

Features to be Implemented for Chat Protocol Project

Client-Server Communication

- Clients connect to a central server using the QUIC protocol.
- Text messages sent by clients to server.

Message Exchange

- Send and receive text messages between clients and the server.
- Support for both individual and group messaging. (Future Scope/Optional)
- If it's group messaging then any message sent by any client will be sent over all connected clients and server during the session.

Negotiation Process

- Initial handshake to negotiate connection parameters.

Message History

- Maintain message history for the duration of the session, ensuring messages remain on screen.

Security

- Authentication: login using username or local host.

Message Integrity

- Consistency of sent messages. The sent messages can't be changed post arrival.

Frame Types

Chat Message Frame: Sender, recipient, and message content.

Ack Frame: Acknowledgment of message transfers.

Ping Frames: Verify peer responsiveness.

Connection Close Frames: Signal session termination.(Future Scope/Optional)

States

Disconnected (D), Connecting (C), Connected (O), Disconnecting (S)

Transitions

D → C: Initiate connection.

C → O: Successful connection.

O → O: Message exchange.

O → S: Initiate disconnection.

S → D: Successful disconnection.