Programming Assignment 5 – CSE 223, Spring 2019

For this assignment, you're going to implement a chat utility as a pair of programs (a server and a client). You're to do this in Java, using sockets for communication and threads to support simultaneous two-way communication (full-duplex). Specifically:

•create a server (a class named "ServerMain") that listens for connections on port 1221;

•create a client (a class named "ClientMain") that creates a socket and attempts to connect to a server on port 1201. The client should first ask for the IP address of the server ("localhost" or 127.0.0.1 always refer to the current host; this may be useful for testing).

These programs should be runnable on a single machine, to establish communication between them. Once communication has been established, each program should:

•wait for the user to type input, and once the ENTER key is pressed, should transmit the entry to the other program (via the socket connection);

•at the same time, whenever input arrives via the socket, it should immediately be displayed, without waiting for the user to hit ENTER.

When a client exits, the connection should be gracefully shut down, and the server should continue running, listening for another incoming connection request, and proceeding again as above. You're welcome to embellish the look and feel of the programs, i.e., implement GUIs, etc. but command-line operation is perfectly acceptable.

Two additional things to note:

•	for this assignment only, you're allowed to work in groups (this doesn't need to be the same as your lab group); and

•	you must demonstrate your code in class. Plan on a 5 minute presentation to demonstrate the basic behavior of your programs, and to discuss any details particular to your solution. Demos will begin the Monday that the assignment is due.