BAIS3110 TCP/IP Assignment

Name _____

Open a command prompt and run the following commands and summarize the results on the next page. Remember that adding /? After the command name will often give descriptive help for the command.

Netstat
Netstat –a
Netstat –b
Netstat –e
Netstat –n
Netstat –r
Ping 127.0.0.1
Ping wa304-xx (replace xx with another workstation)
Arp –a (try it after pinging another students workstation)
Nbtstat –n
Ipconfig /all
Route print
Tracert www.nait.ab.ca

Run the previous commands and try to determine a good usage for them and fill in the table on the next page.

Run an online Nslookup, such as: http://www.kloth.net/services/nslookup.php and write down www.nait.ca's IP address:

_____

Use Netcraft.com and the What's that site running textbox on the upper left hand side of their webpage to determine what WebServer nait is running.

_____

While you're at Netcraft, write down the total number of internet domains, and Apache's and IIS's market share percentages.

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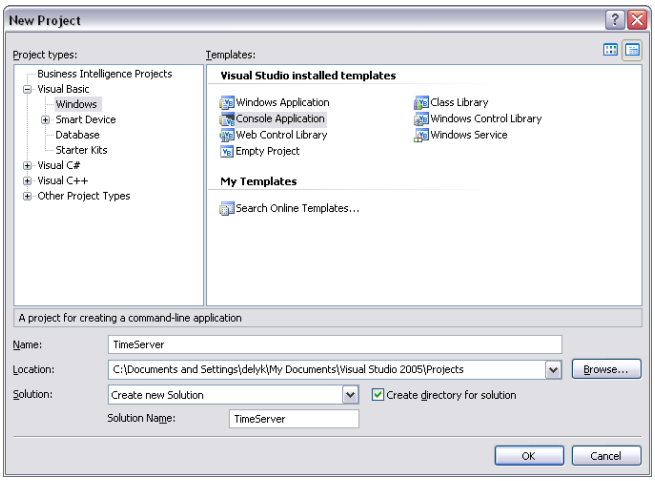
TCP/IP Commands

Command	Result
Arp –a	
Ipconfig /all	
Nbtstat –n	
Netstat	
Netstat –a	
Netstat –b	
Netstat –e	
Netstat –n	
Netstat –r	
Ping 127.0.0.1	
Ping wa304-xx	
Route print	
Tracert site	

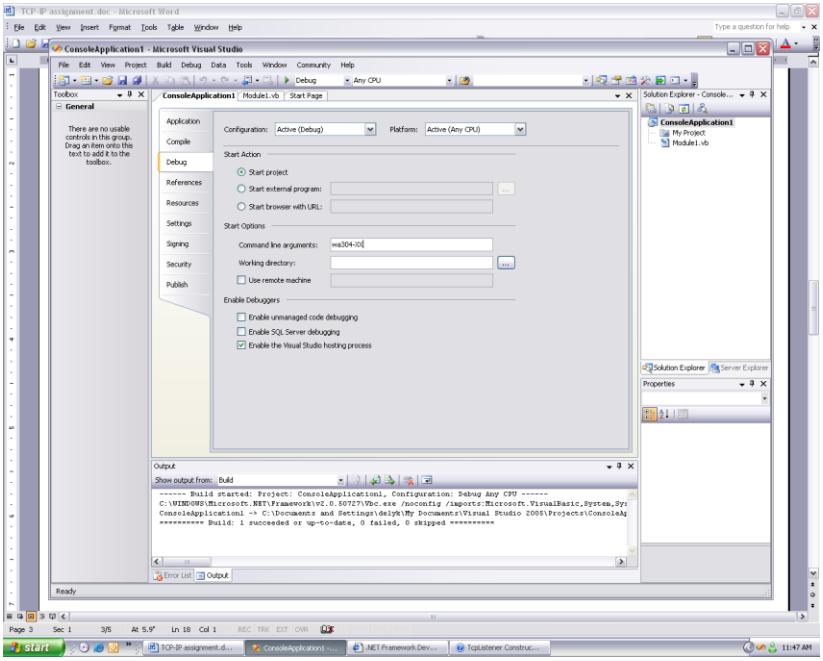
Programming Section:
To learn a little about writing network aware applications, create and run the following 2 samples found on the next two pages.
To build the programs in Visual Studio 2010 you should create new Visual Basic -> Windows -> Console Applications projects. Create one for the server and one for the client, named appropriately.



You need to run the server before you can connect with the client. If you run both the server and the client on the same machine you won't run into firewall problems. If you run them on separate machines you may have to disable the firewall.

The client requires a server name to be specified on the command line example:
`C> DateTimeClient wa304-V26 (use localhost to test on a single machine)`

If you are running the client program from within the Visual Studio environment you can specify the command line argument in the Project -> ProjectName->Debug Properties dialog box.



How Do I...Make a DateTime server with TCPListener?

```
Imports System
Imports System.Net
Imports System.Net.Sockets
Imports System.Text
Imports System.Threading
Imports System.Globalization

Module Module1

    Sub Main()
        Dim now As Date
        Dim strDateLine As String
        Dim ASCII As Encoding = Encoding.ASCII

        Thread.CurrentThread.CurrentCulture = CultureInfo.InvariantCulture

        Try
            Dim tcpl As New TcpListener(IPAddress.Any, 14) 'listen on port 14

            tcpl.Start()

            Console.WriteLine("Waiting for clients to connect")
            Console.WriteLine("Press Ctrl+c to Quit...")

            While (True)
                ' Accept will block until someone connects
                Dim s As Socket = tcpl.AcceptSocket()

                ' Get the current date and time then concatenate it
                ' into a string
                now = DateTime.Now
                strDateLine = now.ToShortDateString() + " " + now.ToLongTimeString()

                ' Convert the string to a Byte Array and send it
                Dim byteDateLine() As Byte = ASCII.GetBytes(strDateLine.ToCharArray())
                s.Send(byteDateLine, byteDateLine.Length, SocketFlags.None)
                s.Close()
                Console.WriteLine("Sent {0}", strDateLine)
            End While

        Catch socketError As SocketException
            If (socketError.ErrorCode) = 10048 Then
                Console.WriteLine("Connection to this port failed.  There is another
server is listening on this port.")
            End If
        End Try

    End Sub

End Module
```

How Do I...Make a DateTime client with TCPClient?

```
Imports System
Imports System.IO
Imports System.Net
Imports System.Net.Sockets
Imports System.Text

Module Module1

    Sub Main()
        Dim tcpc As New TcpClient()
        Dim read(35) As Byte
        Dim args As String() = Environment.GetCommandLineArgs()

        If (args.Length < 2) Then
            Console.WriteLine("Please specify a server name in the command line")
            Exit Sub
        End If

        Dim server As String = args(1)

        ' Verify that the server exists
        Try
            Dns.GetHostEntry(server)
        Catch
            Console.WriteLine("Cannot find server: {0}", server)
            Exit Sub
        End Try

        ' Try to connect to the server
        tcpc.Connect(server, 14)

        ' Get the stream
        Dim s As Stream
        Try
            s = tcpc.GetStream()
        Catch exc As InvalidOperationException
            Console.WriteLine("Cannot connect to server: {0}", server)
            Exit Sub
        End Try

        ' Read the stream and convert it to ASCII
        Dim bytes As Integer = s.Read(read, 0, read.Length)
        Dim Time As String = Encoding.ASCII.GetString(read)

        ' Display the data
        Console.WriteLine("Received {0} bytes", bytes)
        Console.WriteLine("Current date and time is: {0}", Time)

        tcpc.Close()

        ' Wait for user response to exit
        Console.WriteLine("Press Return to exit")
        Console.Read()

    End Sub

End Module
```