

Computer Networks Programming Assignment

1. 執行環境：Ubuntu(Linux) 18.x

```
$ ./client  
$ ./server <port>
```

2. 程式語言：c++ (openssl 1.1.1)

3. 需求檔案：client 執行檔、server執行檔

4. 編譯方式：

- 先確認當前目錄有：main.cpp、client.cpp、client.h、ui.cpp、ui.h、input.h、server.cpp、makefile、client-cert.pem、client-key.pem、server-cert.pem、server-key.pem這12個檔案
- 確認環境位於Ubuntu(Linux) 18.x下
- 確認環境已安裝Openssl 1.1.1以上
- 執行：

```
$ make all
```

```
~/Desktop/ssl/new ➤ make all
```

5. 執行過程：

- client端執行：

```
$ ./client
```

```
~/Desktop/ssl/new ➤ ./client
```

- server端執行：

```
$ ./server <port>
```

```
~/Desktop/ssl/new ➤ ./server 5002
```

- client操作畫面：

```
#####
#
#
#
#      [v]NAME:           Name      IP           Port      #
#
#      [ ]IP:             #
#
#      [ ]PORT:           #
#
#      [ ]LOGIN PORT:     #
#
#      Money:             #
#
#      Online User:       #
#
#
#
#      [ ]LIST   [ ]LOGIN   [ ]LOGOUT   [ ]EXIT      #
#
#
#
#      [ ]TRANS NO.:      #
#
#      [ ]TRANS MONEY:    #
#
#
#
#
#      [ ]TRANS           #
#
#
#
#####
```

- 透過W與S鍵可以操作勾選位置
- 透過enter可以開始輸入以及確認輸入
- 完成輸入後選到LOGIN的地方按enter可以開始登入

```

#####
#
#
#
#   [ ]NAME:test2           Name   IP       Port
#                               test   127.0.0.1   1234
#   [ ]IP:127.0.0.1
#
#   [ ]PORT:5002
#
#   [ ]LOGIN PORT:2222
#
#   Money:10000
#
#   Online User:2
#
#
#
#       [ ]LIST   [v]LOGIN   [ ]LOGOUT   [ ]EXIT
#
#
#
#   [ ]TRANS NO.:
#
#   [ ]TRANS MONEY:
#
#
#
#               [ ]TRANS
#
#
#####

```

- 選擇LOGOUT可以登出帳號
- 選擇EXIT可以結束程式
- TRANS NO.要輸入欲轉帳的使用者編號，編號依據清單順序從0開始
- TRANS MONEY要輸入欲轉帳的金額

```
#####
#
#
#
#   [ ]NAME:test2      Name   IP       Port
#                       test   127.0.0.1   1234
#   [ ]IP:127.0.0.1
#
#   [ ]PORT:5002
#
#   [ ]LOGIN PORT:2222
#
#   Money:10000
#
#   Online User:2
#
#
#   [ ]LIST   [ ]LOGIN   [ ]LOGOUT   [ ]EXIT
#
#
#   [ ]TRANS NO.:0
#
#   [v]TRANS MONEY:1000
#
#
#           [ ]TRANS
#
#
#####
```

- server端畫面：

```
~/Desktop/ssl/new ➤ ./server 5002
REGISTER#test#10000
test#1234
REGISTER#test2#10000
test2#2222
```