NP 109112 Assignment 2 Date: 20-03-2022

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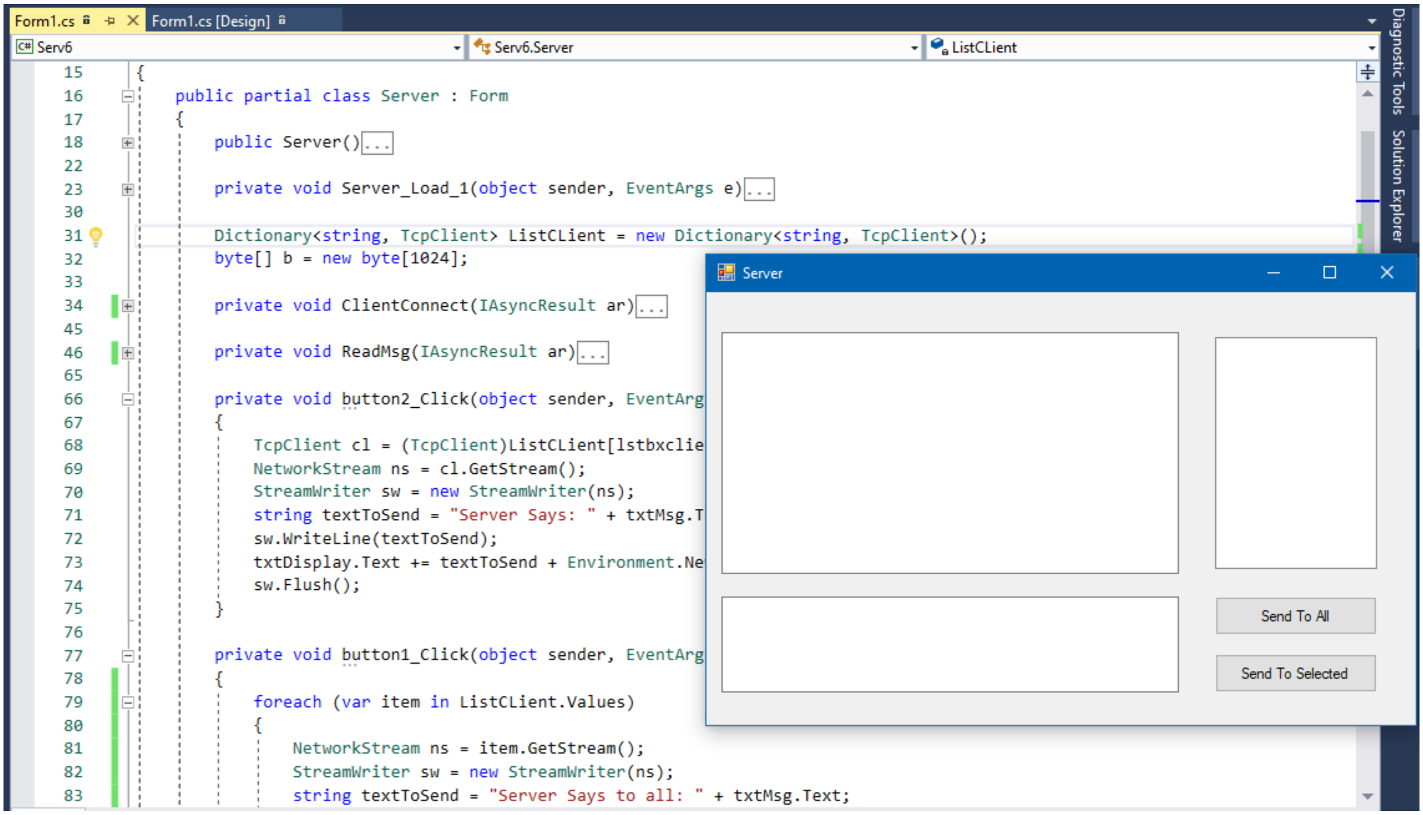
Server:

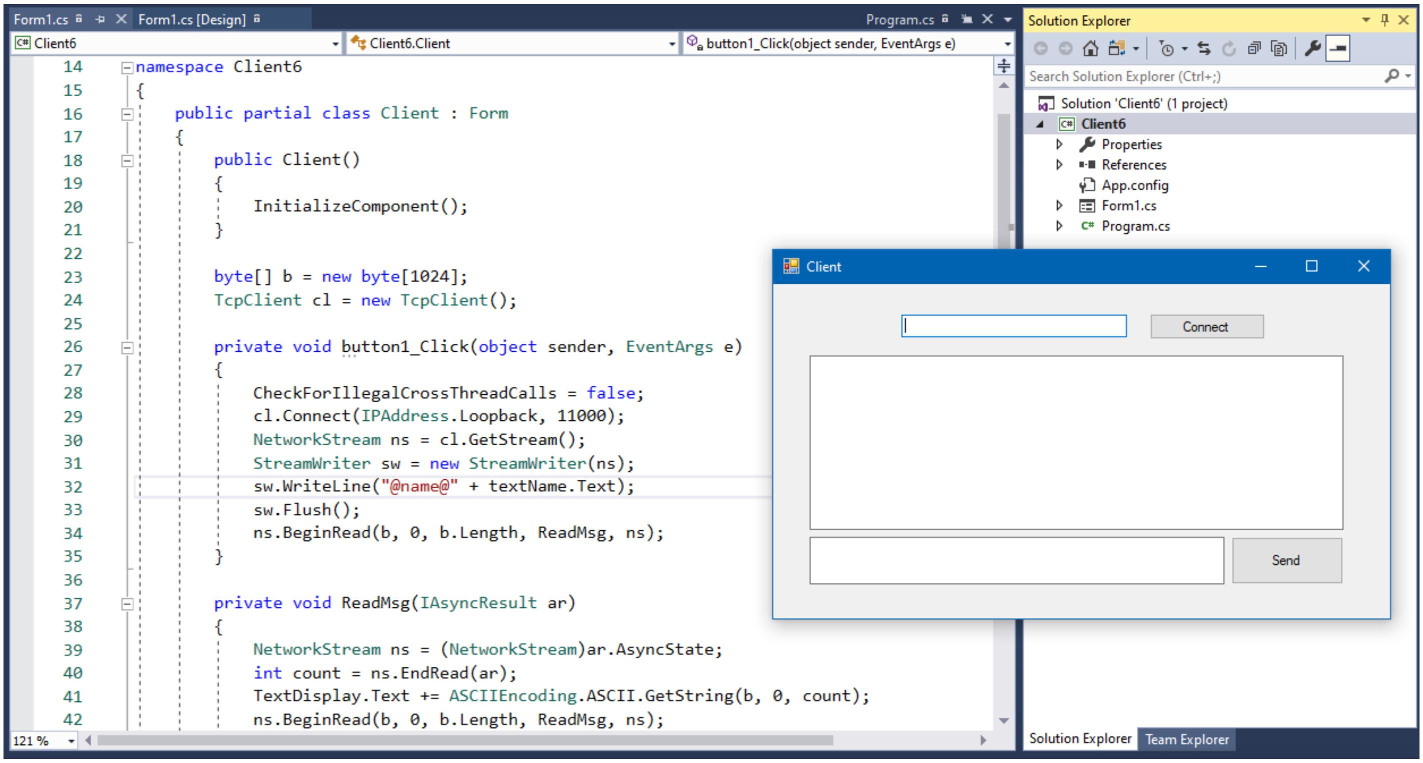
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Net;
using System.Net.Sockets;
using System.IO;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Serv6 {
    public partial class Server : Form {
        public Server() {
            InitializeComponent();
        }

        private void Server_Load_1(object sender, EventArgs e) {
            CheckForIllegalCrossThreadCalls = false;
            TcpListener lis = new TcpListener(IPAddress.Loopback, 11000);
            lis.Start(10);
            lis.BeginAcceptTcpClient(new AsyncCallback(ClientConnect), lis);
        }

        Dictionary<string, TcpClient> ListCLient = new Dictionary<string, TcpClient>();
        byte[] b = new byte[1024];

        private void ClientConnect(IAsyncResult ar) {
            TcpListener lis = (TcpListener)ar.AsyncState;
            TcpClient cl = lis.EndAcceptTcpClient(ar);
            NetworkStream ns = cl.GetStream();
            object[] a = new object[2];
            a[0] = ns;
            a[1] = cl;
            ns.BeginRead(b, 0, b.Length, new AsyncCallback(ReadMsg), a);
            lis.BeginAcceptTcpClient(new AsyncCallback(ClientConnect), lis);
        }

        private void ReadMsg(IAsyncResult ar) {
            object[] a = (object[])ar.AsyncState;
            NetworkStream ns = (NetworkStream)a[0];
            TcpClient cl = (TcpClient)a[1];
            int count = ns.EndRead(ar);
            string msg = ASCIIEncoding.ASCII.GetString(b, 0, count);
            if (msg.Contains("@name@")) {
                string name = msg.Replace("@name@", "");
                ListCLient.Add(name, cl);
                lstbxclient.Items.Add(name);
            }
            else{
                txtDisplay.Text += msg + Environment.NewLine;
            }
            ns.BeginRead(b, 0, b.Length, new AsyncCallback(ReadMsg), a);
        }
        private void button2_Click(object sender, EventArgs e)        {
            TcpClient cl = (TcpClient)ListCLient[lstbxclient.SelectedItem.ToString()];
            NetworkStream ns = cl.GetStream();
            StreamWriter sw = new StreamWriter(ns);
            string textToSend = "Server Says: " + txtMsg.Text;
            sw.WriteLine(textToSend);
            txtDisplay.Text += textToSend + Environment.NewLine;
            sw.Flush();
        }

        private void button1_Click(object sender, EventArgs e) {
            foreach (var item in ListCLient.Values) {
                NetworkStream ns = item.GetStream();
                StreamWriter sw = new StreamWriter(ns);
                string textToSend = "Server Says to all: " + txtMsg.Text;
                txtDisplay.Text = textToSend + Environment.NewLine;
                sw.WriteLine(textToSend);
                sw.Flush();
            }}}}
```



```
{
    public partial class Server : Form
    {
        public Server()...

        private void Server_Load_1(object sender, EventArgs e)...

        Dictionary<string, TcpClient> ListCLient = new Dictionary<string, TcpClient>();
        byte[] b = new byte[1024];

        private void ClientConnect(IAsyncResult ar)...

        private void ReadMsg(IAsyncResult ar)...

        private void button2_Click(object sender, EventArg
        {
            TcpClient cl = (TcpClient)ListCLient[lstbxclie
            NetworkStream ns = cl.GetStream();
            StreamWriter sw = new StreamWriter(ns);
            string textToSend = "Server Says: " + txtMsg.T
            sw.WriteLine(textToSend);
            txtDisplay.Text += textToSend + Environment.Ne
            sw.Flush();
        }

        private void button1_Click(object sender, EventArg
        {
            foreach (var item in ListCLient.Values)
            {
                NetworkStream ns = item.GetStream();
                StreamWriter sw = new StreamWriter(ns);
                string textToSend = "Server Says to all: " + txtMsg.Text;
```

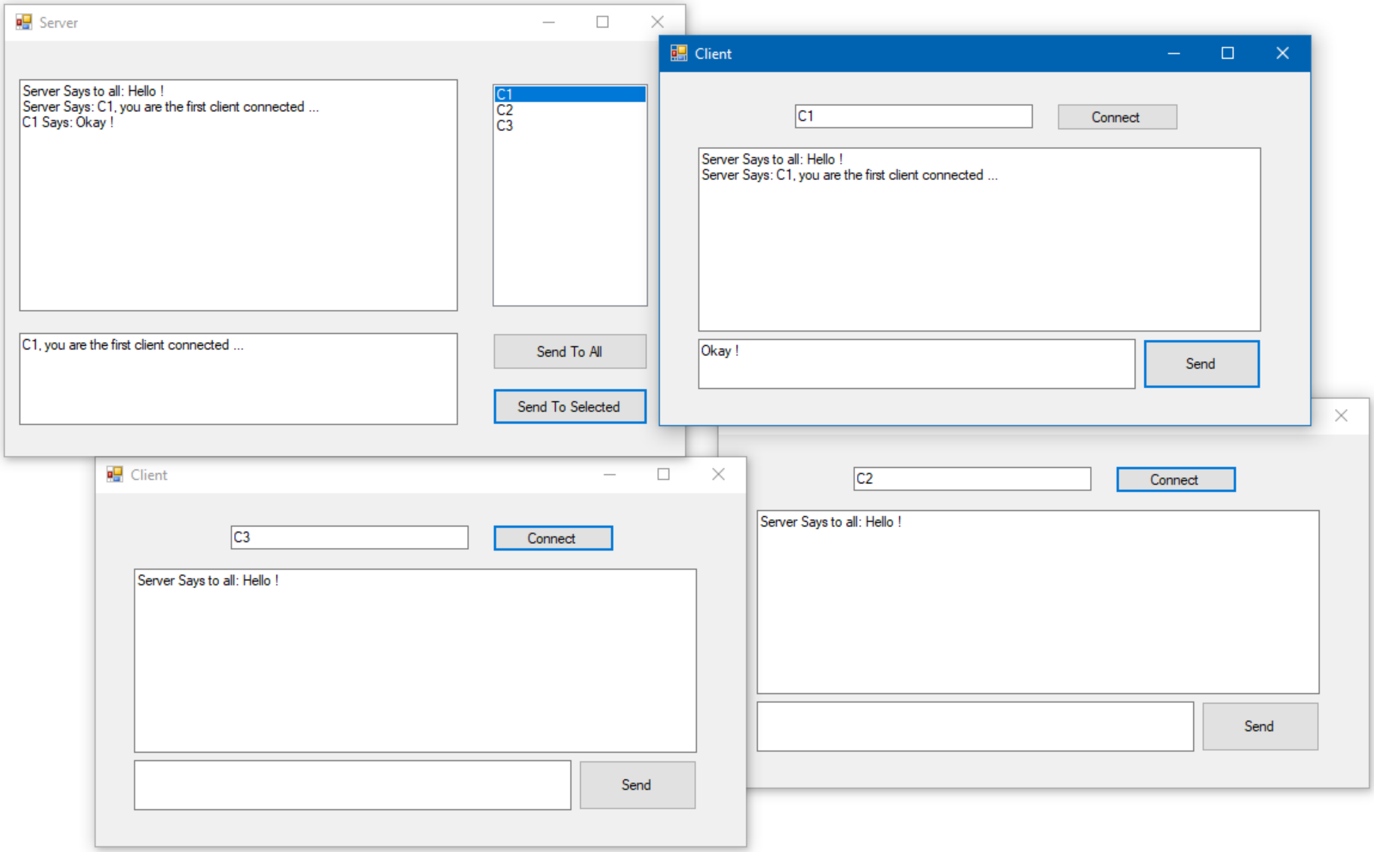
Client:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Net;
using System.Net.Sockets;
using System.IO;

namespace Client6 {
    public partial class Client : Form {
        public Client() {
            InitializeComponent();
        }

        byte[] b = new byte[1024];
        TcpClient cl = new TcpClient();

        private void button1_Click(object sender, EventArgs e) {
            CheckForIllegalCrossThreadCalls = false;
            cl.Connect(IPAddress.Loopback, 11000);
            NetworkStream ns = cl.GetStream();
            StreamWriter sw = new StreamWriter(ns);
            sw.WriteLine("@name@" + textName.Text);
            sw.Flush();
            ns.BeginRead(b, 0, b.Length, ReadMsg, ns);
        }

        private void ReadMsg(IAsyncResult ar) {
            NetworkStream ns = (NetworkStream)ar.AsyncState;
            int count = ns.EndRead(ar);
            TextDisplay.Text += ASCIIEncoding.ASCII.GetString(b, 0, count);
            ns.BeginRead(b, 0, b.Length, ReadMsg, ns);
        }

        private void Send_Click(object sender, EventArgs e) {
            NetworkStream ns = cl.GetStream();
            StreamWriter sw = new StreamWriter(ns);
            sw.WriteLine(textName.Text + " Says: " + txtMsg.Text);
            sw.Flush();
        } }}
```



```
namespace Client6
{
    public partial class Client : Form
    {
        public Client()
        {
            InitializeComponent();
        }

        byte[] b = new byte[1024];
        TcpClient cl = new TcpClient();

        private void button1_Click(object sender, EventArgs e)
        {
            CheckForIllegalCrossThreadCalls = false;
            cl.Connect(IPAddress.Loopback, 11000);
            NetworkStream ns = cl.GetStream();
            StreamWriter sw = new StreamWriter(ns);
            sw.WriteLine("@name@" + textName.Text);
            sw.Flush();
            ns.BeginRead(b, 0, b.Length, ReadMsg, ns);
        }

        private void ReadMsg(IAsyncResult ar)
        {
            NetworkStream ns = (NetworkStream)ar.AsyncState;
            int count = ns.EndRead(ar);
            TextDisplay.Text += ASCIIEncoding.ASCII.GetString(b, 0, count);
            ns.BeginRead(b, 0, b.Length, ReadMsg, ns);
```

Outputs:



```
Server Says to all: Hello !
Server Says: C1, you are the first client connected ...
C1 Says: Okay !
```

```
C1, you are the first client connected ...
```

```
C1
C2
C3
```

```
C1
```

```
Server Says to all: Hello !
Server Says: C1, you are the first client connected ...
```

```
Okay !
```

```
C3
```

```
Server Says to all: Hello !
```

```
C2
```

```
Server Says to all: Hello !
```