Project 3: Simple Chatting Room [Group Only]

<Purpose>

In this project, you will learn and simulate how two persons chatting in the chatting room.

<Simulation Requirements>

You will design a session between two individuals on separate computers to exchange messages. These two persons can exchange messages without echo back the message. You have two ways to achieve chatting request.

1. You may create a central controller to serve as a server socket and both two individuals are served as the client sockets. This requires the synchronization which you will learn in the operating system class.

2. You create the controller (one server socket) with an IP address known by the individual. Then two individuals will create the client socket which connects to the controller's server socket. Two clients will also create another server socket, respectively, and wait for the other client to connect. The client will tell the controller its own IP and port number and the controller will send this information to the other client. Now both individuals know the other's IP address and port number and they can create the client socket to establish the conversion. This is the easier way.

Now these two individuals can talk to each other. When one person says "Bye" to the other, the socket will be closed and the program will stop.

<Record and Design Requirements>

Both two clients and controller in your simulation should maintain a log file (e.g. client1.log and controller.txt) to show the proper steps in the simulation. Especially, PCs should record the sending and receiving messages.

Also, the two clients use the chatting room through GUI applications so that they do not have to remember commends.

<Additional points>

1. (10 extra credits) Video/audio chatting and record. It is better to see the friends on the screen. If you can achieve audio, you obtain 5 extra credits. You will obtain another 5 extra

credits if you can achieve video chatting.

2. (10 extra credits) Multiple person chatting. This is also challenge since more than two persons will use the chatting room. In this work, you should allow at least three persons to join the chatting room. The additional functions the chatting room should support includes but not limited to 1) the private chatting between two persons; and 2) broadcast a message to all persons in the chatting room. If you implement the video chatting, you may also consider to enable the screen share.

<Submission Requirements>

You should submit the documents shown as follows:

1. A demo video.

2. The source code.

3. The design documents (such as the code explanation and any help from the website or other persons except instructors). If the project is done by the group, you should also include the document to indicate the role (work performed) of each person in the group.