**PRACTICAL LAB 03 – IT4062E**

Submitting requirements:

* Use Makefile to compile
* Encapsulate all source code and makefile to a compress file naming with the following format Name\_StudentID\_HW3.zip. Example: NgocTranNguyen\_20201234\_HW3.zip
* Submit your file to the equivalent assignment on Team

**Exercise 1.** Build an UDP application as followed

**Server:**

* Run at any port provided by the command line parameter using the following syntax

**./server PortNumber (Example ./server 5500)**

* Receive a string sent by the client
* Return two strings, one string only contains alphabet characters while the other contains digit characters. If received string contained one of other characters (non-alphabet and non-digit), send the error message

**Client:**

* Connect to the server. Using command line parameters to provide server IP address and port for the connection. Syntax:

**./client IPAddress PortNumber (Example: ./client 127.0.0.1 5500)**

* Allow users to input any string from keyboard and send that string to server
* Receive and show the results from server
* Repeat steps until the input string is a blank one or “\*\*\*”

***Note: Use Makefile to create the binary files with the names of files: server and client***

|  |  |
| --- | --- |
| **INPUT** | **OUTPUT** |
| 1a2b3cd | 123  abcd |
| 123 | 123 |
| abcd | abcd |
| Ab15CD$ | Error |

**Exercise 2.** Write and build an UDP application that:

**Server:**

* Run at any port provided by the command line parameter using the following syntax:

**./server PortNumber (Example ./server 5500)**

* Receive a string containing domain name or IP Address from client
* Return a result string (IP addresses of input domain or Domain names of input IP Address)

**Client:**

* Connect to the server. Using command line parameters to provide Server IP address and port. Syntax:

**./client IPAddress PortNumber (Example: ./client 127.0.0.1 5500)**

* Allow users to type any IP address or domain name
* Receive and show results from server
* Repeat the steps until the user types a blank string.

***Note: Use Makefile to create the binary files with the names of files: server and client***

|  |  |
| --- | --- |
| **INPUT** | **OUTPUT** |
| google.com | Official IP: 216.58.197.110  Alias IP:  216.58.197.123  126.58.99.199 |
| 126.58.99.199 | Official name: hkg07s22-in-f3.1e100.net  Alias name:  hkg07s22-in-f99.1e100.net |
| aznsc.test.com | Not found information |
| 259.12.34.12 | IP Address is invalid |