

C++ Socket Programming

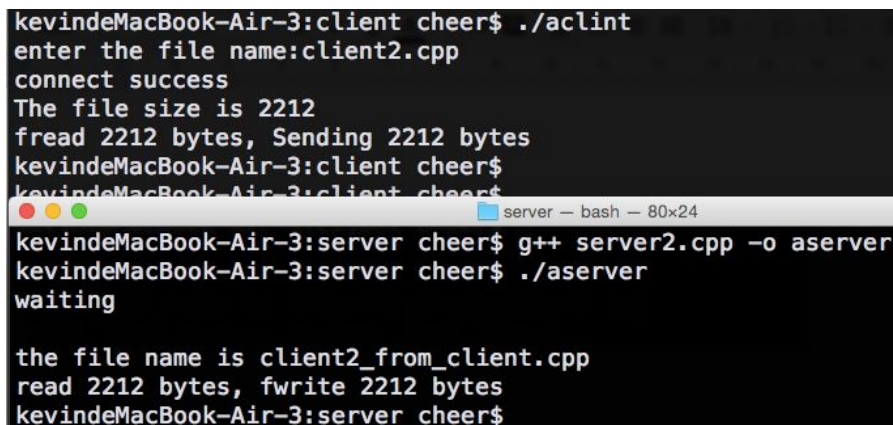
File Transfer

Consider a client aiming to upload a file to the server using TCP. To this end, the server's program will prompt the user to specify a port number, whereas the client's program will prompt the user to input 1) the server's IP, 2) the server's port number, and 3) the filename.

Once a TCP connection is established, the client should be able to upload the file to the server. The server should be able to receive this file through the TCP connection, and rename it by attaching “_from_client” at the end.

Source Code: https://github.com/kevin5566/Socket_cplusplus/tree/master/FT

Demo:



```
kevindeMacBook-Air-3:client cheers$ ./aclint
enter the file name:client2.cpp
connect success
The file size is 2212
fread 2212 bytes, Sending 2212 bytes
kevindeMacBook-Air-3:client cheers$
kevindeMacBook-Air-3:client cheers$

server — bash — 80x24
kevindeMacBook-Air-3:server cheers$ g++ server2.cpp -o aserver
kevindeMacBook-Air-3:server cheers$ ./aserver
waiting

the file name is client2_from_client.cpp
read 2212 bytes, fwrite 2212 bytes
kevindeMacBook-Air-3:server cheers$
```

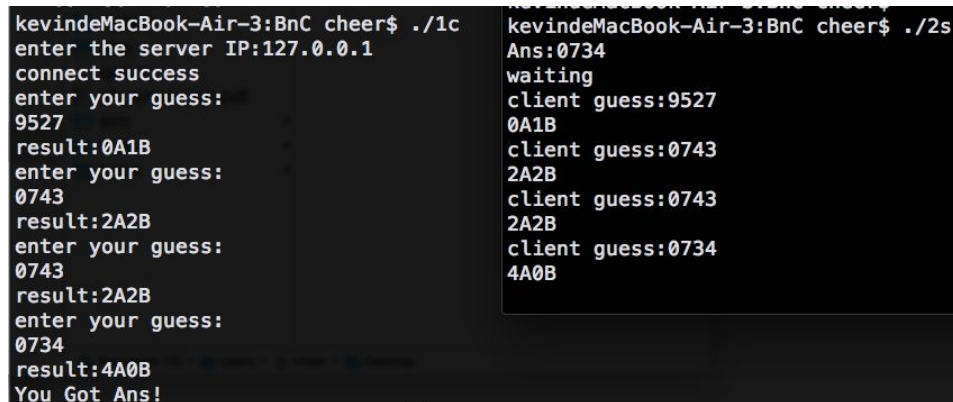
Bulls & Cows (1A2B Game)

Let a client play a paper-and-pencil game of Bulls & Cows with a server. The rules of this game can be described as follows.

- The server randomly draws a 4-digit number and the client has to find out this number
- The digits must be all different.
- Each matching digit is called a “bull” if it is on the right position, or a “cow” if it is on a wrong position.

Source Code: https://github.com/kevin5566/Socket_cplusplus/tree/master/BnC

Demo:



```
kevindeMacBook-Air-3:BnC cheers$ ./1c
enter the server IP:127.0.0.1
connect success
enter your guess:
9527
result:0A1B
enter your guess:
0743
result:2A2B
enter your guess:
0743
result:2A2B
enter your guess:
0734
result:4A0B
You Got Ans!

kevindeMacBook-Air-3:BnC cheers$ ./2s
Ans:0734
waiting
client guess:9527
0A1B
client guess:0743
2A2B
client guess:0743
2A2B
client guess:0734
4A0B
```