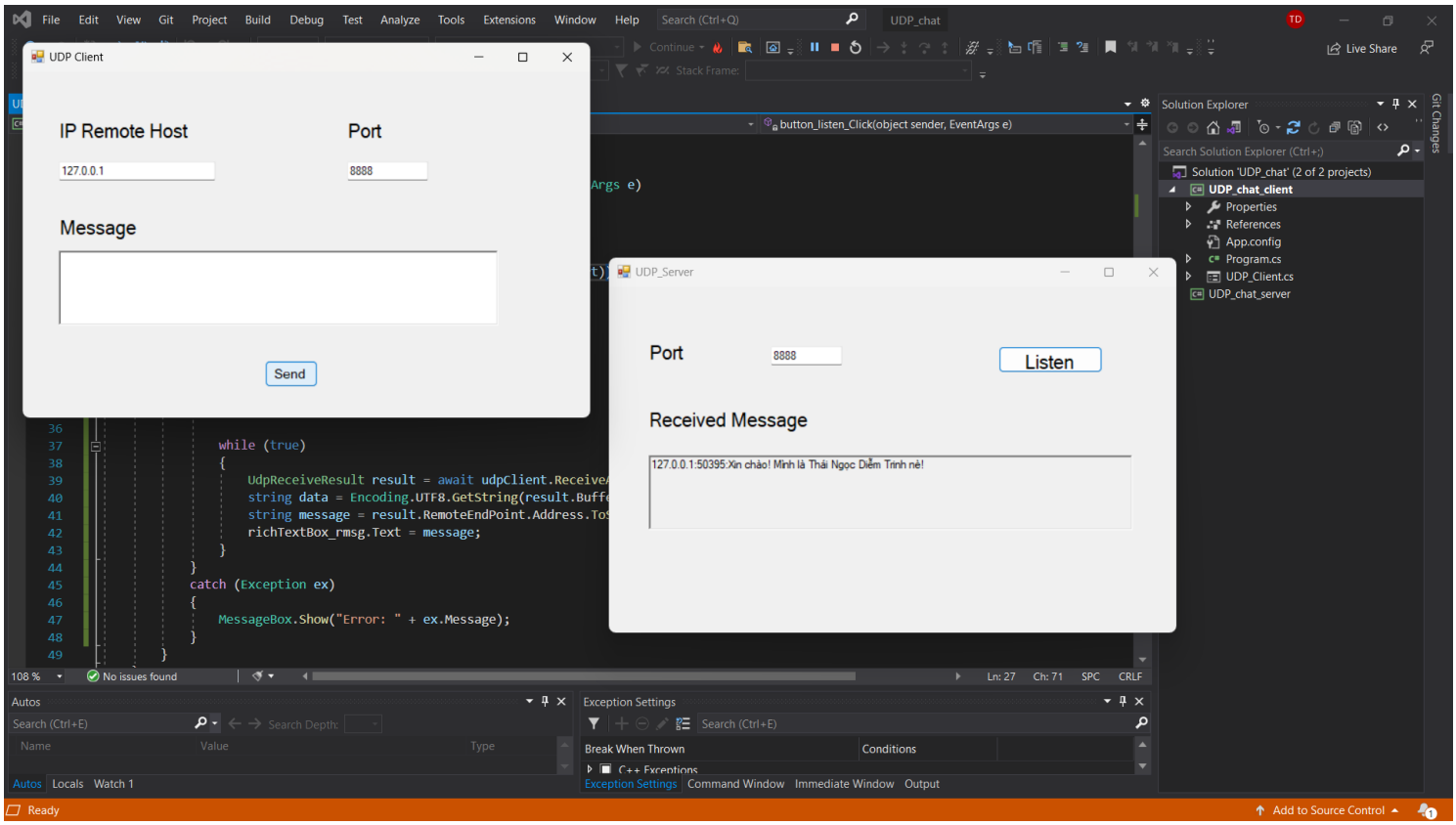
1. UDP:



UDP 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;

namespace UDP_chat
{
    public partial class UDP_Client : Form
    {
        public UDP_Client()
        {
            InitializeComponent();
        }

        private void button_send_Click(object sender, EventArgs e)
        {
            UdpClient client = new UdpClient();
            IPAddress ipadd = IPAddress.Parse(textBox_IP.Text);
            int port = Convert.ToInt32(textBox_port.Text);
            IPEndPoint ipendpoint = new IPEndPoint(ipadd, port);
            byte[] stringByte = Encoding.UTF8.GetBytes(richTextBox_msg.Text);
            client.Send(stringByte, stringByte.Length, ipendpoint);
            richTextBox_msg.Text = "";
        }
    }
}
```

UDP Server:

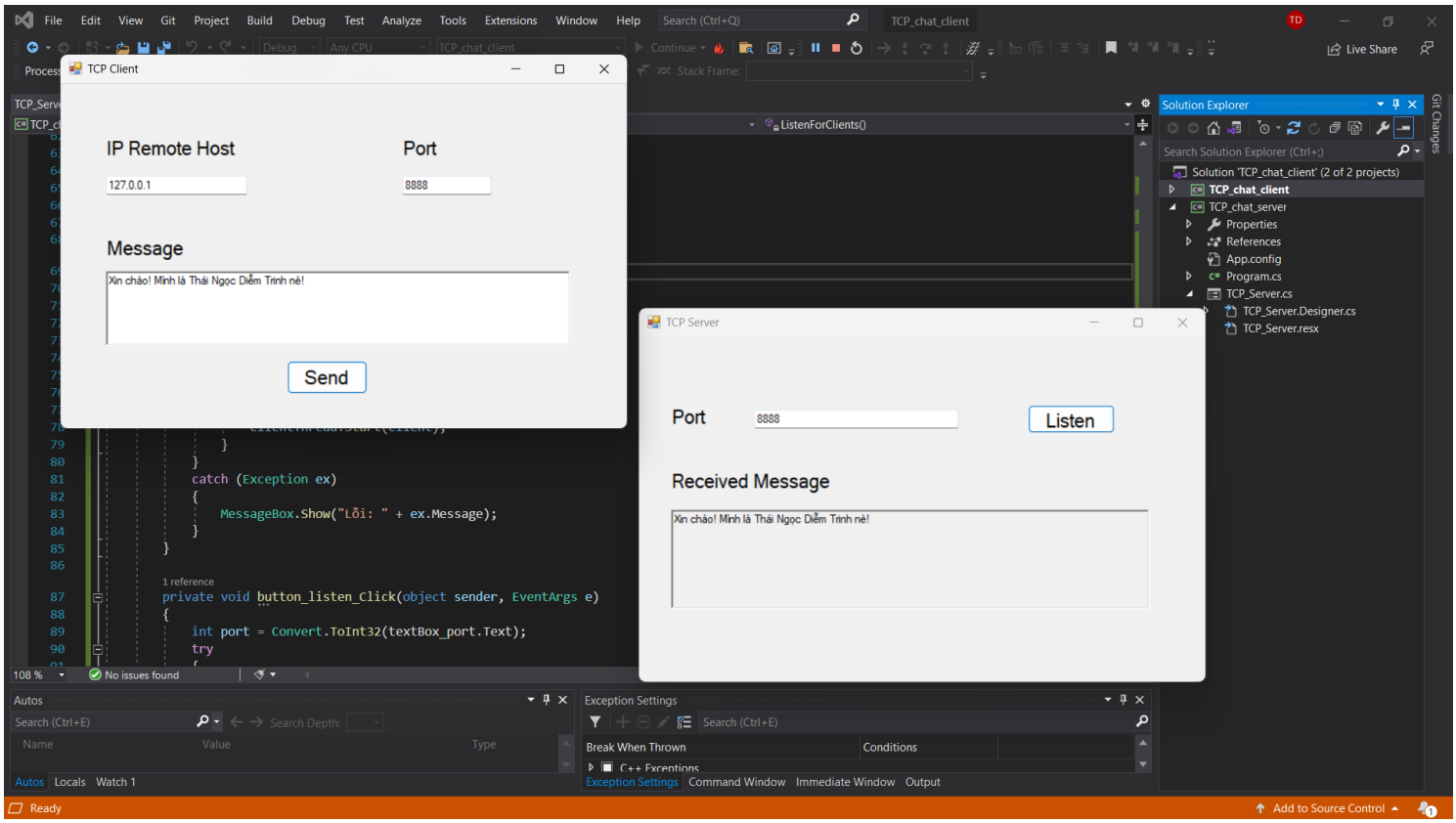
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Net;
using System.Net.Sockets;

namespace UDP_chat_server
{
    public partial class UDP_Server : Form
    {
        public UDP_Server()
        {
            InitializeComponent();
        }

        private async void button_listen_Click(object sender, EventArgs e)
        {
            try
            {
                int port;
                if (!int.TryParse(textBox_port_server.Text, out port))
                {
                    MessageBox.Show("Port không hợp lệ");
                    return;
                }
                UdpClient udpClient = new UdpClient(port);

                while (true)
                {
                    UdpReceiveResult result = await udpClient.ReceiveAsync();
                    string data = Encoding.UTF8.GetString(result.Buffer);
                    string message = result.RemoteEndPoint.Address.ToString() + ":" +
result.RemoteEndPoint.Port.ToString() + ":" + data;
                    richTextBox_rmsg.Text = message;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error: " + ex.Message);
            }
        }
    }
}
```

2. TCP:



TCP 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;

namespace TCP_chat_client
{
    public partial class TCP_Client : Form
    {
        public TCP_Client()
        {
            InitializeComponent();
        }

        private void button_send_Click(object sender, EventArgs e)
        {
            int port = Convert.ToInt32(textBox_port.Text);
            IPAddress ipadd = IPAddress.Parse(textBox_IP.Text);

            try
            {
                TcpClient tcpClient = new TcpClient(textBox_IP.Text, port);
                NetworkStream stream = tcpClient.GetStream();
                byte[] stringBytes = Encoding.UTF8.GetBytes(richTextBox_msg.Text);
```

```
                stream.Write(stringBytes, 0, stringBytes.Length);
                stream.Close();
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }
    }
}
```

TCP Server:

```
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.Sockets;
using System.Net;
using System.Threading;

namespace TCP_chat_server
{
    public partial class Form1 : Form
    {
        private TcpListener listener;

        public Form1()
        {
            InitializeComponent();
        }

        private void DisplayMessage(string message)
        {
            if (richTextBox_rmsg.InvokeRequired)
            {
                richTextBox_rmsg.Invoke((MethodInvoker)delegate {
                    richTextBox_rmsg.Text = message;
                });
            }
            else
            {
                richTextBox_rmsg.Text = message;
            }
        }

        private void HandleClientComm(object clientObj)
        {
            TcpClient client = (TcpClient)clientObj;
            NetworkStream stream = client.GetStream();
            byte[] data = new byte[1024];

            try
            {
                while (true)
                {
                    int bytesRead = stream.Read(data, 0, data.Length);
                    if (bytesRead == 0)
                    {
                        break; // Kết thúc khi client đóng kết nối
                    }
```

```
                string message = Encoding.UTF8.GetString(data, 0, bytesRead);
                DisplayMessage(message);
            }
        }
        catch (Exception ex)
        {
            MessageBox.Show("Lỗi trong xử lý dữ liệu từ client: " + ex.Message);
        }
        finally
        {
            client.Close();
        }
    }

    private void ListenForClients()
    {
        try
        {
            while (true)
            {
                TcpClient client = listener.AcceptTcpClient();
                Thread clientThread = new Thread(HandleClientComm);
                clientThread.IsBackground = true;
                clientThread.Start(client);
            }
        }
        catch (Exception ex)
        {
            MessageBox.Show("Lỗi: " + ex.Message);
        }
    }

    private void button_listen_Click(object sender, EventArgs e)
    {
        int port = Convert.ToInt32(textBox_port.Text);
        try
        {
             listener = new TcpListener(IPAddress.Any, port);
            listener.Start();
            // Khởi tạo một luồng riêng biệt để lắng nghe kết nối từ client
            Thread listenThread = new Thread(ListenForClients);
            listenThread.IsBackground = true;
            listenThread.Start();
            MessageBox.Show("Đã bắt đầu lắng nghe kết nối từ client.");
        }
        catch (Exception ex)
        {
            MessageBox.Show("Lỗi: " + ex.Message);
        }
    }
}
}
```