Protocol Document

Sentinel Characters:
TOKEN "^" - this is the "the token." upon receiving this message from a peer, the host will allow the user to read and write from the bulletin board.

JOIN "~" - this is the join request message. Peers send this message to the server to indicate that they would like to form a token ring; the server then sends the IP address and Port of PeerX to PeerY. Hosts wishing to connect to an existing token ring also use this value by sending it to a peer in the token ring.

EXIT "# PREV_IP:PREV_PORT DEST_IP:DEST_PORT" - this is the exit token ring message. Peers exiting the token ring send this message through the token ring. If a peer gets the message, but the message is not for that peer, the peer passes it through the ring. Once the message reaches the intended peer, that peer changes their destination IP and Port to the one indicated in the message

EXIT_ACK "&" - the peer that the EXIT message is intended for sends this EXIT_ACK message to the peer who sent the EXIT message to let that peer know the EXIT is acknowledges and that the peer can exit.

Nuances

1. If a peer wishes to EXIT and is the last remaining peer in the ring, it will send itself an EXIT request. It will detect that it sent itself a message and then safely exit.

2. A peer that has sent out an EXIT message may receive more messages while it is waiting for an EXIT_ACK. The peer will simply forward all messages through the ring.