**JAVA GROUP CHAT APPLICATION**

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**ABSTRACT:**

The JAVA GROUP CHAT is a server based application developed in java programming language. By implementing this application , it provides an effective means for real-time group communication over a network, meeting the needs of professionals, Students and researchers across various domains.

**FEATURES:**

The key features of the project are:

* The project has been coded using Java programming with multi-threading, sockets and robust error handling concepts.
* This project demonstrates multi-threaded socket programming for group chat functionality.
* It serves as a foundation for building real-time chat applications with added features and robust error handling..
* Interactive Interface: It features an interactive interface for real-time interactions, including message sending, reception, and graphical representation of the chat.
* Basic Chat Functionality: Clients can send and receive messages in a chat room.
* Real-time Communication: Messages are delivered and displayed in real-time.
* Multithreading: The server handles multiple client connections simultaneously
* Graceful Disconnects: When clients connect or disconnect, messages are broadcasted to all clients.
* Usernames: Clients are assigned usernames and their messages include their usernames.
* Simple Command Line Interface: The client application provides a basic command line interface for user interaction.

**SYSTEM SPECIFICATIONS:**

**Hardware requirements:**

* Hard Disk: PC with minimum 2GB
* RAM: 256MB or more

**Software requirements:**

* Language : JAVA
* Packages :. java.io.\*, java.net.ServerSocket, java.net.Socket, java.util.ArrayList, java.util.Scanner.

**CONCLUSION:**

In conclusion, this code provides the foundation for a basic group chat application where multiple clients can connect to a server and engage in real-time text-based conversations. While it demonstrates the core functionalities of group chat, it can be extended and improved to include features like message persistence, user authentication, and a more user-friendly interface.