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MULTI THREAD CHAT SERVER

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ABSTRACT

The client server model is still used today on the internet where a user computing may connect to a service operating on a remote system through the internet protocol suite web browser are clients that connect to web server and retrieve web page for display. Most people use Email client to retrieve their Email from their Internet service provider's mail storage servers. Online Chat uses a variety of clients, which vary depending on the chat protocol being used.

Increasingly, existing large client applications are being switched to websites, making the browser a sort of universal client. This avoids the hassle of downloading a large piece of software onto any computer you want to use the application on.

INTRODUCTION

We have used various types of chat application in web-based applications. All these chat applications support text messages to be sent between the users in the instant they press Enter key. Now suppose two friends are discussing Geometry problems which actually contain Text based Applications. When these two are actually far away from each other and still want discuss these problems simple texting is not the ideal solution for this. It would be so much better for them they could communicate using actual diagrams and figures. Even telephoning won't help. One solution we have come up with is to create a chat application using which we not only communicate using text messages but also with figures and diagrams. This would be helpful to a lot of professionals all over the world. It would also be popular for ordinary users. Our chat application is designed for professional organizations like schools, colleges, industrial units and organizations.

Though the primary focus of our application is on the feature of providing communication through diagrams and figures, we would also provide different features in our chat app like using predictive texting, exchange of files, providing themes, voice to smiley, etc.

The Chat application we intend to design would provide us with the following features:

- Creating an Account: The user gives his personal information, chooses a UserID and a password of his own choice. The database on the server side updated after this.
- Login and Logout: These functions indicate the availability or non-availability of the user.

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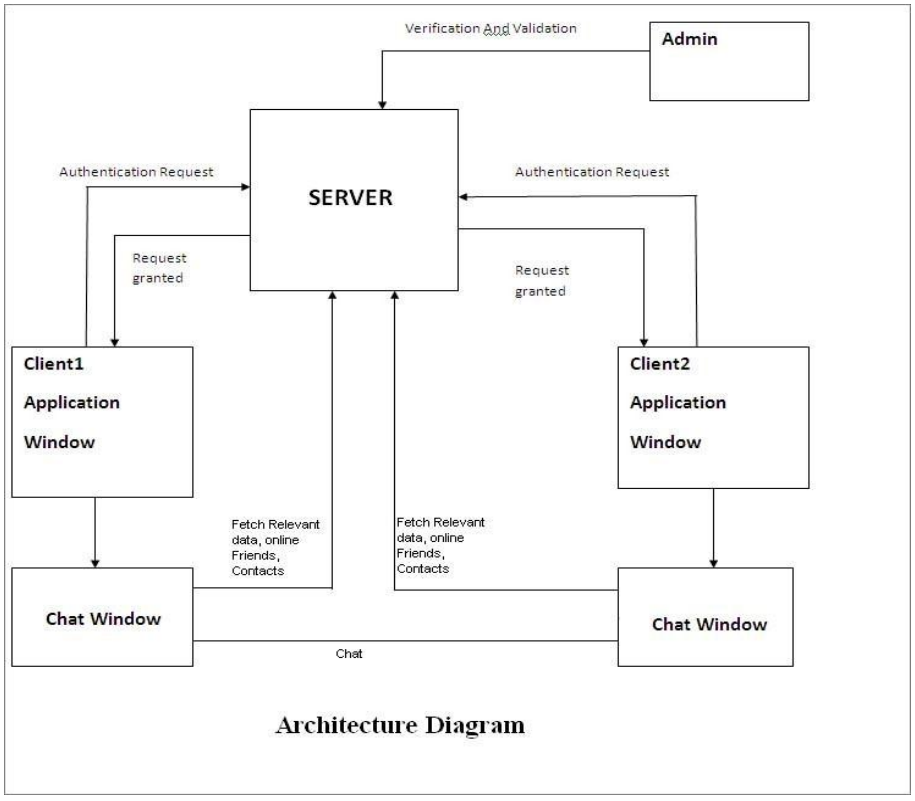
- Handling Users: It allows administrator to add or remove any user account in case of changes due to termination, resignation, violation of any rules or for some other reasons.
- Instant Messaging: This is a regular feature of any chat. This chat application would also provide this feature between multiple users.
- Drawing: The application allows users to use the paint window within the chat to draw basic figures like lines, rectangles, circles, etc or free hand.
- Painting and Coloring: The application allows users to use colors to draw figures and fill the figures. Different colors have been provided.
- Predictive Text: In this feature we would give user the option of using different words by predicting what the user is going to type from initial alphabets. The predictive texting is self learning. If the user has used typed "computer" word once. Then on typing of the letters "com", the word "computer" would be displayed.
- Transferring images: The chat application would also have to transfer images drawn by the users between each other.

System Architecture



Architecture Diagram

The chat application would be accomplished on a Server-Client Architecture with in a lan. The client– server model of computing is a distributed application that partitions tasks or workloads between the providers of a resource or service, called servers, and service requesters, called clients. The Server Side would be a continuously running service listening to the different Clients asking its services. The chat application would be installed on every communicating client. A Database of users would be maintained by the Server. When a client PC logins to the application, the Server authenticates the user of the client PC. Once the user is authenticated the IP address of the client is registered to the Server and it sends the list of online user friends and other relevant data to the Client.

Implementation of projects

The system that we have built encompasses the following features. The working and explanation of the features have been given.

a) Chat Server

The System that we have designed is based on client-server architecture. So creating a server is necessary. The functions of a server are to maintain user information, maintaining the record of users logged in to the system and providing the IP addresses to the clients who want to chat.

In the Server side a server-socket is created which accepts connection from client those who have logged in. Once any user logs in and makes connection with the server, it is assigned a thread. Input stream and output stream objects are created in the run method.

Client

- Client must be able to choose a nickname on connection.
- Client must show when another client connects or disconnects with the server.
- Client must be able to send messages to the server before arriving in other client.
- Client must be able to receive messages while writing.
- Client must be able to print out any messages received from the server.

Server:

- Server must be able to print information in the event of the following cases: (connect, disconnect, send and receive messages).
- The server does not allow for more than one client to get the same nickname.
- Server must be able to return messages again to all clients (including source).

- Client connected and disconnected with the server does not crash the server.

CONCLUTION

In this project can be enhanced by making it more secure by providing password protection. Presently the project runs on the local network i.e. LAN or local wireless network but later we can make this run on internet by providing public IP address and making it run global. We can handle user data separately proving them password access. We can also improvise it for private conversation with a user selected user. We can also add various emotions and smilies. Most important addition about which we our thinking is telecommunication through chatting software as presently available in g-talk and other chatting software.

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