# KONGU ENGINEERING COLLEGE

PERUNDURAI ERODE-638060

Estd : 1984

Transform Yourself

## DEPARTMENT OF COMPUTER APPLICATIONS

# WEB BASED COMMUNICATION TOOL


**Team Guide:**

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# PROJECT OVERVIEW

- **User Management**: Login/Signup, Add/Remove Users, Profile Viewing, and User Search.
- **One-to-One Chats & Group Conversations**: Facilitates dynamic, real-time communication.
- **Real-Time Messaging**: Powered by Socket.io for instant updates.
- **Secure Authentication**: Utilizes JWT for secure login and data protection.
- **Responsive Design**: Ensures compatibility across devices for seamless user experience.
- **Outcome**: A robust and scalable communication tool offering a user-friendly, secure, and efficient platform for interactive communication.

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# EXISTING SYSTEM

- **Mobile-First Design**: Popular chat platforms like WhatsApp and Telegram are optimized for mobile devices.
- **Limited Web Functionality**: Some apps lack robust web-based features or require a mobile device for authentication and use.
- **Mobile Dependency**: WhatsApp Web, for example, relies on the mobile app for data synchronization, authentication, and connectivity.
- **Connectivity Issues**: If the mobile device loses internet access or battery power, the web version becomes unusable

# PROPOSED SYSTEM

- **Independent Web Functionality**: Access directly from any web browser without relying on mobile devices for authentication or synchronization.
- **User-Friendly Authentication**: Secure JWT-based login supports multi-device access.
- **Real-Time Communication**: Instant message delivery for one-to-one and group chats, powered by Socket.io.
- **Group Chat & Collaboration**: Efficient management of chat groups for enhanced collaboration.

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# TECHNOLOGIES USED

**FRONT-END**

- REACT JS
- HTML
- CSS

**BACK-END**

- NODE JS
- MONGO DB

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# DATAFLOW DIAGRAM

**LEVEL 0**

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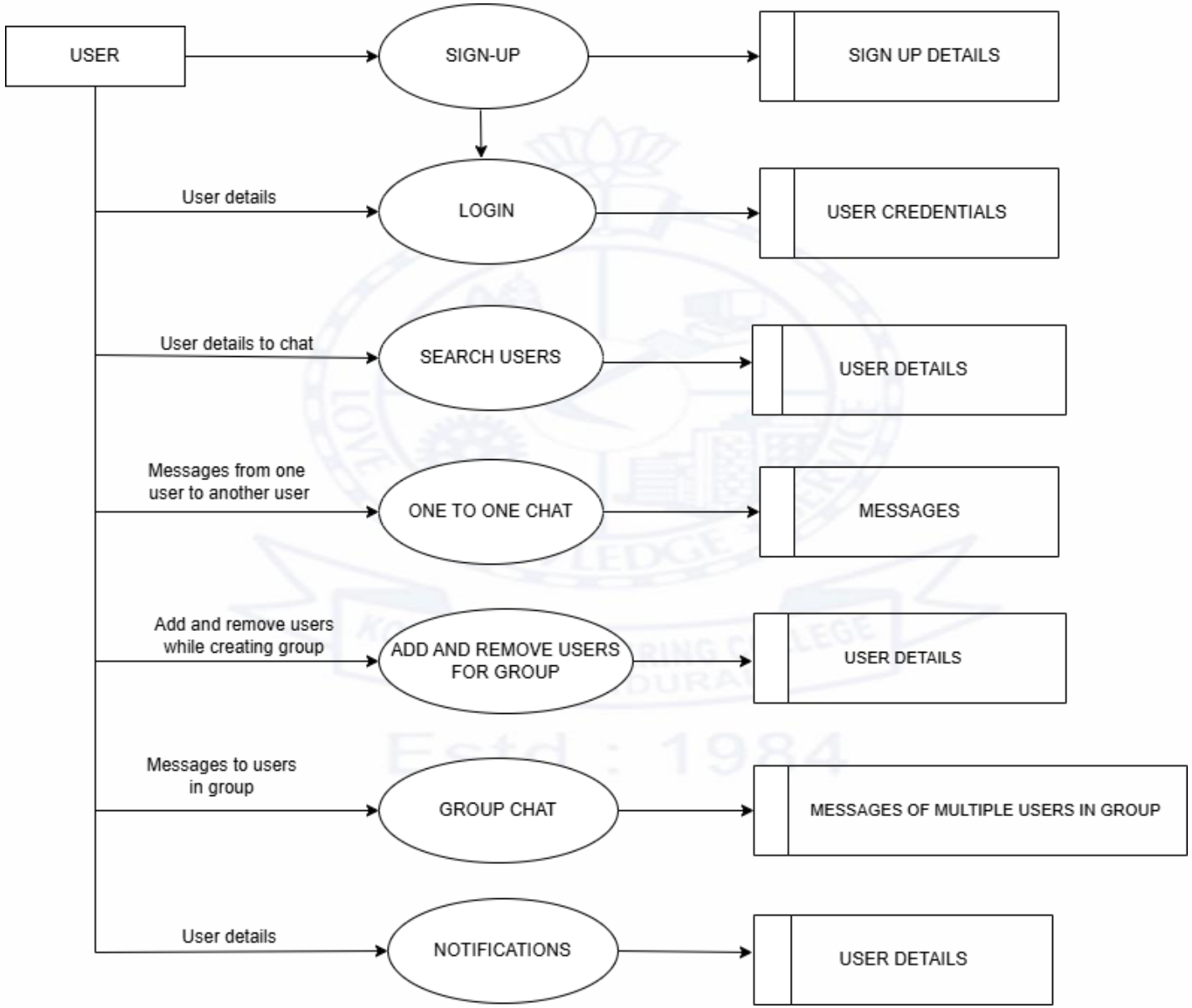
# LEVEL 1


USER
SIGN-UP
SIGN UP DETAILS
User details
LOGIN
USER CREDENTIALS
User details to chat
SEARCH USERS
USER DETAILS
Messages from one user to another user
ONE TO ONE CHAT
MESSAGES
Add and remove users while creating group
ADD AND REMOVE USERS FOR GROUP
USER DETAILS
Messages to users in group
GROUP CHAT
MESSAGES OF MULTIPLE USERS IN GROUP
User details
NOTIFICATIONS
USER DETAILS

# MODULE DESCRIPTION

## LOGIN/SIGNUP:

- **User Registration**: New users can create an account by providing email, name, password, and profile details.
- **Login Authentication**: Users log in using their email and password.
- **Credential Validation**: The system validates the entered credentials for accuracy.
- **JWT Token Generation**: Upon successful login, a JWT token is generated for secure session management.
- **Session Management**: JWT tokens keep users logged in during active sessions.

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## SEARCH USER:

- **Advanced Search Functionality**: Allows users to search for others by **name** and **email**.
- **Efficient Querying**: Uses **MongoDB's text indexing** for fast and effective searches, even with large datasets.
- **Relevant Results**: Displays relevant user profiles in the search results.
- **Direct Chat Links**: Provides direct links to start chats with searched users.

## ONE-TO-ONE CHATS:

- **Private Messaging**: Enables real-time, private messaging between two users.
- **Conversation Initiation**: Users can start conversations with any registered user.
- **Real-Time Communication**: Powered by **Socket.io** for instant message delivery and smooth communication.
- **Message Storage**: All conversations are securely stored in the database for future reference

## GROUP CHATS:

- **Group Communication**: Supports collaborative discussions among multiple users.
- **Group Creation**: Users can assign names, add members, and remove users while creating groups.
- **Message Sharing**: Group members can send messages and announcements visible to all participants.
- **Real-Time Interaction**: Ensures instant communication within the group using **Socket.io**.

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## NOTIFICATION:

•**Real-Time Alerts**: Notifies users about new messages and group updates.

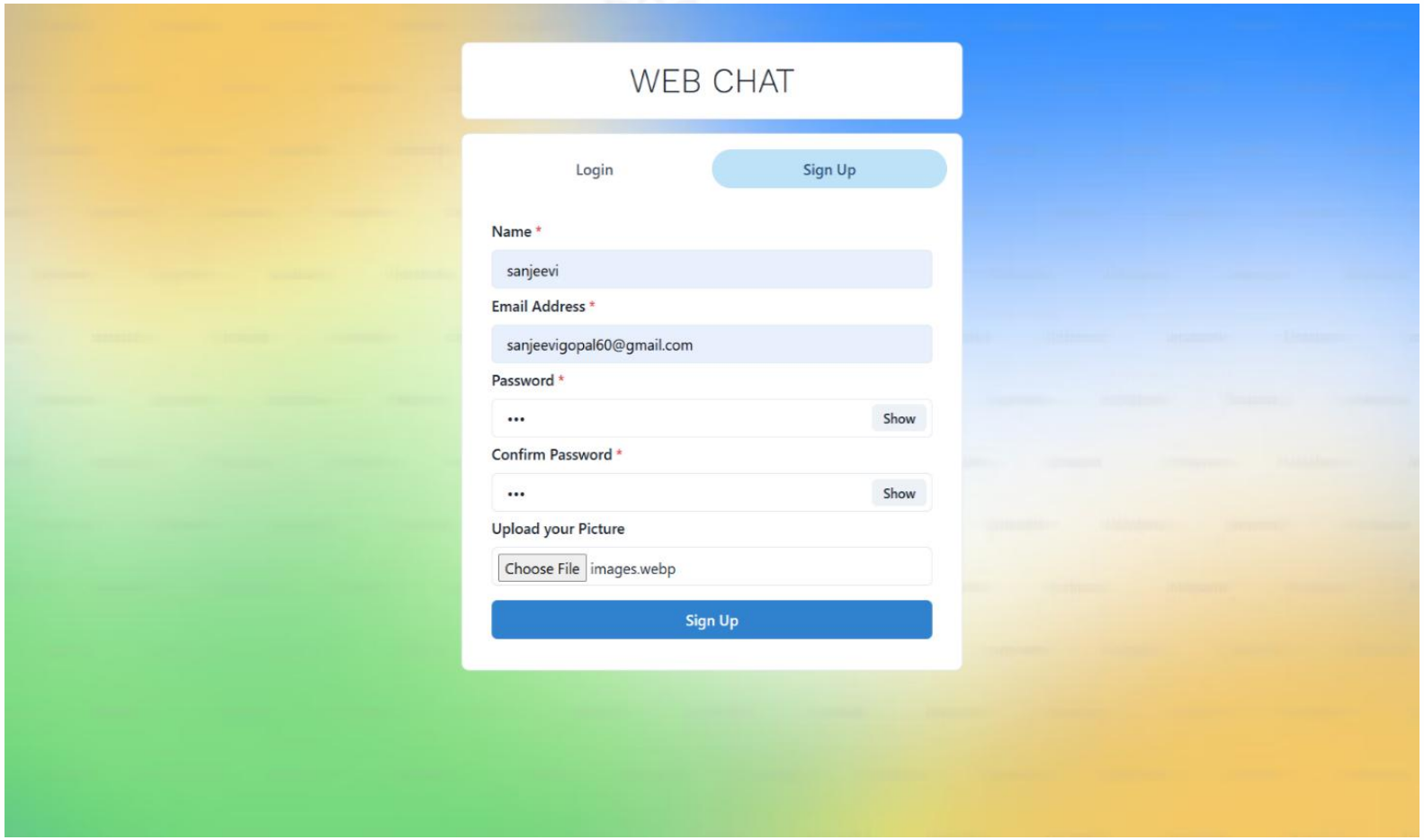
•**Message Notifications**: Includes alerts for both **chat messages** and **group messages**.

•**Persistent Notifications**: Notifications are stored in the database and remain displayed until dismissed or marked as read.

•**User Engagement**: Ensures users stay informed about important events in real-time.

# SCREEN SHOTS

SIGNUP PAGE



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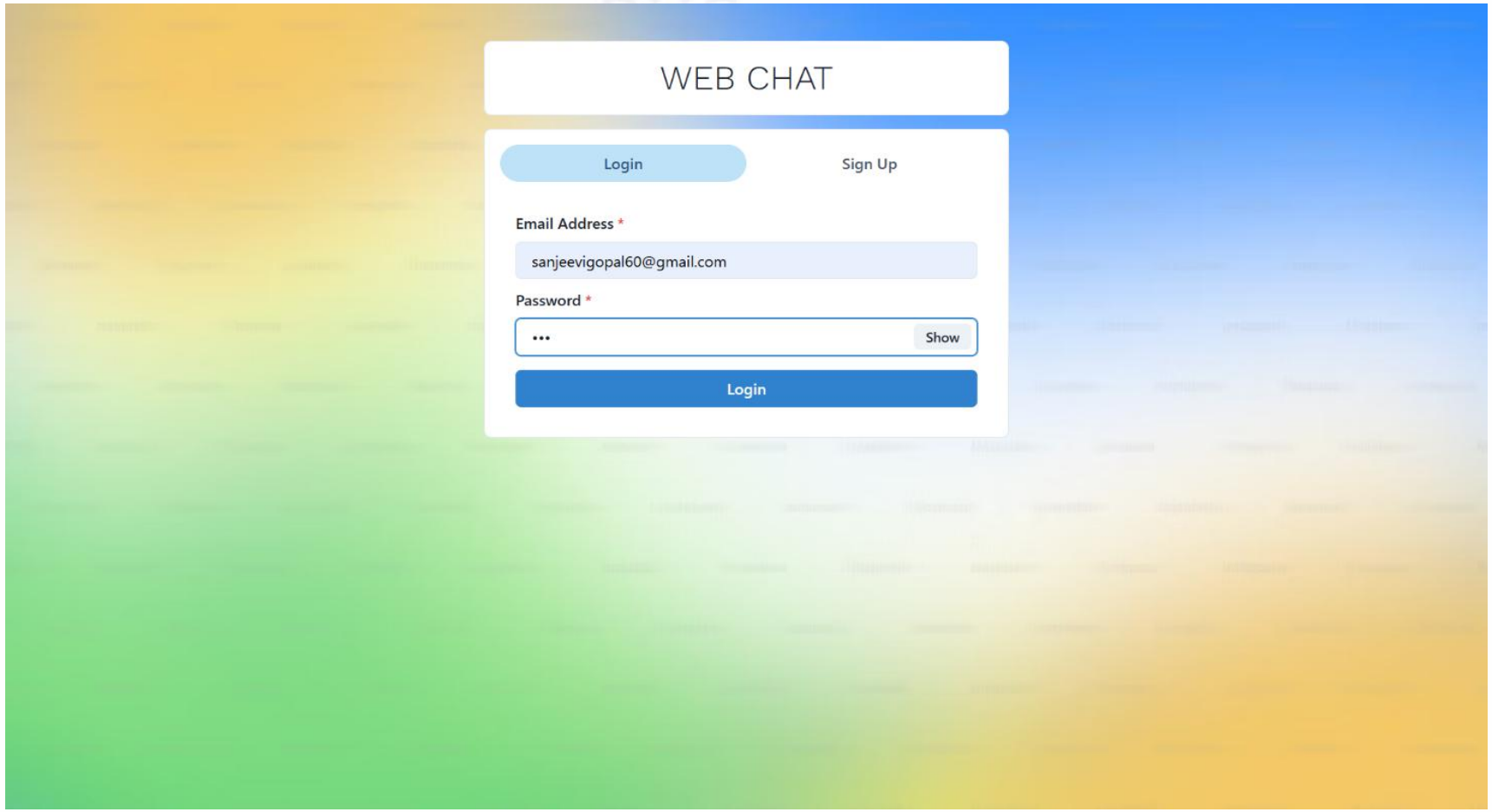
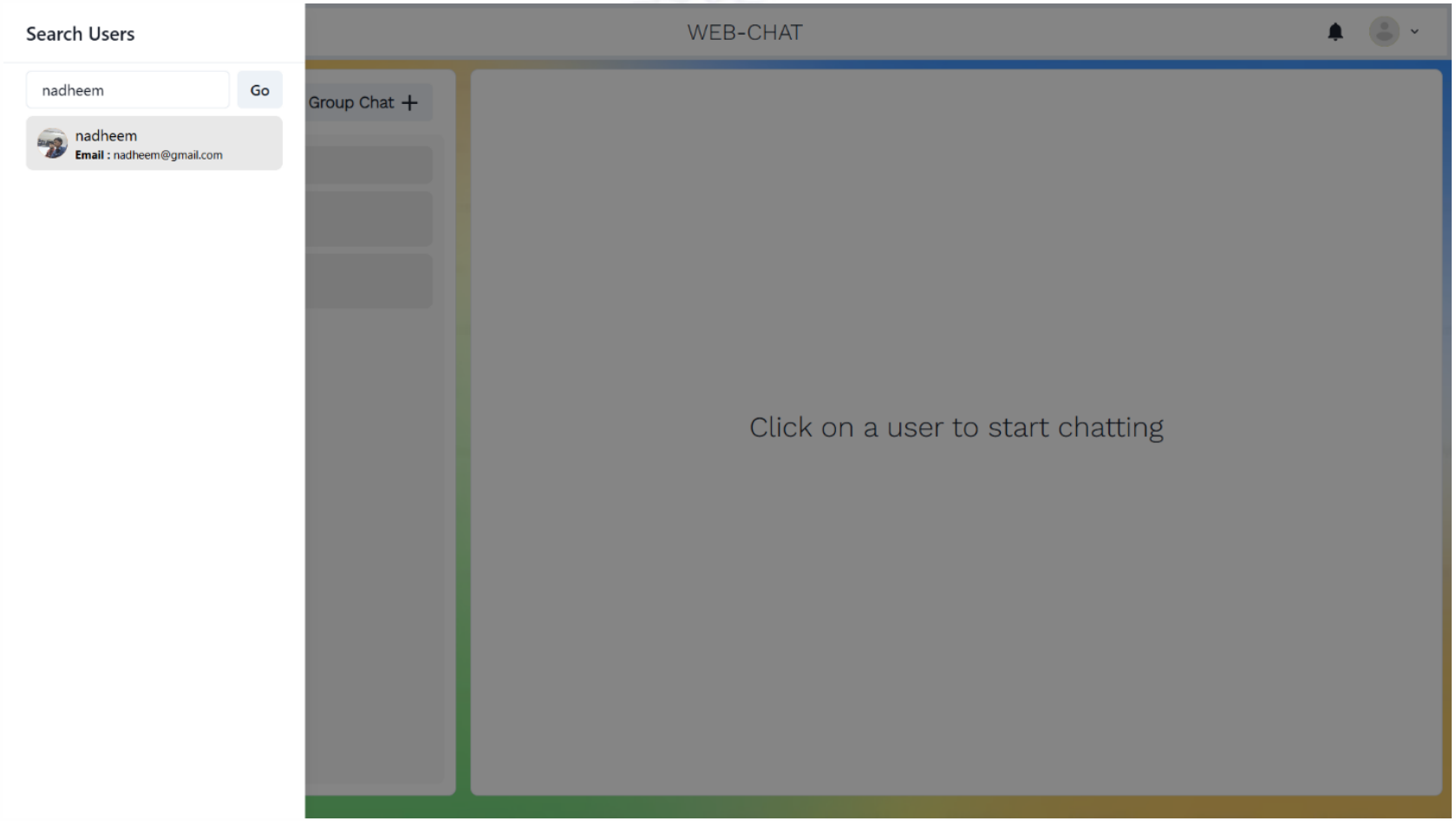
# LOGIN PAGE



# SEARCH USER


Search Users
nadheem
Go
nadheem
Email : nadheem@gmail.com
WEB-CHAT
Group Chat +
Click on a user to start chatting

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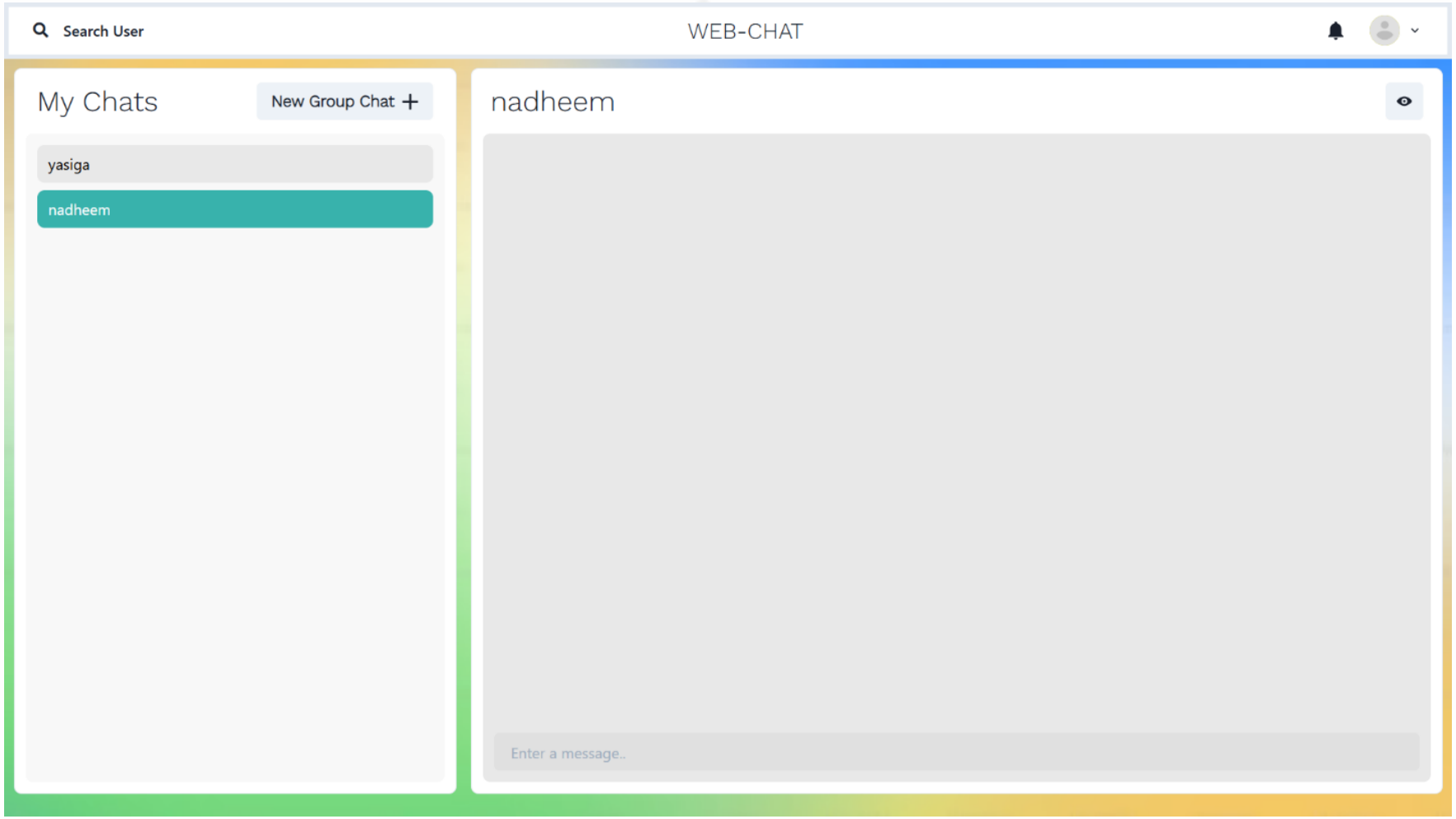
# CHAT INTERFACE



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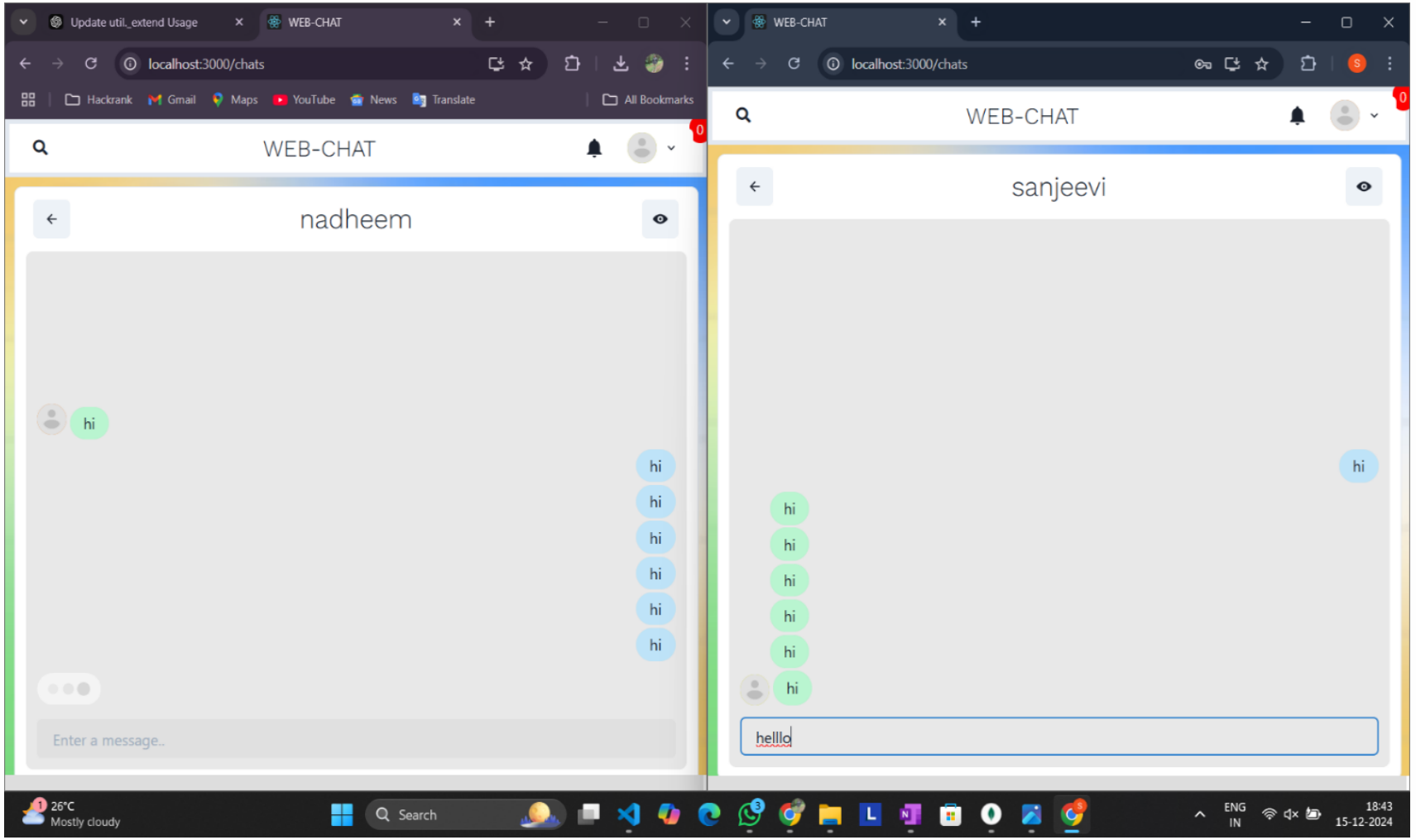
# ONE TO ONE CHAT



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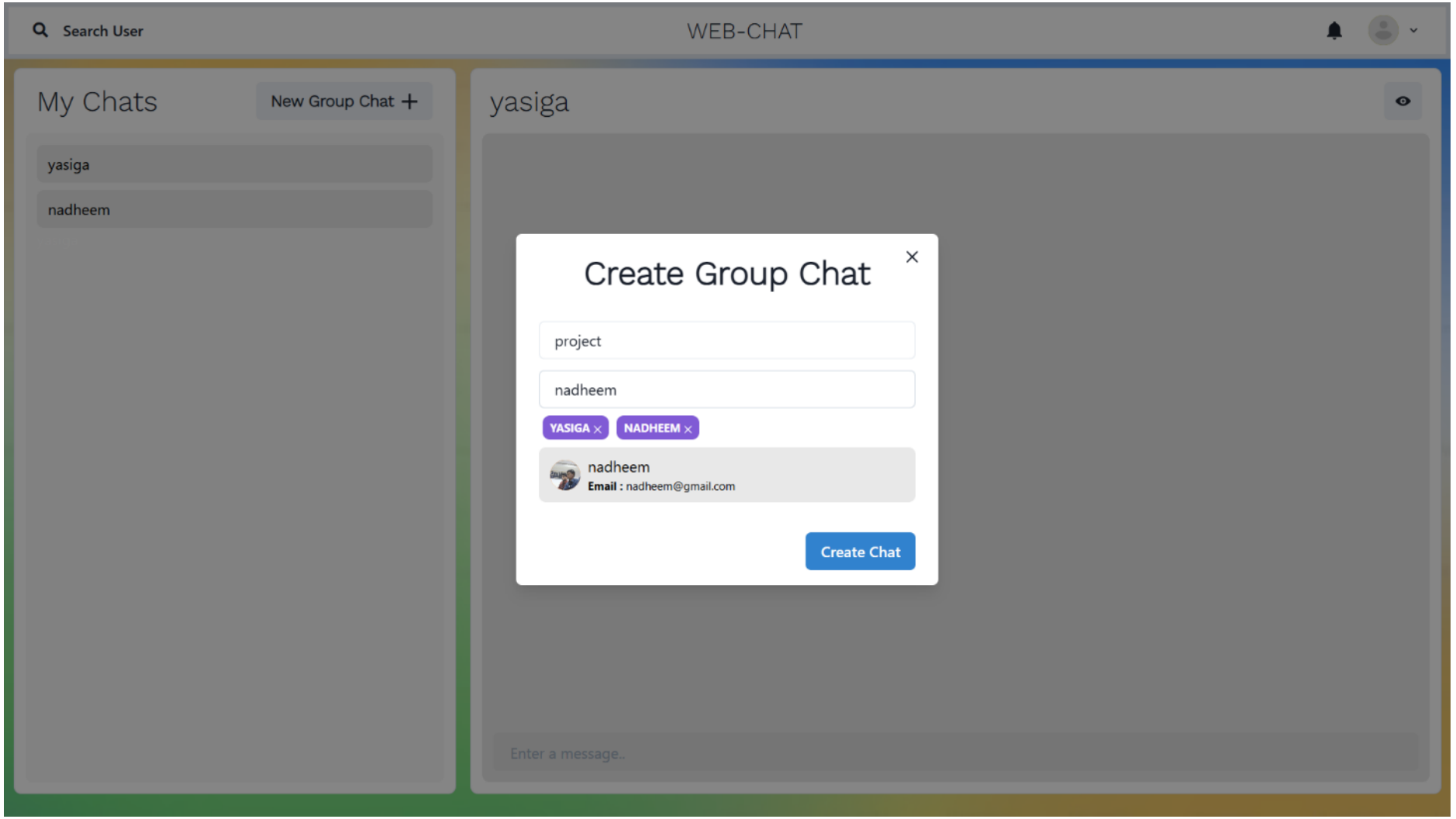
# GROUP CHAT



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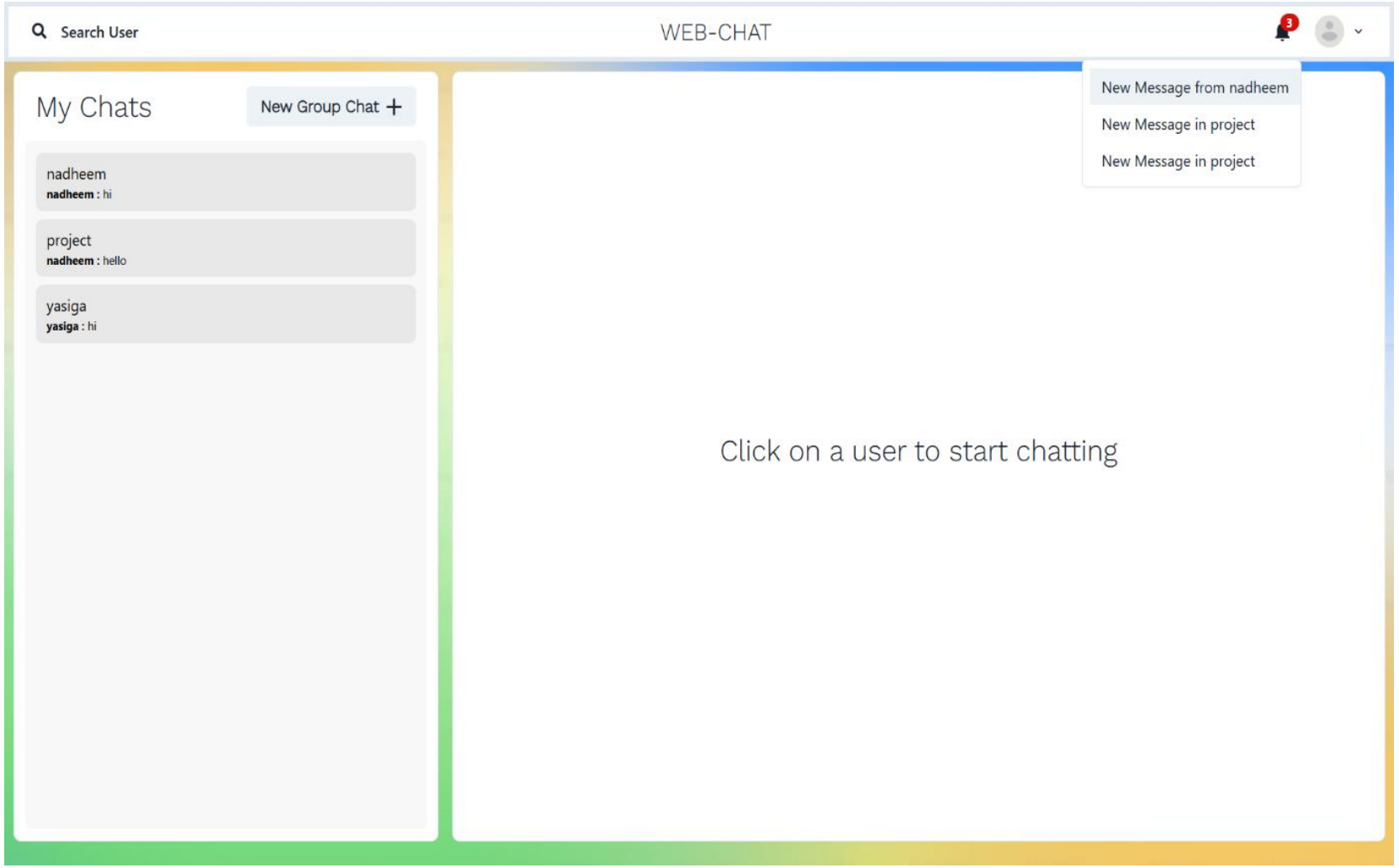
# NOTIFICATION



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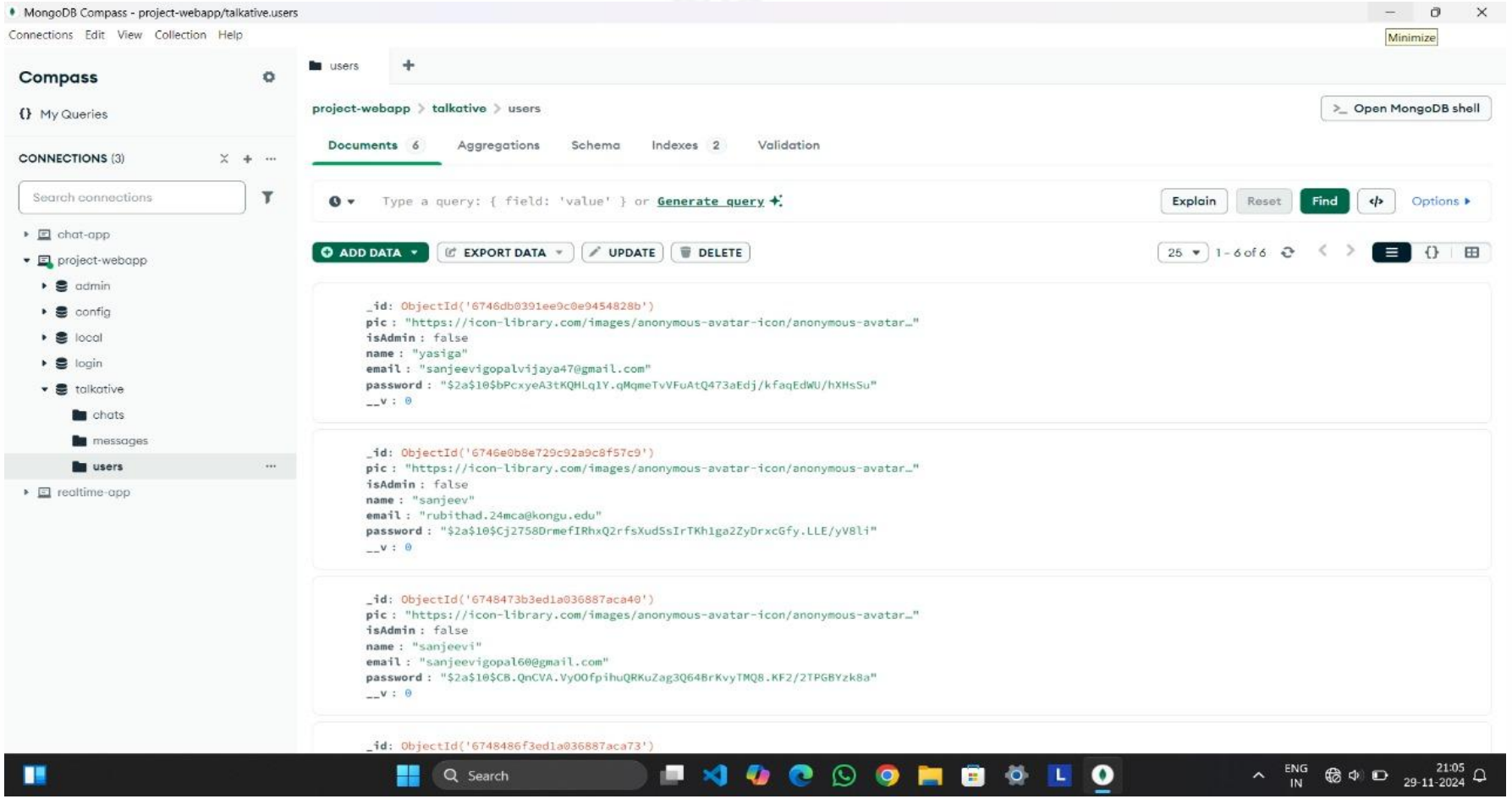
# DATABASE FOR USERS



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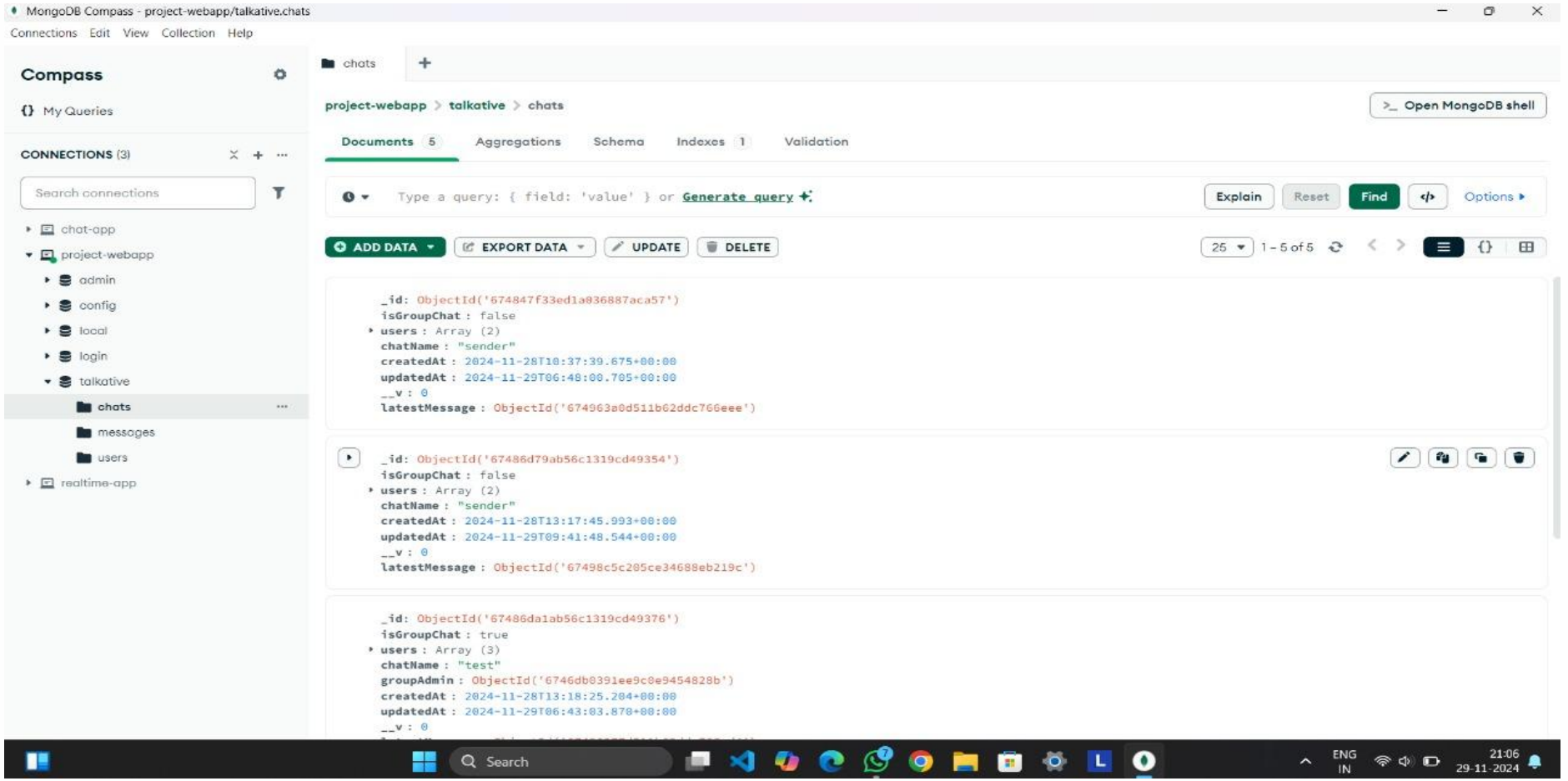
# DATABASE FOR CHATS



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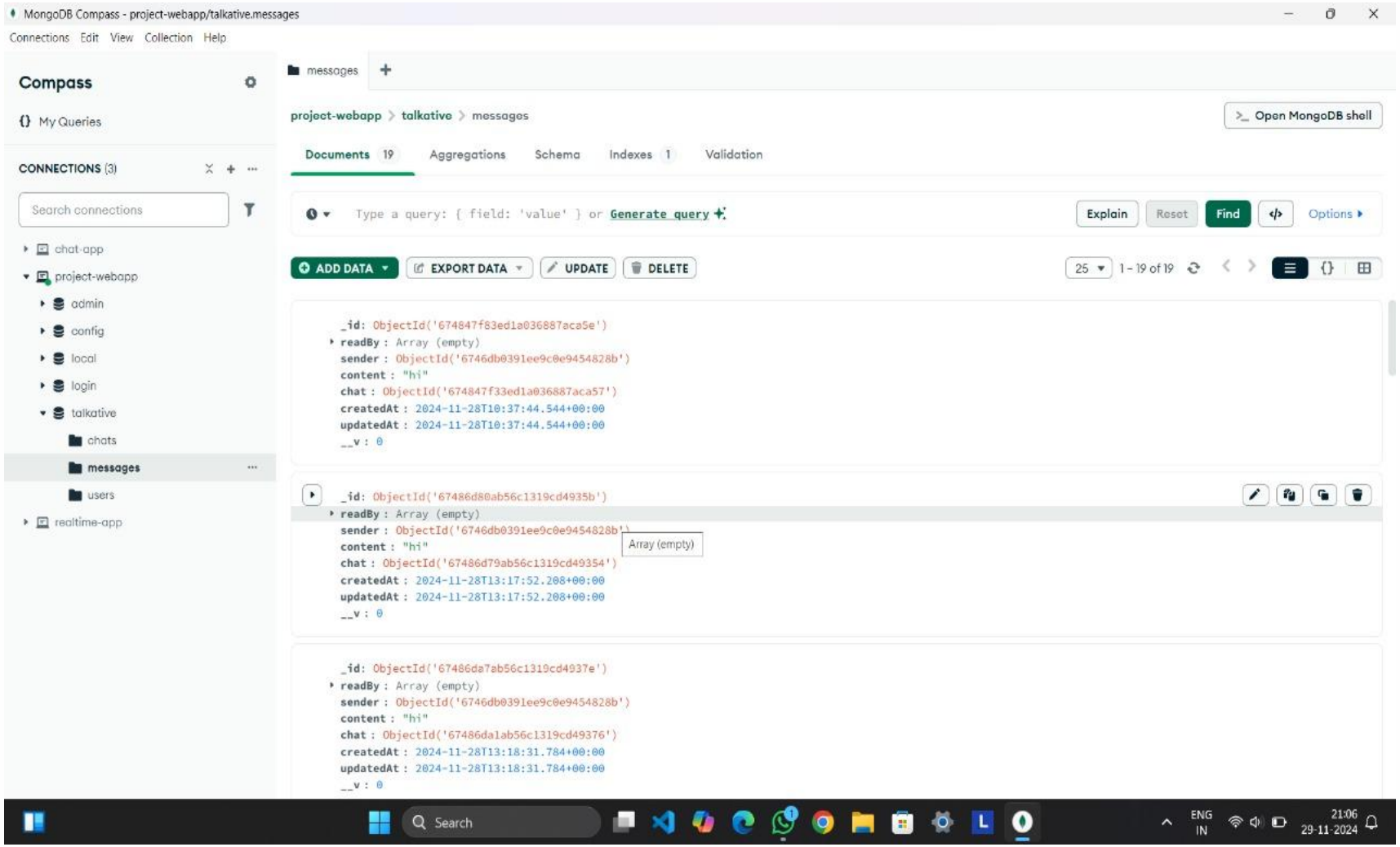
# DATABASE FOR STORE MESSAGES



# CONCLUSION

- **Enhanced Communication**: The tool offers features like **one-to-one chat**, **group chat**, **user search**, **profile viewing**, and **real-time notifications** to streamline user interactions.
- **Simplified User Experience**: Makes it easier for users to stay connected, manage conversations, and find others efficiently.
- **Scalable Platform**: Ensures adaptability to meet evolving communication needs.
- **Focus on Security**: Provides a secure communication environment for users.
- **Seamless Experience**: Prioritizes smooth user experience, making it suitable for both personal and professional use

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THANK
YOU !