

Secure Voice Enabled Text Chat Application

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Abstract: Both the written and audio files can be uploaded to the chat programme. Everyone carries a cellphone in the current world, however not all users have the most recent models, making the majority of native programmes incompatible with those systems. Any device, including computers and handsets, can access the online application because it is a text- and audio-enabled chat system. You can also form a group called "channel" where everyone is able to chat simultaneously in text and audio. In contrast to other chat programmes, the channel does not impose any restrictions on its users. Still, we have applications that allow for an unlimited number of members on a specific channel. but they may need some amount of money to utilise the feature or enable the feature. The application has a feature of speech-to-text conversion, so that the speech can be converted into text. The project is secured with end-to-end encryption, so the security of the application is also provided.

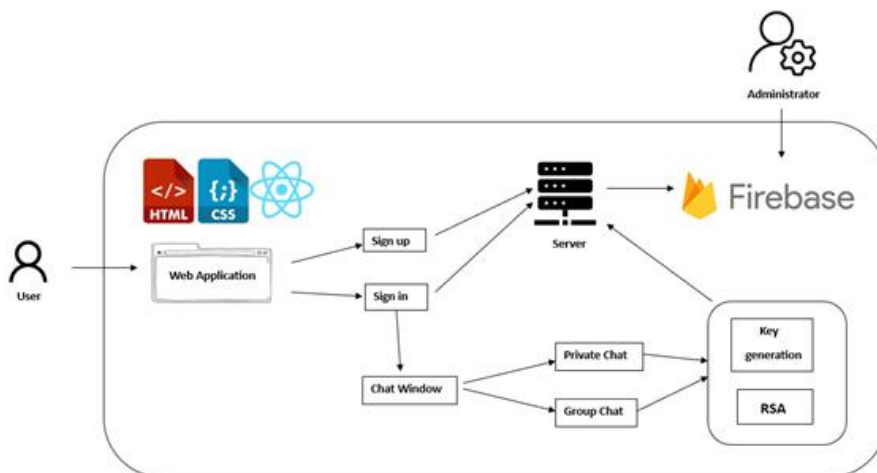
Keywords: Speech-to-Text, Web Application, Chat Application, Real Time Application.

I. INTRODUCTION

A messaging platform that employs cloud computing technologies to offer a safe and dependable messaging service is known as a secure chat web application. The platform is constantly up and running and user data is secure because the programme is hosted on cloud servers, which offer scalability, availability, and data redundancy. End-to-end encryption, multi-factor authentication, and data backup and recovery are just a few of the capabilities that secure chat web applications may offer thanks to cloud computing, which also improves the platform's overall security and privacy. The application can manage numerous users and messages while assuring quick and effective message delivery thanks to the cloud architecture.

A secure chat online application that uses cloud computing has the benefit of removing the requirement for users to save messages on their potentially lost or stolen devices. Instead, all messages are safely kept in the cloud, allowing users to view them from any computer or mobile device with an internet connection. Overall, a stored in the cloud secure chat application is the perfect answer for people, companies, and organisations who need a reliable and safe communications platform that can be effortlessly accessed from any location around the world.

II. SYSTEM ARCHITECTURE



User:

An individual who has registered or joined up to use the application and converse with other users is referred to as a user. To distinguish themselves from other users within the application, each user often has a special username or recognition. To interact with other users who have comparable interests, objectives, or connections, users may set up, join, and take part in a variety of chat rooms or channels. Depending on the platform, a user may have access to various functions and features within a chatting application, but they typically include the ability to send messages, share multimedia content, and communicate with other users in a variety of ways.

Administrator:

The administrator often has access to extra features and functions that are not available to regular users, such as the power to add and remove chat rooms, control user behaviour, handle user accounts, and maintain the database.

Server:

The server is in charge of responding to all user requests and handling message processing. The application server is frequently housed in the cloud and has the ability to scale dynamically to manage a high volume of users and messages. Additionally, it offers security tools like encryption, authentication, and access control to safeguard user information.

Database:

The database component of the application stores all user data, including messages, user profiles, and settings. The database can be hosted in the cloud or on-premises and can scale dynamically to handle large volumes of data. It also provides backup and recovery features to ensure that user data is always available.

III. LIST OF MODULES

1. User Sign Up:

Making an account is the initial step in utilising the application. Users have two login options: utilising their social networking accounts or signing up with their email address and password.

2. User Sign In:

Logging into an existing account on a platform is the process of signing in to a talking application. After creating an account, a user can log in to enjoy the capabilities of the application.

3. Chatting

3.1. Private Chat: In a talking programme, a feature called private chat enables users to hold private, one-on-one chats with one another. Any chatting application must have private chat modules because they let users have private conversations that are not visible to other users.

3.2. Group Chat:

A group chat module in a chatting application is a feature that allows multiple users to have conversations with each other in a shared environment. The group chat module is a popular feature in many chatting applications, as it enables users to communicate and collaborate with multiple people at once, and is especially useful for teams or groups working on projects.

IV. SCREEN SHOTS

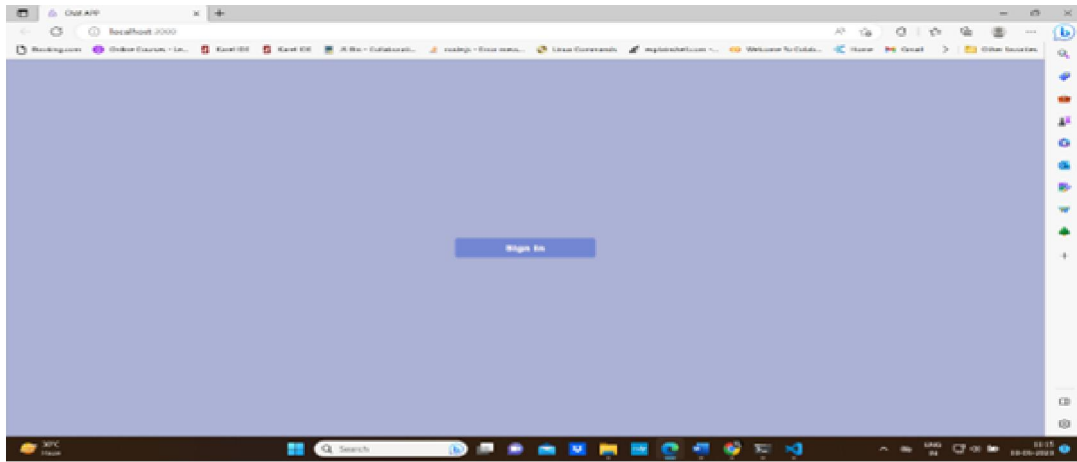


Figure:1 Initial Screen

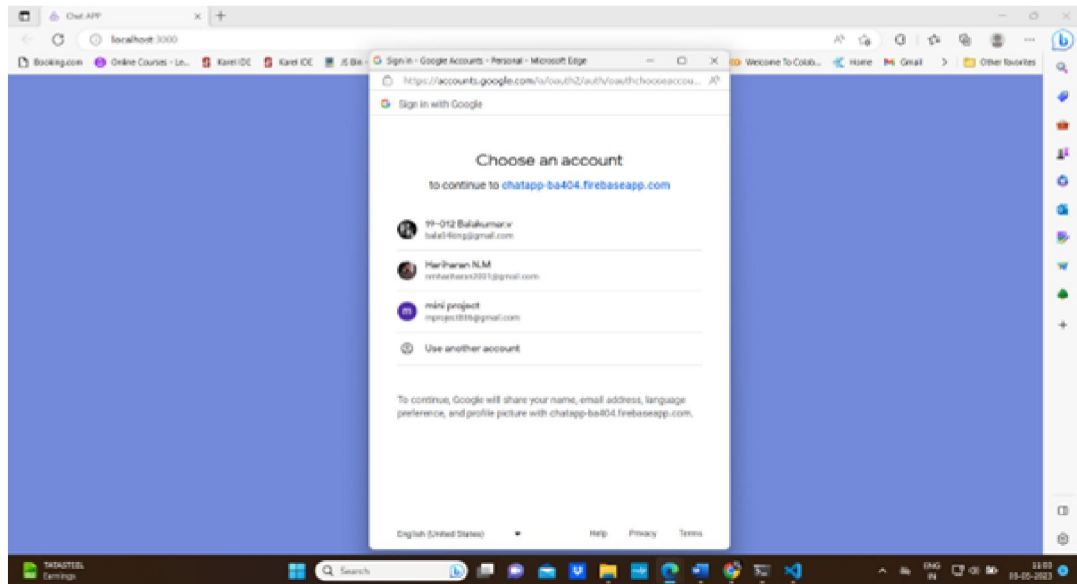


Figure:2 Login Screen

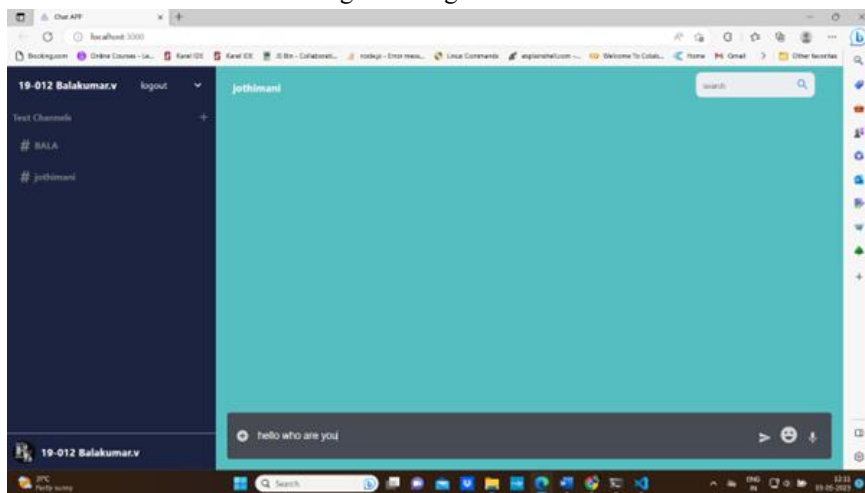


Figure:3 Chat Window

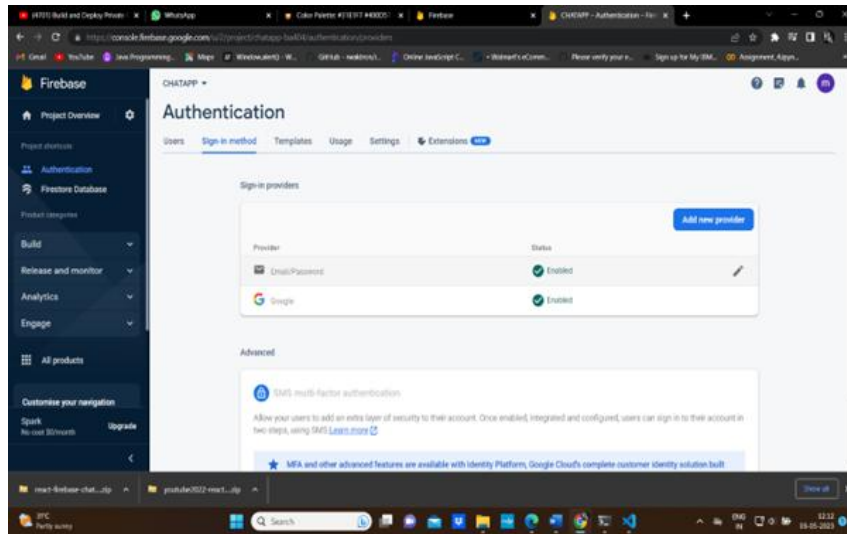


Figure:4 Sign-in methods in Firebase

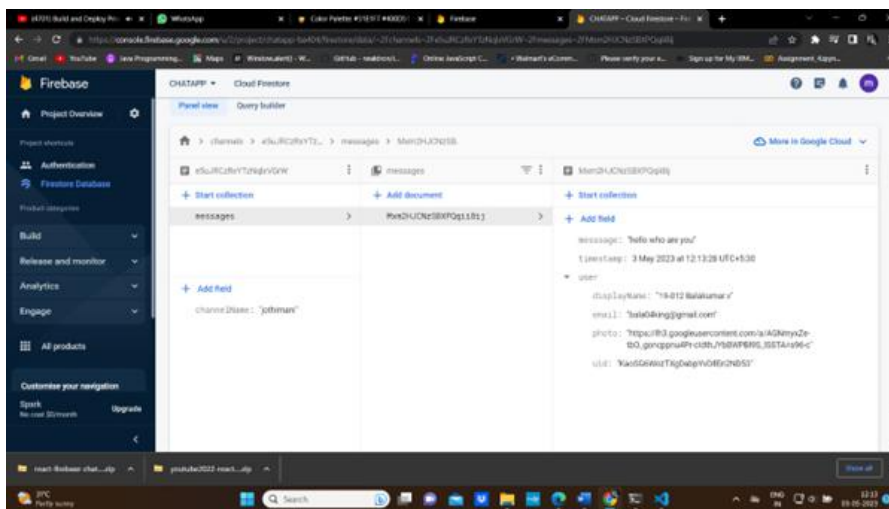


Figure:5 Firestore Database

V.CONCLUSION

In conclusion but not least, creating a safe chat application necessitates a solid grasp of encryption and security standards. End-to-end encryption should be used by the application to ensure that only the intended recipient may access communications. In order to prevent unlawful access to user accounts, user authentication protections like two-factor authentication must be added. Users can freely.

REFERENCES

- [1] Professional ChatApplication based onNatural LanguageProcessing.
- [2] The Design Method of Network Chat System Based on Socket and Cloud Computing.
- [3] Webvibe: A Secure Webchat Application.
- [4] Android-BasedChatApplicationUsingFirebase.
- [5] Design and Implementation of Web Based Real Time Chat Interfacing Server.