

Design Document

I will start the assignment by creating an outline using the CSCE 313 slides provided by the professor as a guideline. I will use multithreaded design to enable the server and the client to communicate with each other. Primarily, I will create threads using pthread and have sockets stored inside them.

For the chatroom structure, I intend to create a struct called chatroom that will hold the data such as socket, port, members, and name for the chatroom. In order to have the chatrooms be remembered throughout multiple instances, I will create a vector or list of chatrooms that acts as a global variable.

The create functionality will initialize a new chatroom struct and initialize the variables stored inside it such as initializing the number of members to 0 and setting the port number that is being used. The create will then store the newly created chatroom in the list or vector of chatrooms. The delete functionality will close any threads that the chatroom is using and then delete the chatroom from the vector/list as a whole so that it can not be accessed again. It will also disconnect any other clients that were connected to that chatroom. For join, the client socket will connect to the room socket in order to enable chatting. Finally, list will parse through the list/vector of chatrooms and create a string of each of the names for a return value. The return value will then be output to the client with a list of the room names for joining purposes.