

# System Design Report

ChatSphere

September 28, 2023

# 1 Introduction

ChatSphere is your vibrant and dynamic online space for engaging conversations, connecting with people from around the globe, and sharing ideas in real time. Step into a world where the art of dialogue is celebrated and friendships are forged through words.

## 2 Features and Functionality

- **Real-Time Messaging:** Instantly connect with others through our intuitive and user-friendly chat interface.
- **Group Chat Room:** Get in touch with everyone using the platform.
- **Individual Chats:** Have personal conversations with friends or make new ones in a private setting.
- **Search Users:** Discover new friends across the platform and enrich your chatting experience on ChatSphere.

### 3 Architecture Design

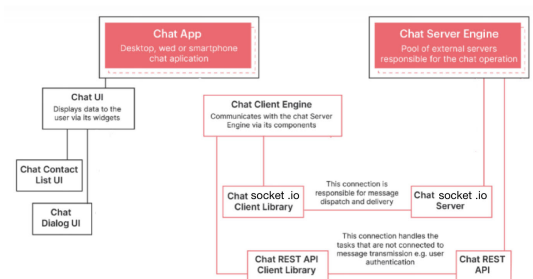


Figure 1: Architecture Design

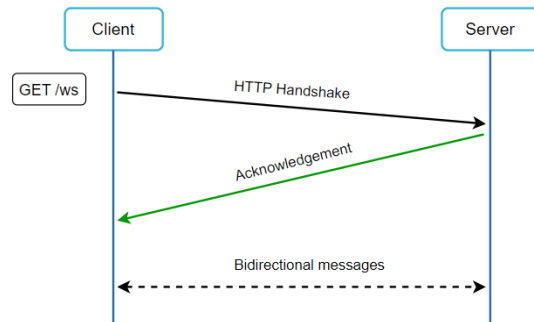


Figure 2: socket.io connection

## 4 Database Design

Field	Type
name	String
password	String
email	String
addedOn	Date

Figure 3: User Schema

Field	Type
time	Date
sender	String
message	String
imgurl	String
id	String
senderEmail	String

Figure 4: chatPool object

## 5 Technology Stack Used

### 5.1 Website -

MERN stack

### 5.2 Bidirectional Data Flow -

socket.io

## 6 Scope for improvement

- Responsiveness of the website
- Notification center
- User profile customization
- Improvement in UI/UX
- Adding more features such as calling and chatbot
- Allowing users to make groups between them