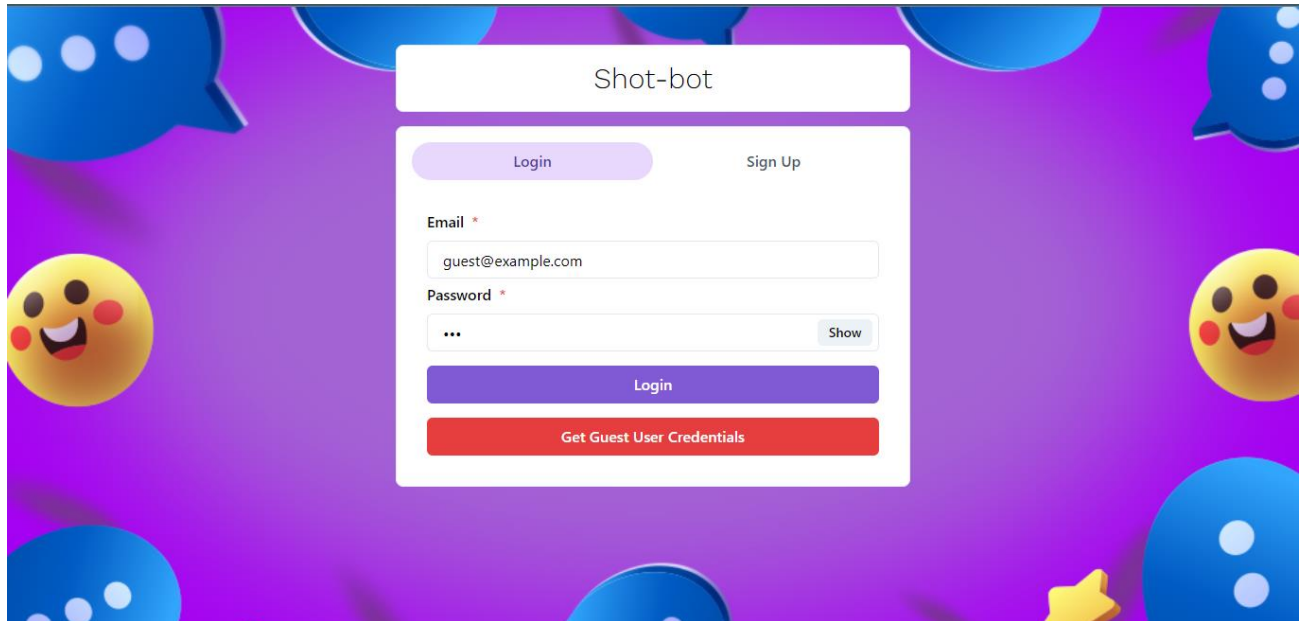
3. ARCHITECTURE DESIGN

MVC is used as the architecture pattern.

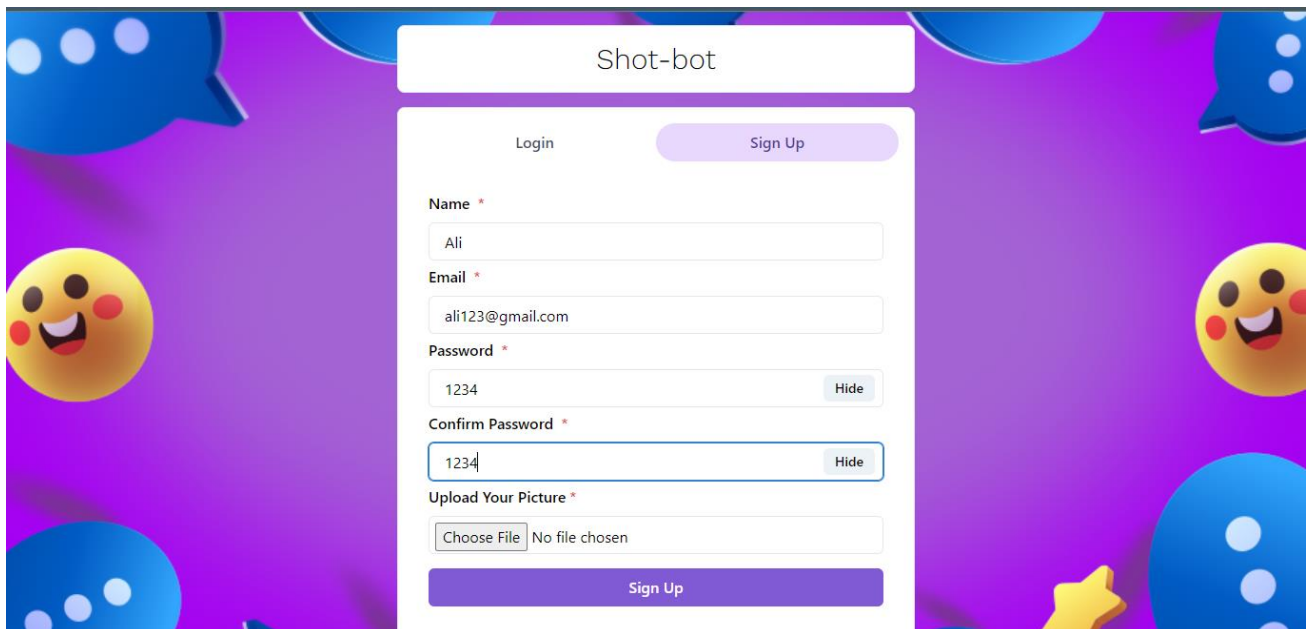


4. WORKING DEMO:

- **Authentication**

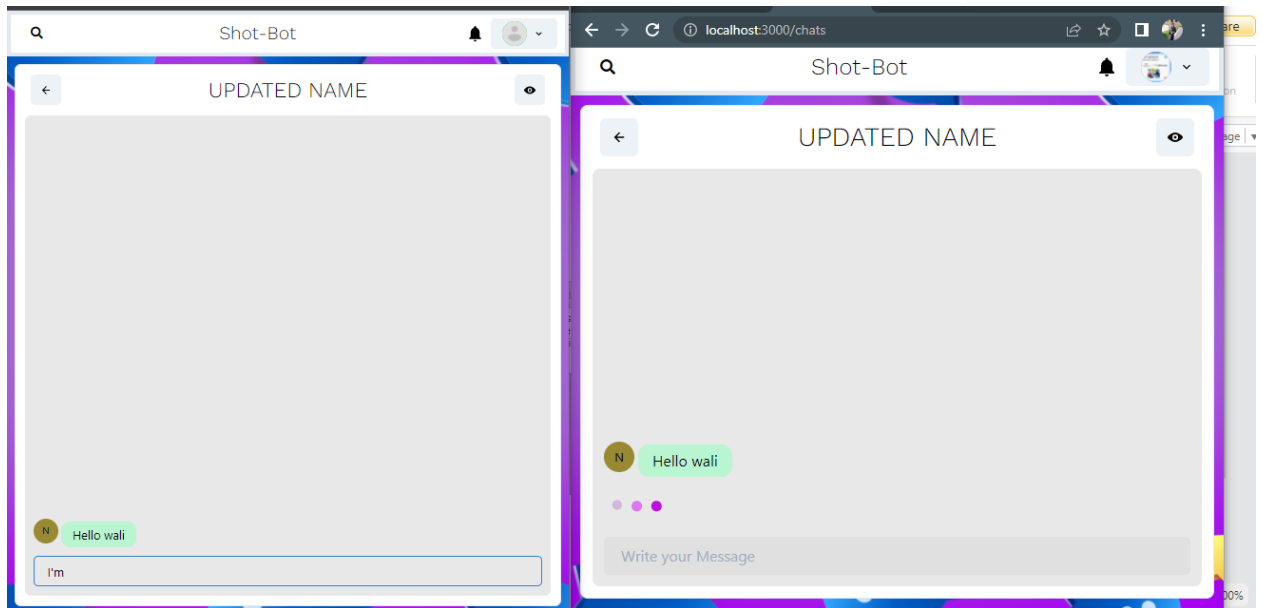


The screenshot shows the 'Shot-bot' login interface. The background is a vibrant purple with floating blue speech bubbles and yellow smiley face emojis. The login form is a white card with a purple header 'Shot-bot'. It features two tabs: 'Login' (active) and 'Sign Up'. The 'Login' section includes an 'Email' field with the placeholder 'guest@example.com', a 'Password' field with masked characters '...' and a 'Show' button, a purple 'Login' button, and a red 'Get Guest User Credentials' button.

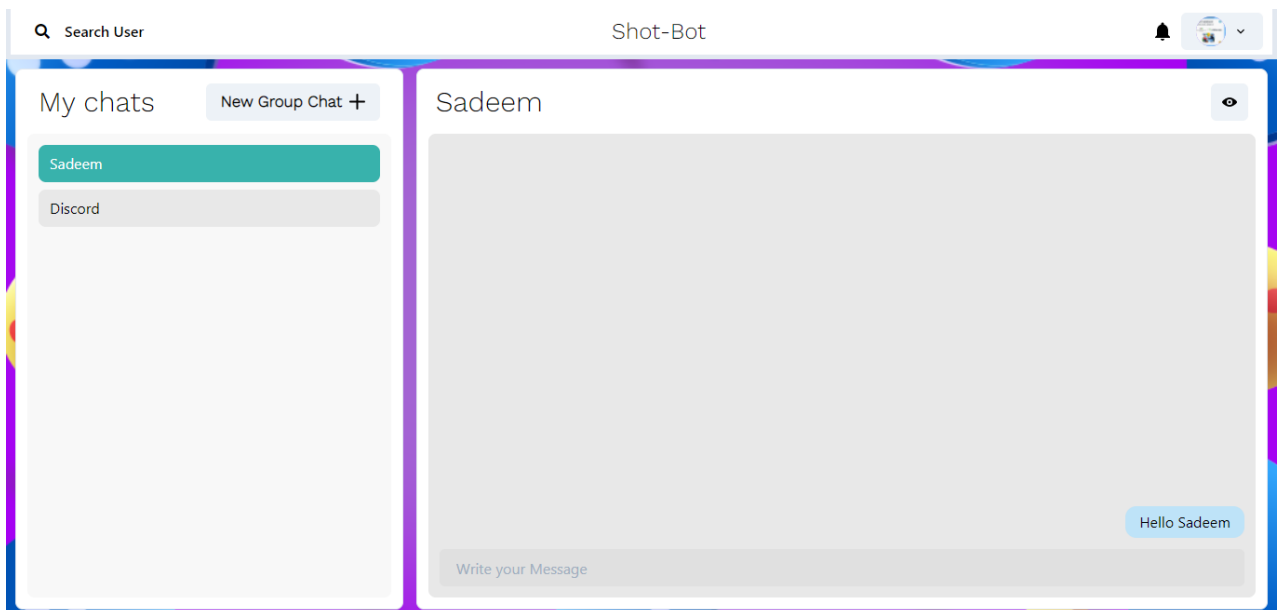


The screenshot shows the 'Shot-bot' sign-up interface. The background is the same vibrant purple with floating blue speech bubbles and yellow smiley face emojis. The sign-up form is a white card with a purple header 'Shot-bot'. It features two tabs: 'Login' and 'Sign Up' (active). The 'Sign Up' section includes a 'Name' field with the placeholder 'Ali', an 'Email' field with the placeholder 'ali123@gmail.com', a 'Password' field with the placeholder '1234' and a 'Hide' button, a 'Confirm Password' field with the placeholder '1234' and a 'Hide' button, and an 'Upload Your Picture' section with a 'Choose File' button and the text 'No file chosen'. A purple 'Sign Up' button is at the bottom.

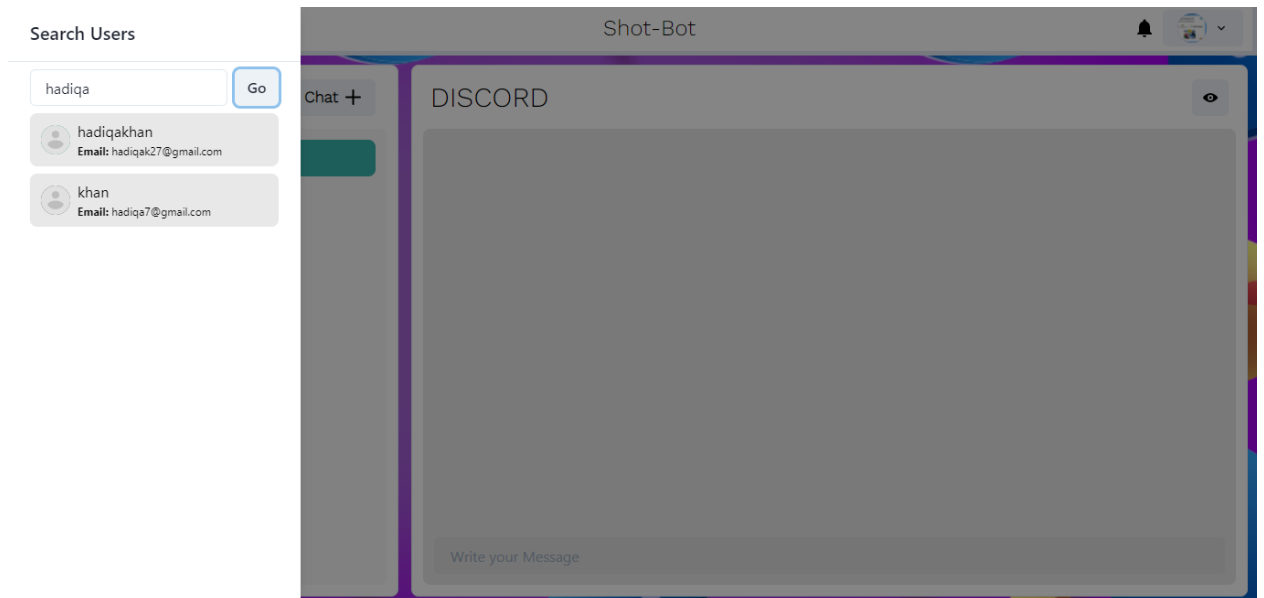
- ***Real Time Chatting with Typing Indicator***



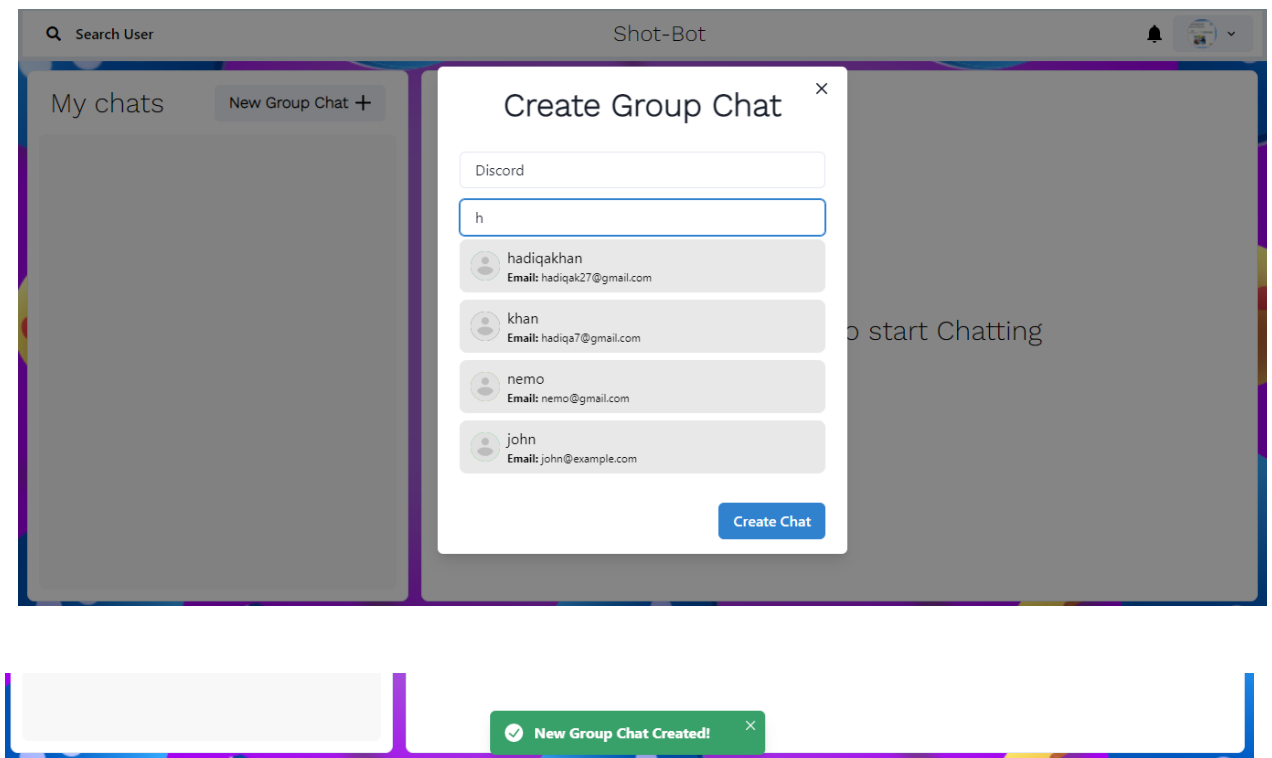
- ***Single Chat***



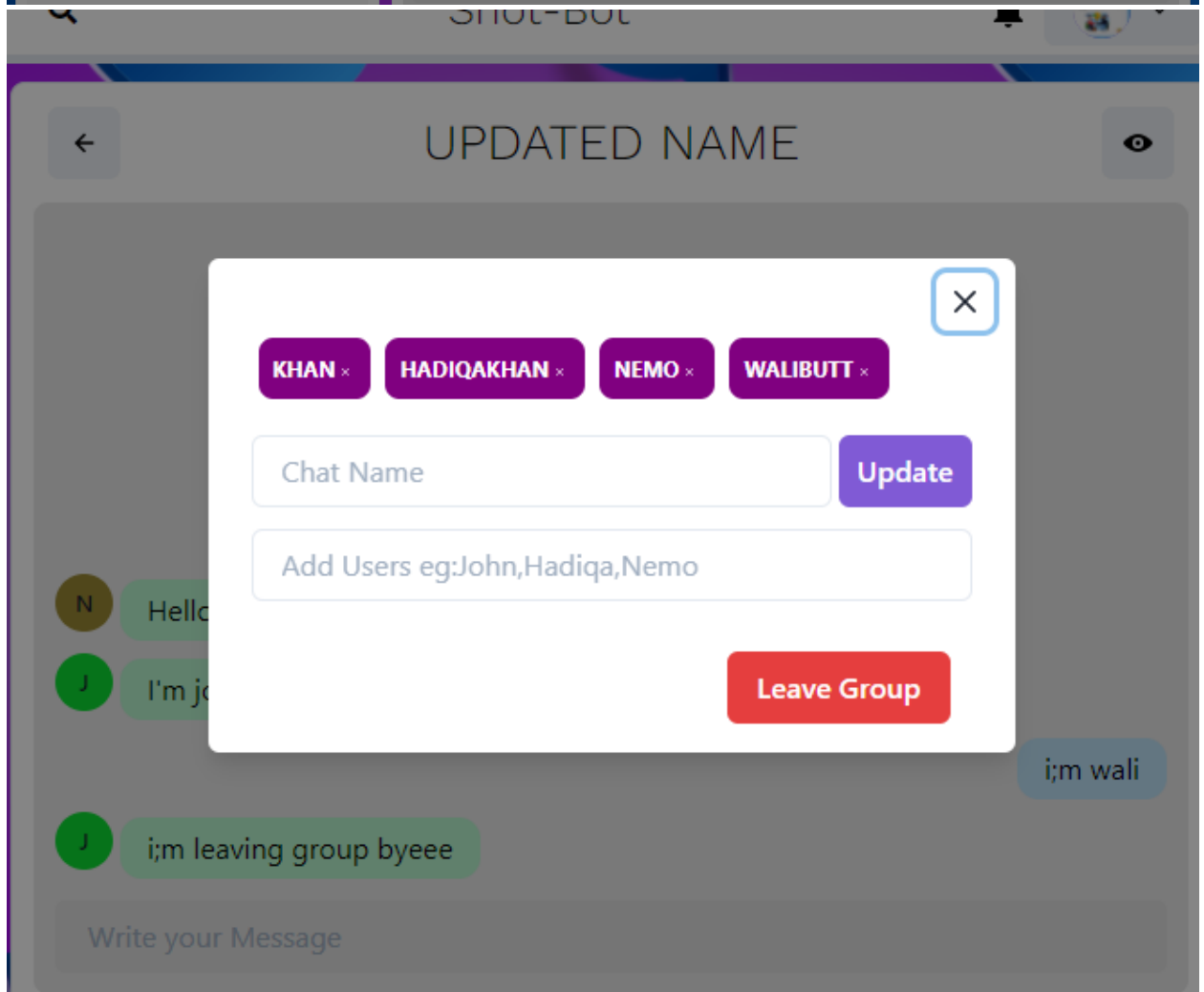
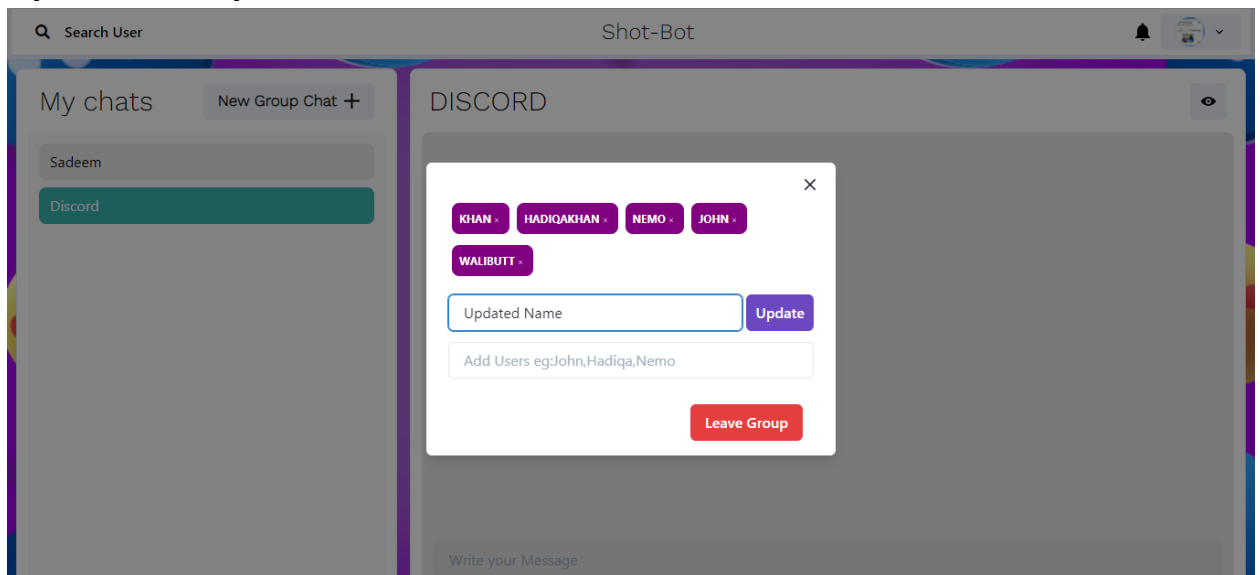
- ***Search Users***



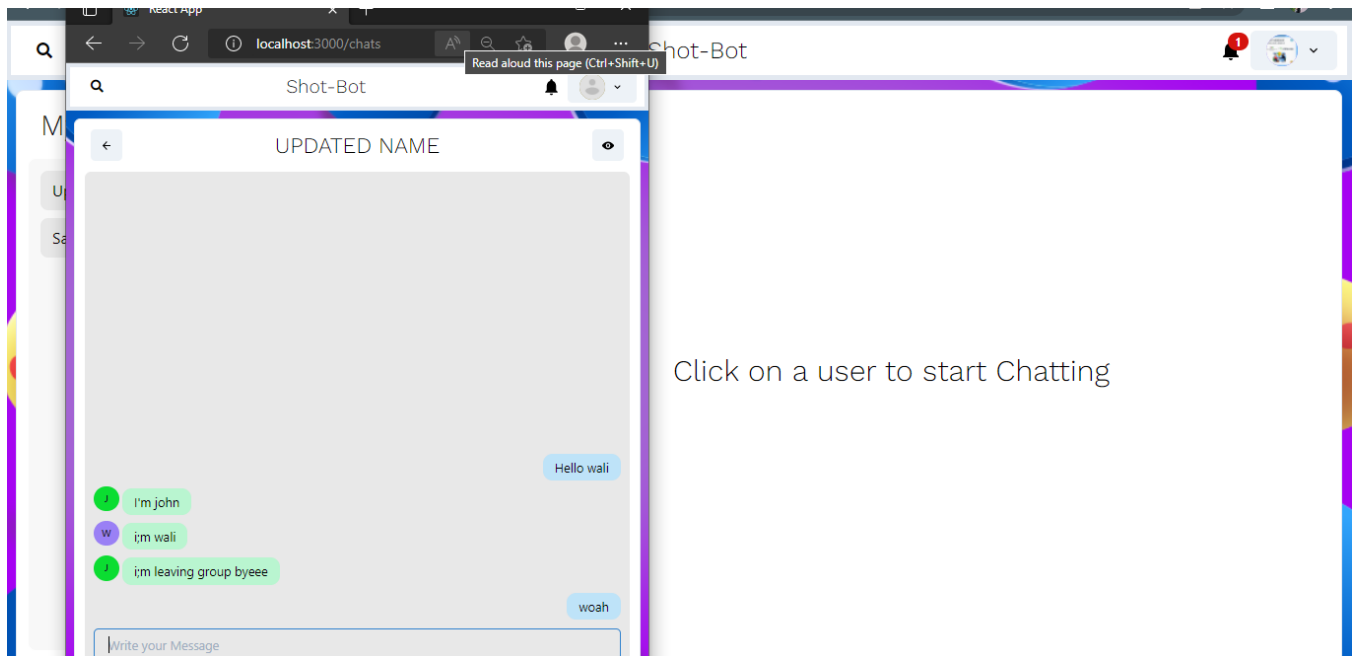
- ***Create Group Chat***



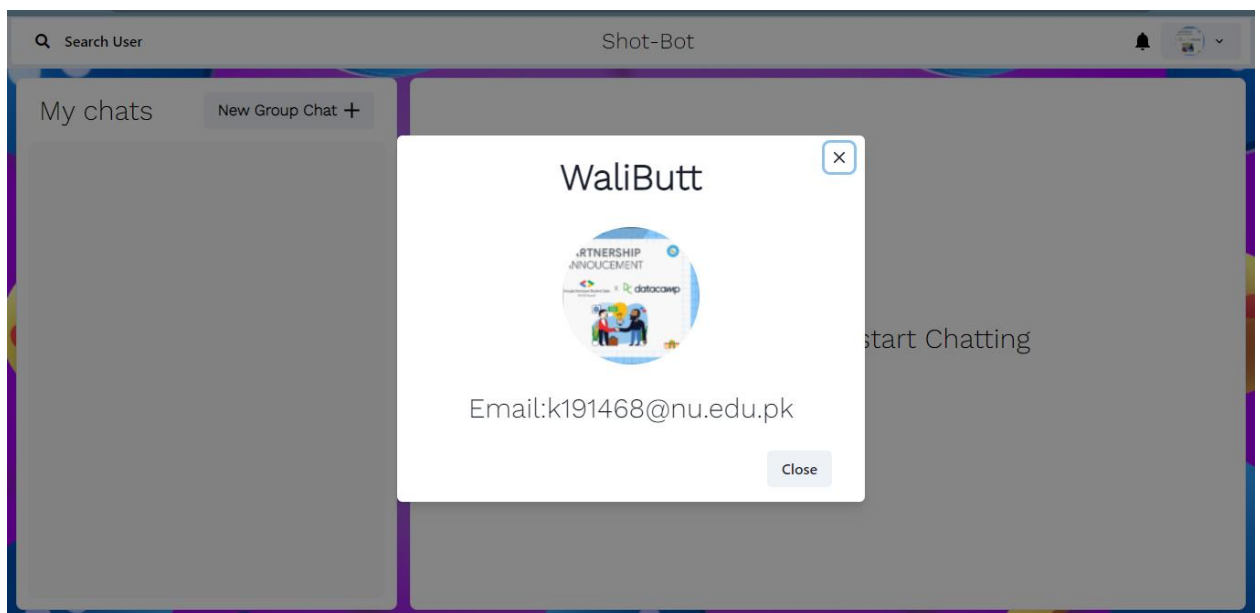
- **Update Group Chat**



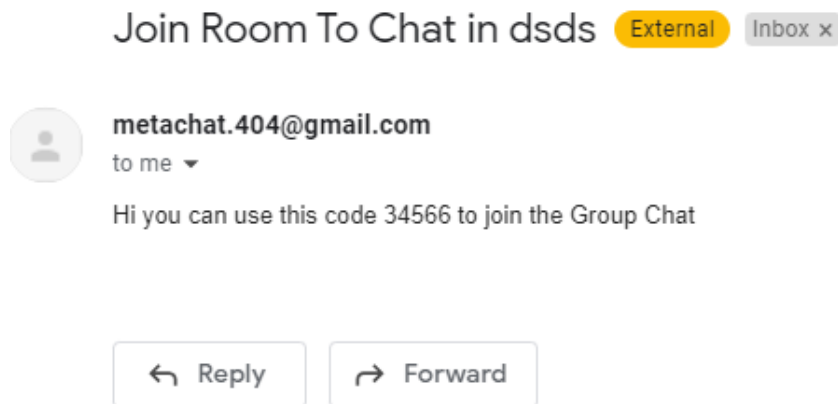
- **Get Notification**



- **Get User Info**



- **Send Email**



- **Send Files**

File transfer protocol is **a way to download, upload, and transfer files from one location to another on the internet and between computer systems**. FTP enables the transfer of files back and forth between computers or through the cloud.

