Assignment 2

Operating Systems, Spring 2018

Time: One week

Instructions: Do not copy material from other sources, if it is necessary, then provide the references. Plagiarized assignment will get negative marks, and can be called for DC action.

You are to implement a peer-to-peer chat application. The idea is to open a server TCP socket on port `7788`. Your main program will be listening on this port for any client to communicate. When it recieves a connection request it spawns a new thread and delegates all responsibilities to this thread. The thread opens up an `Xterm` terminal as a chat window. The messages you write here will get transfered to the other side of the socket. The messages received will be visible in this window. When you write `quit` on this window the window and the socket are closed, and chatting with the other party is not possible until you open a new connection.

How to connect. When you start the application it will receives commands from the usual command prompt. To connect to a machine you should write `connect <hostip>`. Here `<hostip>` means the IP address of the computer to which you want to connect. After writing this command an `Xterm` window will open which will show the status whether you are connected or not. This window will be opened in a **new thread**. When you are connected, you can type your messages here and also see the receving messages. When you write `quit` in this window the window and socket should close. You can open a new connection by writing any number of `connect` commands.

You machine's own IP address is `127.0.0.1`. For local testing you can use this IP.

Submission The submission should contain only following two things. If there is one missing then the assignment will be given 0 marks. Additional things will also be penalized.

1. `Assign-2.cpp` the code of the assignment. If there are more than one CPP files then that is also OK, but they should get compiled using a single `Makefile` and hence by invoking `make` only once.

2. `Makefile` which makes executing `make` command in the respective directory compile the code into an executable.

After executing `make` an executable should be created named `assign-2.o`. Executing that executable should open up the command window.