Report

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8th April 2018

1 Task

This project is to implement a centralized chat system, similar to Internet Relay Chat (IRC). In such a system, client-to-client text messages must first be passed to a centralized server, then the server forwards the messages to the destination client

2 Description of Solution

The Server detects connection of the client as well as identifies the client's IP and Port number. The Client sends a message to the server and the servers responds by sending the message to the clients con nected.

2.1 Client Side

The client side has the following methods:

- *user-message-input () : for user input with pipe[1] STDIN
- void *connection controller (): handles socket connection and pipe reading [0]
- void getHostName (char *hostname) :check valid host name
- int main() : The main method of the client side implements the non blocking using ON_NBLOCK and it implements and creating the threads to handle connections and inputs from clients. The user input is passed through the pipe by the connection handling thread.

2.2 Server Side

The server side after listening binding and creating a new connection. Implements the following:

- The fd_set for declaration of the set
- FD_ZERO for clear the set

- FD_SET and add listening sockfd to set
- MAX_NUMBER_CLIENTS(which i defined to be 50 clients).

Non blocking is also implemented. The server fork() creates a child process each time a new client connects. Child tp parent pipe is represented with C_P[0](reading from client to server C_P[1] (when messages from Client to Server)while Parent to child pipe is represented by P_C[0] or P_C[1] (when messages from Server to client) .

3 Result

The result a full communication between clients and server as well as clients to client is achieved.