

IMPLEMENTATION OF CHATTING APPLICATION-ICHAT

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Abstract— Teleconferencing or chatting refers to any kind of communication that offers a real-time transmission of messages from sender to the receiver. Chatting is a method of using technology to bring people and ideas together despite the geographical barriers. The technology to provide the chatting facility has been available for years, but the acceptance is quite recent. Analysis of chatting provides an overview of the technologies used, available features, functions, system of the architecture of the application, the structure of database of an Instant Messaging application: IChat(IC). The objective of IC application is to facilitate text messaging, group chatting option, data transfer without size restriction which is commonly seen in most of the messaging applications.

Index Terms— IC, client, server, text messaging, file transfer, chatting, session

I. INTRODUCTION

IC has become a day-to-day utility for everyone. The reason for choosing IC is that it provides a good scope for beginners to implement a network based system. IC is a type of chatting application that provides text-transmission over the Internet. IC operates in a similar way as that of a LAN Messenger over a Local Area Network. Messages are transmitted between two parties i.e. The sender and the receiver, it can also be between more than two parties (group chatting). The messages transmitted are bi-directional in nature. Messaging applications also use push technology to provide real-time transmission of messages as they are composed, character by character. The advanced IC applications which are available now also offer file transfer, voice calls, video calls as per paper [10]. The two protocols applied for the system are Transport Control Protocol(TCP) and User Datagram Protocol(UDP). TCP is for control message and UDP is for chat messaging as per paper [10].

II. LITERATURE SURVEY

Internet communication is getting more and more popular among the public. Apart from using telephones or automobiles and sending mails, people can now communicate with each other through the chat technology. The chat, is a kind of Internet technology that

supports human-to-human communication. IC, for instance, is one of the latest chat. Over the past two years, with the advanced level of technology, there is an increasing trend of using IC for communication. With IC, users can chat, send messages, files and URL's.

As per [2] **Yahoo Chat** is a free online chat room service which was provided exclusively only for Yahoo! Users and was first launched on January 7, 1997. It was said to be a feature on the very first release of Yahoo! Pager. The first public version was released on March 9, 1998. Yahoo Chat allows its users to create public chat rooms, send text messages and use emoticons.

As per [2] **Skype** is an instant messaging application. It provides online text message and video chat services. Users may transmit both text and video messages and allows exchange of digital documents. Skype allows video conference calls.

Chatting applications enables us to stay in connected anytime, anywhere from any part of the world. There are many applications which provides chat services, the most popular among them are WhatsApp, Facebook messenger, yahoo IM, emails etc. IC applications have evolved from being just an another application to send messages. The latest IC applications have features such as transfer of different types of files, video chatting, group chat etc. The common disadvantage is that these applications restrict the size of the files being transferred. Thus in IC we have implemented chatting with unlimited data transfer without any size restriction.

The most important features of IC are

- Easy and quick communication.
- Unlimited data transfer without the size restriction.
- Group chat

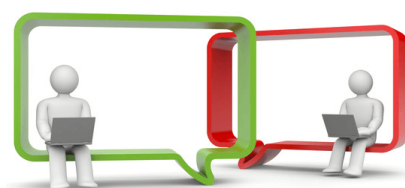


Fig.1: Chatting

III. REQUIREMENTS SPECIFICATION

Functional Requirements:

The primary requirement of IC application is to provide a mechanism for Online Chatting at a small scale.

Non-Functional Requirements:

- Ease of use:

The User Interface must be easy to navigate, understand and use.

- Availability:

The application must be available to use as and when required.

Hardware Requirements:

- **Operating System:** Windows XP
- **Processor:** Intel Core 2 Duo 1.8 GHz
- **Ram:** 1 GB
- **HDD:** 1.5GB

Software Requirements:

- **Language:** HTML, JavaScript, Angularjs, Codeigniter, CSS
- **Tools:** XAMP
- **Database:** MySQL

IV. ARCHITECTURE

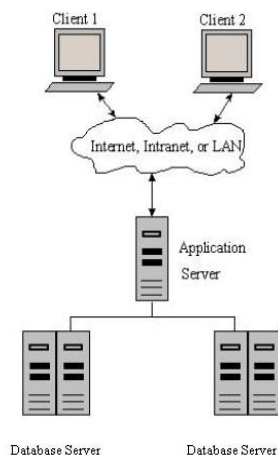


Fig.1: Client-Server Architecture

Chat system is peer-to-peer where the users exchange text messages and files. The users of the system are the client and the server. The architecture is a distributed programming which consists of two components, the server

and the client. The client initiates the communication by requesting for the server location information and display the received chat messages. The server conducts the chat session and manages all the client. The client starts the session by requesting for two parameters, the server name and the port number. The client and the server have two type of communication between them. Firstly, control message where one can join and leave chat session, create a chat room. Secondly, chat message where one can send and receive messages, transfer files from or to their contacts.

V. IMPLEMENTATION

The following features have been implemented in the IC:



Text Messaging

With IC, transmitting or sending messages is faster, secure and can be done easily. The messages that are sent are encrypted and sent securely. If a message has been sent to a user who is not online, the user will receive the message as soon he logs into his account.

Starting a chat session:

1. Select the contact from the contact list.
2. Type the message in the text box.
3. Click on the “send” button or press Enter.

Message history

The chat sessions are stored locally on the client computer. The user can easily review the messages that are exchanged by using the chat history.

Offline messages

Messages can be sent to even to users who are offline. The user will receive the message as soon as he/she logs into their account.



Group chat

A user can create a chat room by adding contacts to a group. The messages sent in the chat room are sent to all the members of the group. Users who are online will receive the messages immediately and those who are offline will receive the messages when they get online.



File transfer

Like many other applications IC also provides the service of file transfer. The kind of file that can be transferred ranges from images, videos, audio to documents of various types. Though Email provides such a service, it restricts on the size of file. Using IC file transfer can be done without any

restriction on the file size that is being transferred and is much faster than email.

Sending a File:

1. Click on the “Upload File” button, a dialog box appears.
2. Select the name of the contact to whom the file is to be sent.
3. Click on the “Browse” button to select the files from your computer.
4. Click On the “Send File” button to send the file.

TESTING AND RESULTS

User Authentication

A user gains the access to his messages by logging into the application by providing his email address and password which he had given while registering to the application. This information is stored in the User table in the database. Each time user logs in, this information is crossed checked with the database.

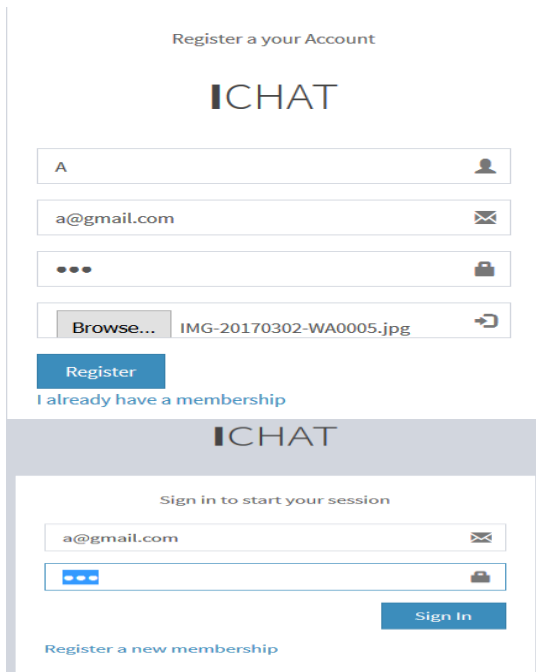


Fig 2: Registration for user A

Fig 3: Login for user A

Once the user has logged in successfully, they can send the messages to their contacts.

- The main use case is: user A sees B online, A sends a message to B, B receives it.
- The secondary use case is: user A sees B *offline*, A sends a message to B. When B comes back online, B receives the message. (No push notifications).
- The goal is to minimize latency. Speed matters.
- The messages should arrive in order. We cannot lose messages but receiving duplicates once in a while is fine.
- Just text data, no binary data.

Direct Chat

A user sends direct text messages to another user from his contact list

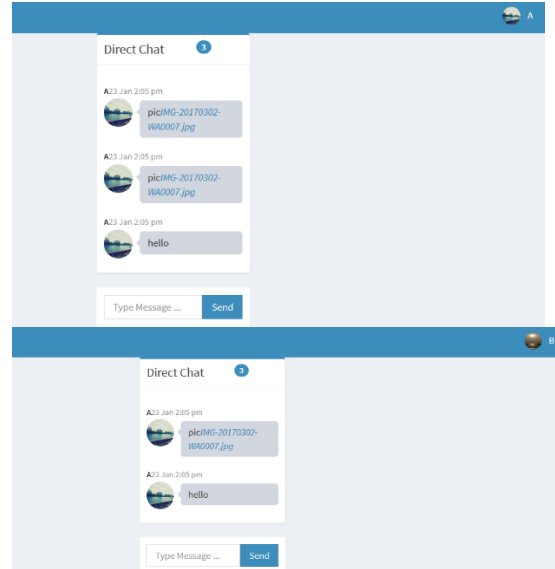


Fig 4: A sends a text message to B

Fig 5: B receives the message of A

In the above figures,

1. User A sends a message to user B.
2. User B receives the message from User A when he logs in to his account.

Group Chat

User A creates a chat room from his list of contacts and sends a message in this group which is received by all the users included in the chat room.

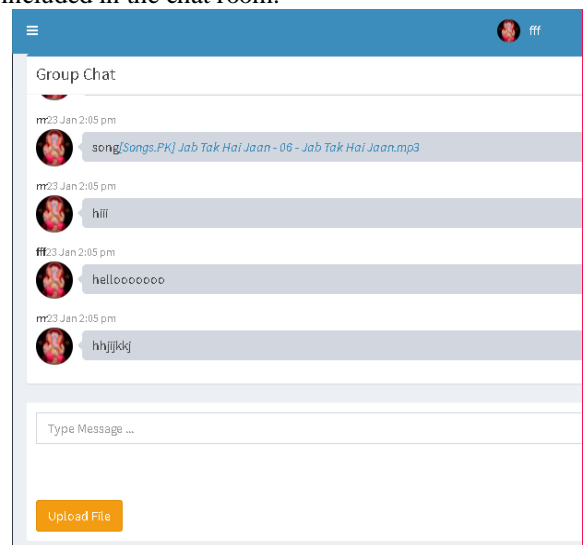


Fig 6: Group chat

File Transfer

A user can transfer files in a direct chat with one of his contacts or in a group chat. The files can be of any type and size. There is no restriction on the size of the file.

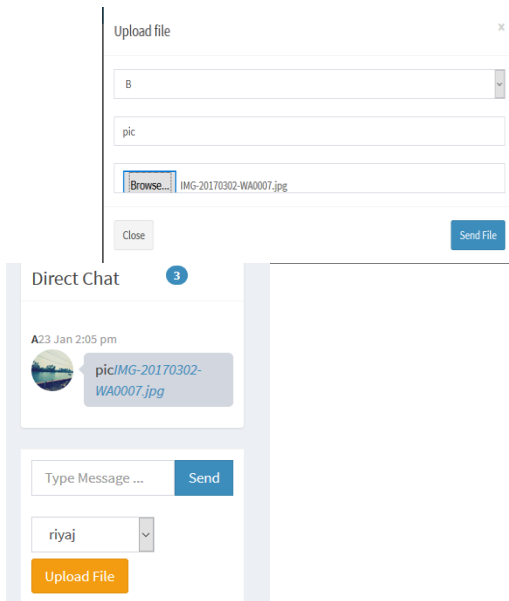


Fig 7: A sending a file to B

Fig 8: B receives the file

In the above figures,

1. A selects B from the contact list.
2. Selects a file from his computer to be sent to B.
3. B receives this file from A

VI. FUTURE ENHANCEMENTS

IC can be further implemented in the area of voice and video calling and can be used in the large organizations by hosting the application. IC can be further implemented by providing security algorithms to encrypt the data transfer without the size restrictions for a larger scale.

VII. CONCLUSION

IC has dealt with implementing a chatting application on small scale using latest technology in web development. IC has features such as text messaging, group chat, data transfer. The main objective of IC was to develop an application which provides the data transfers without the size restrictions and hence has been implemented.

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