

410885049 萬逸涵 電腦網路程式期末作業

程式內容：

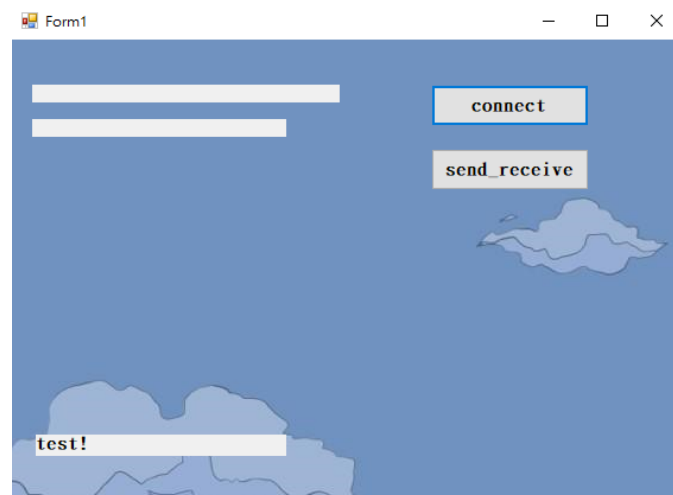
使用 TCP 建立連線，client 可在 textbox1 輸入訊息，並傳送給 server。

連線步驟：

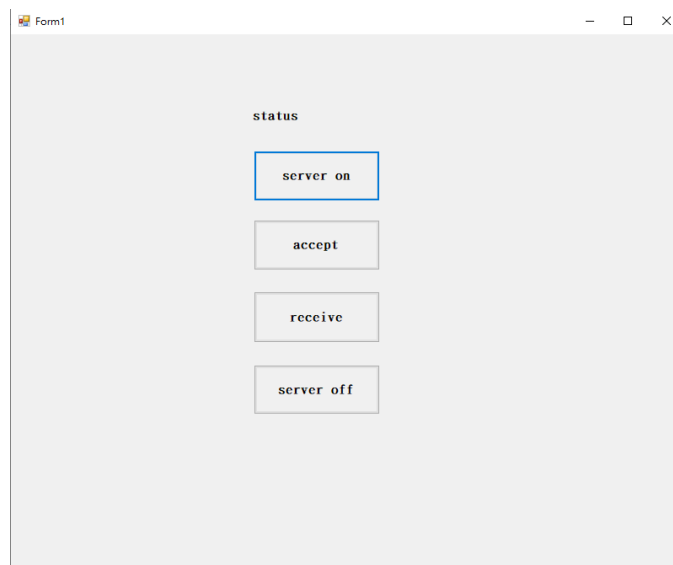
1. 將 server 打開，點選 server on
2. 再到 client 端點選 Connect，server 端和 client 端就成功連線
3. 點選 Accept 做好接收的準備
4. client 端點選 send_receive 傳送預設訊息 test
5. server 這時候點選 receive 就可以收到訊息 test
6. 也可以刪除 test 傳送其他訊息，重複步驟 4、5
7. 連線結束，點選 server off

執行畫面：

Client 端



Server 端



程式碼：

Client 端

```
Client1
1 using System;
2 using System.Collections.Generic;
3 using System.ComponentModel;
4 using System.Data;
5 using System.Drawing;
6 using System.Linq;
7 using System.Text;
8 using System.Threading.Tasks;
9 using System.Windows.Forms;
10 using System.Net.Sockets;
11
12 namespace Client1
13 {
14     4 個參考
15     public partial class Form1 : Form
16     {
17         TcpClient clientSocket;
18
19         1 個參考
20         public Form1()
21         {
22             InitializeComponent();
23             InitializeMyControl();
24         }
25         1 個參考
26         private void InitializeMyControl()
27         {
28             textBox1.Text = "test!";
29         }
30
31         1 個參考
32         private void button1_Click(object sender, EventArgs e)//connect
33         {
34             clientSocket = new TcpClient();
35             try
36             {
37                 clientSocket.Connect("127.0.0.1", 8888);
38             }
39             catch (Exception ex)
40             {
41                 label1.Text = "Server not found";
42                 clientSocket = null;
43                 return;
44             }
45             label1.Text = "Connected";
46
47         }
48
49         1 個參考
50         private void button2_Click(object sender, EventArgs e)//send receive
51         {
52             if (clientSocket == null)
53             {
54                 label1.Text = "Server is Off";
55                 return;
56             }
57             NetworkStream serverStream = clientSocket.GetStream();
58             byte[] outStream = System.Text.Encoding.ASCII.GetBytes(textBox1.Text);
59             serverStream.Write(outStream, 0, outStream.Length);
60             serverStream.Flush();
61             label1.Text = "Send: " + textBox1.Text;
62
63             byte[] inStream = new byte[1000];
64             serverStream.Read(inStream, 0, 100);
65             string returndata = System.Text.Encoding.ASCII.GetString(inStream);
66             label1.Text = "Recv: " + returndata;
67         }
68     }
69 }
```

Server 端

```
1 using System;
2 using System.Collections.Generic;
3 using System.ComponentModel;
4 using System.Data;
5 using System.Drawing;
6 using System.Linq;
7 using System.Text;
8 using System.Threading.Tasks;
9 using System.Windows.Forms;
10 using System.Net.Sockets;
11
12 namespace _1
13 {
14     3 個參考
15     public partial class Form1 : Form
16     {
17         TcpListener serverSocket;
18         TcpClient clientSocket;
19         bool on = false;
20
21         1 個參考
22         public Form1()
23         {
24             InitializeComponent();
25         }
26
27         1 個參考
28         private void button1_Click(object sender, EventArgs e)//server on
29         {
30             serverSocket = new TcpListener(8888);
31             serverSocket.Start();
32             label1.Text = "Server On";
33             on = true;
34         }
35
36         0 個參考
37         private void button3_Click(object sender, EventArgs e)//server off
38         {
39             if (clientSocket != null)
40             {
41                 clientSocket.Close();
42             }
43             if (on)
44             {
45                 serverSocket.Stop();
46                 on = false;
47                 label1.Text = "Server Off";
48             }
49         }
50
51         1 個參考
52         private void receive_Click(object sender, EventArgs e)//receive
53         {
54             if (clientSocket == null)
55                 return;
56             NetworkStream networkStream = clientSocket.GetStream();
57             byte[] bytesFrom = new byte[1000];
58             networkStream.Read(bytesFrom, 0, 100);
59             string dataFromClient = System.Text.Encoding.ASCII.GetString(bytesFrom);
60             label1.Text = dataFromClient;
61             networkStream.Write(bytesFrom, 0, bytesFrom.Length);
62             networkStream.Flush();
63         }
64
65         1 個參考
66         private void accept_Click(object sender, EventArgs e)//accept
67         {
68             if (!serverSocket.Pending())
69             {
70                 label1.Text = "Wait for a client";
71                 return;
72             }
73             clientSocket = serverSocket.AcceptTcpClient();
74             label1.Text = "Client Accepted";
75         }
76     }
77 }
```