```
// Bài tập 1 – Chương 5
using System;
using System.Net;
using System.Net.Sockets;
using System.Text;
using System.Threading;
class ThreadedTcpSrvr
{
  private TcpListener client;
  public ThreadedTcpSrvr()
  {
   client = new TcpListener(9050);
   client.Start();
   Console.WriteLine("Waiting for clients...");
   while(true)
   {
     while (!client.Pending())
     {
      Thread.Sleep(1000);
     }
     ConnectionThread newconnection = new ConnectionThread();
     newconnection.threadListener = this.client;
     Thread newthread = new Thread(new
          ThreadStart(newconnection.HandleConnection));
     newthread.Start();
   }
  }
  public static void Main()
  {
   ThreadedTcpSrvr server = new ThreadedTcpSrvr();
  }
}
class ConnectionThread
{
  public TcpListener threadListener;
  private static int connections = 0;
  public void HandleConnection()
  {
   int recv;
   byte[] data = new byte[1024];
   TcpClient client = threadListener.AcceptTcpClient();
   NetworkStream ns = client.GetStream();
   connections++;
   Console.WriteLine("New client accepted: {0} active connections",
            connections);
   string welcome = "Welcome to my test server";
   data = Encoding.ASCII.GetBytes(welcome);
   ns.Write(data, 0, data.Length);
   while(true)
   {
     data = new byte[1024];
     recv = ns.Read(data, 0, data.Length);
     if (recv == 0)
      break;
     ns.Write(data, 0, recv);
   }
   ns.Close();
   client.Close();
   connections--;
   Console.WriteLine("Client disconnected: {0} active connections",
            connections);
  }
}
```

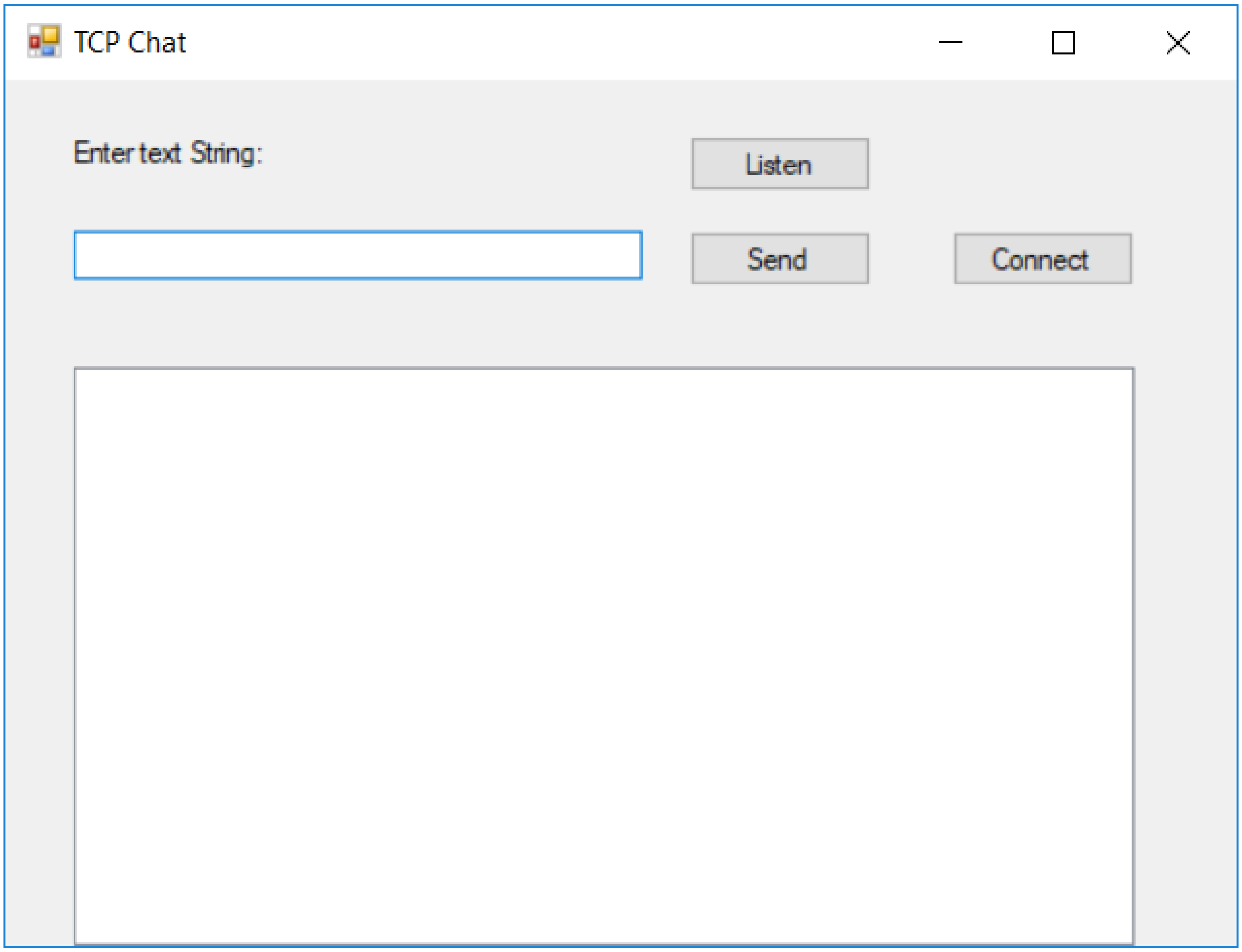
Client:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Net;
using System.Net.Sockets;
using System.Threading;
namespace _9._7TCPChat
{
    public partial class TcpChat : Form
    {
```

```
private static Socket client;
private static byte[] data = new byte[1024];
public TcpChat()
{


    InitializeComponent();
}

private void ButtonConnect_Click(object sender, EventArgs e)
{
    results.Items.Add("Connecting...");
    client = new Socket(AddressFamily.InterNetwork, SocketType.Stream,
     ProtocolType.Tcp);
    IPEndPoint iep = new IPEndPoint(IPAddress.Parse("127.0.0.1"), 9050);
    client.BeginConnect(iep, new AsyncCallback(Connected), client);

}

private void ButtonListen_Click(object sender, EventArgs e)
{
    results.Items.Add("Listening for a client...");
    Socket newsock = new Socket(AddressFamily.InterNetwork, SocketType.Stream,
     ProtocolType.Tcp);
    IPEndPoint iep = new IPEndPoint(IPAddress.Any, 9050);
    newsock.Bind(iep);
    newsock.Listen(5);
    newsock.BeginAccept(new AsyncCallback(AcceptConn), newsock);


}


private void ButtonSend_Click(object sender, EventArgs e)
{
    byte[] message = Encoding.ASCII.GetBytes(newText.Text);
    newText.Clear();
    client.BeginSend(message, 0, message.Length, 0,
     new AsyncCallback(SendData), client);


}
void SendData(IAsyncResult iar)
{
    Socket remote = (Socket)iar.AsyncState;
    int sent = remote.EndSend(iar);
}
void AcceptConn(IAsyncResult iar)
{
    Socket oldserver = (Socket)iar.AsyncState;
    client = oldserver.EndAccept(iar);
    results.Items.Add("Connection from: " + client.RemoteEndPoint.ToString());
    Thread receiver = new Thread(new ThreadStart(ReceiveData));
    receiver.Start();
}


void Connected(IAsyncResult iar)
```

```
{
    try
    {
        client.EndConnect(iar);
        results.Items.Add("Connected to: " + client.RemoteEndPoint.ToString());
        Thread receiver = new Thread(new ThreadStart(ReceiveData));
        receiver.Start();
    }
    catch (SocketException)
    {
        results.Items.Add("Error connecting");
    }
}
void ReceiveData()
{
    int recv;
    string stringData;
    while (true)
    {
        recv = client.Receive(data);
        stringData = Encoding.ASCII.GetString(data, 0, recv);
        if (stringData == "bye")
            break;
        results.Items.Add(stringData);
    }
    stringData = "bye";
    byte[] message = Encoding.ASCII.GetBytes(stringData);
```

```
            client.Send(message);
            client.Close();
            results.Items.Add("Connection stopped");
            return;
        }
        private void TCPChat_KeyPress(object sender, KeyPressEventArgs e)
        {
            if (e.KeyChar == 13)
                ButtonSend_Click(sender, e);
        }
    }
}
```


TCP Chat
Enter text String:
Listen
Send
Connect