

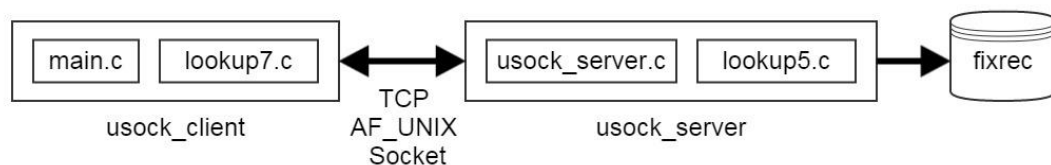
## [2014 網路系統程式設計 Homework 7]

### ◆ 主旨：

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

### ◆ 第一部分：

1. Set up a TCP client and server which talk over 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 files have been edited, type make, or make usock\_server and usock\_client.
  - IV. When you get the prompt, run the usock\_server and usock\_client as shown in the output below.



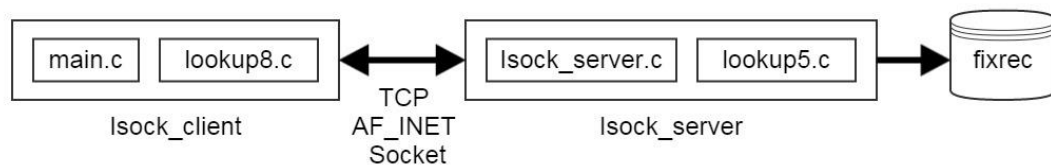
2. Files provided:
  - I. dict.h
  - II. fixrec
  - III. lookup5.c
  - IV. lookup7.c
  - V. main.c
  - VI. Makefile
  - VII. usock\_server.c

### 3. 執行結果如下：

```
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part1$ ./usock_server fixrec TUNNEL &
[1] 10912
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part1$ ls -l TUNNEL
srwxrwxr-x 1 michael michael 0 11月 18 14:10 TUNNEL
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part1$ ./usock_client TUNNEL
What word do you want : work
work : The curse of the drinking classes.
What word do you want : cynic
cynic : A blackguard who sees things as they are and not as they ought to be.
What word do you want : 
```

## ◆ 第二部分：

1. Set up a client and server which 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. Exit the **isock\_server.c** file to listen on a TCP AF\_INET socket for any number of internet clients and reply down the same socket.
  - III. After the files have been edited, type make, or make isock\_server and make isock\_client.
  - IV. When you get the prompt, run isock\_server and isock\_client as shown in the output below.



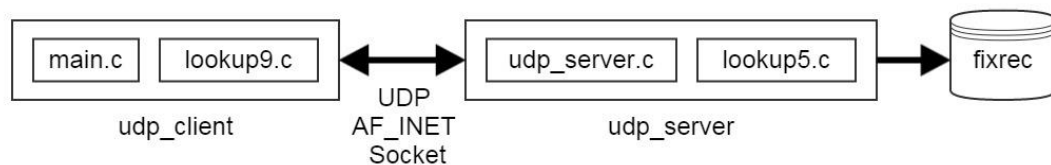
2. Files provided:
  1. dict.h
  2. fixrec
  3. isock\_server.c
  4. lookup5.c
  5. lookup8.c
  6. main.c
  7. Makefile

3. 執行結果如下：

```
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part2$ ./isock_server fixrec &
[1] 10992
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part2$ ./isock_client localhost
What word do you want : cynic
cynic : A blackguard who sees things as they are and not as they ought to be.
What word do you want : beauty
beauty : The power by which a woman charms a lover and terrifies a husband.
What word do you want : 
```

### ◆ 第三部分：

1. Set up a client and server which talk over UDP AF\_INET sockets. The 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 the **udp\_server.c** file to listen on a UDP AF\_INET socket for any number of internet clients and reply down the same socket.
  - III. After the files have been edited, type make, or make udp\_server and udp\_client.
  - IV. When you get the prompt, run udp\_server and udp\_client as shown in the output below.



2. Files provided:
  - I. dict.h
  - II. fixrec
  - III. lookup5.c
  - IV. lookup9.c
  - V. main.c
  - VI. Makefile
  - VII. udp\_server.c

### 3. 執行結果如下：

```
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part3$ ./udp_server fixrec &
[1] 11057
michael@michael-P5QPL-VM-BM:~/Desktop/金翼/碩一上/sp/hw7/part3$ ./udp_client localhost
What word do you want : peace
peace : In international affairs, a period of cheating between two periods of fighting.
What word do you want : alliance
alliance : In international politics, the union of two thieves who have their hands so deeply inserted into
each other's pocket that they cannot safely plunder a third.
What word do you want :
```

### ◆ 限制：

1. 請在 Ubuntu 14.04 系統上使用 C 語言寫本次作業並進行測試，**Demo 時只接受助教指定作業伺服器上的執行結果。**
2. 本作業必須上傳能編譯本作業之 **Makefile**，內容不拘，未寫要扣分。
3. 嚴禁抄襲其他同學作業，參與者(**抄襲與被抄襲**)均以**零分**計算。
4. 請對你的程式碼有深入瞭解，demo 時助教會問。
5. 對題目有問題可以寄信問助教群(sp\_ta@net.nsysu.edu.tw)或是到實驗室(F5018)詢問，但不幫忙 debug。
6. **逾期以零分計算，不接受補交**，有問題請事先告知，Demo 時間會另外通知。

### ◆ 作業上傳：

1. 請壓縮成 zip 或 tar 的壓縮檔，並上傳至**中山網路大學**，作業命名規則為”**學號\_SP\_HW7**”，Example: M013040001\_SP\_HW7.zip。
2. 作業截止時間為**2014/11/25 (Tue.) 23:59**，請在時間內上傳作業。