Project Report Writing Guidelines:

- **Project Overview**

  Briefly explain the aim and objectives of the chat application.

- **System Architecture**

  Describe the client-server architecture, including how the server manages multiple clients.

- **Threading Implementation**

  Explain how threading handles concurrent client connections on the server side.

- **Broadcasting Mechanism**

  Describe the process of broadcasting messages from one client to all others.

- **Message Handling**

  Explain how message encoding and decoding are managed to ensure proper communication between clients and servers.

- **Client-Server Communication Flow**

  Outline the flow of communication, from a message being sent by a client to being received by other clients. Add a diagram of the handshaking process.

- **Handling Disconnections**

  Describe how the system manages client disconnections without disrupting the service.

- **Challenges Encountered**

  Discuss any technical challenges faced during development and how they were resolved.

- **Testing and Results**

  Explain the tests to ensure the system works as intended, including client connection, message broadcasting, and disconnection handling.

- **Conclusion and Future Work**

  Summarize the project outcome and suggest possible improvements or future extensions.