NT21 Assignment 5

Sockets

Task 1: TCP Socket Client/Server

Create a C# Client and Server Program that can communicate and follow these requirements:

1. Client and Server are connected via loopback.
2. Client accepts textual input from the user (e.g. from command line but you can also use form) and sends it to the Server.
3. Server prints everything it received on console (or in form if you choose to use GUI)
4. When Client sends “quit” command both Client and Server finish their execution

For writing of the code you can use a very simplistic example of socket: MyFirstSocket.zip and of course any information from the Internet. There is plenty of code when you look for description of .NET classes like *TCPClient* or *TCPListener*. If you use code from the Internet, take care that you only use code necessary for the project and that you understand it well. Any source from Internet should be mentioned in the delivered documentation.

Provide a screenshot of the running code and a zip file with C# code

Task 2: TCP Socket Client/Server Extended Echo Server

Extend the socket from task 1 so that it satisfies the following requirements:

1. Client reads IP address of the server to connect to from the user interface (so loopback interface has to be replaced)
2. Server accepts user input from the Client, converts it to uppercase and sends it back to the Client
3. Client shows received data from the Server

Provide a screenshot of the running code (Client and Server run on different PCs) and a zip file with C# code.

Task 3 (Optional):

Choose one of 3 possibilities and implement it:

1. Implement task 2 but use instead of TCP socket a UDP socket
2. Implement server from task 2 in C (use “classical” Berkeley sockets) and let it talk to original C# client
3. Implement server from task 2 on an embedded system like Arduino or ESP8266 and let it talk to original C# client

Provide a screenshot of the running code and a zip file with code