[2018 Network System Programming Homework 10]

Implement a simple client-server model using sockets in UNIX, Internet, and UDP/TCP domains.

Rules:

1. Please use C language in this homework and run your program on Ubuntu 18.04.
2. Please provide Makefile to compile your homework; otherwise, you will get ZERO.
3. Do not copy others homework.
4. If you have any question, please send email to sp_ta@net.nsysu.edu.tw or come to F5018, but TA does not help to debug.

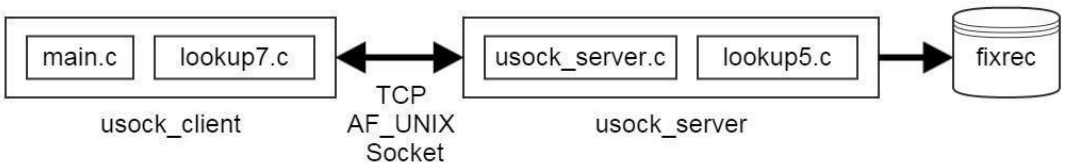
Upload:

1. Please compress your homework into zip or tar archive.
2. Naming rules: "StudentID_SP_HW10.zip". For example: M063040001_SP_HW10.zip
3. Upload your homework to NSYSU Cyber University.
4. Deadline: 2018/12/18 23:59; if it is overdue, you will also get ZERO.

Part1:

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

I. Edit the lookup7.c file to communicate with a server by using TCP AF_UNIX sockets.
II. 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.
III. After the file have been edited, type make, or make usock_server and usock_cilent.
IV. When you get the prompt, run the usock_server and usock_client as shown in the output below.



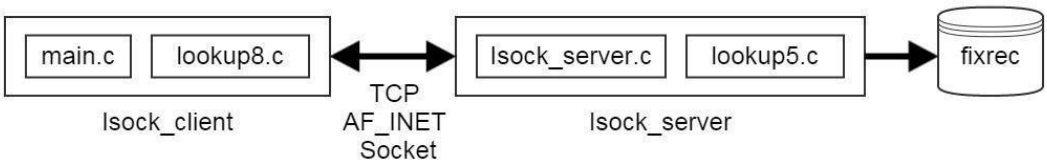
Sample output:

```
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 :
```

Part2:

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

I. Edit the lookup8.c file to communicate with a server by using TCP AF_INET sockets.
II. Edit isock_server.c to listen on an TCP AF_INET socket for any number of internet clients and reply down the same socket.
III. After the file have been edited, type make, or make isock_server and isock_cilent.
IV. When you get the prompt, run the isock_server and isock_client



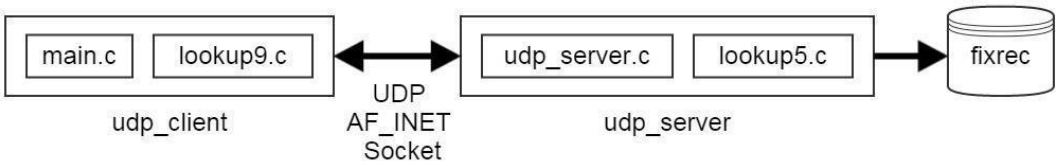
Sample output:

```
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 :
```

Part3:

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

I. Edit the lookup9.c file to communicate with a server by using UDP AF_INET sockets.
II. Edit udp_server.c to listen on an UDP AF_INET socket for any number of internet clients and reply down the same socket.
III. After the file have been edited, type make, or make udp_server and udp_cilent.
IV. 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 :
```