

Problem Description

In this project, you are required to implement a *distributed chatting board system* using RPC.

As shown in Figure 1, you will need to develop three programs: **Server**, **LocalDisplay** and **LocalInput**.

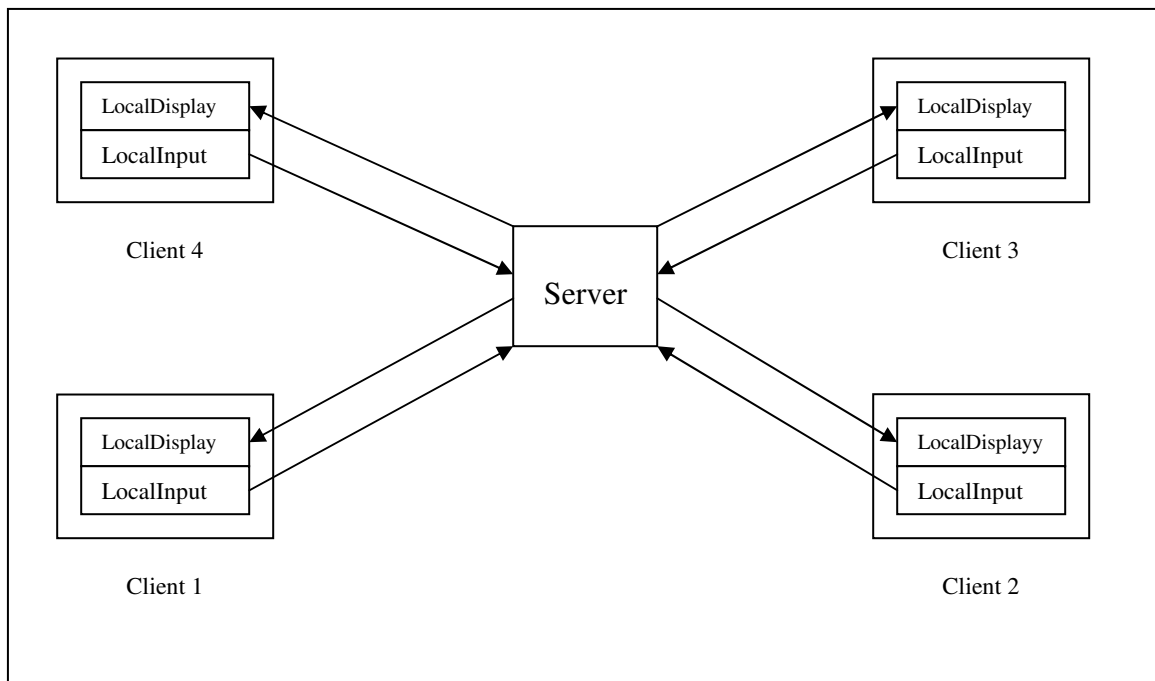


Figure 1

On the machine of each client, the **LocalInput** program is run to accept message inputs from the client and report them to the server program run on the same or different machine; the **LocalDisplay** program is run to retrieve and display new message inputs from all clients connected to the server, every S seconds (S is an argument for the **LocalDisplay** program, and its value is inputted by the client when he runs the program).

You are free to decide the **LocalInput/Server** and **LocalDisplay/Server** interfaces, as well as the related data structures. You should use RPC mechanisms (instead of directly manipulating Sockets) to implement the system. Your programs should run in Linux. Though you may test your programs in any computing environments convenient to you, you should make sure that they run correctly on the machines of Pearson Linux Lab (i.e., lin141b.lab.cs.iastate.edu ~ lin14t.lab.cs.iastate.edu) or the machines of pyrite cluster (i.e., pyrite-n1~pyrite-n3.lab.cs.iastate.edu). The output of the **LocalDisplay** should be easy to read; that is, the content of each message as well as the client who sends the message should be displayed using a friendly format (considering the real network chatting systems you have used).

We will test your programs in such a configuration: (1) three clients use three different machines respectively, and (2) **Server** runs on one of the client machines.

Submission

- You should zip the directory of your source code and submit it via WebCT.
- Your submission should be named as assignment-3-XXXXX-YYYYY.zip or assignment-3-XXXXX-YYYYY.tar.gz, where XXXXX and YYYYY are the last names of the students.
- One group only needs to submit one copy.
- The submission should include a readme file briefly explaining your solution and how to compile/run your programs; adequate comments between your codes are strongly encouraged to improve code readability.