**PRACTICAL LAB 06 – IT4062**

Using ***threading*** technique for server to build the following applications:

**Exercise 1.** Build an application using TCP socket as followed:

* Server:
* Use the IP address: 127.0.0.1
* Wait the client request at the port 5500
* Receive messages from client, convert messages to capitalized ones and send back to the client. If receiving “q” or “Q” string, close the connection with client
* Client:
* Connect to the server. Note: Show the notification if it fails to connect to the server
* Get the user message from keyboard and send to server
* Show the response messages from server
* Stop sending and close the connection if the user types “q” or “Q”. Then, showing the total bytes client has sent to server before closing the program

**Exercise 2 (Optional)** Using TCP socket to build sign-in/sign-out functions for users

* Start the server with the port number provided from command line parameters:

$./server Port\_Number (Example: $./server 5500)

* Start with the serve IP address and port got from command line parameters:

$./client IP\_Addr Port\_Number (Example: $./client 10.0.0.1 5500)

* Requirements:
* Each client terminal can only login a single account
* Each account can login in multiple terminals
* If the number of failing login attempts of an account reaches 5 times, server will lock that account
* User accounts are stored in a text file named account.txt, each user information is stored in a line (see the example)

UserID Password Status

Where Status is 0 if locked, and status is 1 if unlocked