

UDP Server

Info

- The Server is written in Python.

Compilation

- There's no compilation required.

Running

- Please run it like so:
 - `python serverLab3.py 10115`
 - Where 10115 is my Group's server number

Behavior

- Will take in packages from the Clients and give error if it is corrupted, checks for magic number, port validity within GID, and length of data.
- If nothing goes wrong, it makes the first valid client request wait
- Then it sends the info of the 1st valid client to the 2nd valid client for chatting.

Client (UDP & TCP)

Info

- The Client is written in C.

Compilation

- Please use something like below:
- `gcc clientLab3.c -o test.out`
- Where test.out is whatever you'd like to name it
- The code should be compiling with no warning (from my experience in the tux machines).

Running

- Please run it like so:
 - `./test.out tux064.eng.auburn.edu 10115 10117`
 - Where the 1st field is the address of the host
 - The 2nd is the port of the UDP Server
 - The 3rd is the port which you wish to TCP chat on

Behavior

- Will send packages to the UDP Server to try to find someone to talk to.

- If invalid request is sent, it will receive an error message from the Server and quit.
- If server's reply is invalid, it will print an error message and quit.
- If nothing goes wrong, it will wait if it's the first valid chat requester.
- If it is the second, it will receive the info to connect to the chat partner and connect to it via TCP.
- **Only one person can talk at a time in chat!**
- It is not able to talk at the same time.
- Sending "Bye Bye Birdie" will quit both clients.
- **"Bye Bye Birdie" is case sensitive!**

Below is a demonstration in order of program flow:

Client A

```
gate.eng.auburn.edu
wcl0004@tux059:~/Documents/networksLab3# ./m.out tux064.eng.auburn.edu 10115 10117
serverPort is tux064.eng.auburn.edu
Socket seem to create sucessfully~
recvlen 7
error or reply magicNumber in non-network Byte Order: 4a6f7921
error or reply Ph: 39
The request was successful, we are told to wait for a partner.
wait message magicNumber 21796f4a
wait message GID 21
wait message waitPort 34087
wait message waitPort non-Network byte order 10117
waitOnError.magicNumber: 21796f4a
Socket seem to create sucessfully~
Listening for client...
█
```

UDP Server

```
gate.eng.auburn.edu
wcl0004@tux064:~/Documents/networksLab3# python serverLab3.py 10115
received message: Joy!~
Length of data received: 7
Raw data received as MagicNumber, Ph, P1, GID
('Joy!', 39, 133, 21)
Raw data received as MagicNumber, Port, GID
('Joy!', 10117, 21)
Address displayed in reversed Network Order.
131.204.14.59
Below is the port received in reversed Network Order.
(13619,)
errorCode 0
Returning info for the client to wait.
█
```

Client B

```
gate.eng.auburn.edu
wcl0004@tux053:~/Documents/networksLab3$ ./m.out tux064.eng.auburn.edu 10115 10117
serverPort is tux064.eng.auburn.edu
Socket seem to create successfully~
recvlen 11
Recieved message longer than 7 bytes, suspect is a chat invite.
chat invite magicNumber 21796f4a
chat invite magicNumber in non-network Byte Order: 4a6f7921
chat invite waitingIP non-Network byte order 131.204.14.59
chat invite waitingPort 34087
chat invite waitingPort non-Network byte order 10117
GID 21
Please enter msg:
█
```

UDP Server

```
gate.eng.auburn.edu
wcl0004@tux064:~/Documents/networksLab3$ python serverLab3.py 10115
received message: Joy!~
Length of data received: 7
Raw data received as MagicNumber, Ph, Pl, GID
('Joy!', 39, 133, 21)
Raw data received as MagicNumber, Port, GID
('Joy!', 10117, 21)
Address displayed in reversed Network Order.
131.204.14.59
Below is the port received in reversed Network Order.
(13619.)
errorCode 0
Returning info for the client to wait.
received message: Joy!~
Length of data received: 7
Raw data received as MagicNumber, Ph, Pl, GID
('Joy!', 39, 133, 21)
Raw data received as MagicNumber, Port, GID
('Joy!', 10117, 21)
Address displayed in reversed Network Order.
131.204.14.53
Below is the port received in reversed Network Order.
(13366.)
errorCode 0
Someone is waiting, will send you the info now!
wcl0004@tux064:~/Documents/networksLab3$ █
```

Client B

```
gate.eng.auburn.edu
wcl0004@tux053:~/Documents/networksLab3$ ./m.out tux064.eng.auburn.edu 10115 10117
serverPort is tux064.eng.auburn.edu
Socket seem to create sucessfully~
recvlen 11
Recieved message longer than 7 bytes, suspect is a chat invite.
chat invite magicNumber 21796f4a
chat invite magicNumber in non-network Byte Order: 4a6f7921
chat invite waitingIP non-Network byte order 131.204.14.59
chat invite waitingPort 34087
chat invite waitingPort non-Network byte order 10117
GID 21
Please enter msg:
Hello
Server said:
How are you?
Please enter msg:
Bye Bye Birdie
wcl0004@tux053:~/Documents/networksLab3$
```

Client A

```
gate.eng.auburn.edu
wcl0004@tux059:~/Documents/networksLab3$ ./m.out tux064.eng.auburn.edu 10115 10117
serverPort is tux064.eng.auburn.edu
Socket seem to create sucessfully~
recvlen 7
error or reply magicNumber in non-network Byte Order: 4a6f7921
error or reply Ph: 39
The request was successful, we are told to wait for a partner.
wait message magicNumber 21796f4a
wait message GID 21
wait message waitPort 34087
wait message waitPort non-Network byte order 10117
waitOnError,magicNumber: 21796f4a
Socket seem to create sucessfully~
Listening for client...
Client said:
Hello
Please enter msg to client:
How are you?
Client said:
Bye Bye Birdie
wcl0004@tux059:~/Documents/networksLab3$
```