

ESC101 Advanced Track Project

Assignment 1

Problem Statement

You have to make a simple Client-Server system, which communicate on known port of 8888. The I.P. address of Server is known to be 127.0.0.1. The protocol of Communication is as follows -

- Client takes a number as input from User. Client sends two numbers to Server x and y. x is always the same and equal to -1 while y is the number taken from user as input.
- Server receives the two numbers from Client x and y. If x is not -1, server sends back two numbers both equal to 0 to Client. Else, it sends two numbers back to client where the first number is randomly generated and second number is (y+1).
- Client receives the two numbers from Server (say a and y). If second number is not equal to (y+1) where y is the number taken from user as input in Step 1, then it Prints Bye and exits. Else it sends back a number equal to (a+1) and a string to Server where the string is taken as input from User.
- Server receives the number and String from Client and if the number is equal to 1 plus the first number it sent to client in step 2 then only it converts all lower case letters of the string received to capital and all capital letters to lowercase and sends back the modified String to Client. If the number received is not equal then it does not send anything to Client.
- Upon receiving the modified String From Server, Client prints it on console. If there is no response for 5 seconds from Server, then it prints "No Response" and exits.

Constraints

- The size of input String is not known beforehand. Space allocated for it on Client and server side should be done using "getline" function, and not using scanf("%s").

Help you might Need

- rand() function available in stdlib.h can be used to generate any random number.
- time_t seconds = time(NULL); can be used to get the number of seconds passed till now from January 1, 1970. Need to include <time.h> library for using the above time function.