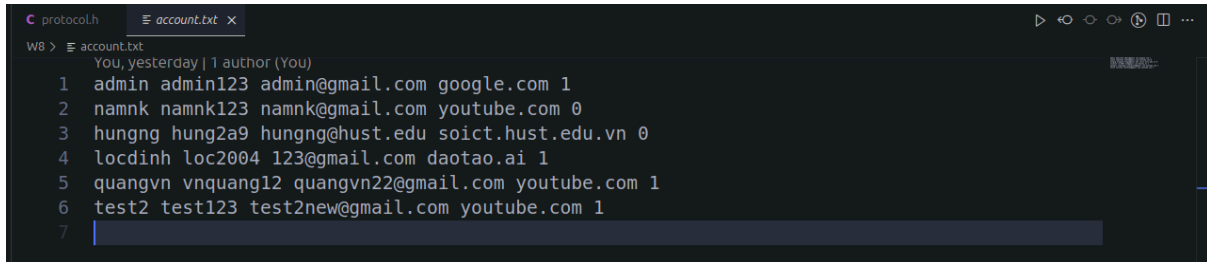


Báo cáo Week 8 - Thực hành Lập trình mạng - Kỳ 2025.1

Nguyễn Khánh Nam - 20225749

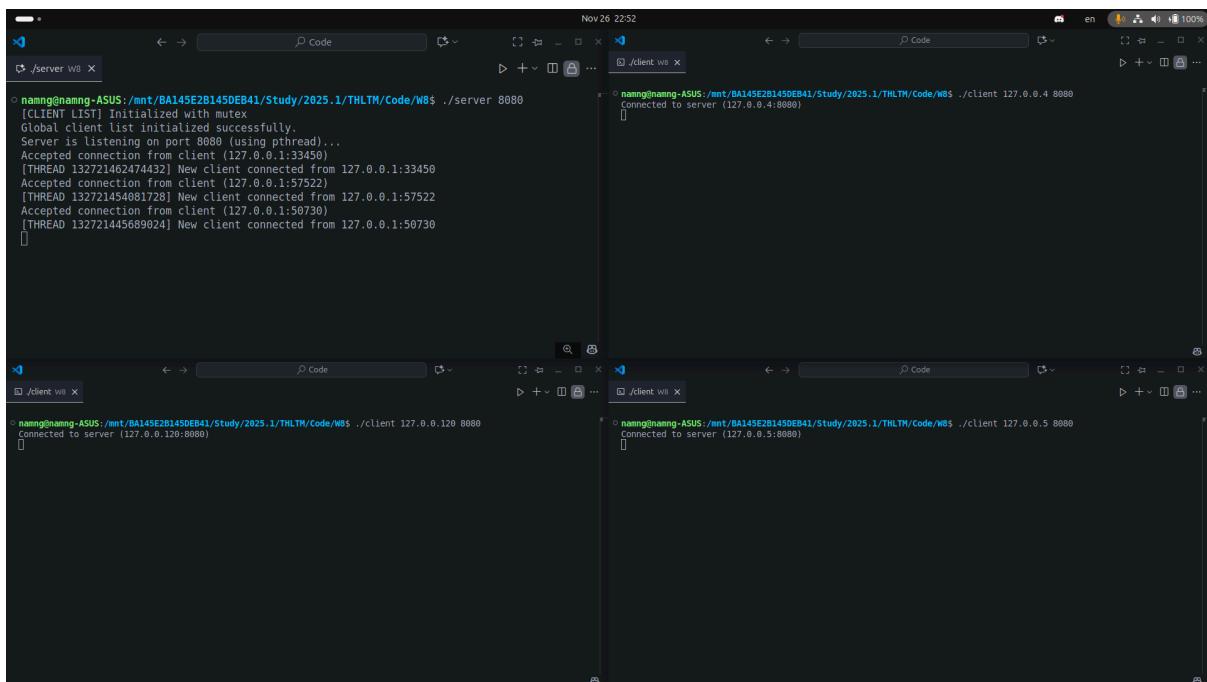
Github: https://github.com/nammannam/IT4062_Network_Programming

File account.txt:

A screenshot of a text editor window titled 'account.txt'. The editor shows a list of six user accounts, each on a new line. The accounts are: 1. admin admin123 admin@gmail.com google.com 1, 2. namnk namnk123 namnk@gmail.com youtube.com 0, 3. hungng hung2a9 hungng@hust.edu soict.hust.edu.vn 0, 4. locdinh loc2004 123@gmail.com daotao.ai 1, 5. quangvn vnquang12 quangvn22@gmail.com youtube.com 1, 6. test2 test123 test2new@gmail.com youtube.com 1. The cursor is at the end of the sixth line.

```
W8 > account.txt
You, yesterday | 1 author (You)
1 admin admin123 admin@gmail.com google.com 1
2 namnk namnk123 namnk@gmail.com youtube.com 0
3 hungng hung2a9 hungng@hust.edu soict.hust.edu.vn 0
4 locdinh loc2004 123@gmail.com daotao.ai 1
5 quangvn vnquang12 quangvn22@gmail.com youtube.com 1
6 test2 test123 test2new@gmail.com youtube.com 1
7
```

Kết quả: **Mô hình 1 Server - 3 Clients**

A screenshot of four terminal windows arranged in a 2x2 grid. The top-left window shows the server output: 'naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8\$./server 8080'. It shows the server listening on port 8080 and accepting connections from three clients. The top-right window shows the output of the first client: 'naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8\$./client 127.0.0.4 8080'. It shows the client connected to the server at 127.0.0.4:8080. The bottom-left window shows the output of the second client: 'naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8\$./client 127.0.0.120 8080'. It shows the client connected to the server at 127.0.0.120:8080. The bottom-right window shows the output of the third client: 'naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8\$./client 127.0.0.5 8080'. It shows the client connected to the server at 127.0.0.5:8080.

```
./server W8 x
naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8$ ./server 8080
[CLIENT LIST] Initialized with mutex
Global client list initialized successfully.
Server is listening on port 8080 (using pthread)...
Accepted connection from client (127.0.0.1:33450)
[THREAD 132721462474432] New client connected from 127.0.0.1:33450
Accepted connection from client (127.0.0.1:57522)
[THREAD 132721454881728] New client connected from 127.0.0.1:57522
Accepted connection from client (127.0.0.1:50730)
[THREAD 132721445689024] New client connected from 127.0.0.1:50730

naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8$ ./client 127.0.0.4 8080
Connected to server (127.0.0.4:8080)

naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8$ ./client 127.0.0.120 8080
Connected to server (127.0.0.120:8080)

naming@naming-ASUS: /mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/W8$ ./client 127.0.0.5 8080
Connected to server (127.0.0.5:8080)
```

```
Nov 26 22:54

[CLIENT LIST] initialized with mutex
DEBUG: len = 5
[SERVER]][THREAD 132721454081728] Nhận yêu cầu LOGIN: namnk
[SERVER]][THREAD 132721454081728] Tài khoản bị khóa: namnk
[AUTH LOG] Login failed: namnk from 127.0.0.1:57522 - account blocked
DEBUG: len = 7
[SERVER]][THREAD 132721454081728] Nhận yêu cầu LOGIN: locdinh
[SERVER]][THREAD 132721454081728] Gửi yêu cầu nhập password cho locdinh
DEBUG: len = 5
[SERVER]][THREAD 132721462474432] Nhận yêu cầu LOGIN: admin
[SERVER]][THREAD 132721462474432] Gửi yêu cầu nhập password cho admin
DEBUG: len = 6
[SERVER]][THREAD 132721445689024] Nhận yêu cầu LOGIN: hungng
[SERVER]][THREAD 132721445689024] Tài khoản bị khóa: hungng
[AUTH LOG] Login failed: hungng from 127.0.0.1:50730 - account blocked
DEBUG: len = 7
[SERVER]][THREAD 132721445689024] Nhận yêu cầu LOGIN: quangvn
[SERVER]][THREAD 132721445689024] Gửi yêu cầu nhập password cho quangvn
[]

namng@namng-ASUS:/mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/WB5 ./client 127.0.0.120 8080
Connected to server (127.0.0.120:8080)
admin
[CLIENT] Enter password:[]

namng@namng-ASUS:/mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/WB5 ./client 127.0.0.4 8080
Connected to server (127.0.0.4:8080)
namnk
[CLIENT] Server DENY (0x00): ERROR: Account is blocked.
locdinh
[CLIENT] Enter password:[]
```

+ Lenh who, help, bye

```
Nov 26 22:54

[CLIENT LIST] initialized with mutex
[CLIENT LIST] Added client: admin (Thread: 132721462474432)
[SERVER]][THREAD 132721462474432] Đăng nhập thành công: admin
[AUTH LOG] Login success: admin from 127.0.0.1:33450
DEBUG: len = 0
[SERVER]][THREAD 132721454081728] Nhận yêu cầu WHO từ [locdinh]
[SERVER]][THREAD 132721454081728] Gửi danh sách: locdinh, quangvn, admin
DEBUG: len = 0
[SERVER]][THREAD 132721462474432] Nhận yêu cầu HELP từ [admin]
[SERVER]][THREAD 132721462474432] Gửi HELP message
DEBUG: len = 3
[SERVER]][THREAD 132721445689024] Nhận TEXT từ [quangvn] : bye
Received message from quangvn: Type=0x10, Length=3, Value="bye"
[SERVER]][THREAD 132721445689024] Gửi phản hồi: CONFIRM sau khi lưu log
[THREAD 132721445689024] Client (127.0.0.1:50730) sent bye command.
[AUTH LOG] Logout: quangvn from 127.0.0.1:50730
[CLIENT LIST] Removed client: quangvn (Thread: 132721445689024)
No user is currently logged in.
[]

namng@namng-ASUS:/mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/WB5 ./client 127.0.0.120 8080
Connected to server (127.0.0.120:8080)
admin
[CLIENT] Enter password:admin123
[CLIENT] Server CONFIRM (0x11): admin
help
[CLIENT] Server CONFIRM (0x11):
== AVAILABLE COMMANDS ==
who - Display list of logged-in users
help - Display this help message
bye - Logout and disconnect
[]

namng@namng-ASUS:/mnt/BA145E2B1450EB41/Study/2025.1/THLTH/Code/WB5 ./client 127.0.0.4 8080
Connected to server (127.0.0.4:8080)
hungng
[CLIENT] Server DENY (0x00): ERROR: Account is blocked.
quangvn
[CLIENT] Enter password:vnquang12
[CLIENT] Server CONFIRM (0x11): quangvn
bye
[CLIENT] Server CONFIRM (0x11): quangvn
[]
```

+ Khoa tai khoan

```
Nov 26 22:55

[CLIENT LIST] Initialized with mutex
[SERVER][THREAD 132721445689824] Nhận yêu cầu LOGIN: quangvn
[SERVER][THREAD 132721445689824] Gửi yêu cầu nhập password cho quangvn
DEBUG: len = 5
[SERVER][THREAD 132721445689824] Nhận password cho username: quangvn
[SERVER][THREAD 132721445689824] Password sai cho: quangvn (Attempts: 2/3)
[AUTH LOG] Login failed: quangvn from 127.0.0.1:58738 - wrong password
DEBUG: len = 7
[SERVER][THREAD 132721445689824] Nhận yêu cầu LOGIN: quangvn
[SERVER][THREAD 132721445689824] Gửi yêu cầu nhập password cho quangvn
DEBUG: len = 10
[SERVER][THREAD 132721445689824] Nhận password cho username: quangvn
[SERVER][THREAD 132721445689824] Password sai cho: quangvn (Attempts: 3/3)
[LOCK ACCOUNT] Locked account: quangvn (changed status to 0)
[LOCK ACCOUNT IN LIST] Locked account in memory: quangvn (status = 0)
[SERVER][THREAD 132721445689824] Tài khoản bị khóa do đăng nhập sai quá 3 lần: quangvn
[AUTH LOG] Account locked: quangvn
[AUTH LOG] Login failed: quangvn from 127.0.0.1:58738 - too many failed attempts
[]

namng@namng-ASUS: /mnt/BA145E2B145DEB41/Study/2025.1/THLTH/Code/WB$ ./client 127.0.0.4 8080
Connected to server (127.0.0.4:8080)
namk
[CLIENT] Server DENY (0x00): ERROR: Account is blocked.
locdinh
[CLIENT] Enter password:loc2084
[CLIENT] Server CONFIRM (0x11): locdinh
who
[CLIENT] Logged-in users: locdinh, quangvn, admin
[]

namng@namng-ASUS: /mnt/BA145E2B145DEB41/Study/2025.1/THLTH/Code/WB$ ./client 127.0.0.120 8080
Connected to server (127.0.0.120:8080)
admin
[CLIENT] Enter password:admin123
[CLIENT] Server CONFIRM (0x11): admin
help
[CLIENT] Server CONFIRM (0x11):
=== AVAILABLE COMMANDS ===
who - Display list of logged-in users
help - Display this help message
bye - Logout and disconnect
[]

namng@namng-ASUS: /mnt/BA145E2B145DEB41/Study/2025.1/THLTH/Code/WB$ ./client 127.0.0.5 8080
Connected to server (127.0.0.5:8080)
[CLIENT] Server DENY (0x00): ERROR: Account is blocked.
quangvn
[CLIENT] Enter password:vnquang12
[CLIENT] Server CONFIRM (0x11): quangvn
bye
[CLIENT] Server CONFIRM (0x11): quangvn
quangvn
[CLIENT] Enter password:quang
[CLIENT] Server DENY (0x00): ERROR: Incorrect password. Attempt 1/3. Warning: Account will be locked after 3 failed attempts.
quangvn
[CLIENT] Enter password:quang
[CLIENT] Server DENY (0x00): ERROR: Incorrect password. Attempt 2/3. Warning: Account will be locked after 3 failed attempts.
quangvn
[CLIENT] Enter password:quangvn123
[CLIENT] Server DENY (0x00): ERROR: Account locked due to too many failed login attempts.
[]
```

- File log auth.log:

```
W8 > log > auth.log M x
17 [2025-11-25 15:50:02] LOGIN namnk from 127.0.0.1:35176 FAIL (account blocked)
18 [2025-11-25 15:50:05] LOGIN namnk from 127.0.0.1:35176 FAIL (account blocked)
19 [2025-11-26 22:53:10] LOGIN namnk from 127.0.0.1:57522 FAIL (account blocked)
20 [2025-11-26 22:53:26] LOGIN hungng from 127.0.0.1:50730 FAIL (account blocked)
21 [2025-11-26 22:54:27] LOGIN locdinh from 127.0.0.1:57522 SUCCESS
22 [2025-11-26 22:54:32] LOGIN quangvn from 127.0.0.1:50730 SUCCESS
23 [2025-11-26 22:54:34] LOGIN admin from 127.0.0.1:33450 SUCCESS
24 [2025-11-26 22:54:44] LOGOUT quangvn from 127.0.0.1:50730
25 [2025-11-26 22:55:01] LOGIN quangvn from 127.0.0.1:50730 FAIL (wrong password)
26 [2025-11-26 22:55:04] LOGIN quangvn from 127.0.0.1:50730 FAIL (wrong password)
27 [2025-11-26 22:55:09] ACCOUNT_LOCKED quangvn
28 [2025-11-26 22:55:09] LOGIN quangvn from 127.0.0.1:50730 FAIL (too many failed attempts)
29
```