

Hermes Chat

Software Engineering Lab

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Overview

Overview

Hermes is a highly scalable real-time chat application available to many users around the world. It offers a medium of connection between people and creates an online platform to have casual conversations as well as manage industrial teams.

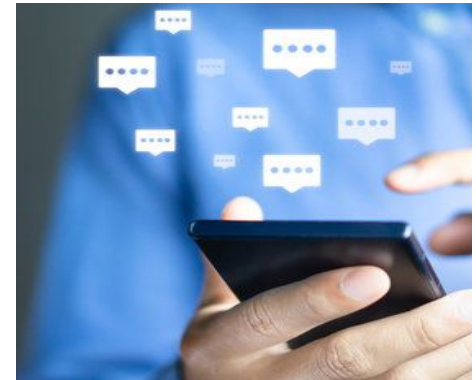
Hermes offers a slew of features that enables an environment where groups and individuals can have formal or informal conversations with increased productivity.

Purpose and Scope of Hermes

Purpose

The purpose of the application is to help connect many people to create an online virtual community to share ideas, work, or casual purposes. It is a collaboration platform where individuals or different teams within an organization can discuss and share ideas.

It offers a means to create a productive environment for professionals, and at the same time, it can also be utilized as an application for a casual conversation among individuals/groups.



Scope of the Application

The Software product to be developed is a chat application that shall essentially provide services such as an environment that a team/group of individuals/employees/peers can utilize to have formal or informal conversations.

This application aims to make collaboration and interaction between individuals/employees/peers hassle-free and as interactive as possible to simulate a work/casual environment due to the advent of the era of COVID-19.

Target Audience

As mentioned in the previous slides, the targeted audience for the Hermes chat application comprises of employees of companies, friend and family groups, and individuals who wish to have a platform to converse and work with people.

Features of Hermes

Features of Hermes

Hermes offers a rich set of features that enables conversations between people and brings in increased productivity for organizations.

The list of features are as follows:

1. User dashboard
2. Groups and One-to-one text
3. Voice call
4. Channels
5. Permissions
6. Roles
7. Event scheduler & Calendar

Requirements

Non-Functional Requirements

Non-functional requirements are those which specifies criteria that can be used to judge the operation of a system, rather than specific behaviours:

1. Performance
2. Security
3. Portability
4. Scalability
5. Interface Requirements:
 - a. User Interface
 - b. Hardware Interface
 - c. OS Permissions

Software Requirements

The user needs to have:

OS (Android 8 and above, iOS 9 and above)

The application is built using the following technologies:

1. Front-end technologies (Flutter, Dart)
2. Back-end technologies (NodeJS, MongoDB)
3. We will use socket.io to implement web-sockets in Dart and Node.JS for real-time communication like voice and text chat.

Hardware Requirements

User device hardware requirements

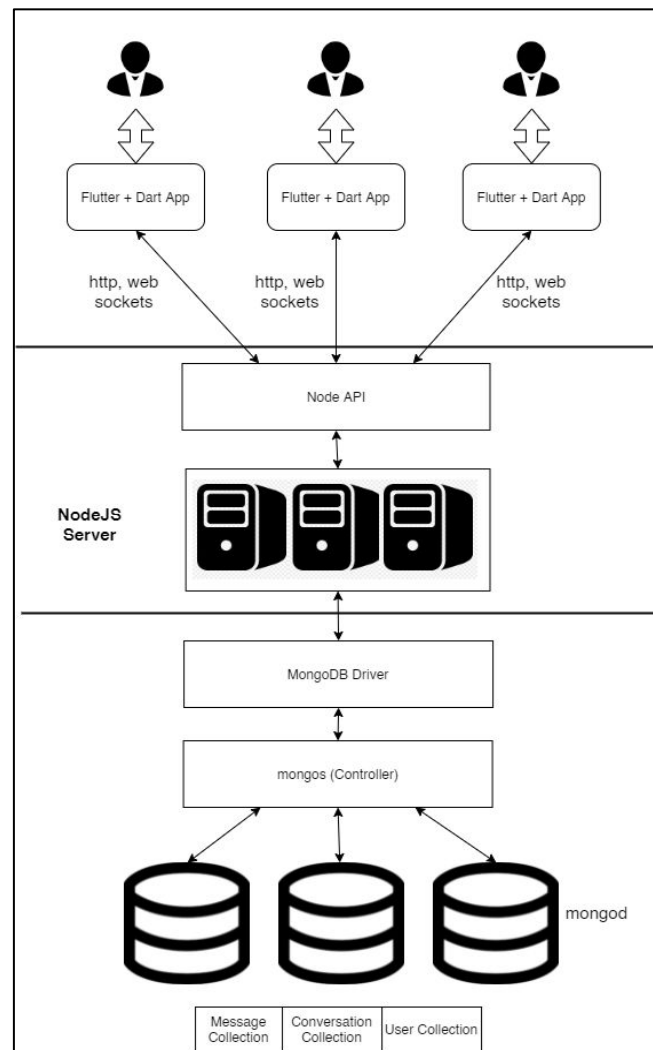
1. 2GB+ RAM
2. Quad-core Mobile Processor (1.5GHz+ Clock Rate)
3. 200MB+ storage
4. Mobile interface (touchscreen + microphone + speaker)
5. Working internet connectivity (1 Mbps+ connections)

System Architecture

System Architecture

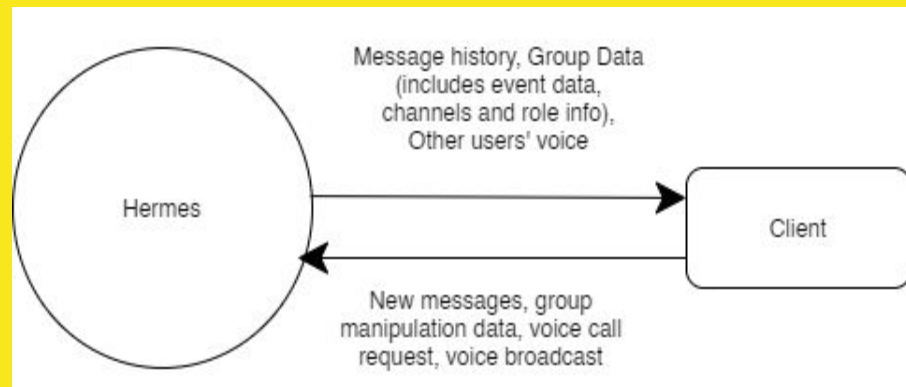
A system architecture is an abstract depiction of different components in a system. It is made to give developers and users a better understanding of the system. Depending on the viewer and purpose, there are different ways of abstraction to form a system architecture.

The physical view of the system architecture gives an idea off the interaction between the server, database and the client-side application.

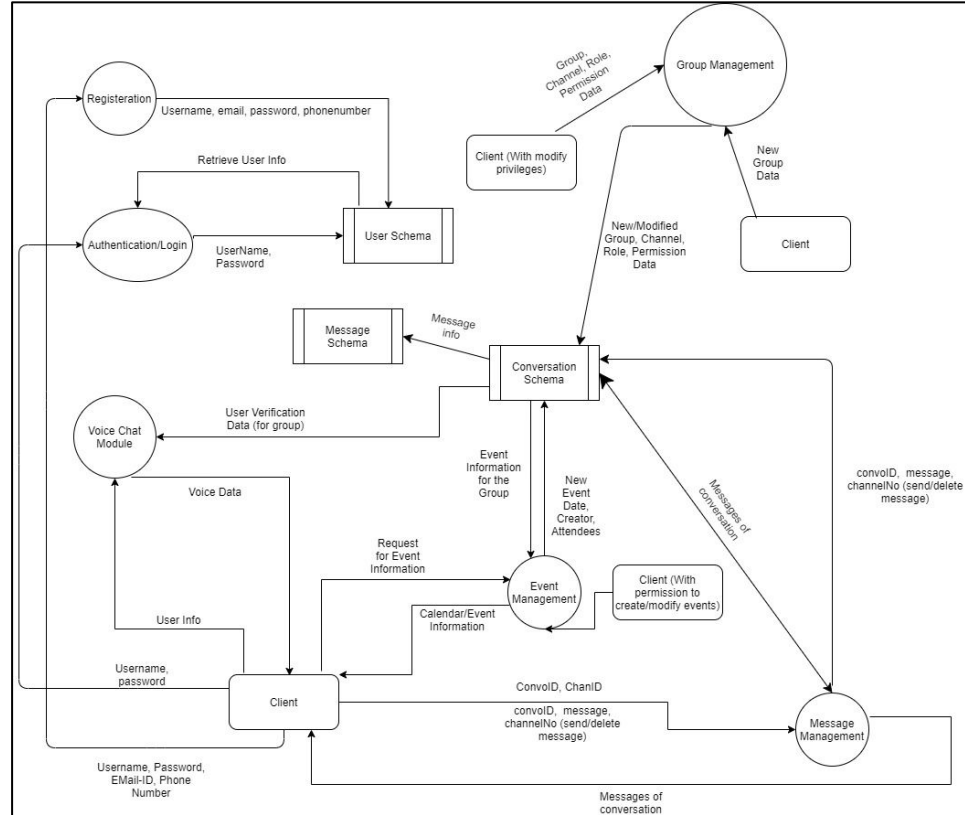


Data Flow Diagrams

Level 0



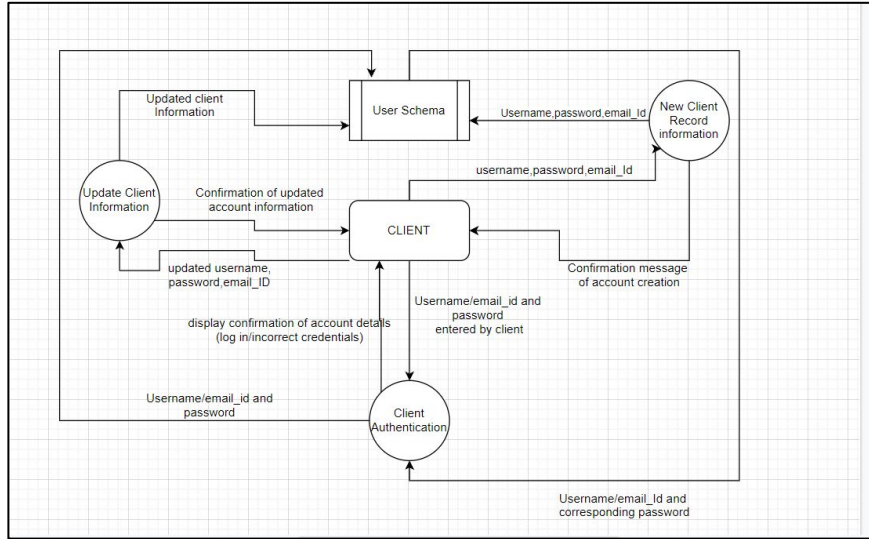
Level 1 DFD



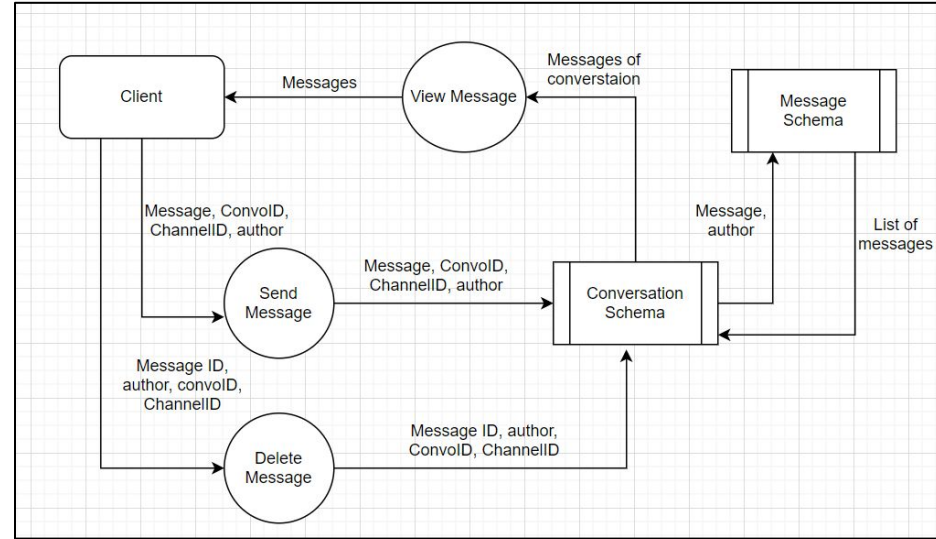
Level 2 DFD

1. Authentication/Login & Registration
2. Message Management
3. Group Management
4. Event Management
5. Voice Chat Module

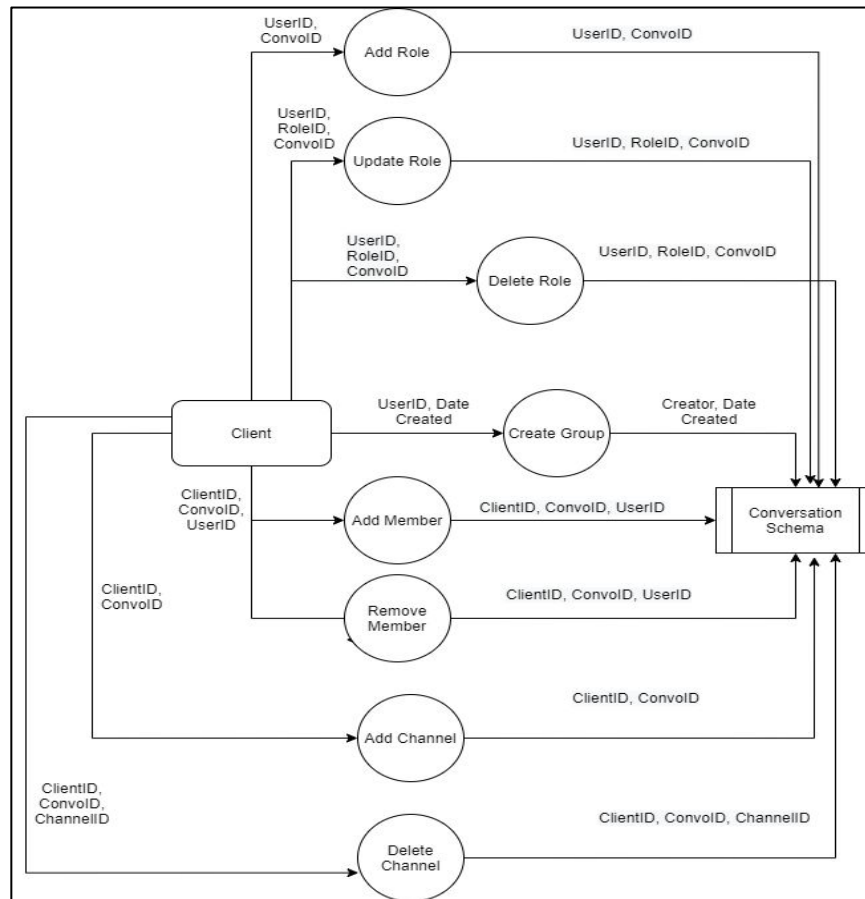
Authentication/Registration

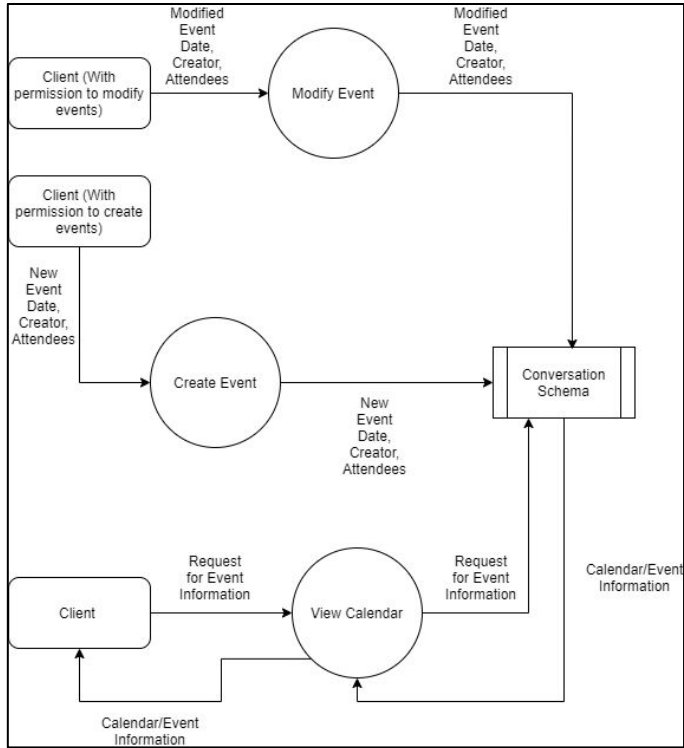


Message Management

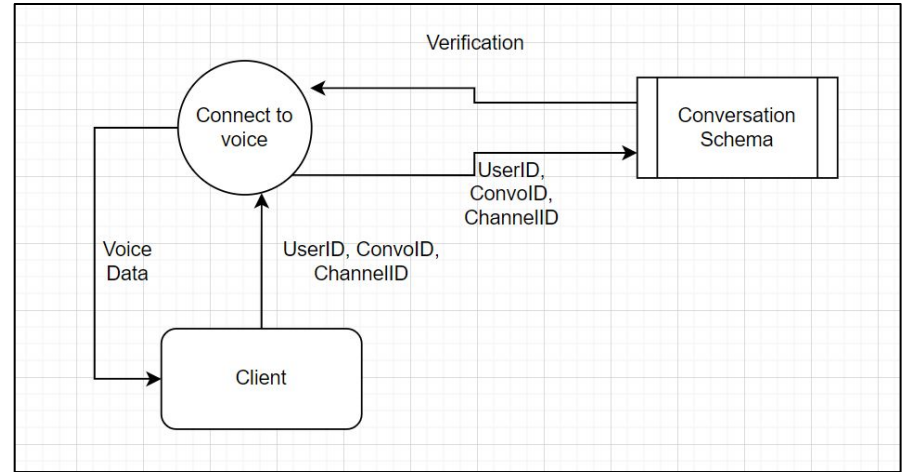


Group Management





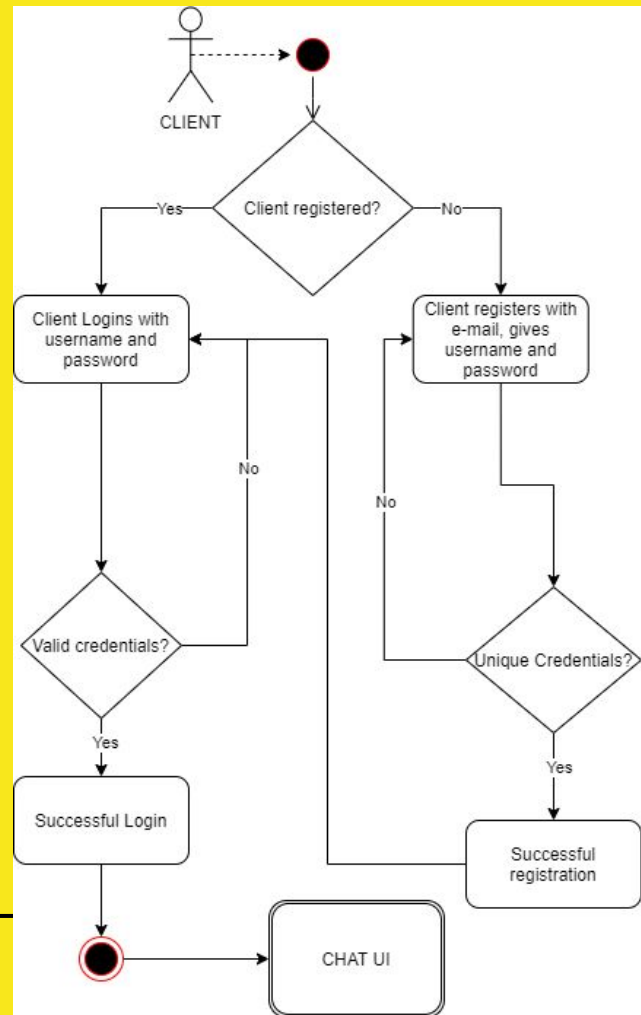
Event Management



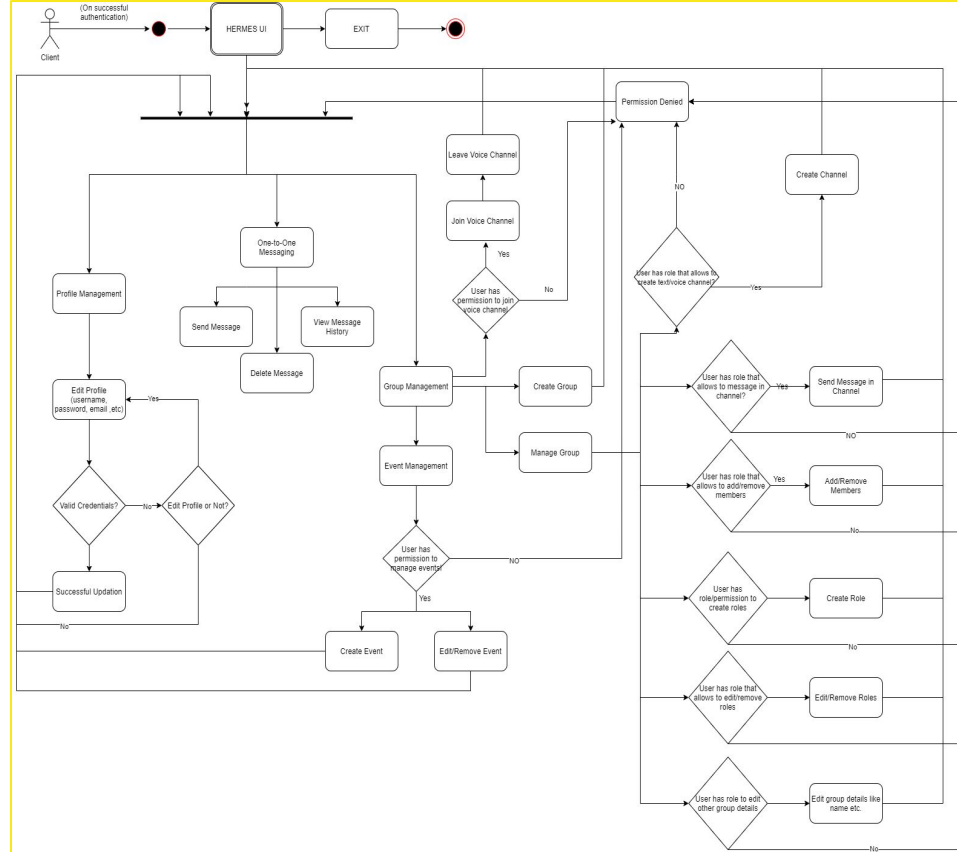
Voice Chat

Activity Diagram

Login/Registration Module



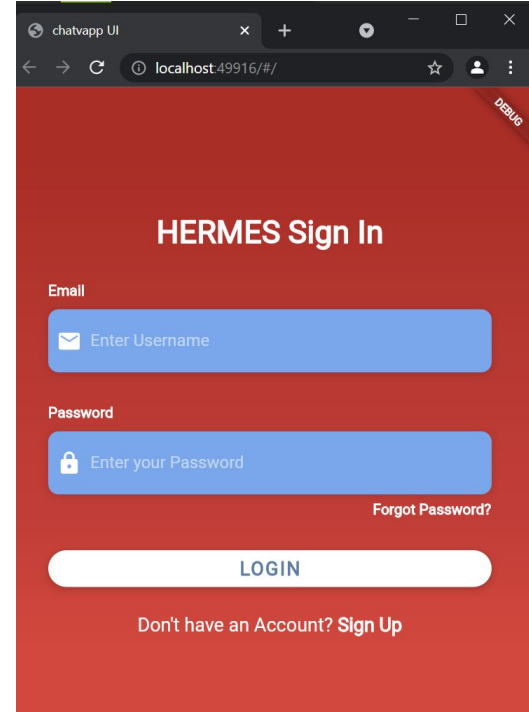
Rest of Hermes



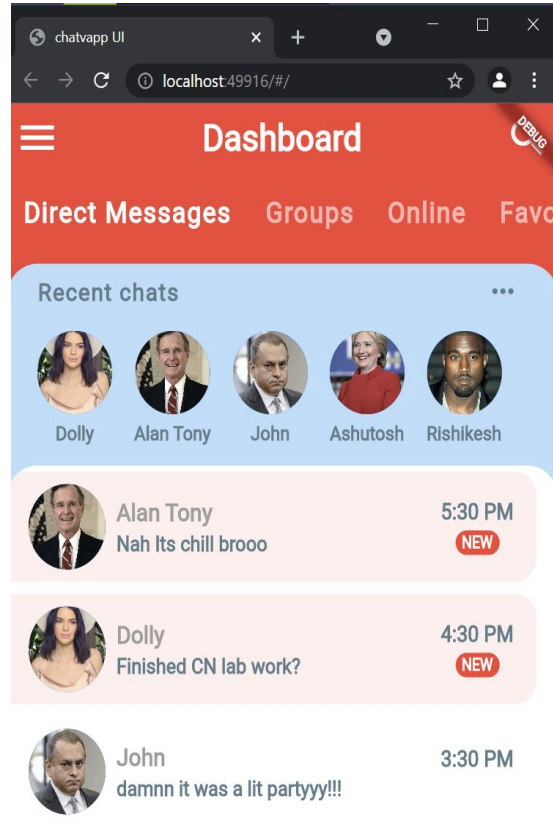
Progress in Hermes

User Interface

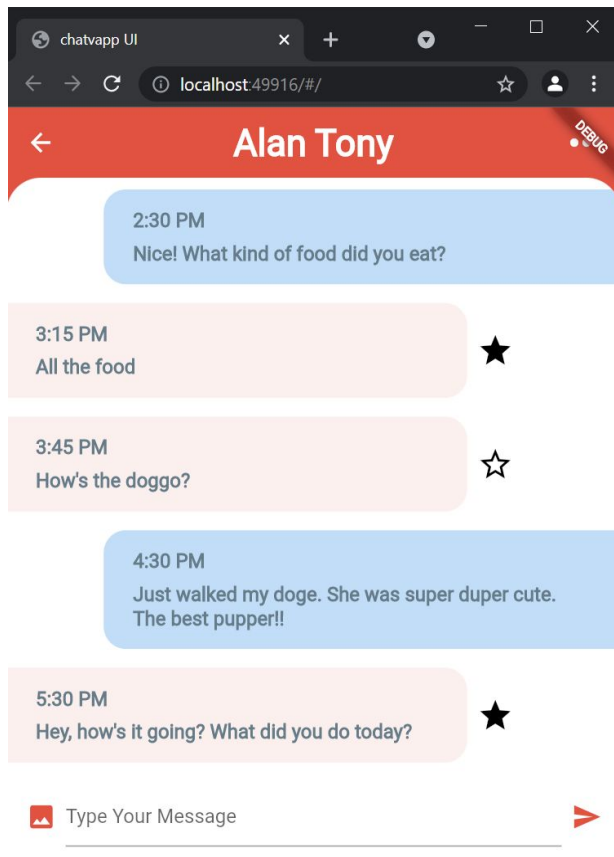
So far we have implemented the UI for dashboard and login and the individual message chat view.



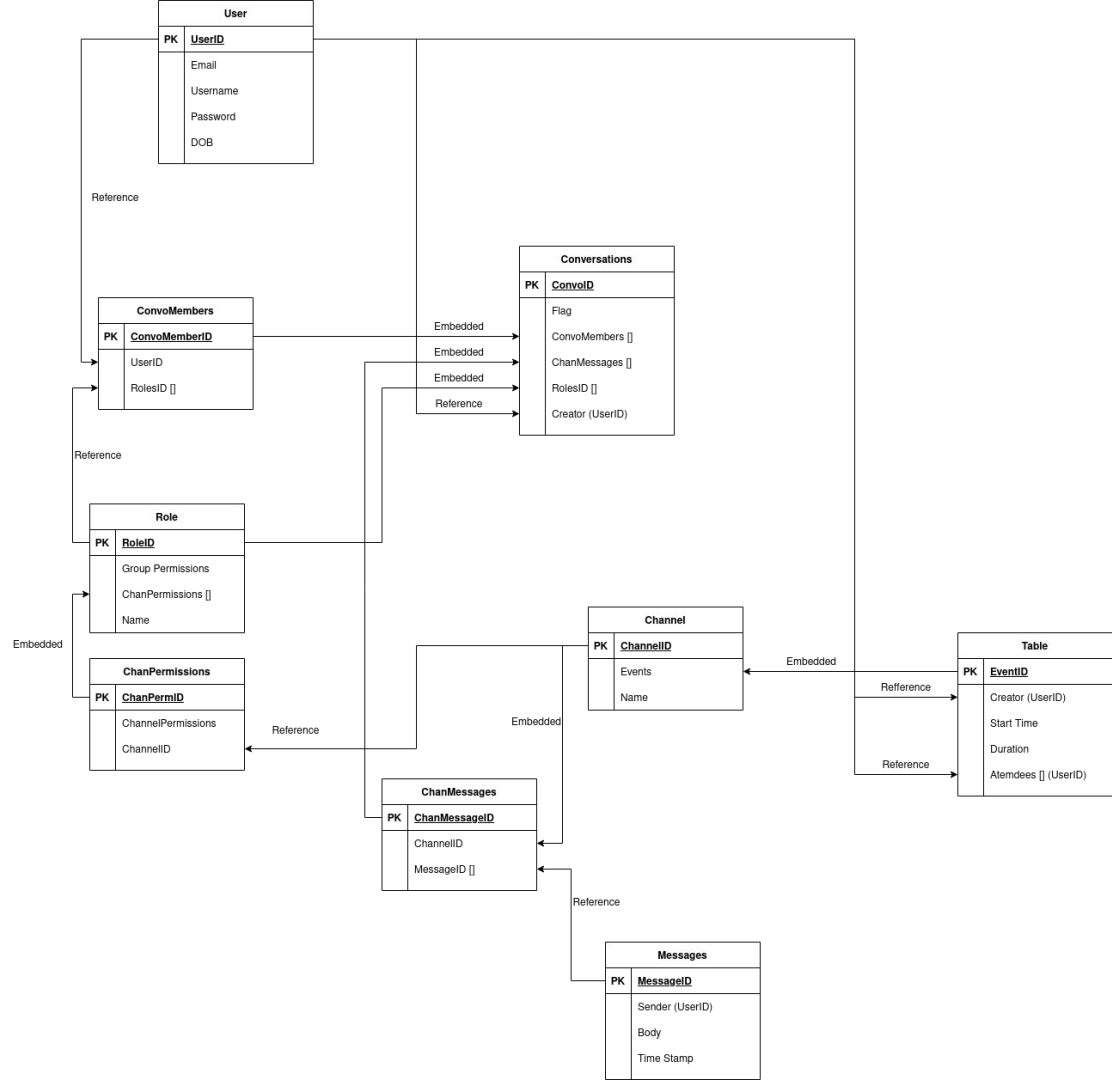
User Dashboard



Chat Page



Database



Progress Chart

