International Journal of Scientific Research & Engineering Trends
Volume 8, Issue 1, Jan-Feb-2022, ISSN (Online): 2395-566X

# Webvibe: A Secure Webchat Application

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**Abstract- Instant messaging is a set of communication technologies used for text-based communication between two (private messaging) or more (chatroom) participants over the Internet or other types of networks, byproviding an alternative to telephone and email conversations. The number of users using Messenger products like WhatsApp, Telegram has been increasing over recent years. Messenger services allow effective and efficient communication, allowing immediate receipt of replies. People of all ages log into messenger services to spend time chatting with known and unknown persons. Similarly, our project aims to develop a client-server java chat application with security in mind. The use of Encryption and decryption algorithms forms part of this project whereby messages exchanged between client and server are encrypted and decrypted with asymmetric private keys.The project overview that shows the structure of the project design is depicted in the introduction part of this document.**

**Keywords- Chatting, Security, Application, Networking.**

## I. INTRODUCTION

"Messaging is one of those things that people do more than social networking." At present more than three million people are using numerous chat apps installed on their smartphones. Today's messengers are not just about sending and receiving messages; instead, they allow users to share photos, videos, gifs, emoticons, voice messages, and a lot more. With many messenger applications already available in the market, making our chat messenger popular is not a cakewalk. However, by implementing it on the web with advanced features into it, we are trying to make this journey smooth and easy. People are more likely to be anonymous, which gives them more strength to express themselves anytime anywhere. Thissame ideais used by most of the popular forums on the internet. So, we came up with some of the basic requirements and by adding some advanced features.

## II.METHODOLOGIES

As we came up with some of the basic requirements and features that will fulfill users' requirements, we have some of the features like:

1. Users will register by giving a handle, which will be unique to every user. Only the handle will be revealed to other users to whom they will chat. So, people are free to choose any handle so they stay anonymous.
2. A member can see other online members.
3. The sender should first send a request to the other member for private messages. On accepting the request of other members,they can have private chat with them.
4. To develop a client-server java chat application that will enable instant messaging between host computers on a network
5. To provide authentication of the message to know whether the message has been sent by the genuine or intended user

## III. FUTURE SCOPE

There is always a possibility and extent for improvement in any application. Right now, we are just dealing with text-based communication. Several chat apps serve similar purposes as this project, but these apps were rather difficult to use and provide confusing interfaces. A positive first impression is essential in a human relationship as well as in human-computer interaction. This project hopes to develop a chat service Web app with a high-quality user interface.With the knowledge we have gained by developing this application, we are confident that in the future we can make the application more effective by adding these services.

- File Transfer
- Video Message
- Audio Call
- Video Call
- Group Call
- Extending this application by providing Authorization service.
- Creating Database and maintaining users.
- Extending it to Web Support.
- Increasing the effectiveness of the application by providing Voice-based chat.

## IV.CONCLUSION

The main goal of the project is to develop a Secure Chat Application. We had taken a wide range of literature reviewsto achieve all the tasks, where we came to know about some of the products that are existing in the market. We made detailed research in that path to cover the loopholes that existing systems are facing and to eradicate them in our application. In the process of research, we came to know about the technologies used to develop any chat architecture and different encryption-decryption algorithms. We analyzed various encryption algorithms (DES, AES, IDEA…), Integrity algorithms (MD5, SHA), key-exchange algorithms, authentication and we had implemented those functionalities in our application. We had gone through core and security concepts of java (JSSE, JCA) packages and for developing GUI we had implemented java swings.

## ACKNOWLEDGMENT

We would like to thank the teacher and friends for supporting us throughout the making and preparation of this paper presentation.

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