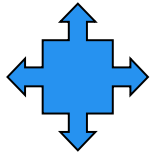


iSYSTEM - Connectivity

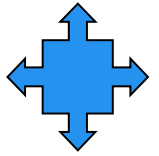


winIDEA Automation Server

Usage and quick introduction to
different scripting technologies



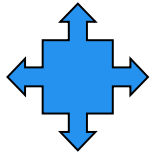
Presentation Overview



- winIDEA
- iSYSTEM.CONNECT
- Automation
- Samples and quick intro
 - Visual Basic
 - VBScript
 - ASP
 - Jscript
 - C#



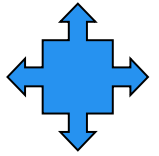
winIDEA



- winIDEA core functionality is very powerful and customers have inquired many times for ways to access it from their own environment, with their own tools.
- Usage includes: real time monitoring, profiling, automated tracing, etc.



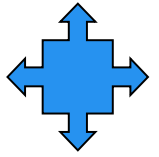
iSYSTEM.CONNECT



- iSYSTEM.CONNECT is the first answer to our customer's requests.
- It currently offers IDE and Debug functionality.
- It is a COM interface.
- Designed for C++
- Con: C++ COM entry barrier is high.



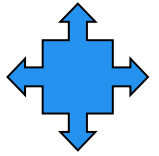
Automation



- Automation (formerly OLE automation) is Microsoft's scriptable object interface.
- Widely supported, mature, easy to use, MS support and drive.
- Can be accessed from virtually anywhere: C++, C#, Visual Basic, VBScript, Jscript (WSH), Delphi, VB for Applications (MS Office macros, Autocad macros), SimProcess, etc.



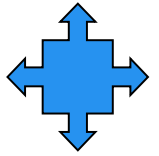
Simple pseudo-code program



- 1) MyObj = CreateObject(WinIdeaAutoServerName)
Create the automation server object
- 2) MyObj.Connect
Connect to (optionaly starts) winIDEA
- 3) MyObj.Function1, MyObj.Function2, MyObj.Function3 ...
Perform the required operations calling the interface functions
- 4) MyObj.Disconnect
Disconnect from winIDEA



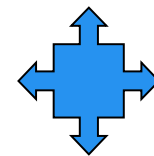
Visual Basic: Intro



- Visual Basic is Microsoft's RAD environment of choice.
- Easy to learn and fast to write simple programs.
- Hard (some times even impossible) to deviate from the standard.
- Limited: no threading support, no direct system access.
- Complex (hard, time consuming, system) tasks are performed by automation servers, written in C++



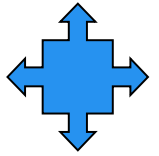
Visual Basic: Quick start



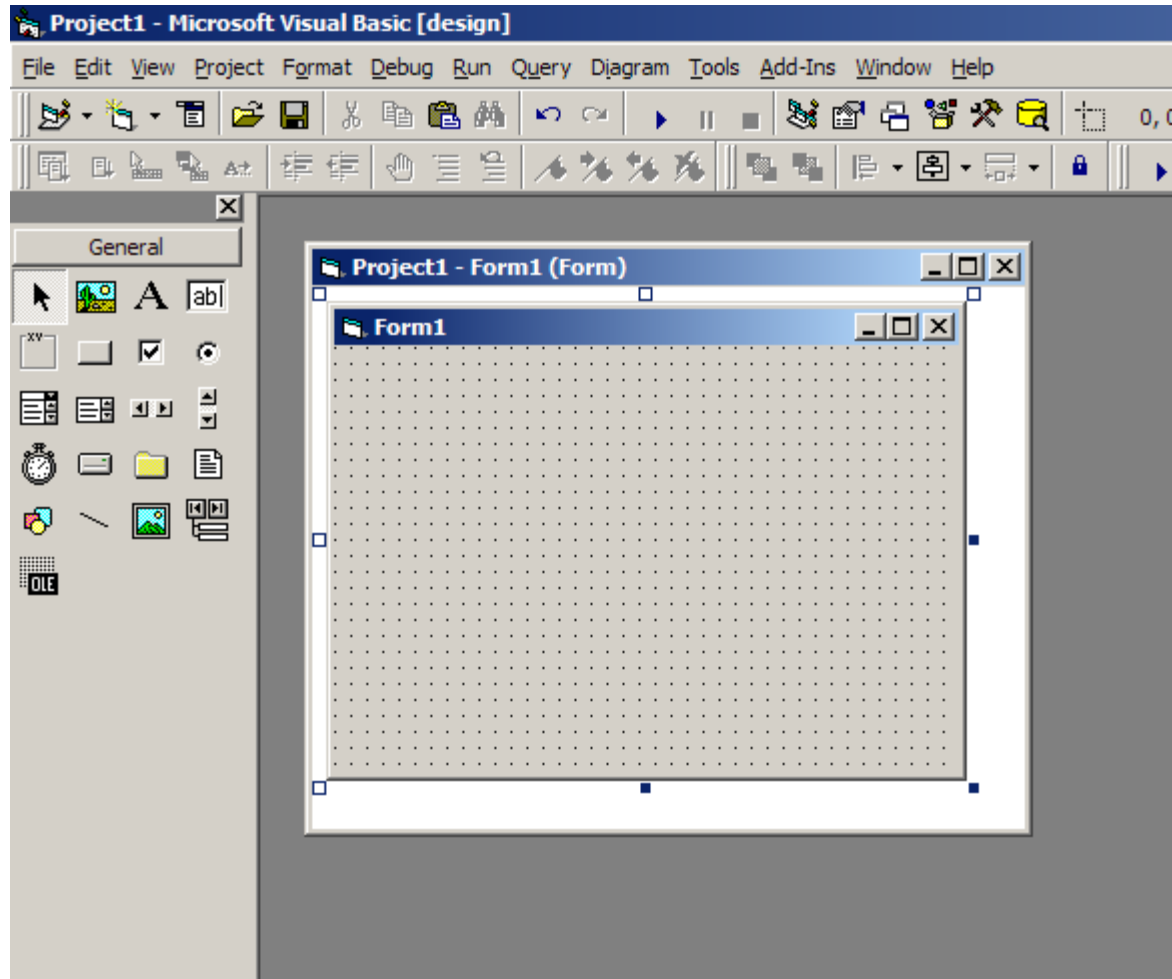
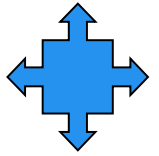
- Open the Visual Basic GUI, create a new project
- Draw your GUI
- Double click on any GUI control to open the function handler editor
- Write you function handler
- You are done!



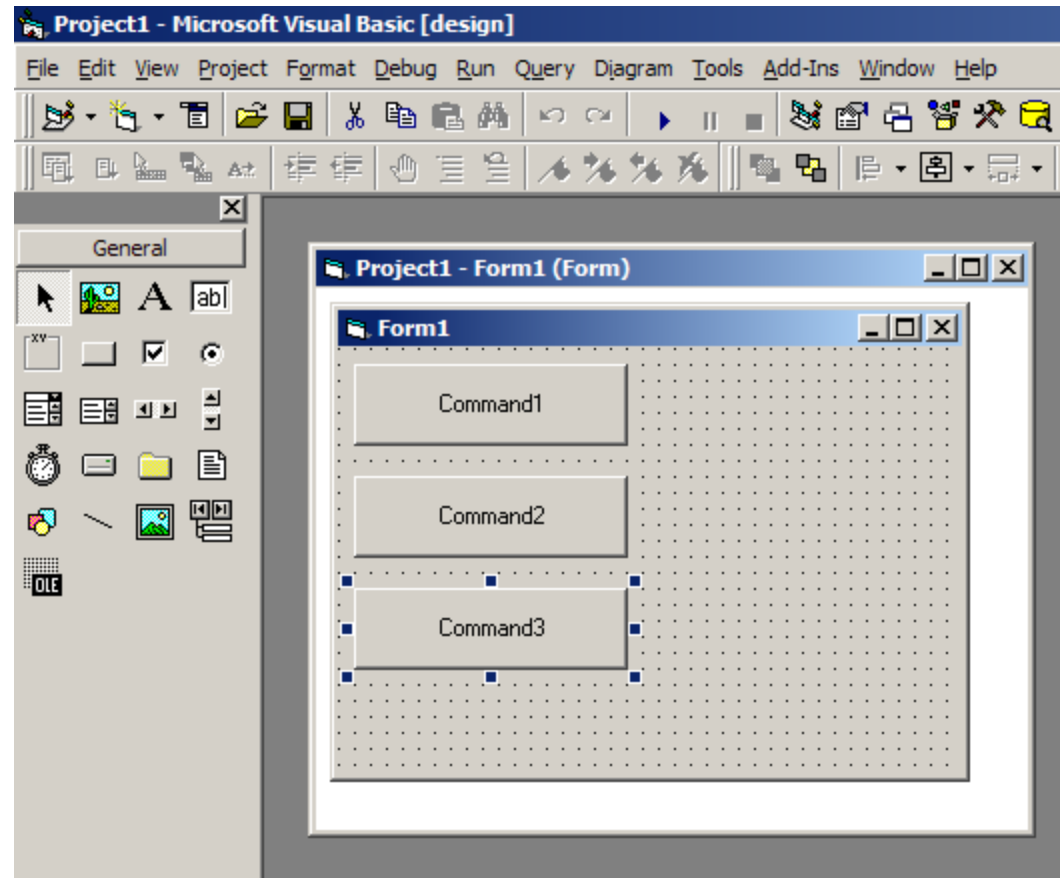
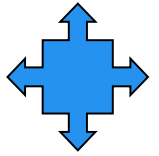
Visual Basic: Example



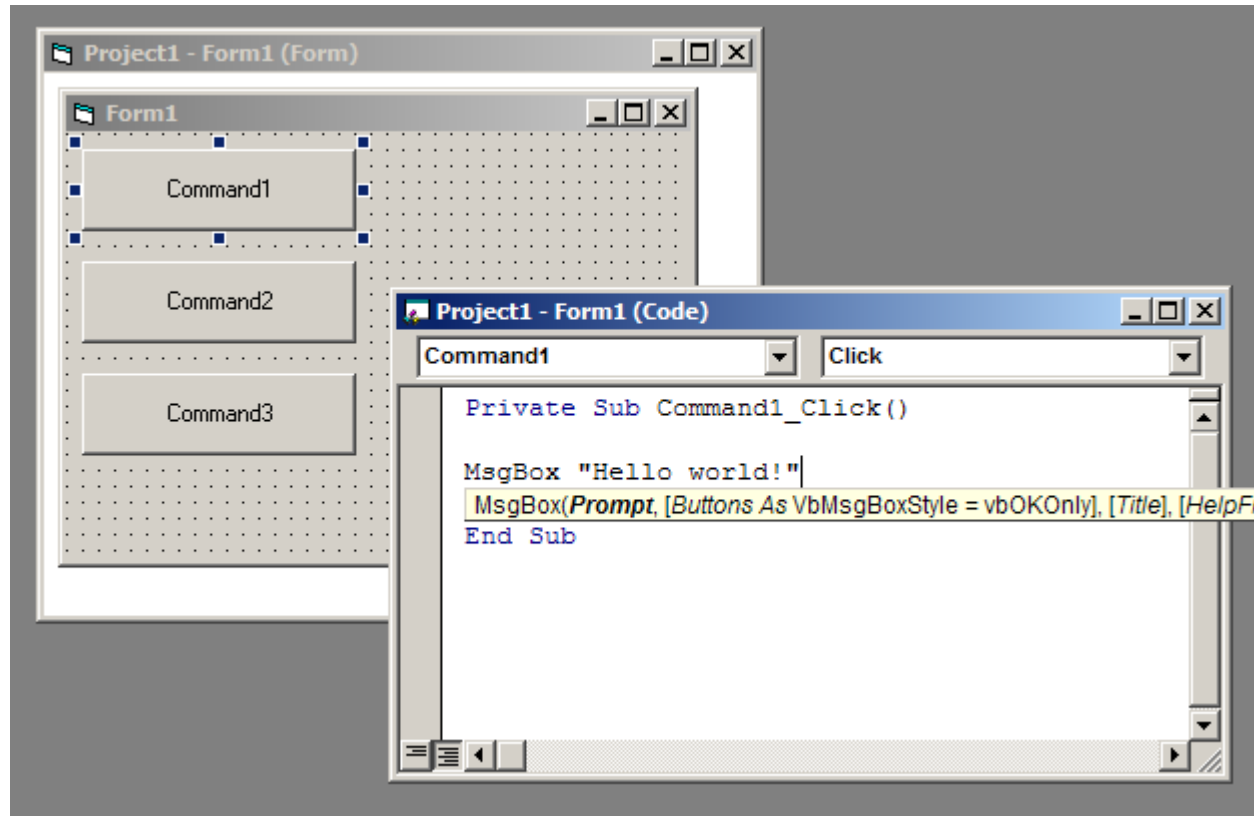
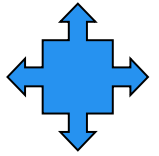
Visual Basic: Example



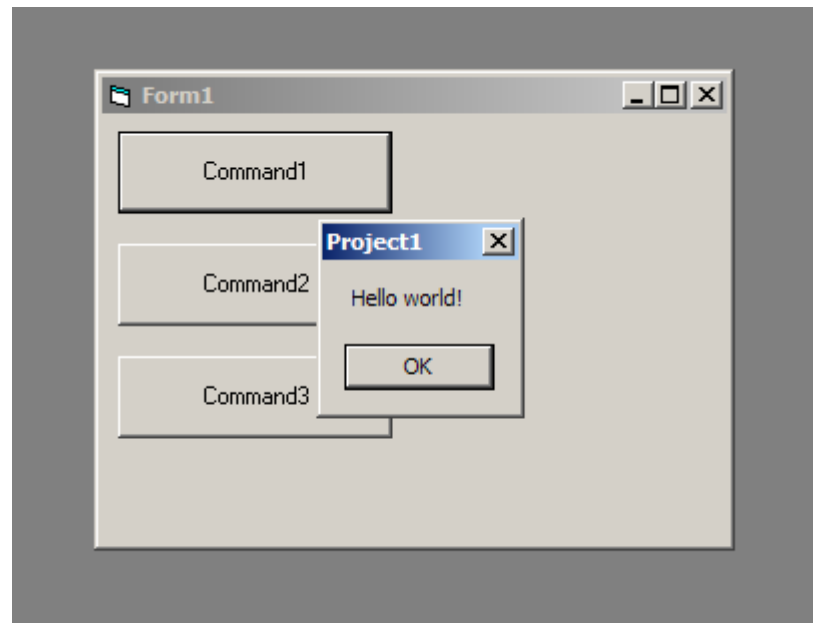
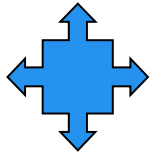
Visual Basic: Example



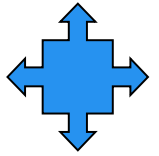
Visual Basic: Example



Visual Basic: Example



Visual Basic: WinIdeaAutoSvr



Project1 - Form1 (Form1)

Register name:
Text1

Read register

Label2
Text2

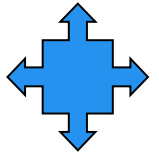
Project1 - Form1 (Code)

Command1 Click

```
Private Sub Command1_Click()  
  
Dim iConnect As WinIdeaAutoSvr  
Set iConnect = CreateObject("WinIdeaAutoSvr")  
iConnect.Connect  
Dim RegName  
Dim RegValue  
RegName = Text1.Text  
iConnect.DebugReadRegister 0, RegName, RegValue  
Text2.Text = "0x" & Hex(RegValue)  
iConnect.Disconnect  
  
End Sub
```



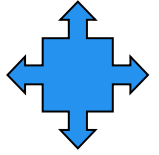
VBScript: Intro



- VBScript is a loosely typed scripting language
- VBScript is a light version of Microsoft's programming language Visual Basic
- Initially intended to be used in web pages, but can be used stand alone (WSH: windows scripting host)
- WSH provides access to the system (files, drives, other objects)



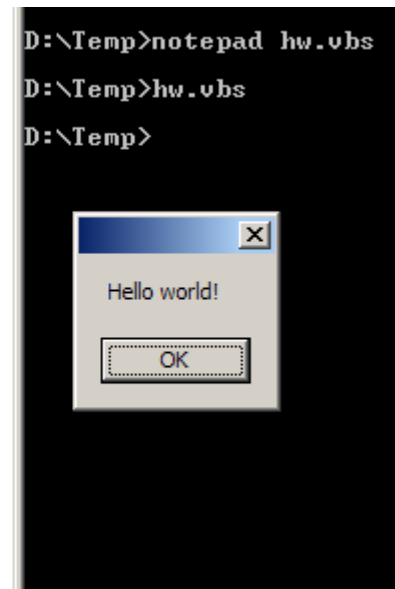
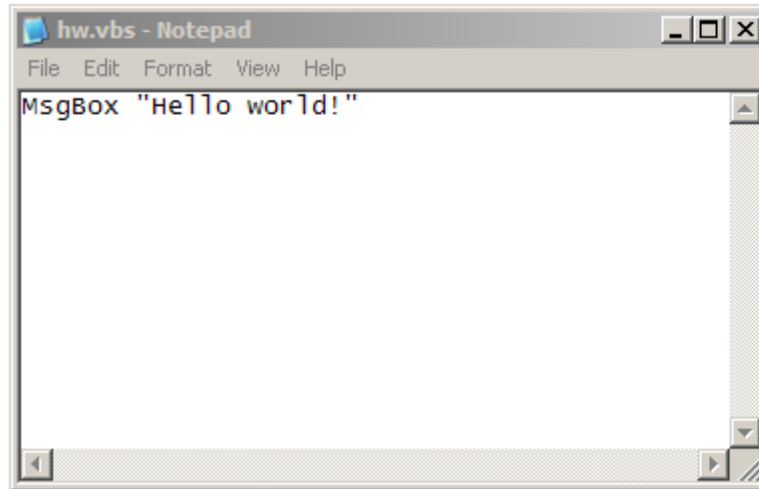
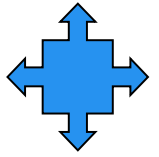
VBScript: Quick start



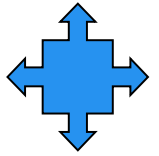
- Open a file with extension .vbs
- Write your VBScript code in it
- Run it:
 - `Cscript script.vbs param1 param2 ...`
the WSH object is available to the script
 - `Wscript script.vbs param1 param2 ...`
this is the default (associated) interpreter, WSH object is not available.



VBScript: Example



VBScript: WinIdeaAutoSvr



```
Dim StdOut
Set StdOut = WScript.StdOut

Dim ObjArgs
Set ObjArgs = WScript.Arguments

If ObjArgs.Count < 1 Then
    StdOut.WriteLine "Usage:"
    StdOut.WriteLine "DebugReadRegister.vbs <regname1> [<regname2> [...]]"
    WScript.Quit(1)
End If

Set iConnect = CreateObject("WinIdeaAuto.WinIdeaAutoSvr")
iConnect.Connect

Dim RegValue

For I = 0 To ObjArgs.Count - 1
    iConnect.ScriptDebugReadRegister 0, CStr(ObjArgs(I)), RegValue
    StdOut.WriteLine "The register " & CStr(ObjArgs(I)) & " contains the value 0x" & Hex(CLng(RegValue))
Next

iConnect.Disconnect
```

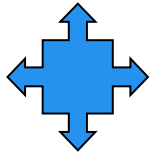
```
D:\9.5\Uenus\Utils\WinIdeaAutoSamples\VBScript>DebugReadRegister.bat r0 r6
Microsoft (R) Windows Script Host Version 5.6
Copyright (C) Microsoft Corporation 1996-2001. All rights reserved.

The register r0 contains the value 0x4100044
The register r6 contains the value 0x40E00024

D:\9.5\Uenus\Utils\WinIdeaAutoSamples\VBScript>
```



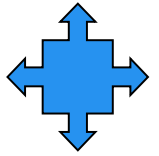
ASP: Intro



- ASP (**A**ctive **S**erver **P**age) is a standard for scripts that run inside **IIS** (**I**nternet **I**nformation **S**erver)
- Scripts in an ASP file are executed on the server
- When a browser requests an ASP file, IIS passes the request to the ASP engine and executes the scripts in the file. The ASP file with embedded script results are returned to the browser as plain HTML.



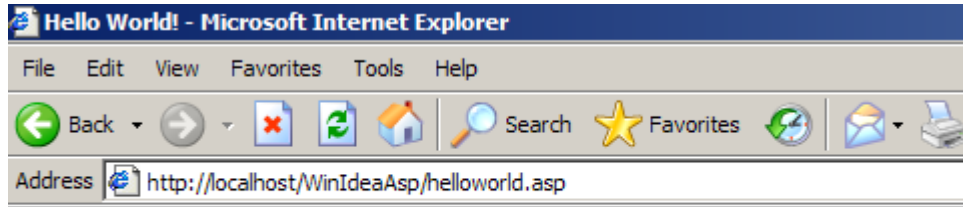
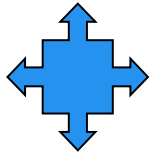
ASP: Quick start



- Install IIS
- Create a new ASP file
- Inside the ASP file write HTML with embedded VBScript enclosed by `<% and %>`
- Access the file with your browser from IIS



ASP: Example

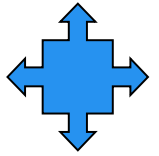


Embedded server script starts...
Hello world!
2*3=6
Embedded server script ends.

```
helloworld.asp - Notepad
File Edit Format View Help
<html>
<head>
<title>
Hello world!
</title>
</head>
<body>
Embedded server script starts...<br>
<%
Response.write "Hello world!<br>"
Response.write "2*3=" & CStr(2*3) & "<br>"
%>
Embedded server script ends.<br>
</body>
</html>
```



ASP: WinIdeaAutoSvr



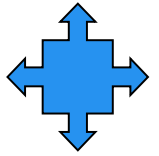
```
WinIdeaSample.asp - Notepad
File Edit Format View Help
<html>
<head>
<title>
Hello world!
</title>
</head>
<body>
<%
Dim iConnect
Set iConnect = Server.CreateObject("winIdeaAuto.winIdeaAutoSvr")
iConnect.Connect
Dim RegValue
RegValue = 0
iConnect.ScriptDebugReadRegister 0, "R0", RegValue
Response.write "The register R0 contains the value 0x|" & Hex(RegValue) & "<br>"
iConnect.Disconnect
%>
</body>
</html>
```

Hello World! - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites
Address http://localhost/WinIdeaAsp/WinIdeaSample.asp

The register R0 contains the value 0x4100044



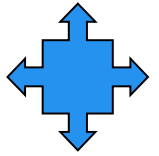
Jscript: Intro



- JScript is an interpreted, object-based scripting language.
- JScript is the Microsoft implementation of the ECMA 262 language specification. It is a full implementation, plus some enhancements that take advantage of capabilities of Microsoft Internet Explorer.
- Quoting MS documentation: “JScript is not a cut-down version of any other language (it is only distantly and indirectly related to Java, for example)”
- Note that Jscript does not support output parameters. You won't be able to retrieve data from the functions that use output parameters: GetInfo, ReadRegister, ReadValue, Evaluate, etc



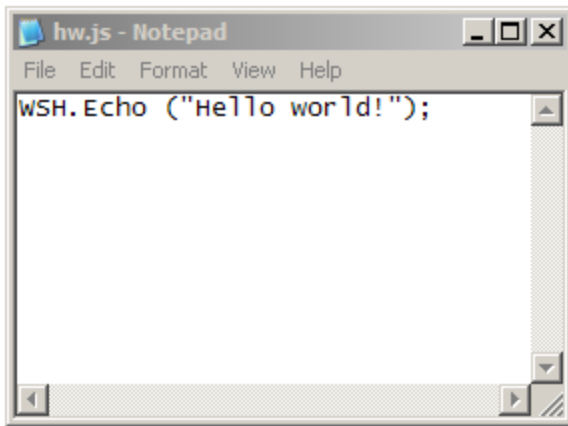
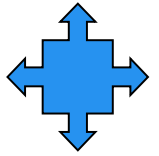
Jscript: Quick start



- Open a file with extension .js
- Write your Jscript code in it
- Run it: (there is no default interpreter)
 - `Cscript script.js param1 param2 ...`
the WSH object is available to the script
 - `Wscript script.js param1 param2 ...`
the WSH object is not available



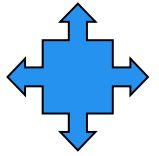
Jscript: Example



```
D:\Temp>notepad hw.js
D:\Temp>cscript //e:javascript hw.js
Microsoft (R) Windows Script Host Version 5.6
Copyright (C) Microsoft Corporation 1996-2001. All rights reserved.
Hello world!
D:\Temp>
```

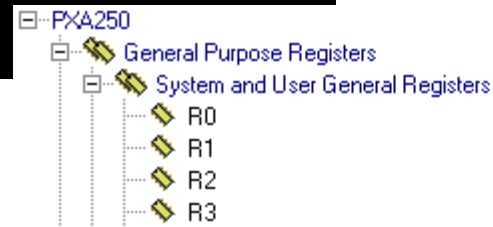
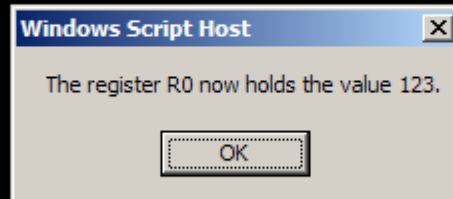


Jscript: WinIdeaAutoSvr



```
var iConnect = WScript.CreateObject("WinIdeaAuto.WinIdeaAutoSvr");  
iConnect.Connect();  
var ErrorValue = iConnect.ScriptDebugWriteRegister(0, "R0", 123);  
WScript.Echo("The register R0 now holds the value 123.");  
iConnect.Disconnect();
```

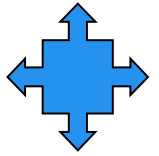
```
D:\9.5\Venus\Utils\WinIdeaAutoSamples\JScript>wscript //e:javascript WriteRegister.js
```



0000007B
000008CB
04100040
00000000



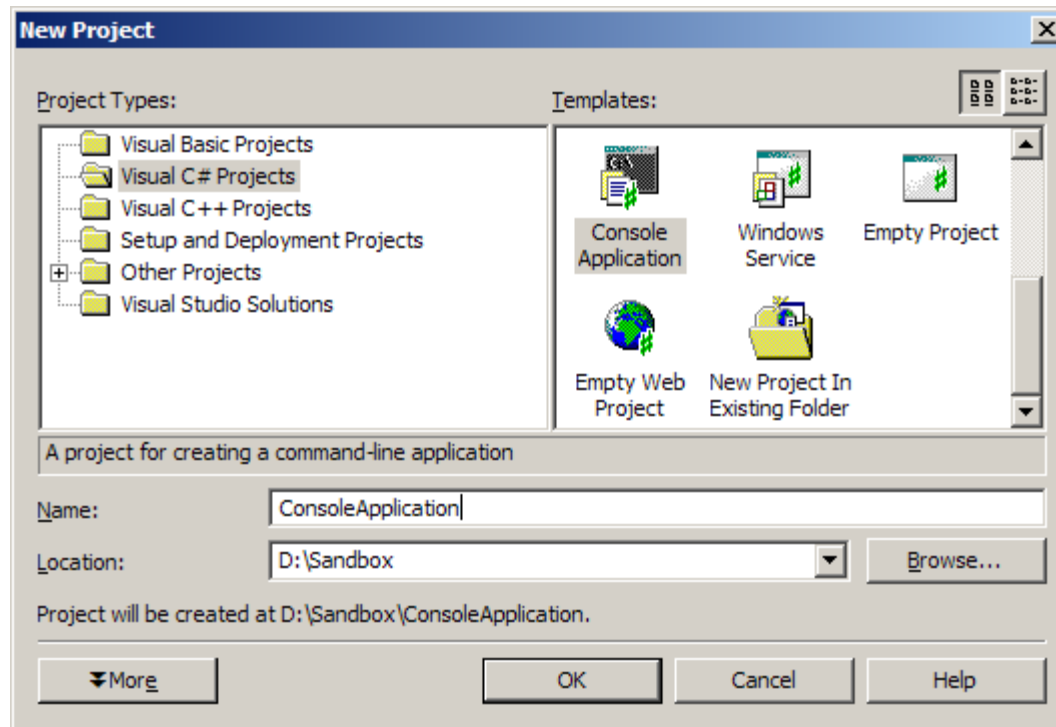
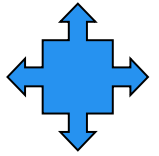
C#: Quick Start



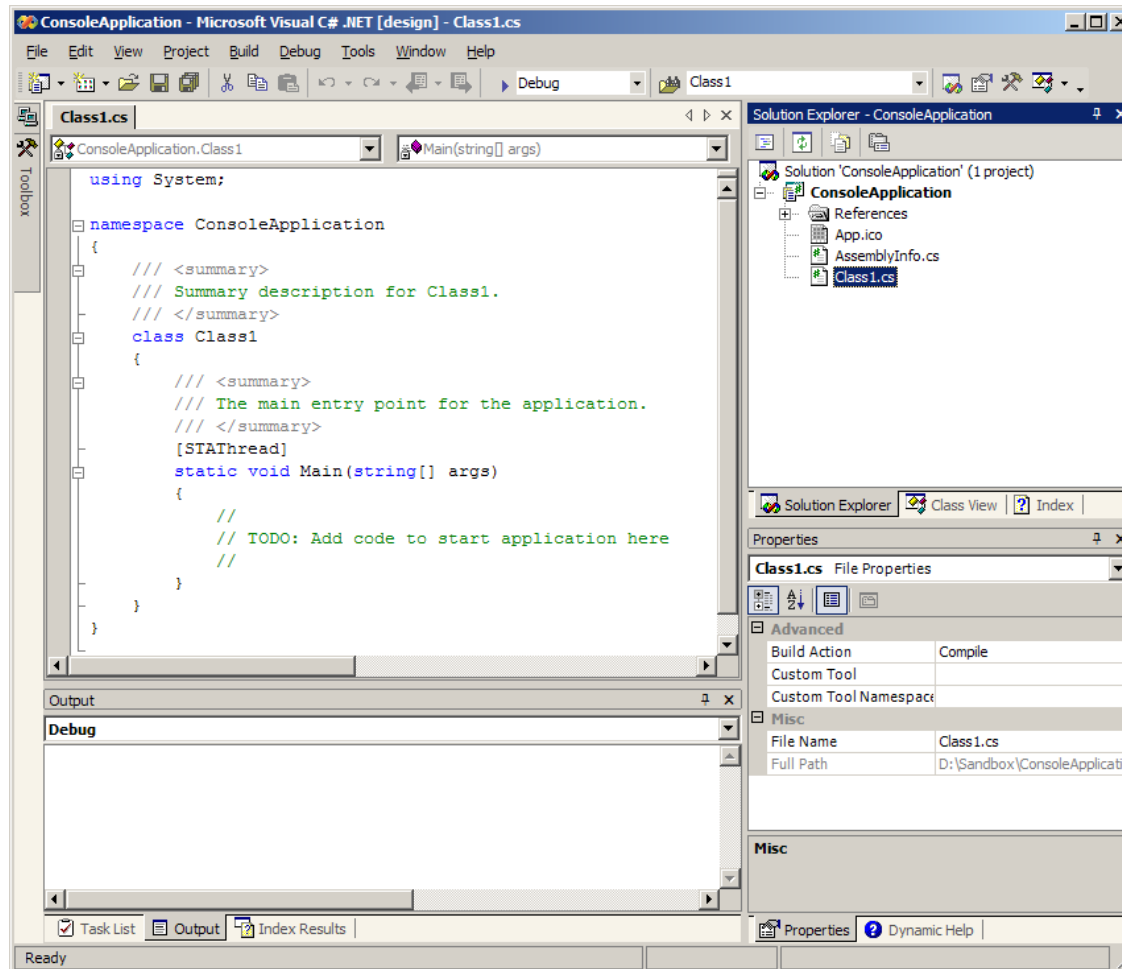
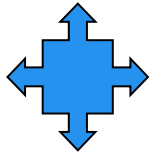
- Start VS .NET
- Create a new C# application
- Write your code
- Run



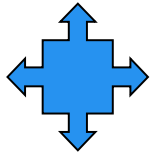
C#: Example



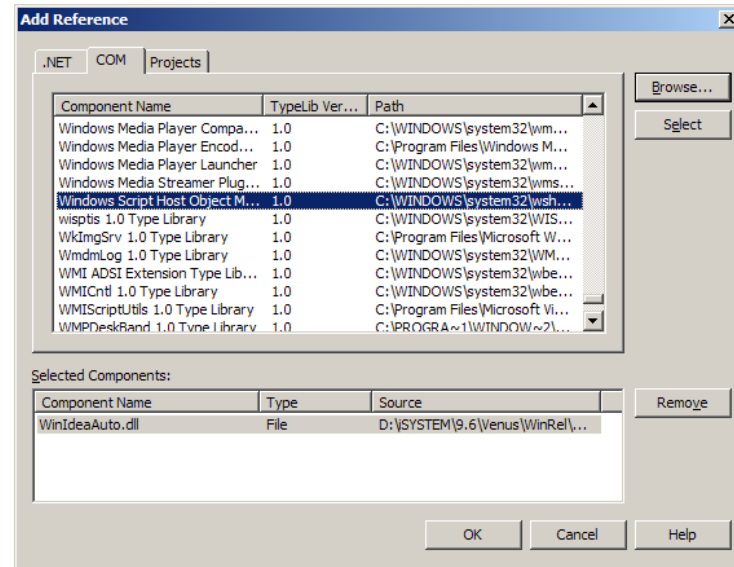
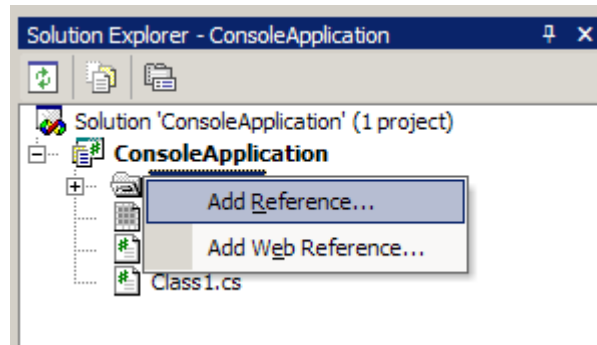
C#: Example



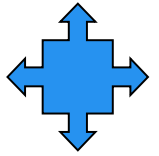
C#: Automation



- You have to add a reference to the automation server you want to use to your application.



C#: WinIdeaAutoSvr



```
using System;
using WINIDEAAUTOLib;

namespace ConsoleApplication
{
    /// <summary>
    /// winIDEA automation client
    /// </summary>
    class WinIdeaAutoClientClass
    {
        /// <summary>
        /// The main entry point for the application.
        /// </summary>
        [STAThread]
        static void Main(string[] args)
        {
            WinIdeaAutoSvrClass WinIdeaAuto;
            string strValue = "";
            WinIdeaAuto = new WinIdeaAutoSvrClass();
            WinIdeaAuto.Connect();
            WinIdeaAuto.DebugEvaluateString(0, "length", ref strValue);
            Console.WriteLine("length: " + strValue);
            WinIdeaAuto.Disconnect();
        }
    }
}
```

