

# [2022 Network System Programming Homework 11]

Rules:

1. Please use C language in this homework and run your program on Ubuntu 22.04.
2. Please provide **Makefile** to compile your homework.
3. Do not copy the others homework definitely.
4. If you have any question, please send email to [sp\\_ta@net.nsysu.edu.tw](mailto:sp_ta@net.nsysu.edu.tw) or drop by Room EC5018. However, TA will not help you to debug program.

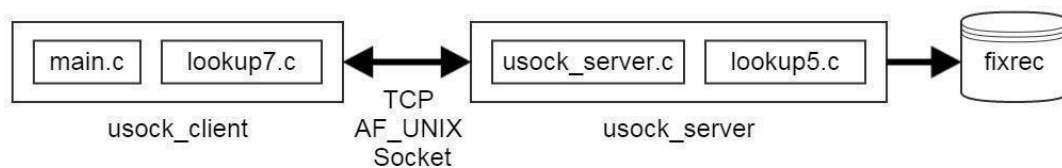
Turn in your homework:

1. Please compress your homework into **zip** archive.
2. Naming rules: “**SP\_HW11.zip**”.
3. Upload your homework (zip file) to NSYSU Cyber University(網路大學).
4. **Deadline: 2022/12/07 14:00. You cannot get any credit if you do not turn in your homework before the deadline.**

## Part 1 :

Set up a client and server while talk over TCP AF\_UNIX sockets. The server performs the dictionary look up.

1. Edit the lookup7.c file to communicate with a server by using TCP AF\_UNIX sockets.
2. Edit usock\_server.c to listen on an AF\_UNIX socket for any number of TCP AF\_UNIX clients and reply down the same socket.
3. After the file have been edited, type make, or make usock\_server and usock\_cilent.
4. When you get the prompt, run the usock\_server and usock\_client as shown in the output below.



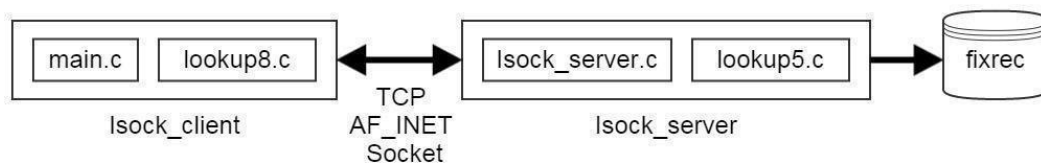
Sample output:

```
jth@jth-XS35:~/桌面/SP_HW7/part1$ ./usock_server fixrec TUNNEL &
[1] 9141
jth@jth-XS35:~/桌面/SP_HW7/part1$ ls -l TUNNEL
srwxrwxr-x 1 jth jth 0 11月 22 17:12 TUNNEL
jth@jth-XS35:~/桌面/SP_HW7/part1$ ./usock_client TUNNEL
What word do you want : work
work : The curse of the drinking classes.
What word do you want : bore
bore : A person who talks when you wish him to listen.
What word do you want : abc
abc : Not Found!
What word do you want : 
```

## Part 2 :

Set up a client and server while talk over TCP AF\_INET sockets. The server performs the dictionary look up.

1. Edit the lookup8.c file to communicate with a server by using TCP AF\_INET sockets.
2. Edit isock\_server.c to listen on an TCP AF\_INET socket for any number of internet clients and reply down the same socket.
3. After the file have been edited, type make, or make isock\_server and isock\_cilent.
4. When you get the prompt, run the isock\_server and isock\_client.



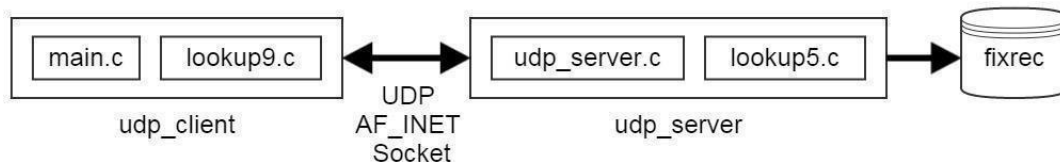
Sample output:

```
jth@jth-XS35:~/桌面/SP_HW7/part2$ ./isock_server fixrec &
[1] 9413
jth@jth-XS35:~/桌面/SP_HW7/part2$ ./isock_client localhost
What word do you want : work
work : The curse of the drinking classes.
What word do you want : bore
bore : A person who talks when you wish him to listen.
What word do you want : abc
abc : Not Found!
What word do you want : 
```

## Part 3 :

Set up a client and server while talk over UDP AF\_INET sockets. server performs the dictionary look up.

1. Edit the lookup9.c file to communicate with a server by using UDP AF\_INET sockets.
2. Edit udp\_server.c to listen on an UDP AF\_INET socket for any number of internet clients and reply down the same socket.
3. After the file have been edited, type make, or make udp\_server and udp\_cilent.
4. When you get the prompt, run the udp\_server and udp\_client as shown in the output below.



Sample output:

```
jth@jth-XS35:~/桌面/SP_HW7/part3$ ./udp_server fixrec &
[1] 9498
jth@jth-XS35:~/桌面/SP_HW7/part3$ ./udp_client localhost
What word do you want : work
work : The curse of the drinking classes.
What word do you want : bore
bore : A person who talks when you wish him to listen.
What word do you want : abc
abc : Not Found!
What word do you want : 
```