



V37

Getting Started with Visual Studio.NET

**Whil Hentzen
Hentzenwerke Corp.**

FoxTeach 2001

Who Am I?

- ◆ **Hentzenwerke Corp. (17 yrs)**
- ◆ **Editor, FoxTalk**
- ◆ **Author (6 books)**
- ◆ **Publisher, The Essentials for Visual FoxPro**
- ◆ **Ask me about my kids**

Today's Agenda

300 MB of Help files but no indication of where the ON button is!

- ◆ I. What and Why is Microsoft.NET?
- ◆ II. What is Visual Studio.NET?
- ◆ III. Installing VS.NET
- ◆ IV. Running VS.NET
- ◆ V. Building Apps with .NET
- ◆ VI. Terminology
- ◆ VII. Where does VFP fit?

I. Visual Studio.NET: What is it?

- ♦ **One Component of Microsoft.NET**
- ♦ **So... What is Microsoft.NET?**

I. Microsoft.NET: What is it?

- ◆ **Tools, framework, infrastructure and philosophy for building web services**
- ◆ **What is a Web Service? “Delivering software as a service”**

I. Web Services: Why?

- ♦ **History of Computing (briefly)**
- ♦ **Currently – the Island model**
- ♦ **Defining yourself in terms of your data**

I. Web Services: Why?

- ♦ Ubiquitous communications on the horizon
- ♦ Regular updating of 'bits'
- ♦ Tailored delivery of functionality
- ♦ Ability to deliver and consume services from 10,000,000 websites (getting them to talk to each other)

I. Microsoft.NET: Why?

- ♦ **Building Web Sites that communicate (“deliver and consume services”) is really, really hard now**
- ♦ **Applications delivered as web services need to be built differently**

I. Microsoft.NET: What is it, really?

- ◆ **.NET platform: .NET infrastructure, tools building block services, device software**
- ◆ **.NET products and services, such as Windows.NET (services), Office.NET, VS.NET, Hailstorm (personal services), MSN.NET, and so on**
- ◆ **Third party .NET services**

I. Microsoft.NET: .NET building block services

- ◆ Identity (Passport/Hailstorm)
- ◆ Notification and messaging (Hotmail, Exchange, IM)
- ◆ Personalization (storing identity and prefs)
- ◆ XML Store (data xfer mechanism/protocol)
- ◆ Calendar (definition of allowable interruptions)
- ◆ Directory/Search (finding others/stuff)
- ◆ Dynamic Delivery (updating bits)

I. Microsoft.NET: .NET products and services?

- ◆ **Windows.NET**
- ◆ **MSN.NET**
- ◆ **Personal Subscription Services (Hailstorm)**
- ◆ **Office.NET**
- ◆ **VS.NET**
- ◆ **bCentral.NET (Hailstorm for businesses)**

II. What is Visual Studio.NET?

According to Beta One:

- ◆ **Framework of services and tools**
 - **Config/Deployment Tools/Utilities**
 - **Windows Forms Design Tools/Utilities**
 - **Security Tools/Utilities**
 - **General Tools and Utilities**
- ◆ **An Integrated IDE for VC, VB, C#**
- ◆ **Oodles of samples and tutorials**

II. What is Visual Studio.NET? (Framework SDK)

Program Files\Microsoft.NET\FrameworkSDK

- ◆ **Assembly Generation Utility**
- ◆ **Global Assembly Cache Utility**
- ◆ **Installer Utility**
- ◆ **Assembly Registration Tool**
- ◆ **Services Registration Tool**
- ◆ **Assembly Cache Viewer**
- ◆ **Type Library Explorer/Importer**
- ◆ **CLR XML Schema Definition Tool**
- ◆ **Web Service Installation Utility**

II. What is Visual Studio.NET? (Framework SDK)

- ◆ **Windows Forms ActiveX Control Importer (wrapper)**
- ◆ **License Compiler**
- ◆ **Resource File Generator**
- ◆ **Windows Forms Designer Test Container**

II. What is Visual Studio.NET (Framework SDK)

- ◆ **Code Access Security Policy Utility**
- ◆ **Software Publisher Certificate Test Utility**
- ◆ **Certificate Manager Utility**
- ◆ **Certificate Verification Utility**
- ◆ **Set Registry Utility**
- ◆ **File Signing Utility**
- ◆ **Strong Name Utility**

II. What is Visual Studio.NET (Framework SDK)

- ◆ CLR Debugger
- ◆ CLR Visual Debugger
- ◆ CLR Intermediate Lang Assembler
- ◆ IL Disassembler
- ◆ PE Verify Utility
- ◆ Windows Forms Class Viewer

II. What is Visual Studio.NET? (Framework SDK)

Where is it?

Program Files\Microsoft.NET\FrameworkSDK

Getting there

Start | Microsoft.NET FrameworkSDK

- ◆ Tools

- IL Disassembler
- Tools Guide

- ◆ .NET Framework SDK Overview

- ◆ Documentation Guide

- ◆ Reference Doc

- ◆ Samples Guide

II. What is Visual Studio.NET? (The IDE)

Where is it?

Program Files\Microsoft Visual Studio.NET

Getting there

Start | Microsoft Visual Studio.NET

- ◆ Visual FoxPro 7.0
- ◆ Visual Studio.NET 7.0
- ◆ MSDN.NET 7.0

II. What is Visual Studio.NET? (The IDE)

Components

- ◆ **Crystal Reports**
- ◆ **Enterprise Samples**
- ◆ **Enterprise Frameworks**
- ◆ **MSDN**
- ◆ **Setup**
- ◆ **SQL Server**
- ◆ **Sys32**
- ◆ **VB7**
- ◆ **VC7**
- ◆ **VS SDKs**

III. Installation

- ♦ **Installation requirements**
- ♦ **The .NET CDs**
- ♦ **The process**
- ♦ **What you end up with on your machine**

III. Installation

Target System, CD Pack

- ◆ **Target System**
 - **Windows 2000 Pro, no SPs**
 - **2.7 GB free on C (out of 4 total)**
 - **Has IE 5, Netscape 4.7, little else**

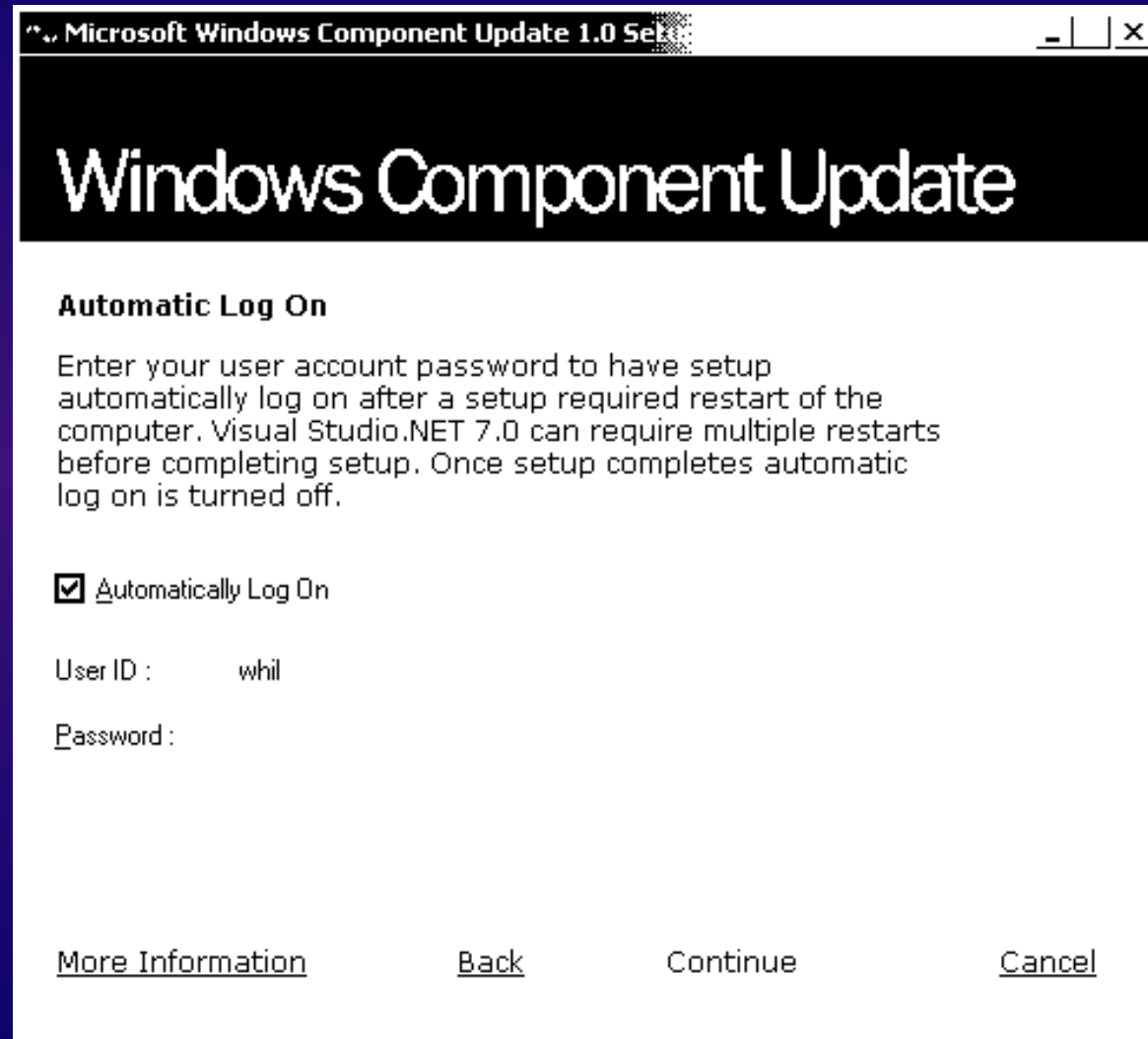
- ◆ **CD pack has**
 - **Beta CD 1**
 - **Beta CD 2**
 - **Windows Component Update CD**
 - **SQL Server 2000**

III. Installation Setup Process

III. Installation Setup Process

III. Installation Setup Process

III. Installation Setup Process



Microsoft Windows Component Update 1.0 Setup

Windows Component Update

Automatic Log On

Enter your user account password to have setup automatically log on after a setup required restart of the computer. Visual Studio.NET 7.0 can require multiple restarts before completing setup. Once setup completes automatic log on is turned off.

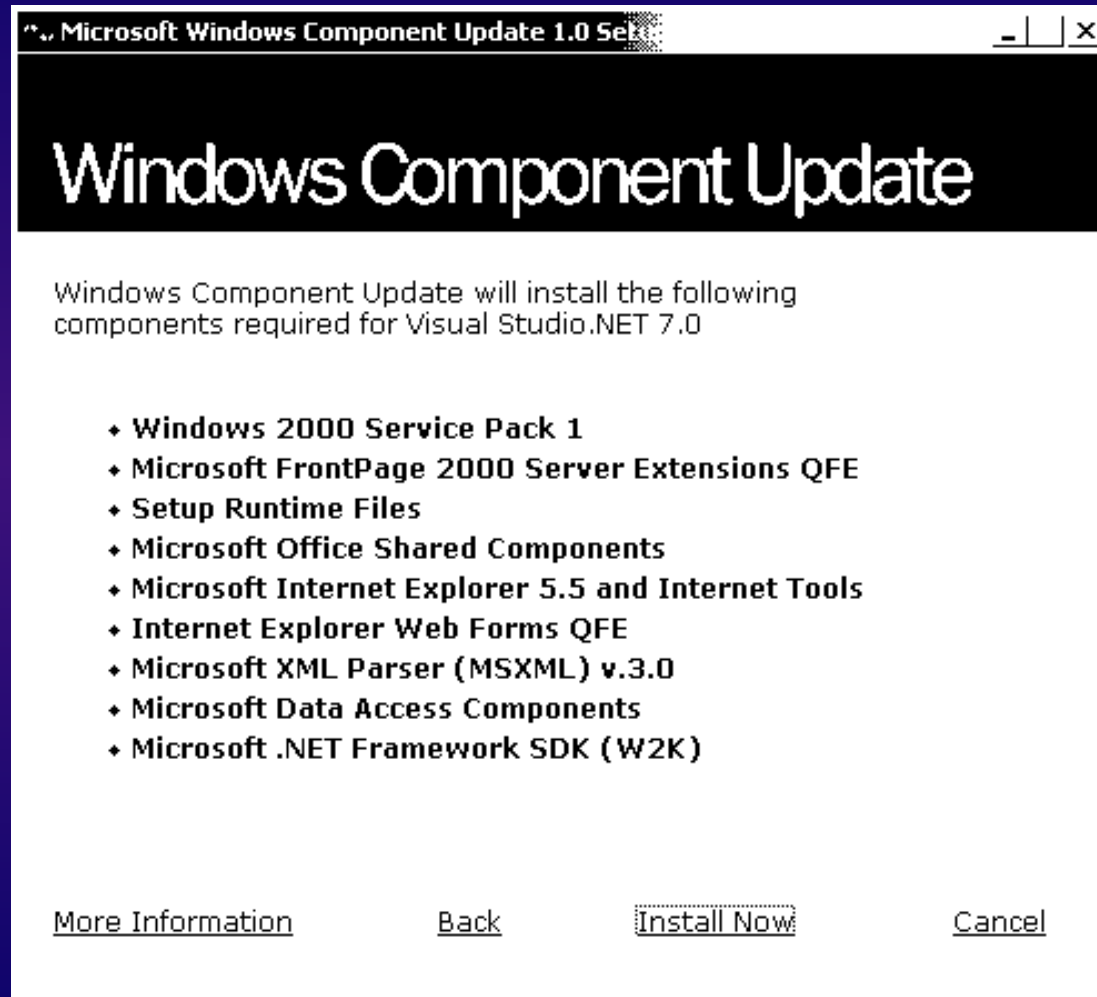
☒ Automatically Log On

User ID : whil

Password :

[More Information](#) [Back](#) Continue [Cancel](#)

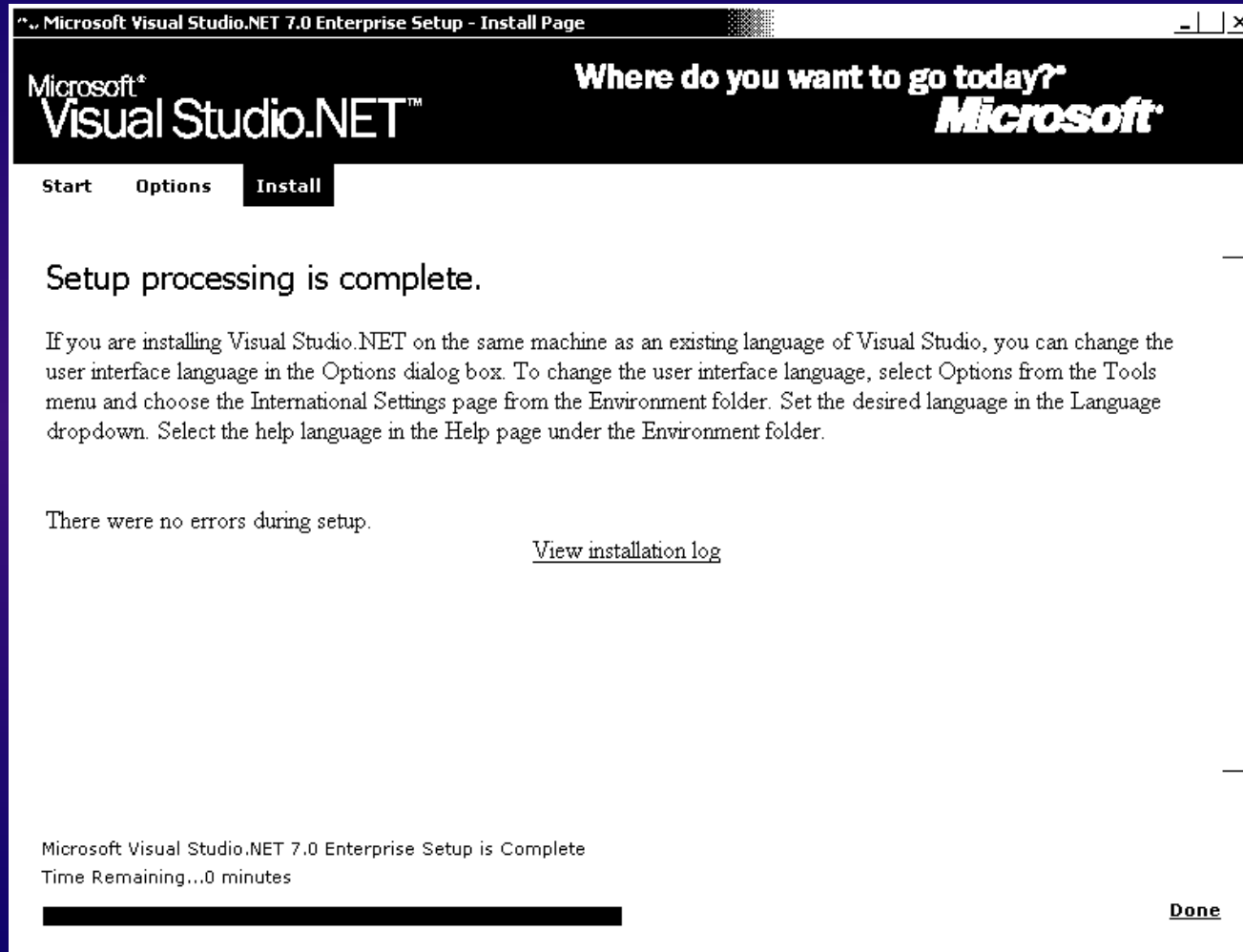
III. Installation Setup Process



III. Installation Setup Process



III. Installation Setup Process



III. Installation

The Results

- ◆ 1.5 GB Free
- ◆ Chewed up 1.2 GB
- ◆ Link on desktop to page for starting out
Program Files\Microsoft.net
 \frameworksdk\starthere.htm
- ◆ You get
Program Files\Microsoft.NET\frameworkSDK
Program Files\Visual Studio.NET

?? Windows Component Update does what ??

III. Installation Directory Results

Name	Ext	Size	Type	Date	Time
Enterprise Samples			File Folder	2/26/2001	2:14 PM
Crystal Reports			File Folder	2/26/2001	2:13 PM
EnterpriseFrameworks			File Folder	2/26/2001	2:11 PM
sqlserver			File Folder	2/26/2001	1:59 PM
Visual Studio SDKs			File Folder	2/26/2001	1:59 PM
Common7			File Folder	2/26/2001	1:56 PM
Msdn			File Folder	2/26/2001	1:56 PM
Setup			File Folder	2/26/2001	1:56 PM
Vb7			File Folder	2/26/2001	1:56 PM
Vc7			File Folder	2/26/2001	1:56 PM
Vfp7			File Folder	2/26/2001	1:56 PM
Common Files			File Folder	2/26/2001	1:54 PM
System32			File Folder	2/26/2001	1:54 PM
Visual Studio.NET 7.0 Enterprise			File Folder	2/26/2001	1:54 PM
contents	.htm	90,125	HTML Document	11/6/2000	11:57 AM
toc	.htm	2,638	HTML Document	10/30/2000	9:52 PM
readme	.htm	3,479	HTML Document	10/13/2000	9:23 AM

C: 1.48GB free (4.01GB total) 0 object(s) selected Total 17 object(s) (94.0KB)

III. Installation

The Sequel

- ◆ **Install the Samples**
see `Frameworksdk\samples\startsamples.htm`
- ◆ **Execute `frameworksdk\samples\samples.exe` from Explorer**
- ◆ **Install MSDE if you don't have S/S or MSDE**

III. Installation The Sequel

- ♦ **Reboot & finish samples installation**
- ♦ **StartSamples.htm will show you hyperlinks for each sample (if the hyperlinks aren't there, you forgot the reboot/finish step)**

	Name	Ext	Size	Type	Date	Time
LOGFILES	..					
My Documents	Reflector			File Folder	3/26/2001	3:05
PM	assemblies			File Folder	3/26/2001	3:05
Program Files	Threading			File Folder	3/26/2001	3:05
Accessories	typeresolve			File Folder	3/26/2001	3:05
Adobe Type Manager	ValueEnum			File Folder	3/26/2001	3:05
Caere	Versioning			File Folder	3/26/2001	3:05
Common Files	VideoPlayer			File Folder	3/26/2001	3:05
ComPlus Applications	WhitePapers			File Folder	3/26/2001	3:05
Internet Explorer	Wintalk			File Folder	3/26/2001	3:05
MapInfo Mapx	WordCount			File Folder	3/26/2001	3:05
microsoft frontpage	GC			File Folder	3/26/2001	3:05
Microsoft Office	ILDasmIntro			File Folder	3/26/2001	3:05
Microsoft SQL Server	Interop			File Folder	3/26/2001	3:05
Microsoft Visual Studio.NET	IntroDev			File Folder	3/26/2001	3:05
Microsoft.Net	Localization			File Folder	3/26/2001	3:05
FrameworkSDK	mmc			File Folder	3/26/2001	3:05
Bin	Permissions			File Folder	3/26/2001	3:05
Docs	QuickStart			File Folder	3/26/2001	3:05
GuiDebug	RefEmit			File Folder	3/26/2001	3:05
include	Remoting			File Folder	3/26/2001	3:05
Lib	Serialization			File Folder	3/26/2001	3:05
Samples	Setup			File Folder	3/26/2001	3:05
symbols	asm			File Folder	3/26/2001	3:05
Tool Developers Guide	Chat			File Folder	3/26/2001	3:05
Navnt	ClsView			File Folder	3/26/2001	3:05
NetMeeting	Configuration			File Folder	3/26/2001	3:05
Netscape	CrossLang			File Folder	3/26/2001	3:05
Outlook Express	CustAttr			File Folder	3/26/2001	3:05
PhotoDeluxe BE 1.0	Deployment			File Folder	3/26/2001	3:05
PowerDesk	exceptions			File Folder	3/26/2001	3:05
RhinoSoft.com	FindType			File Folder	3/26/2001	3:05
Seagate Software	Build	.bat	335	MS-DOS Batch File	3/26/2001	4:03
Symantec	samples	.htm	122	HTML Document	3/26/2001	3:06
Uninstall Information	Samples	.exe	37,061,776	Application	11/1/2000	9:54
Web Publish	ConfidDetails	.htm	5.552	HTML Document	11/1/2000	9:08
Windows Media Player						
Windows NT						
WinZip						
PSFONTS						

IV. Running Visual Studio.NET

- ◆ Where to find it

Programs | Microsoft Visual Studio.NET 7.0
| Microsoft vs .net 7.0

- ◆ Points at

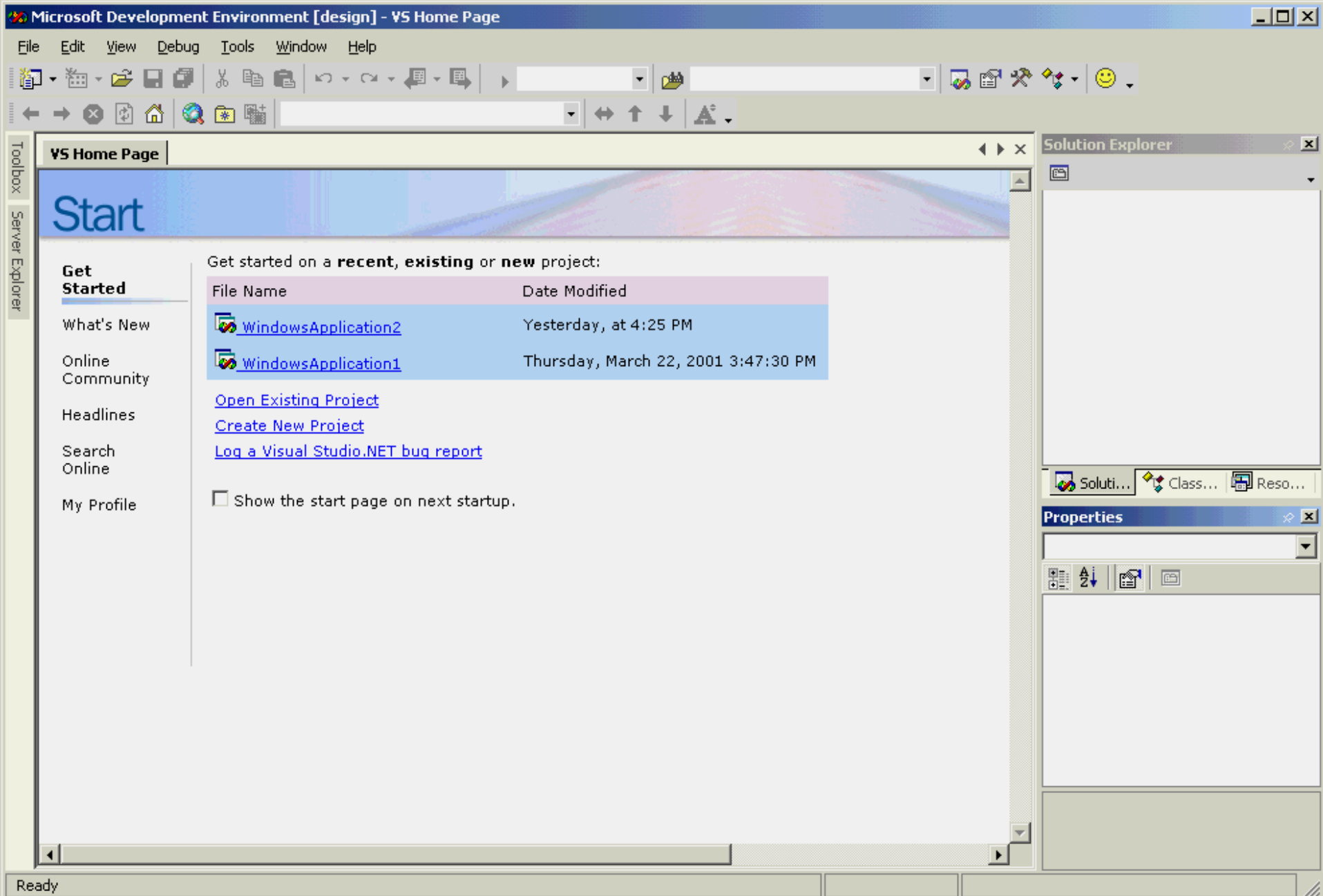
c:\program files\Microsoft Visual Studio.NET
\Common7\IDE\devenv.exe

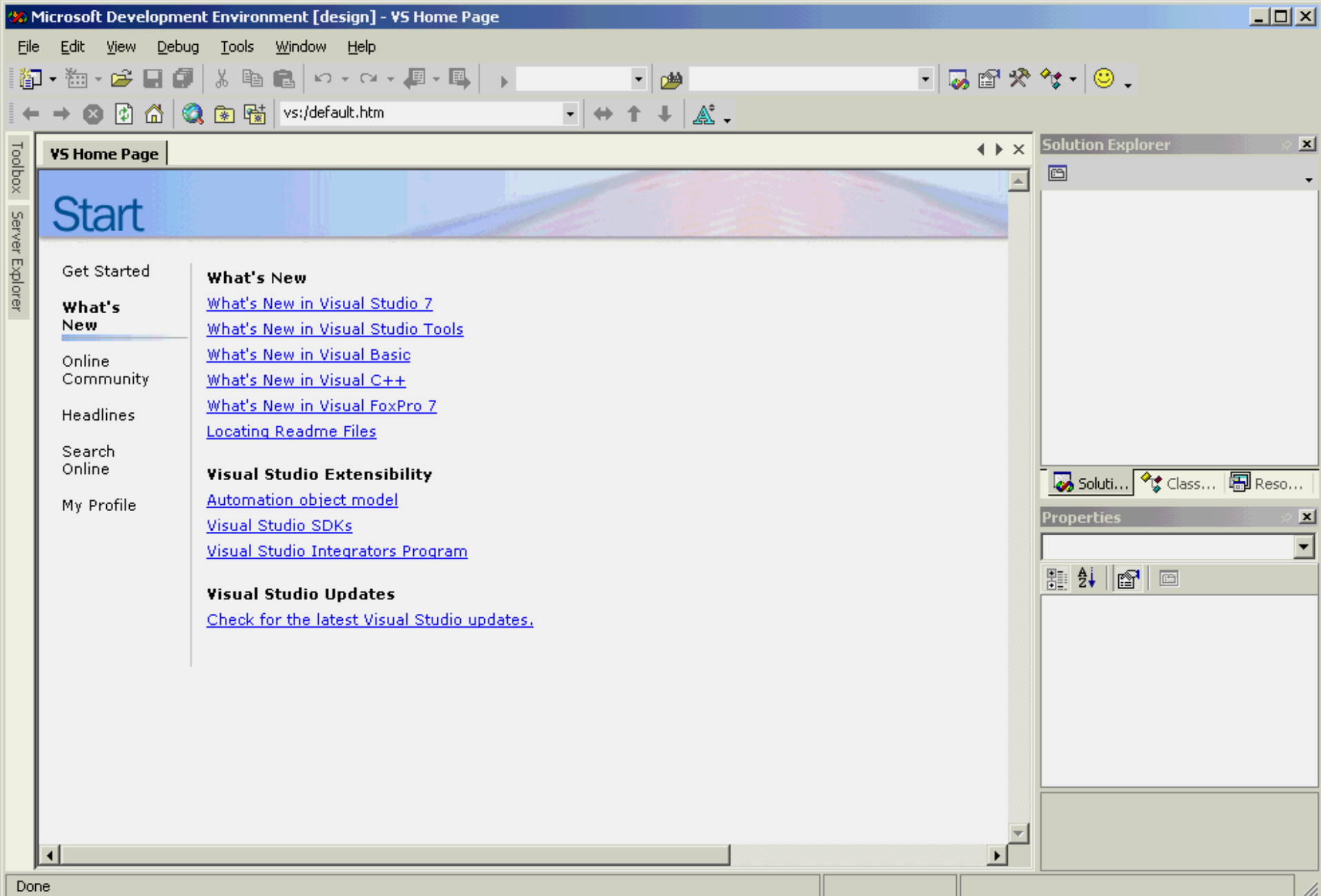
- ◆ The IDE

- ◆ Help

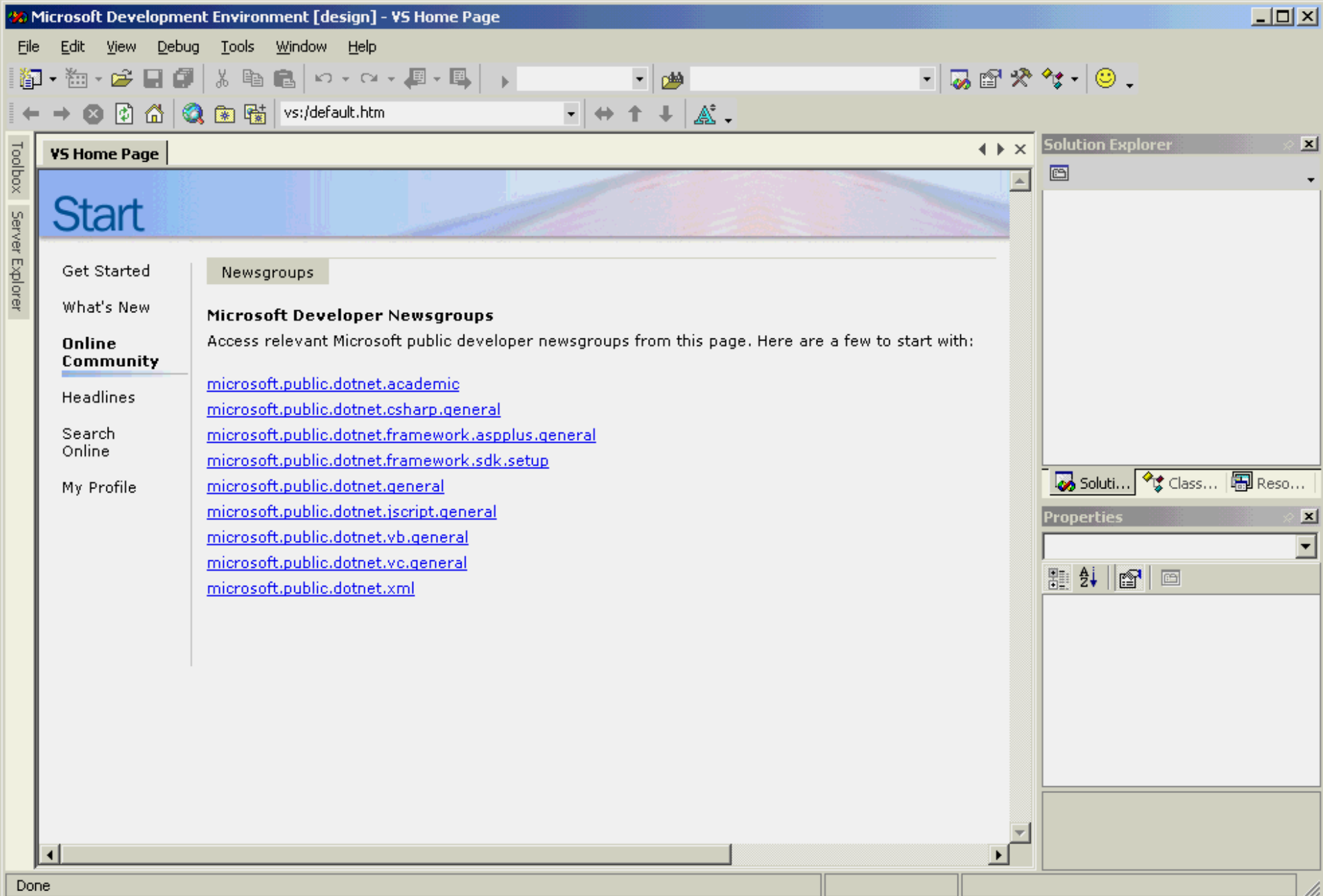
IV. Running Visual Studio.NET The IDE

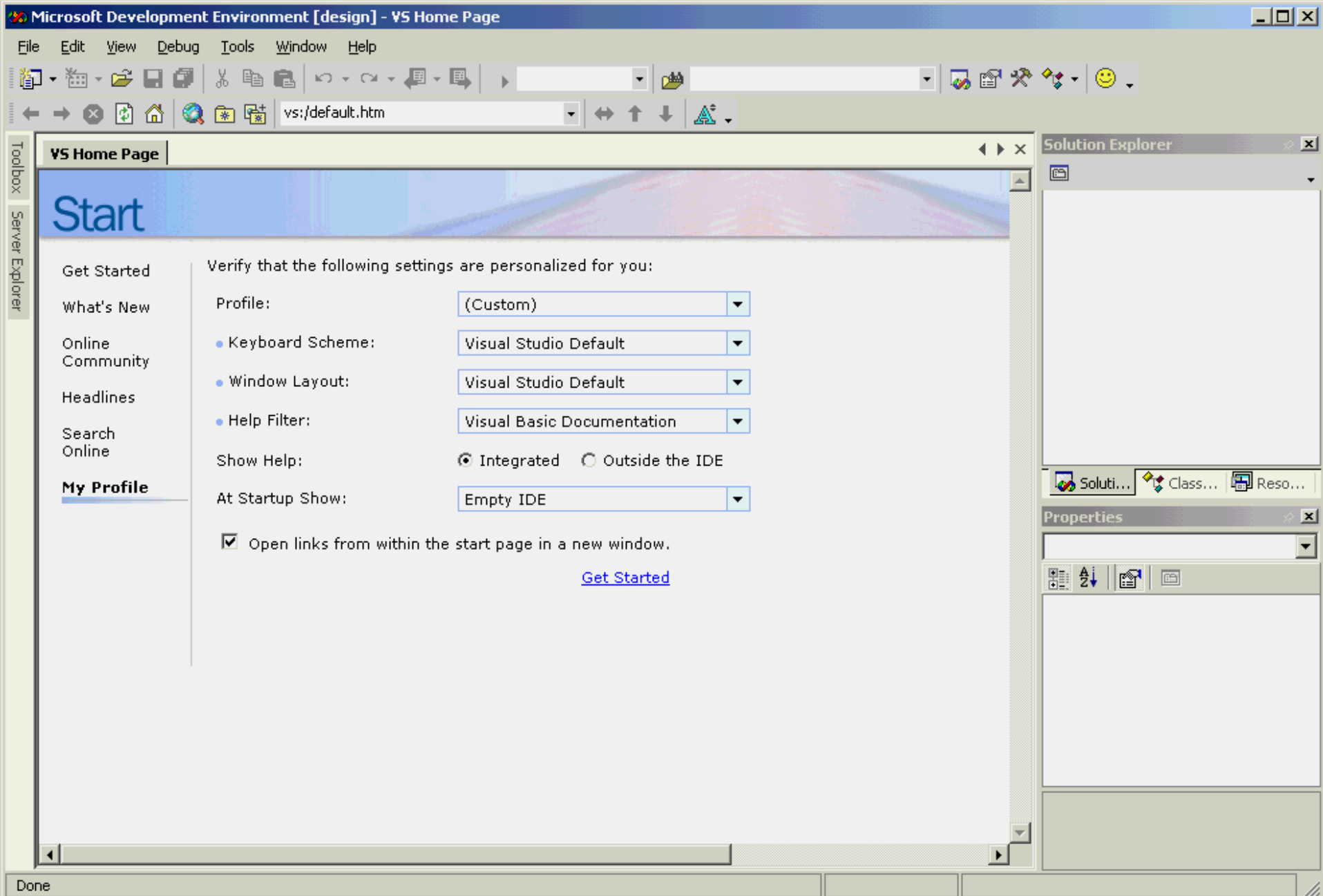


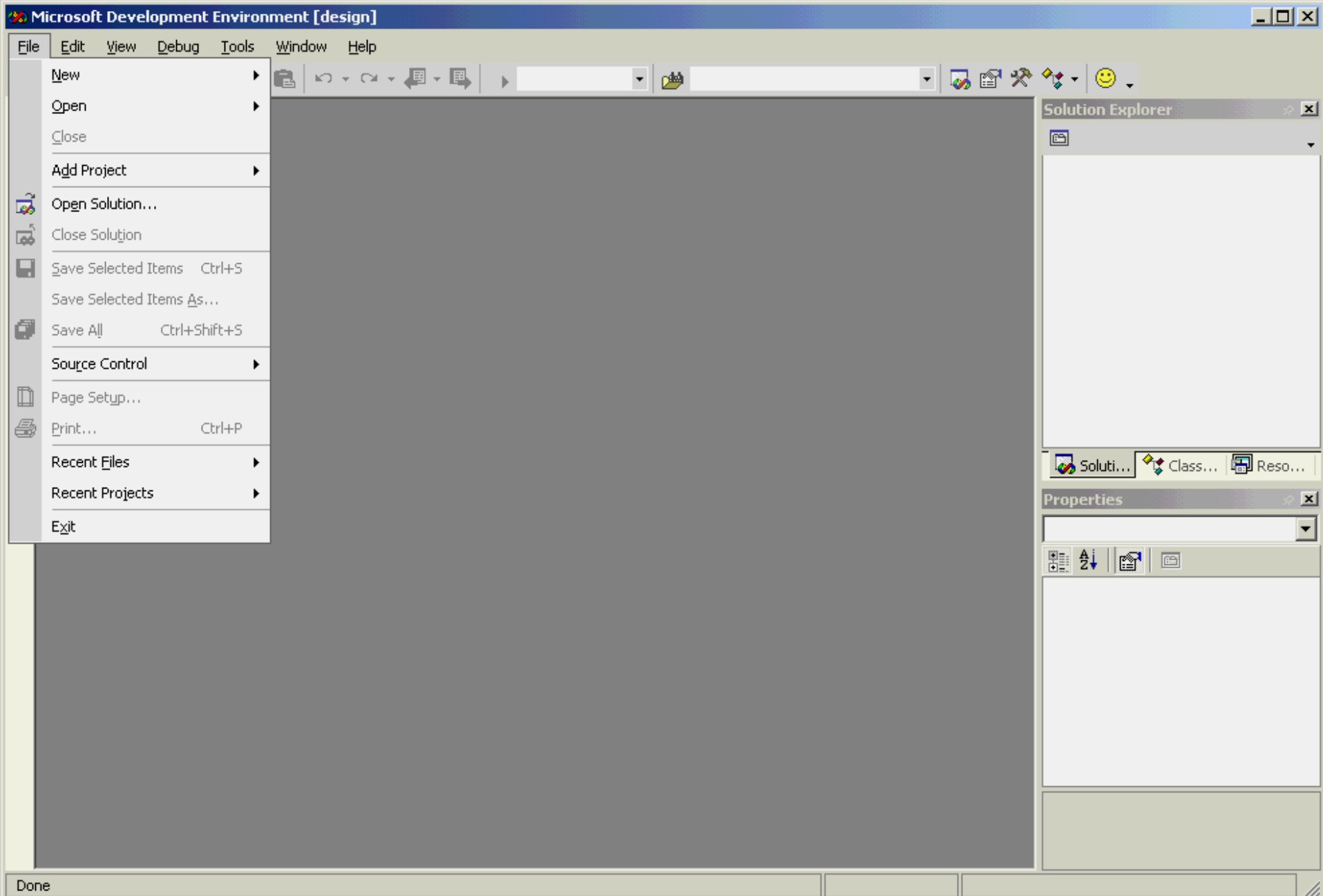




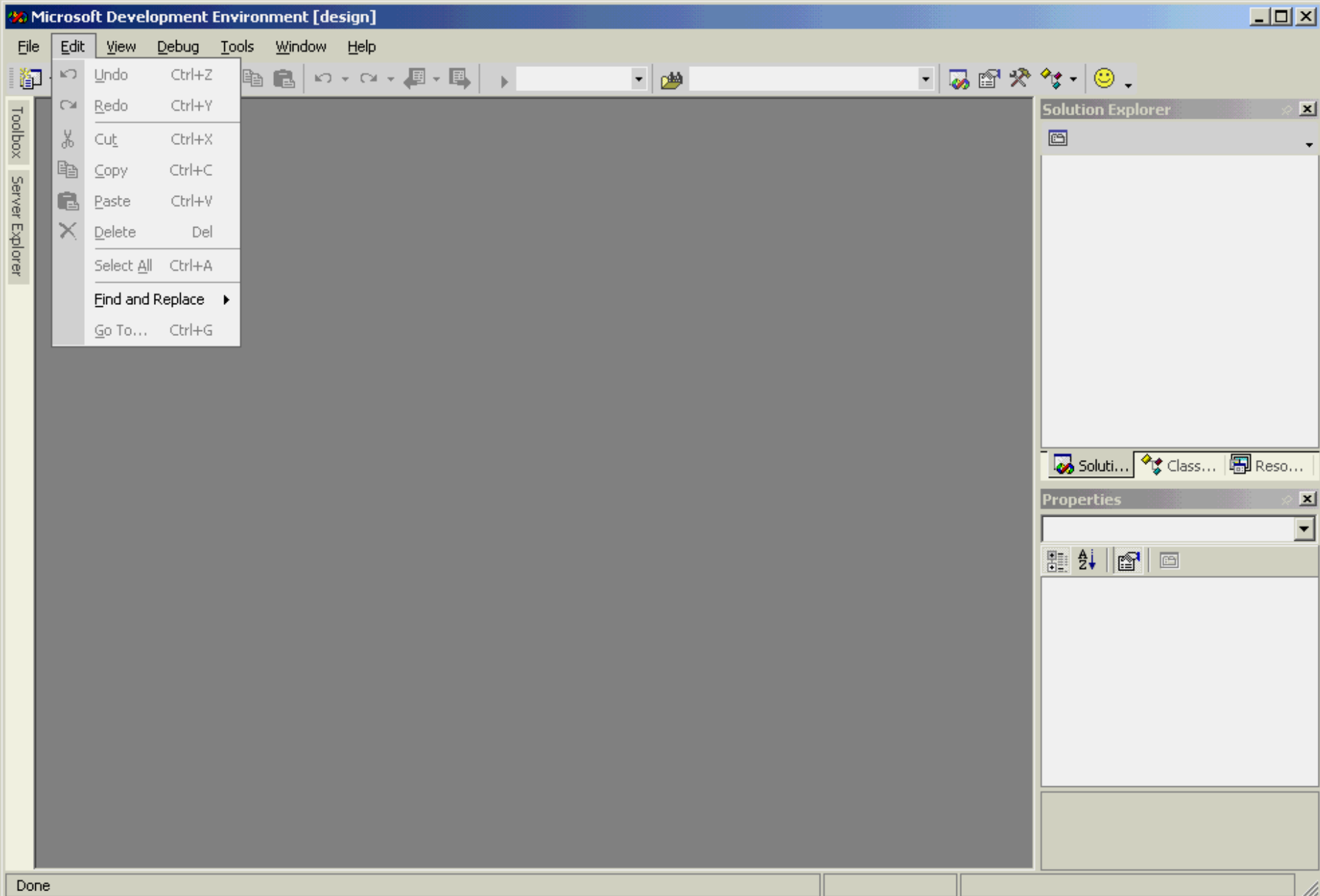
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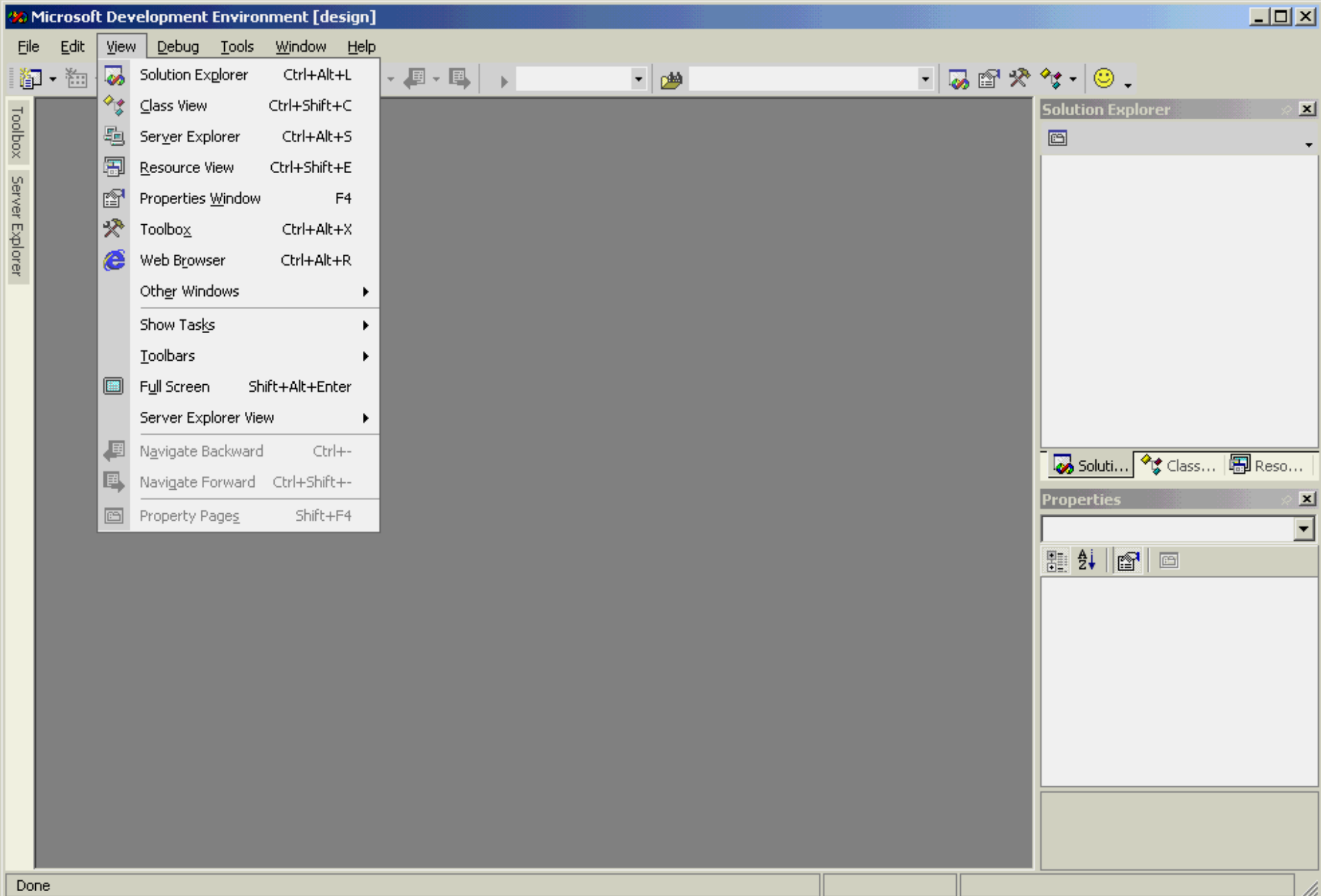




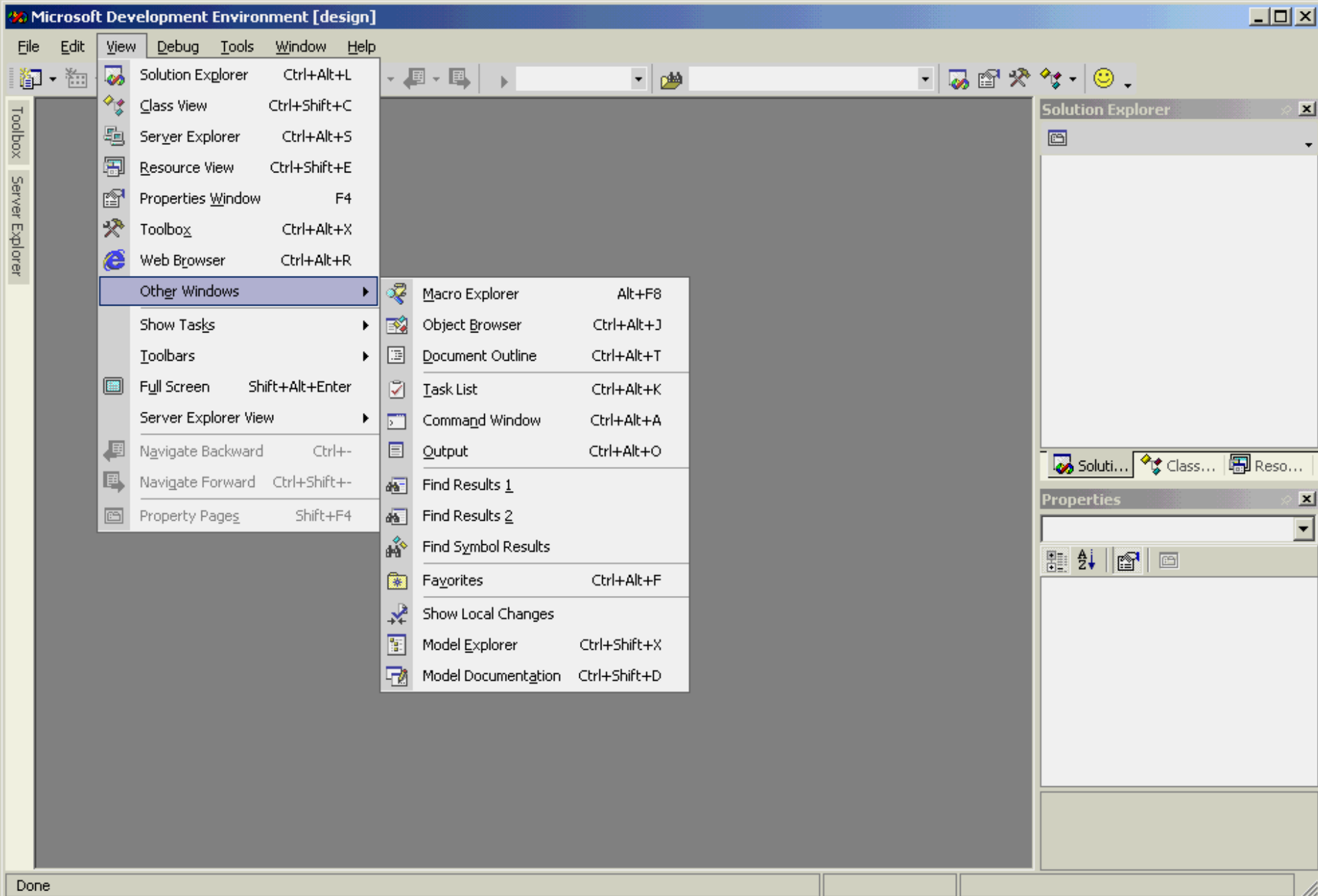
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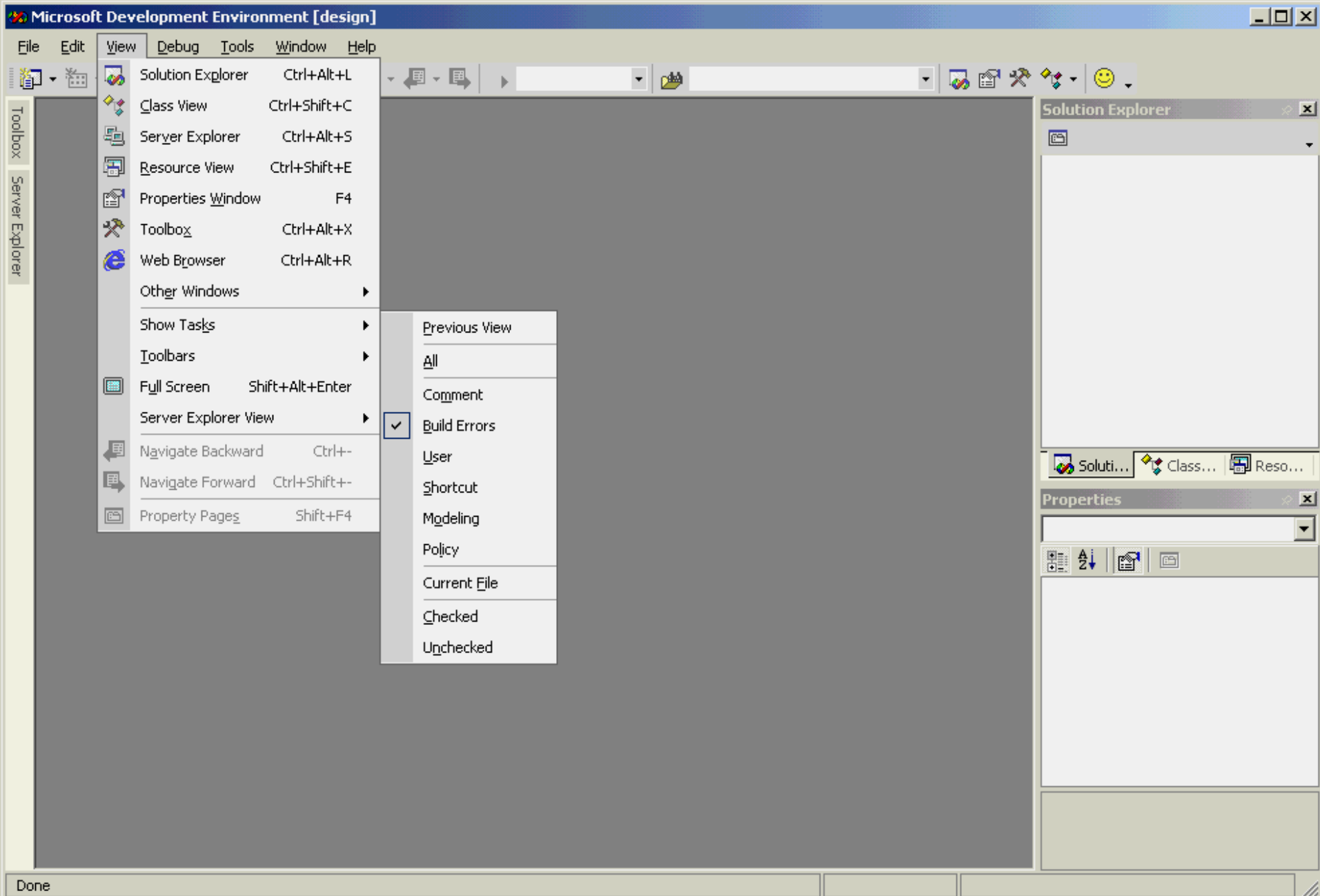


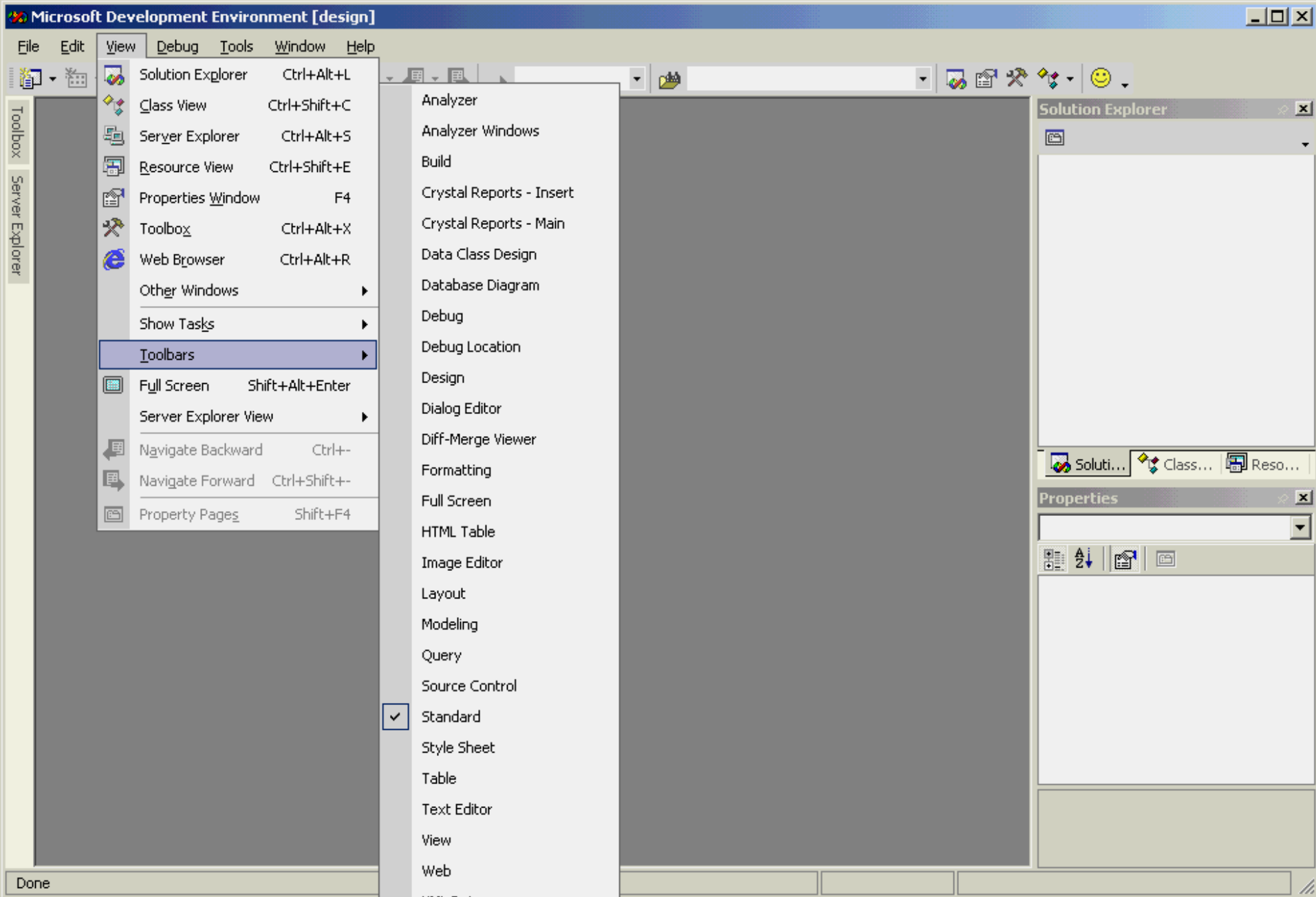
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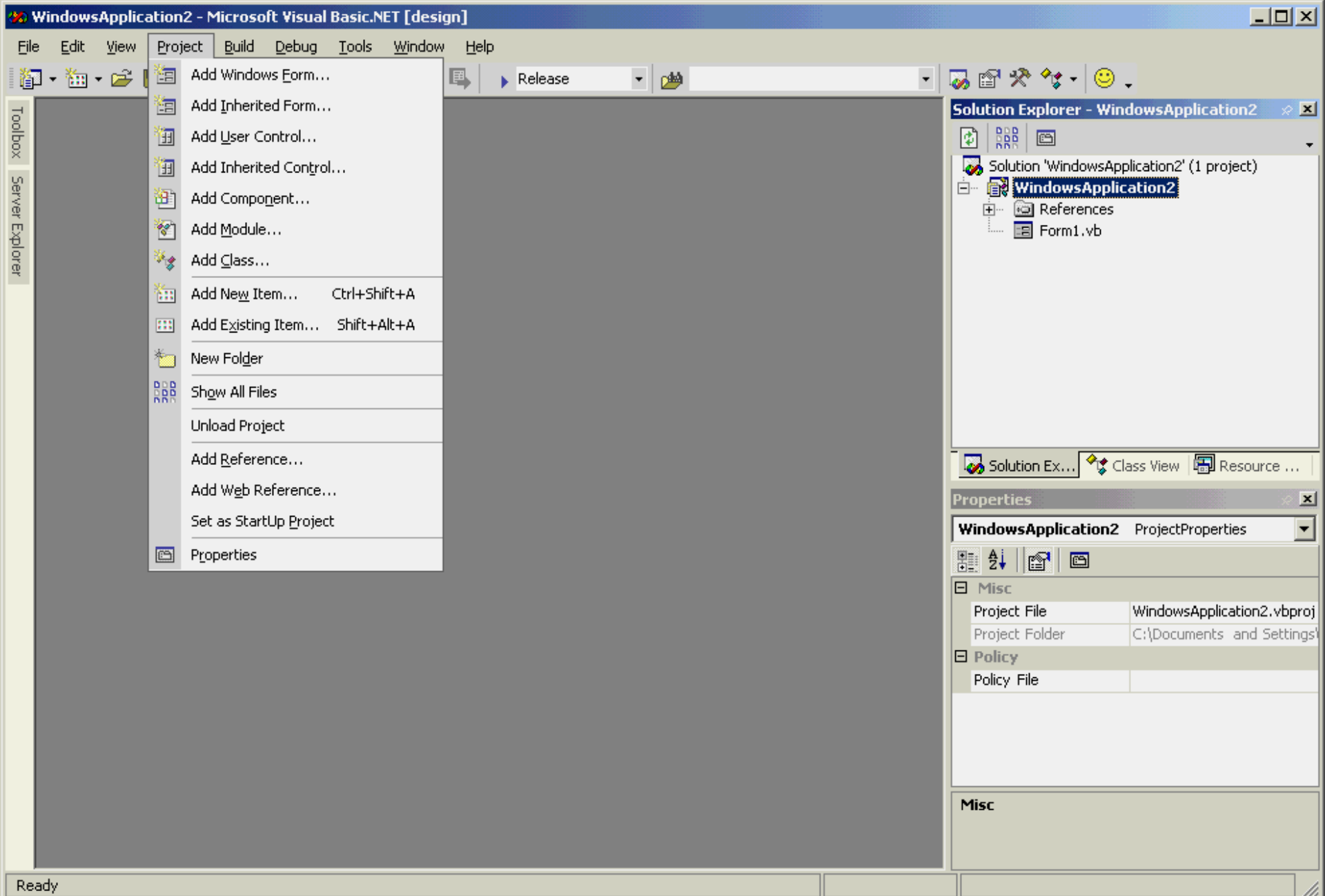
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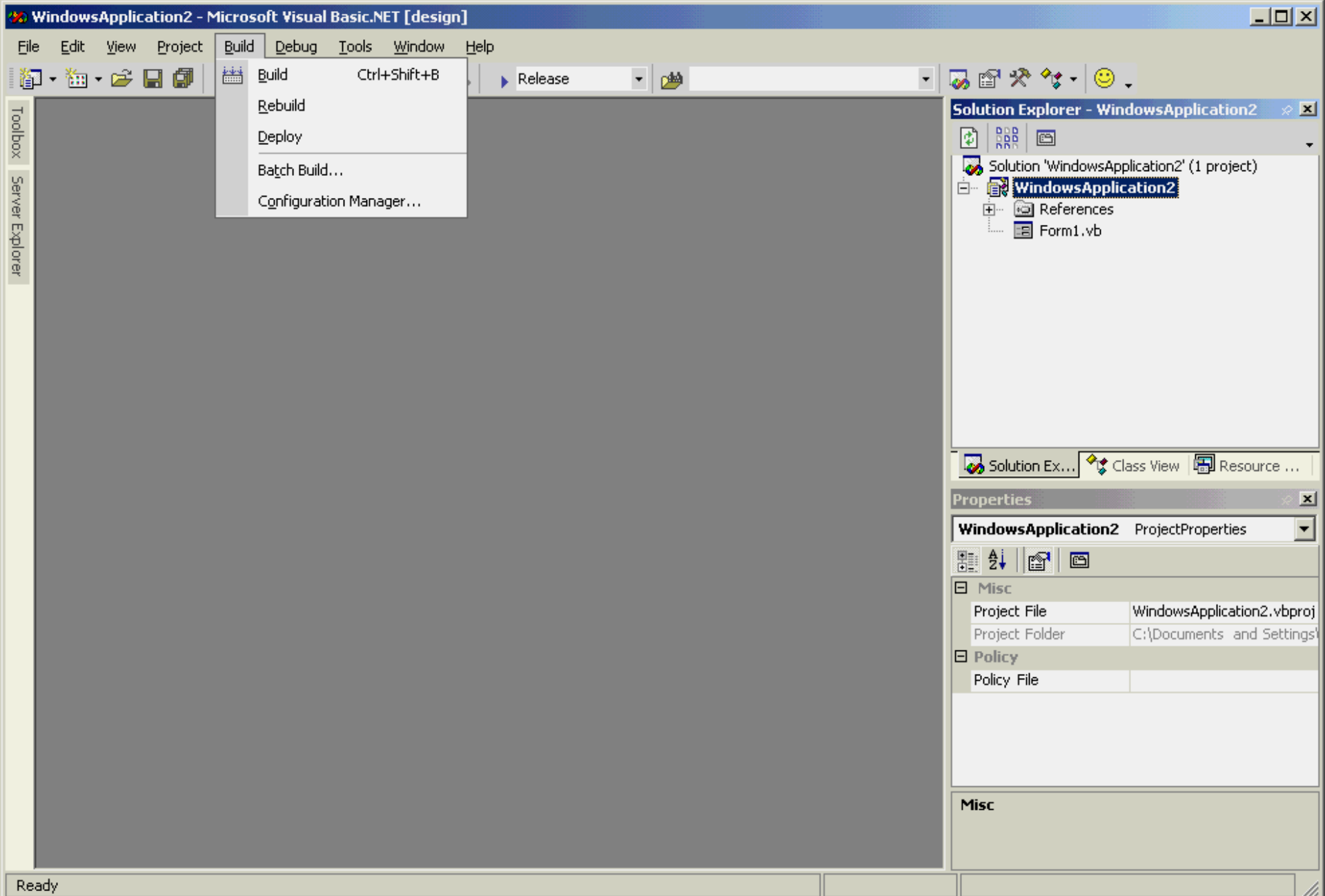




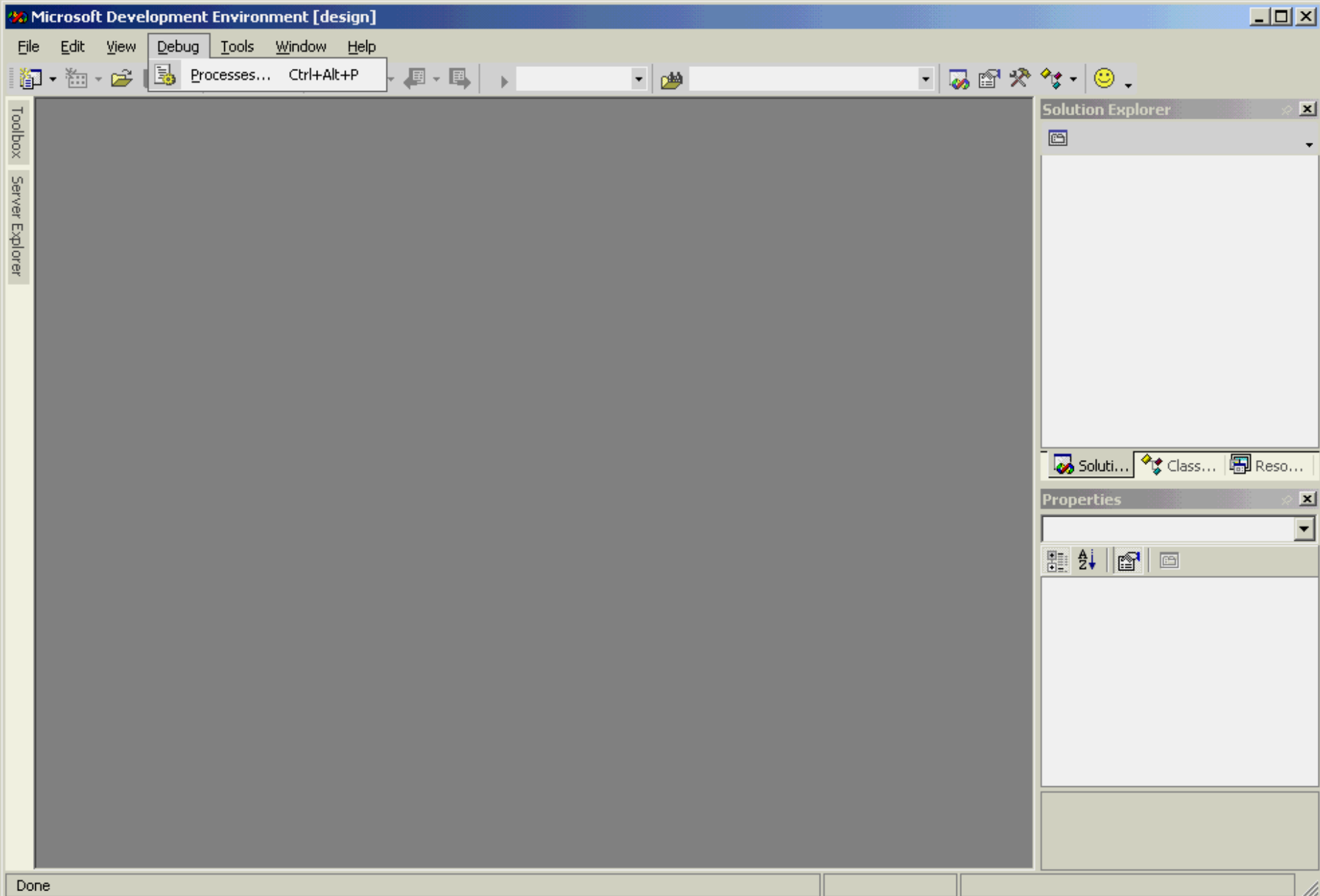
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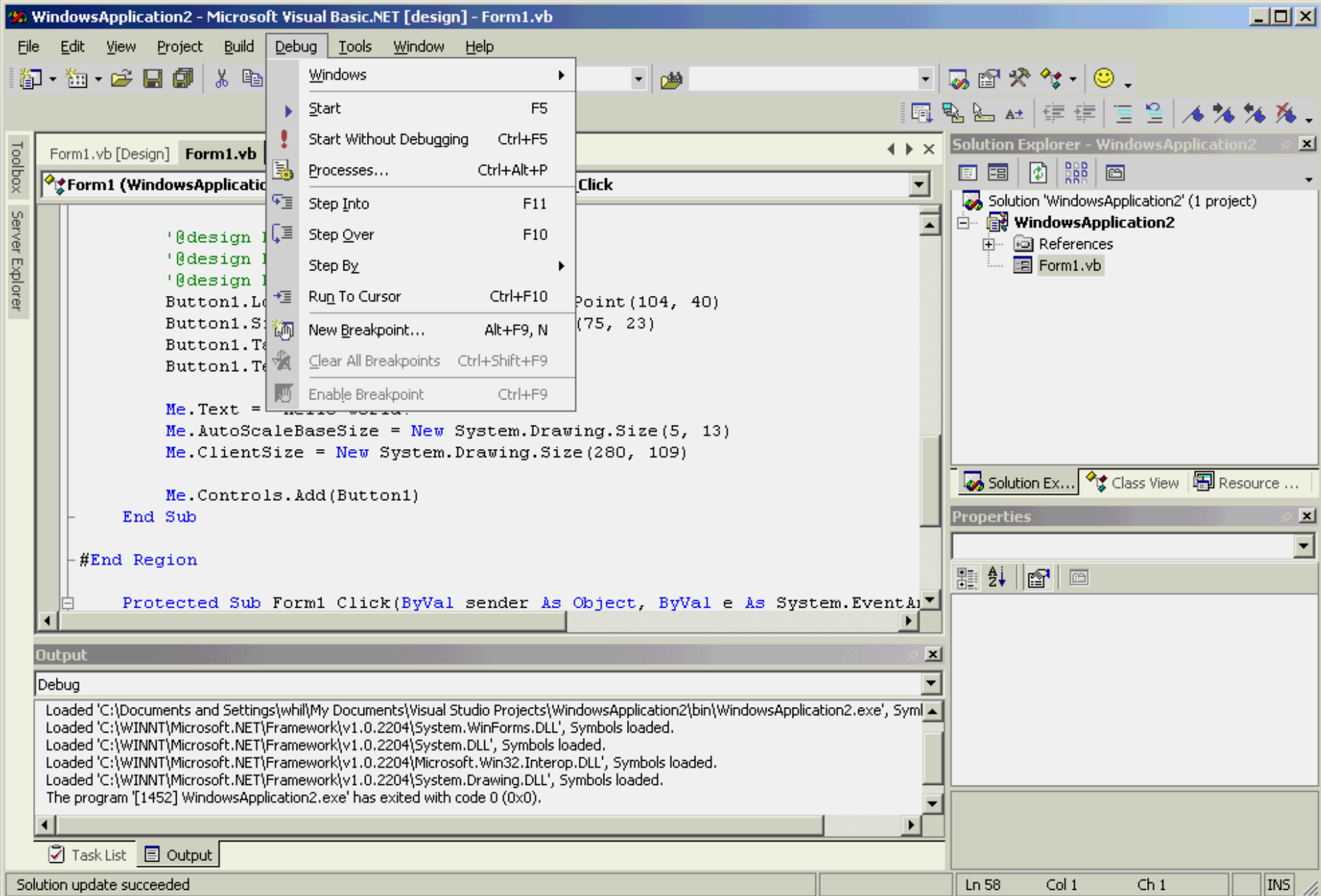
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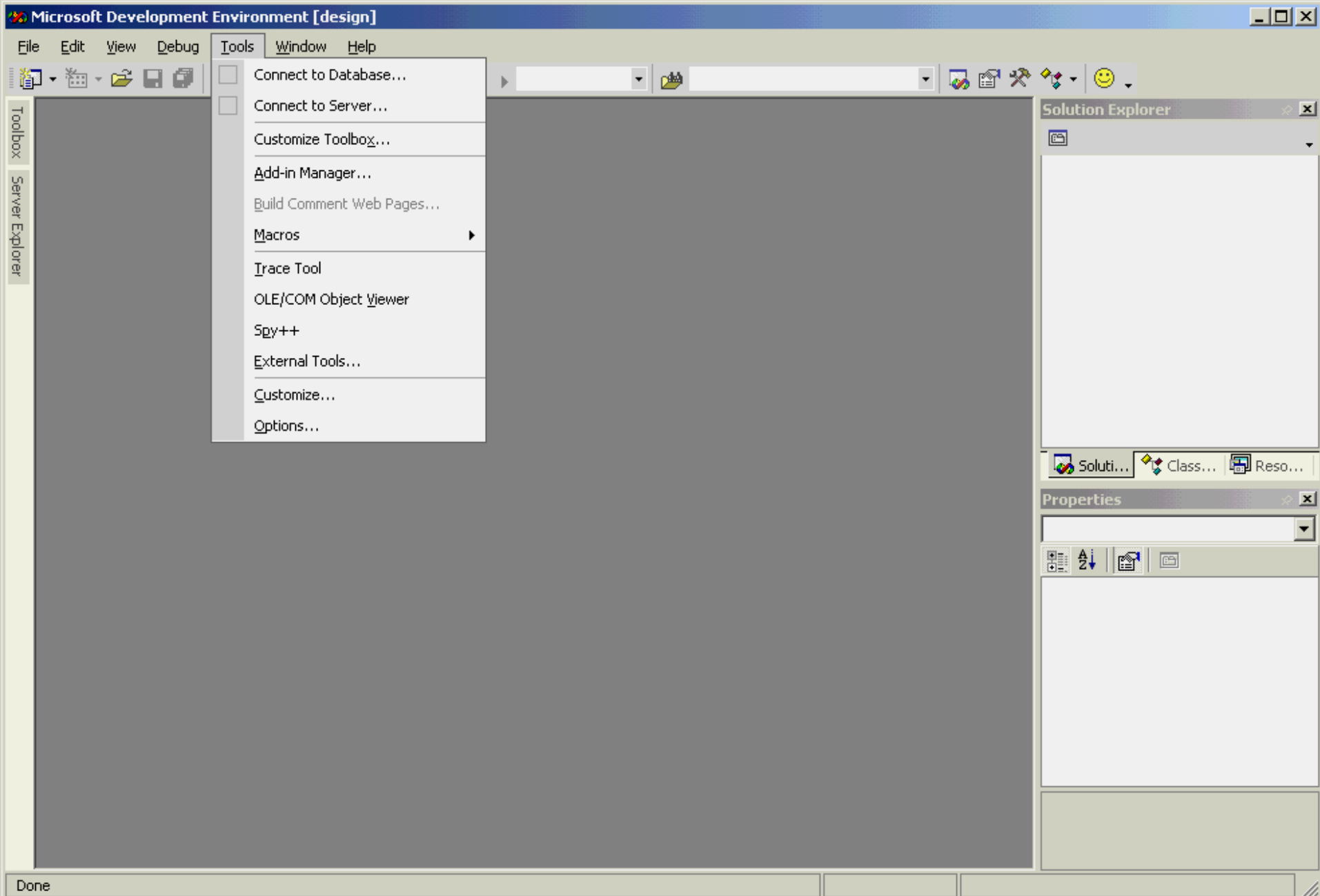


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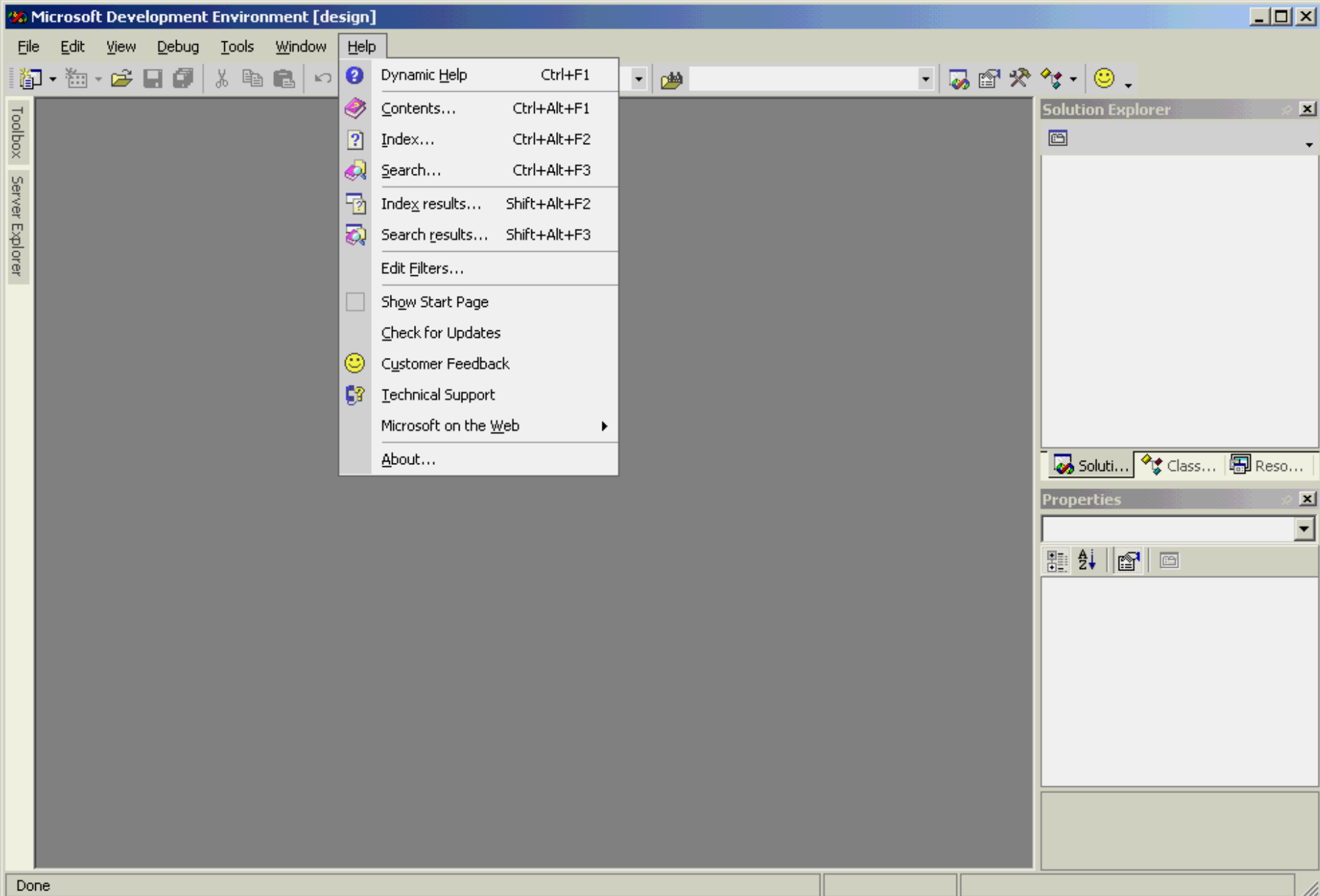


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IV. Running Visual Studio.NET Help

- ◆ **Framework SDK Documentation**

`docs\sdkstart.chm`

- ◆ **Release notes**

`readme.htm`

- ◆ **Tools & Debugger**

`bin\starttools.htm`

- ◆ **Samples**

`samples\startsamples.htm`

V. Building Apps with VS.NET

The Pieces

- ◆ **Tools**
- ◆ **Framework**
- ◆ **Samples and Tutorials**
- ◆ **CLR**
- ◆ **WinForms**
- ◆ **Windows Services Apps**
- ◆ **ASP.NET**
- ◆ **Deployment**

V. Building Apps with VS.NET Tools

- ◆ Visual Basic.NET
- ◆ Visual C++
- ◆ C#
- ◆ The IDE

V. Building Apps with VS.NET

The Framework

- ◆ In one slide?
- ◆ Nearly 90 Namespaces

V. Building Apps with VS.NET Samples and Tutorials

- ◆ **Samples located in FrameworkSDK\Samples**
- ◆ **63 samples in Beta 1**
- ◆ **Tutorials described in FrameworkSDK CHM file**

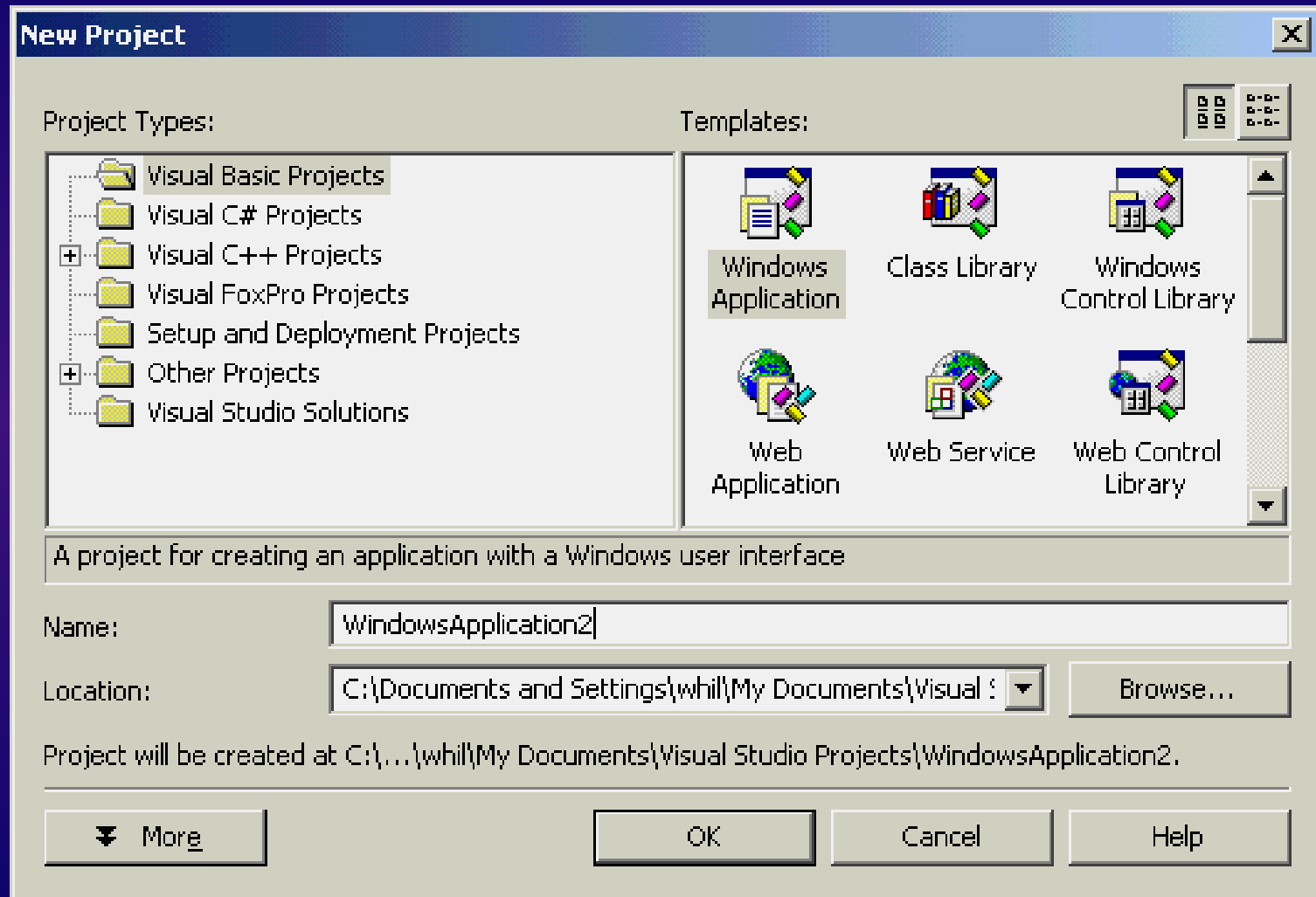
V. Building Apps with VS.NET Common Language Runtime

- ◆ **How it works**
- ◆ **Managed Execution**
- ◆ **Assemblies**
- ◆ **Runtime Hosts**
- ◆ **Common Type System**
- ◆ **Metadata and Self Describing Components**

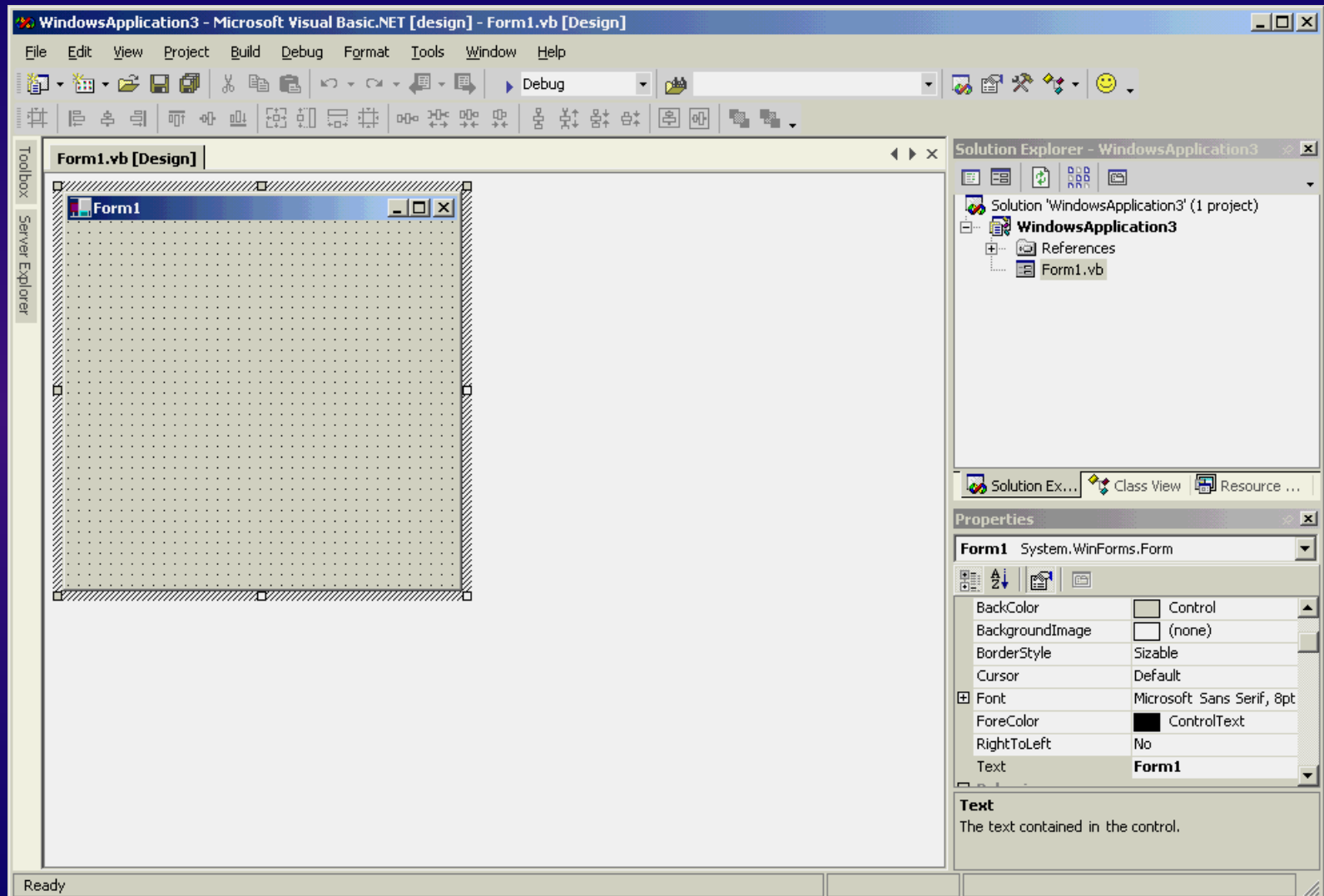
V. Building Apps with VS.NET WinForms

- ◆ **Traditional (“rich”) interfaces**
- ◆ **Methodology**

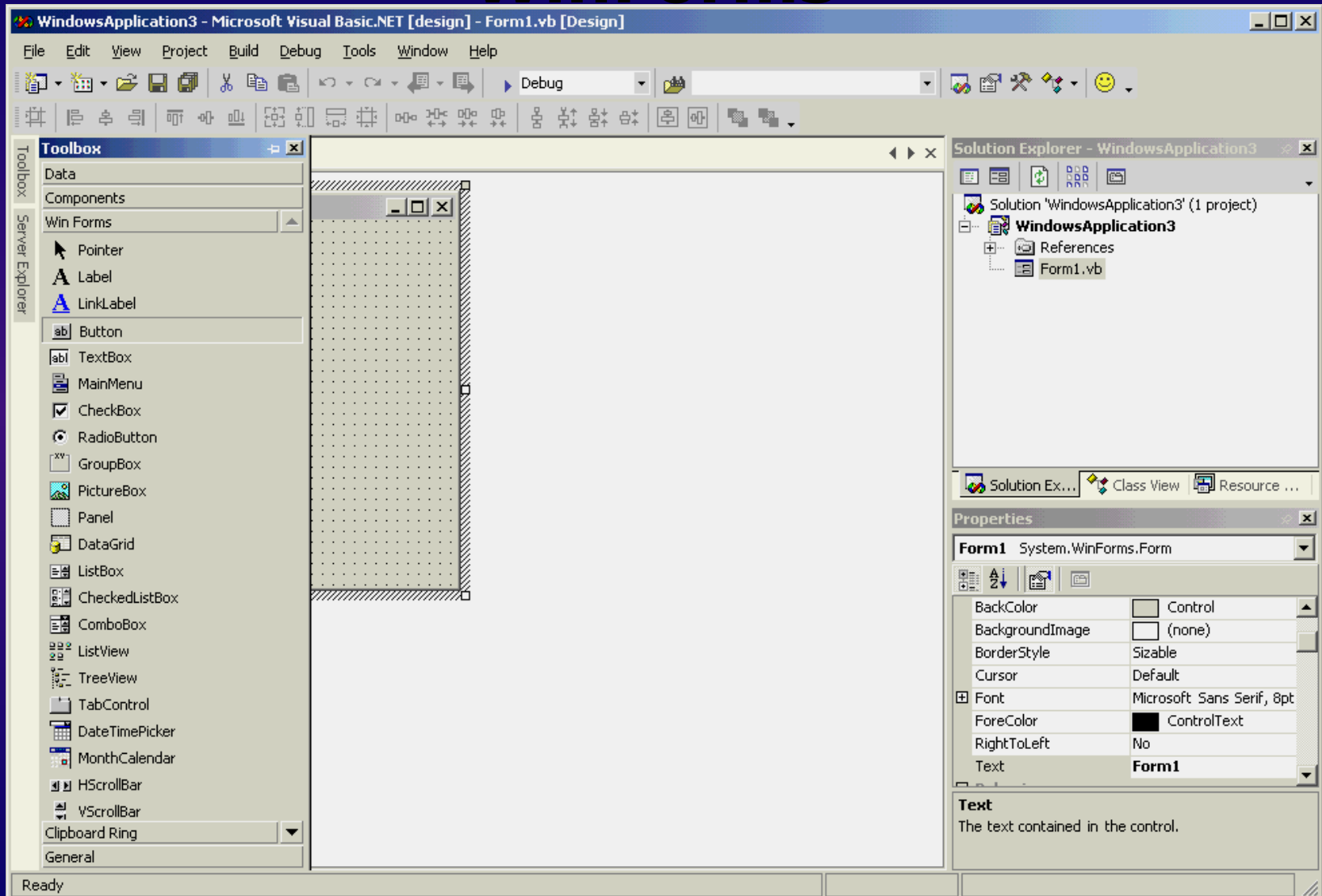
V. Building Apps with VS.NET WinForms



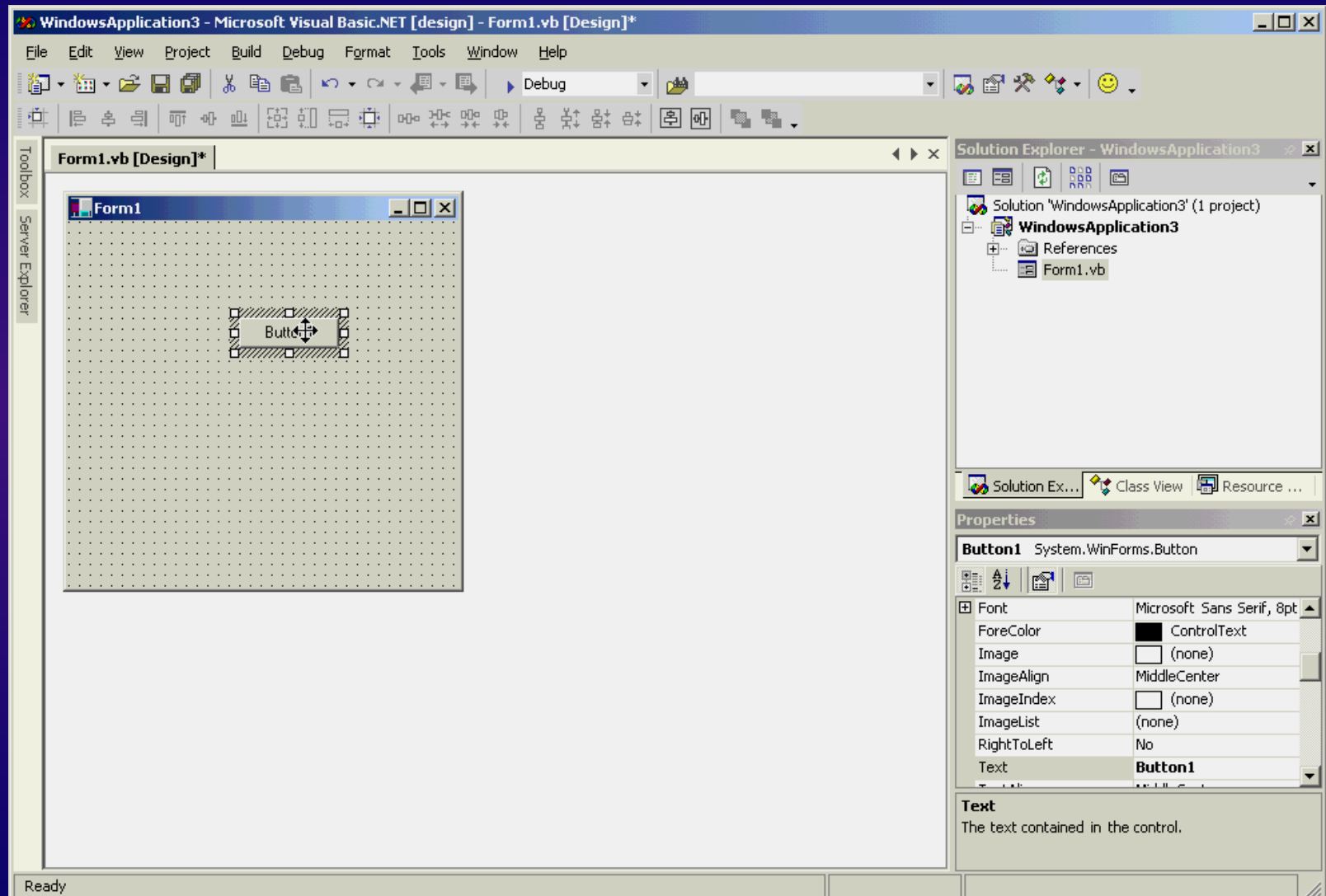
V. Building Apps with VS.NET WinForms



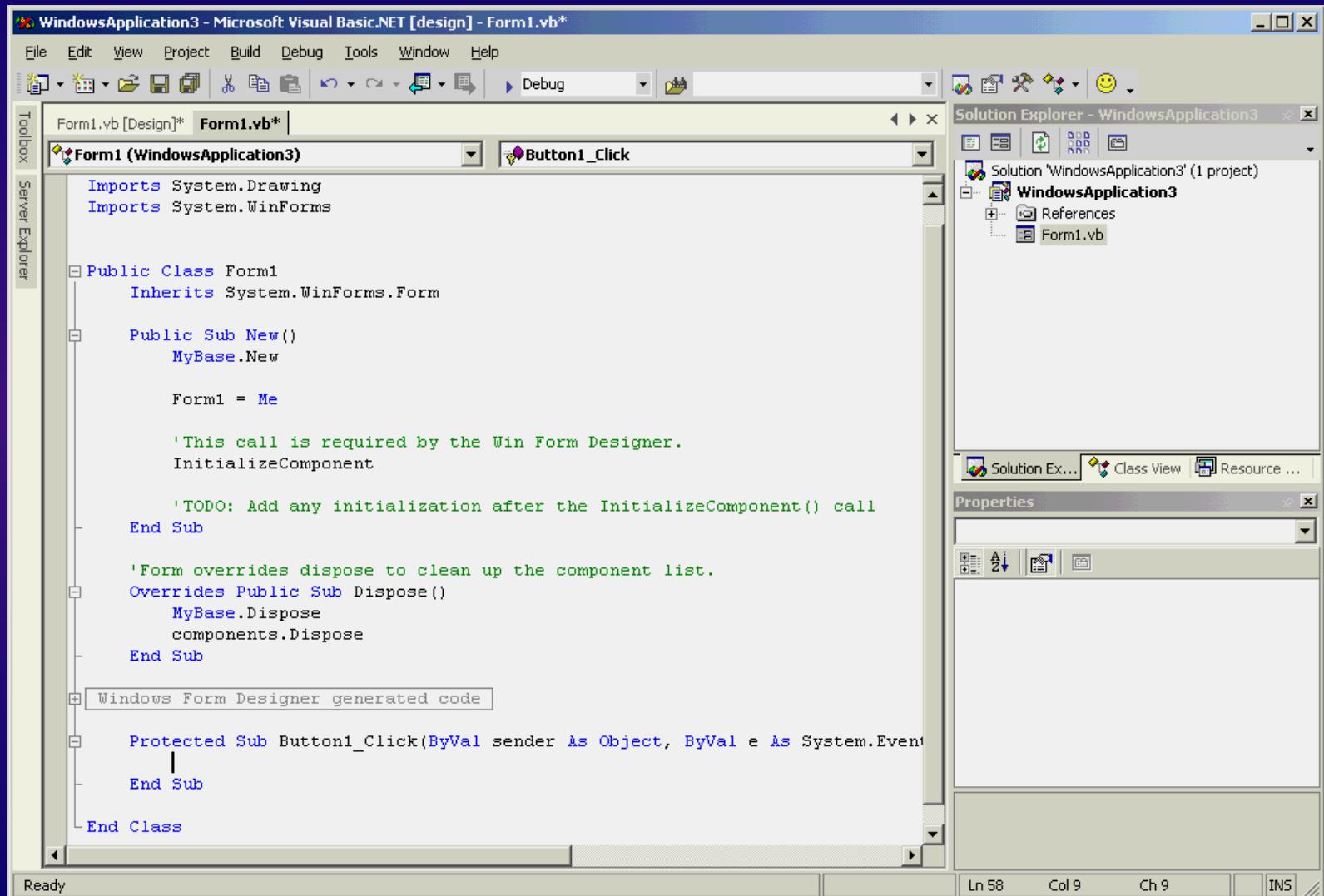
V. Building Apps with VS.NET WinForms



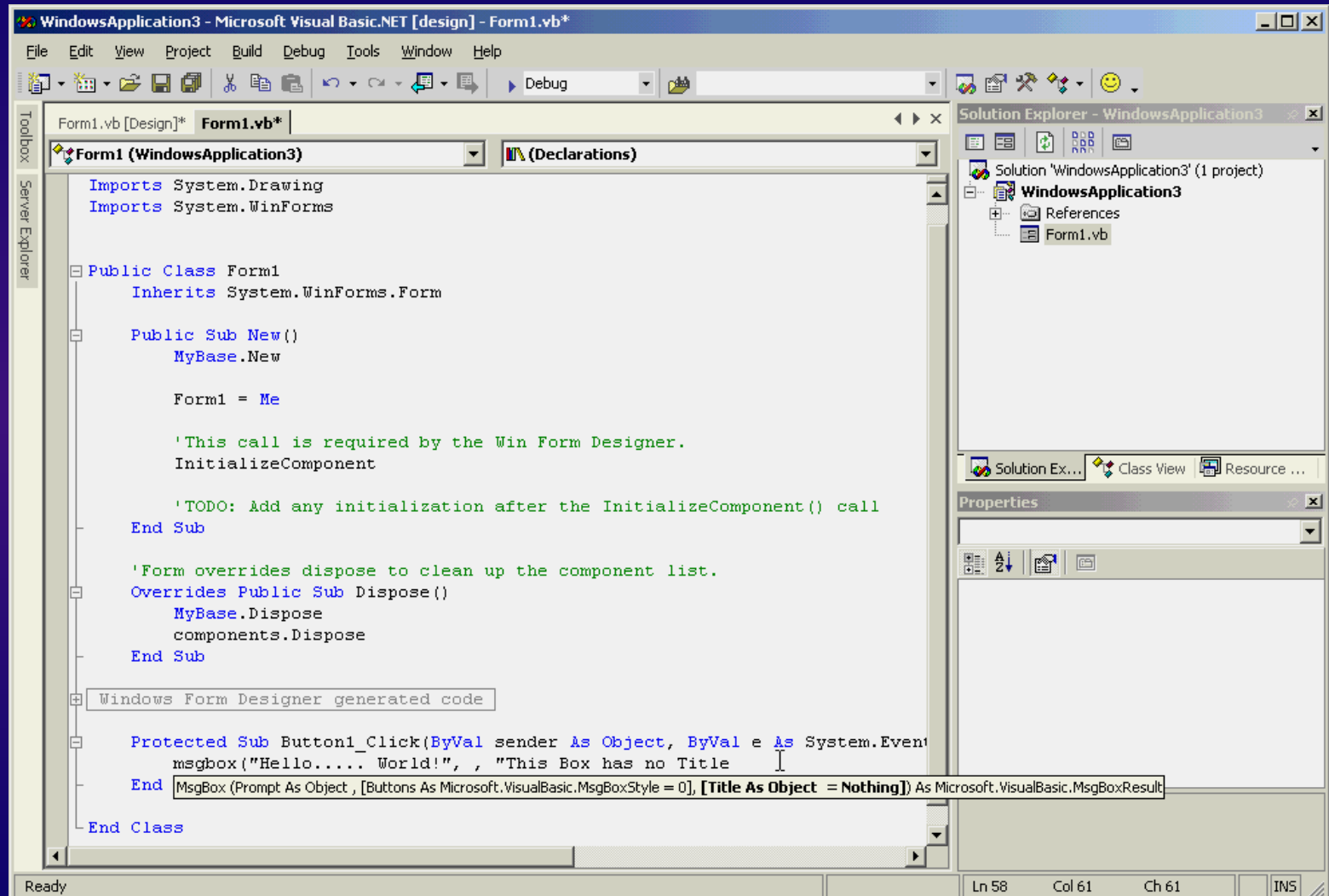
V. Building Apps with VS.NET WinForms



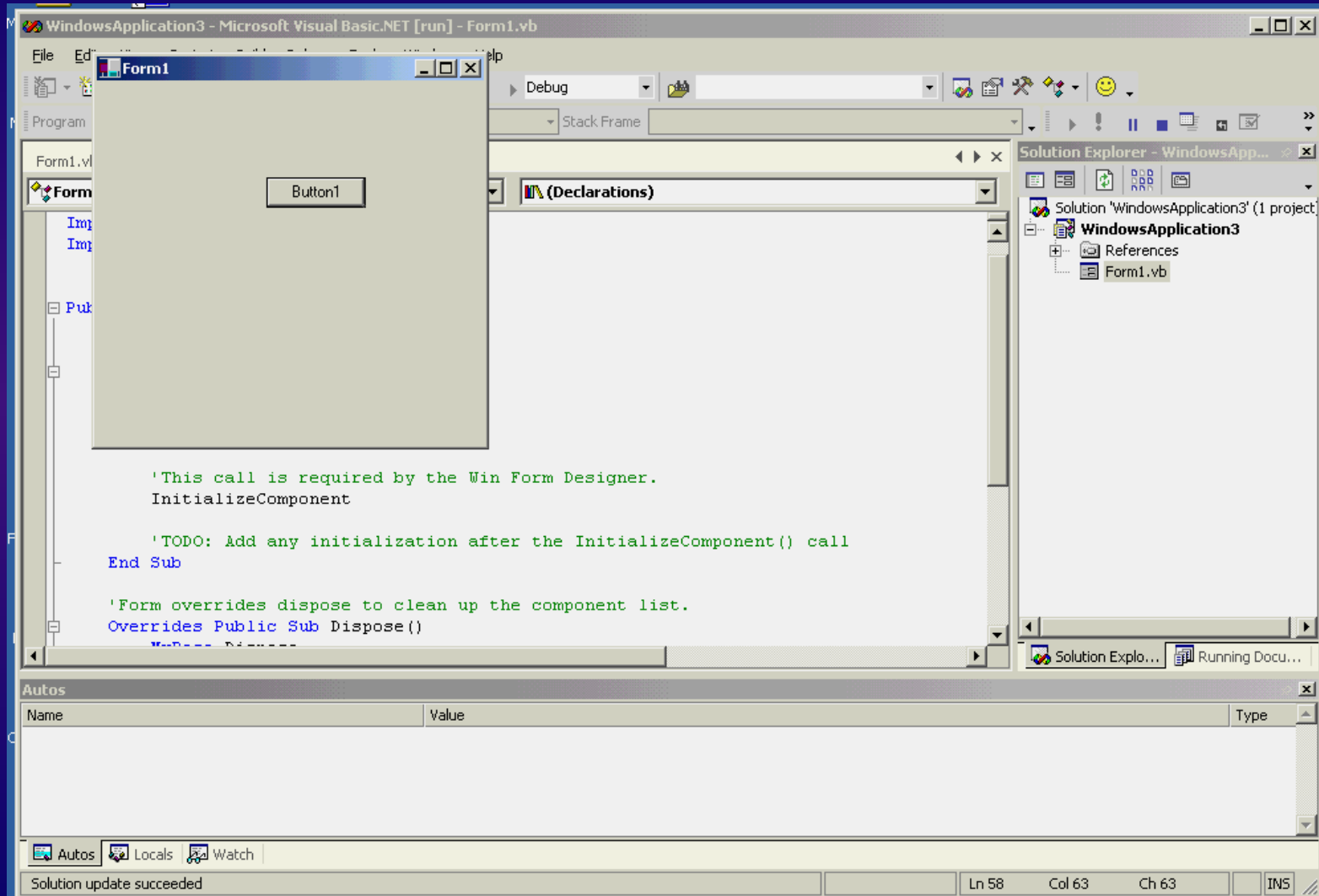
V. Building Apps with VS.NET WinForms



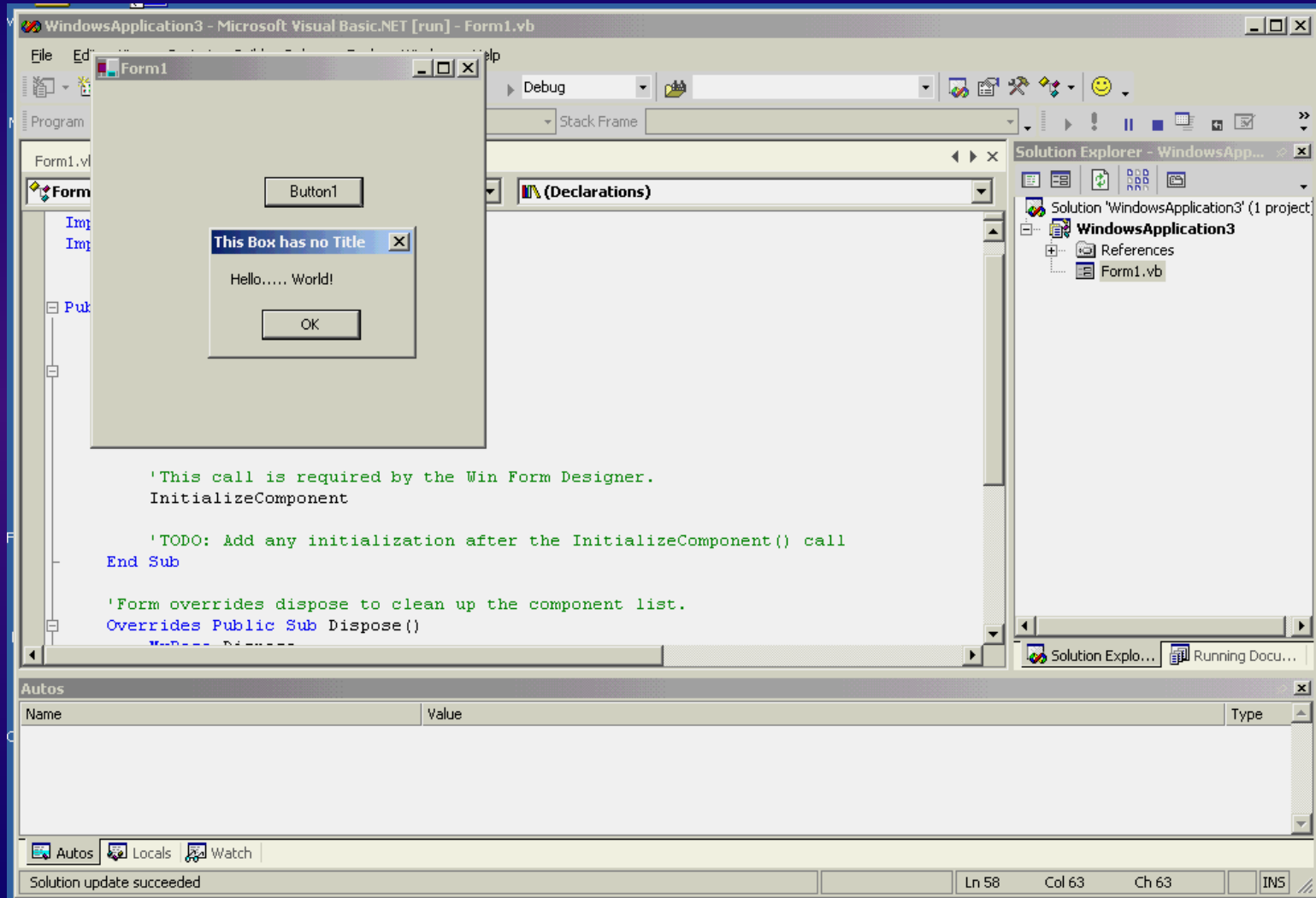
V. Building Apps with VS.NET WinForms



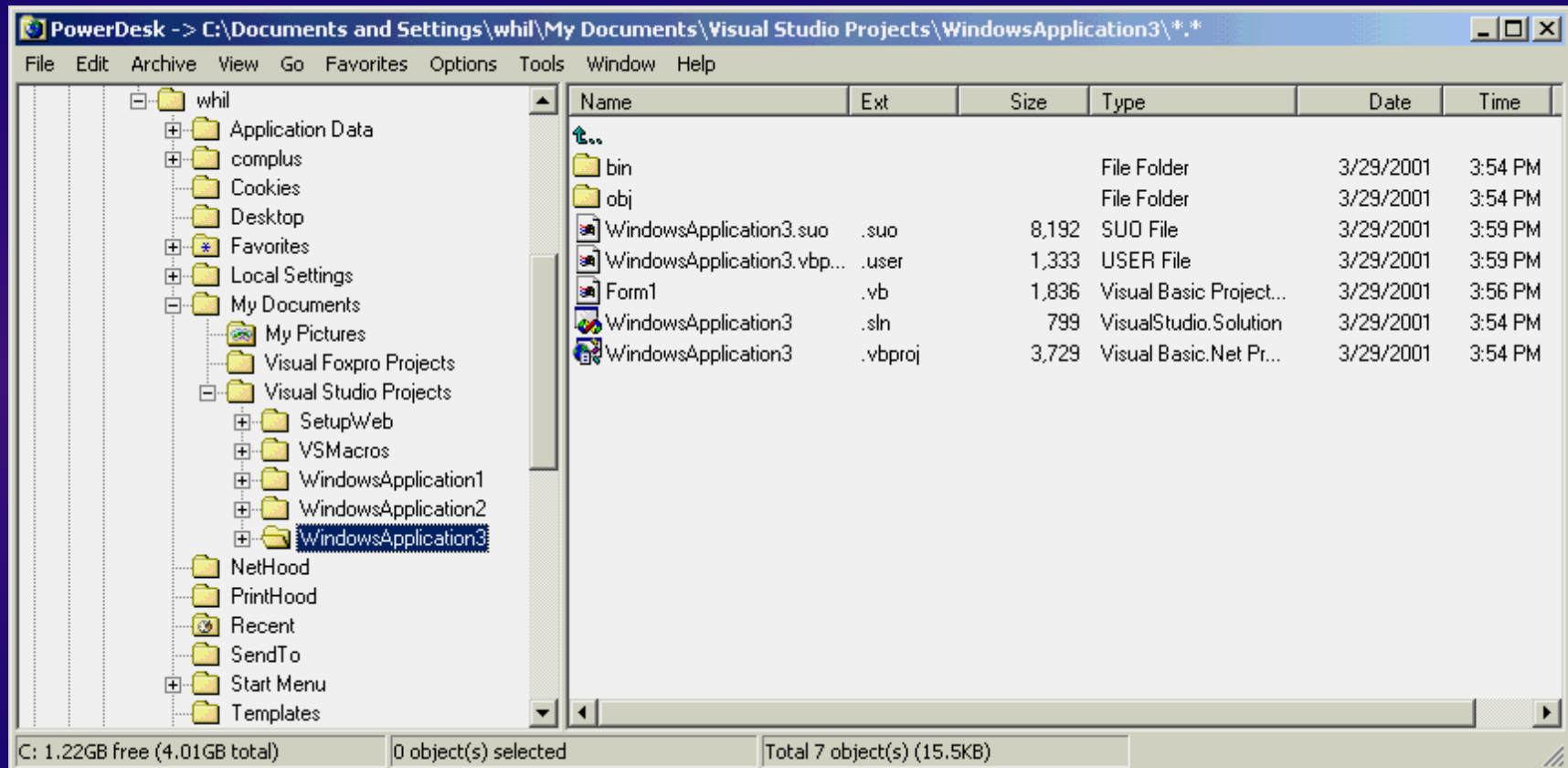
V. Building Apps with VS.NET WinForms



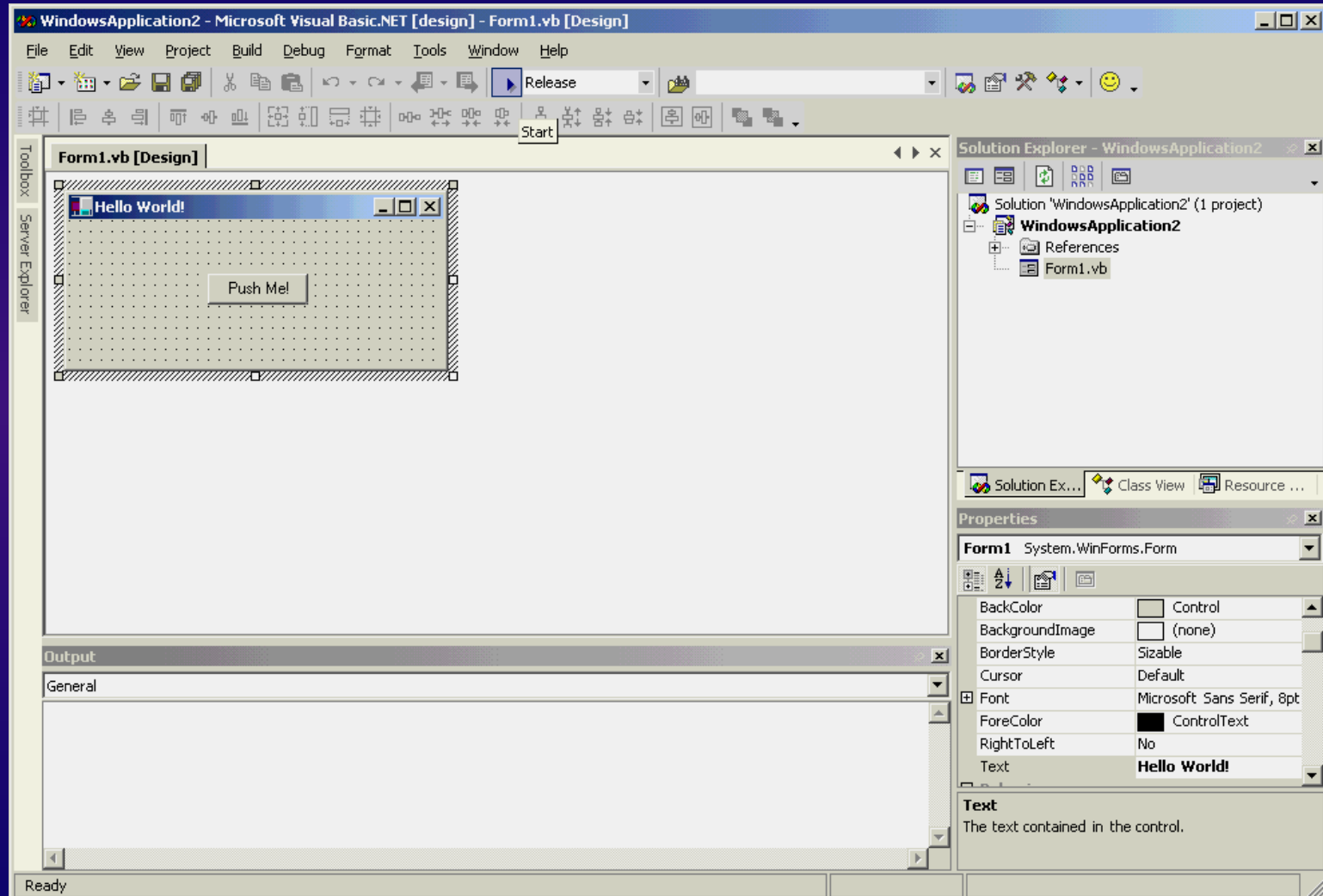
V. Building Apps with VS.NET WinForms



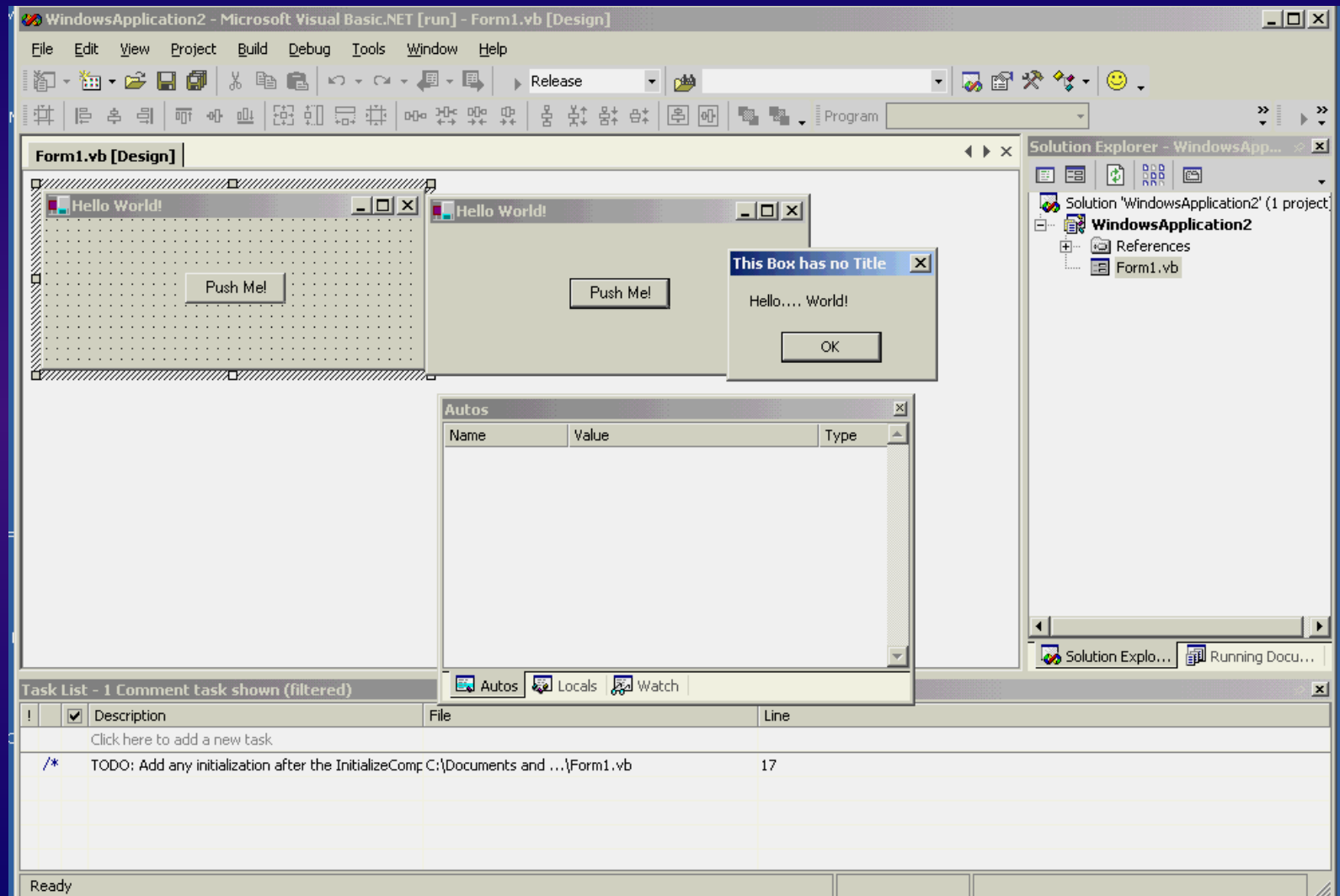
V. Building Apps with VS.NET WinForms



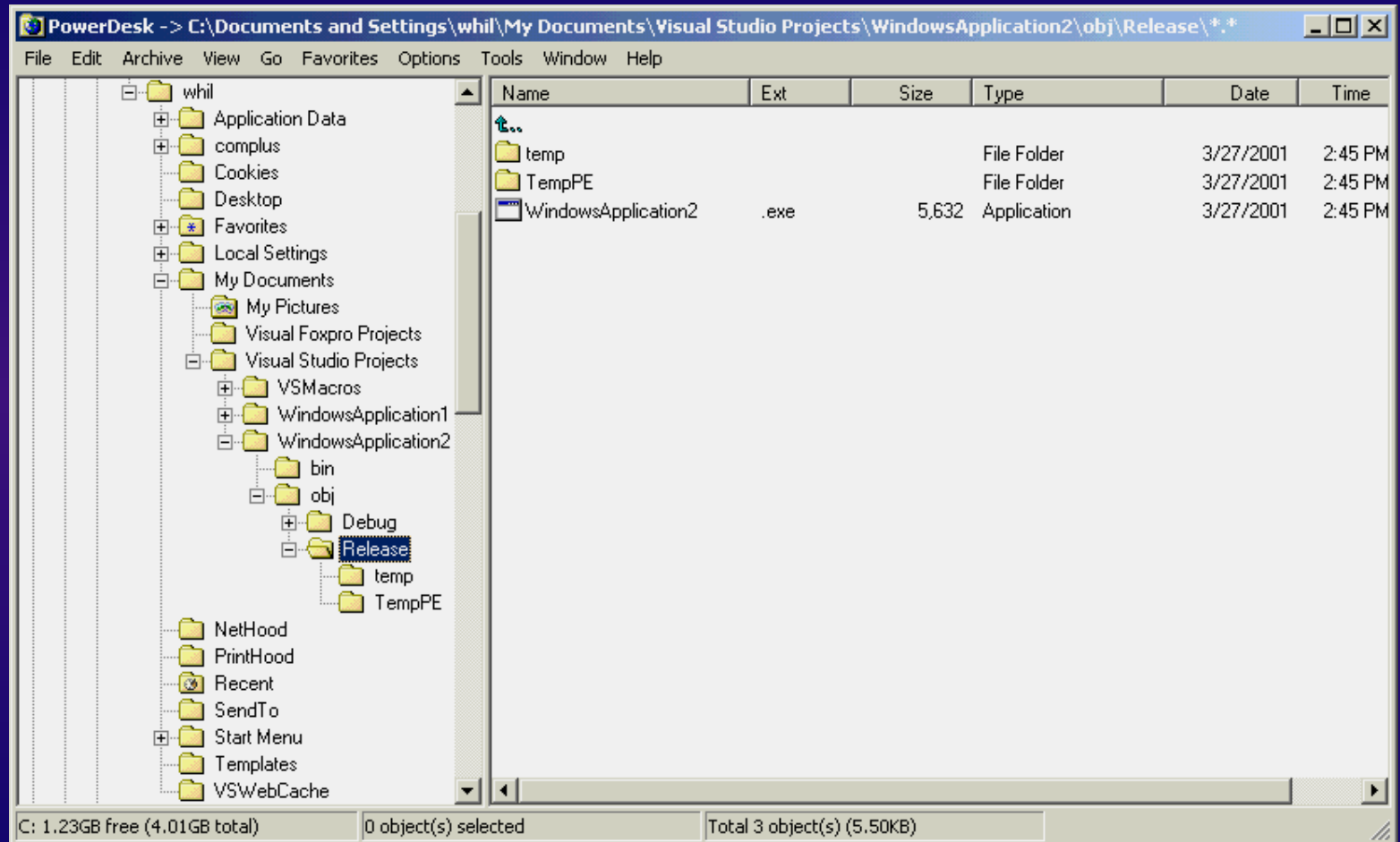
V. Building Apps with VS.NET WinForms



V. Building Apps with VS.NET WinForms



V. Building Apps with VS.NET WinForms



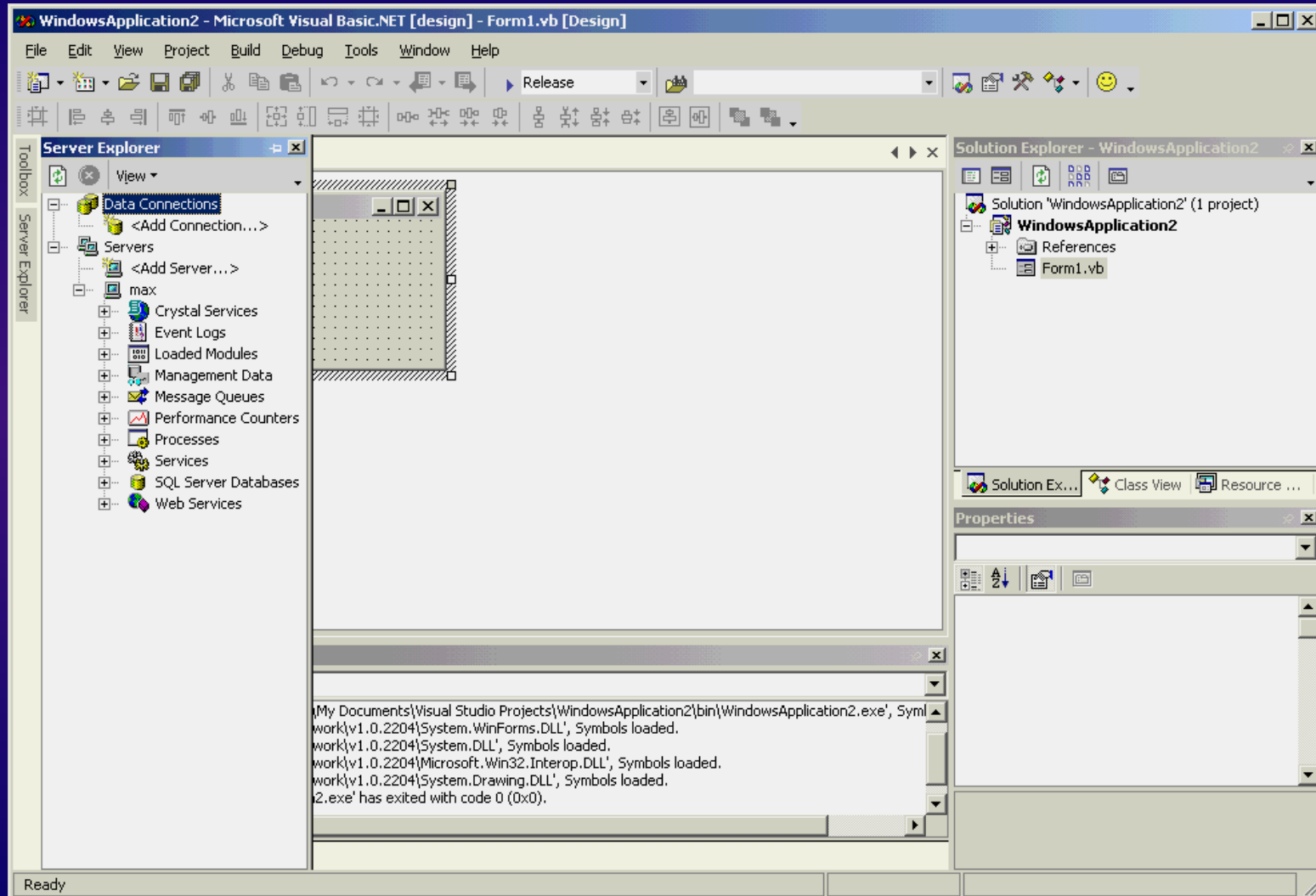
V. Building Apps with VS.NET Window Services Apps

- ◆ Formerly “NT Services”

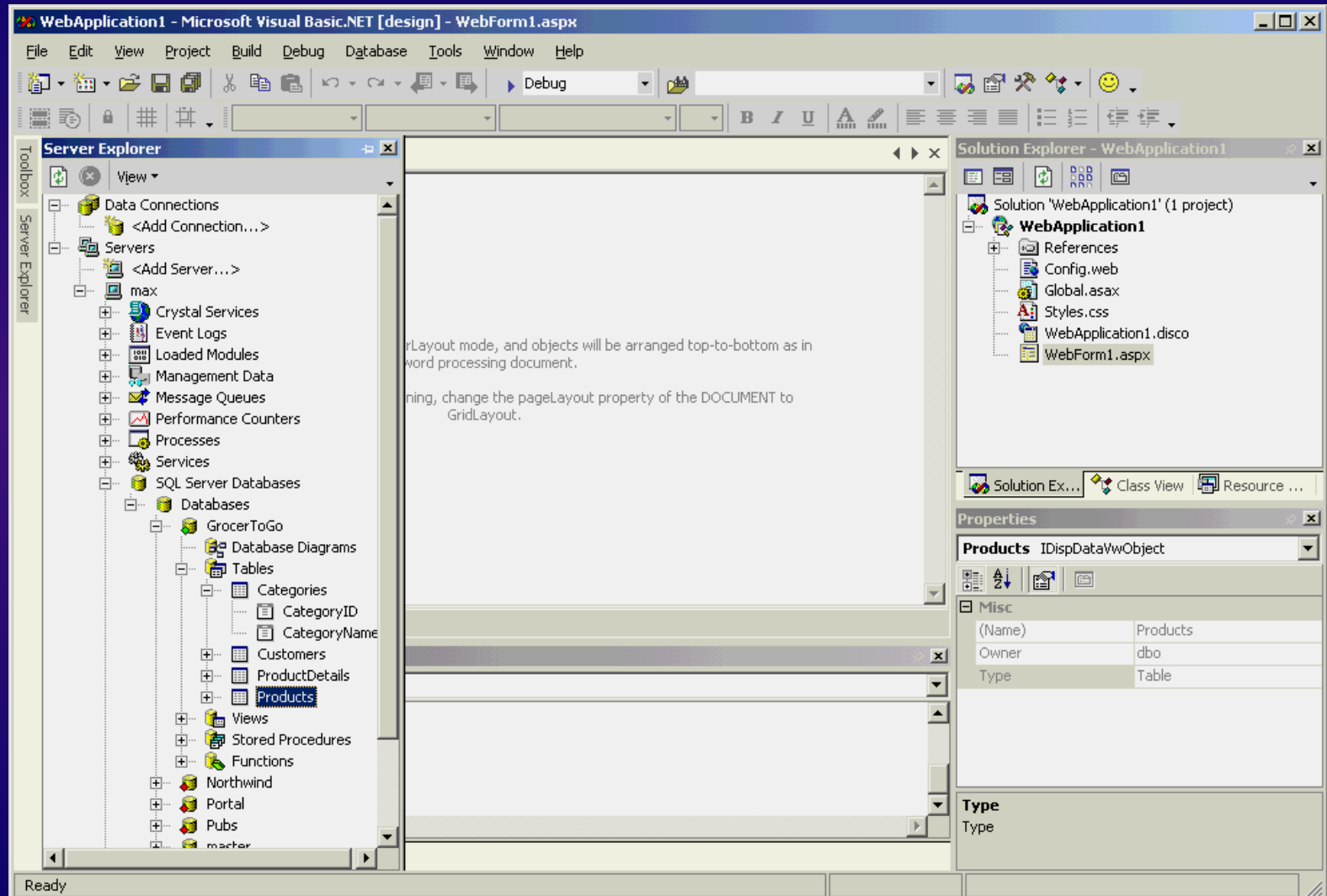
V. Building Apps with VS.NET Data

- ◆ **ADO.NET**
- ◆ **XML**
- ◆ **ASP.NET**

V. Building Apps with VS.NET Data



V. Building Apps with VS.NET Data



V. Building Apps with VS.NET Data

The screenshot displays the Microsoft Development Environment (VS.NET) interface. The title bar indicates the current project is 'max - Microsoft Development Environment [design] - dbo.Products : Table (GrocerToGo)'. The menu bar includes File, Edit, View, Project, Build, Debug, Database, Query, Tools, Window, and Help. The toolbar contains various icons for file operations, debugging, and database management.

The **Server Explorer** pane on the left shows the 'max' server with a tree view of its components. Under 'SQL Server Databases', the 'GrocerToGo' database is expanded, showing 'Tables' and 'Products' selected.

The central pane displays the 'dbo.Products : Table (GrocerToGo)' data table. The table has the following columns: ProductDescription, UnitPrice, ImagePath, and ServingSize. The data rows are as follows:

ProductDescription	UnitPrice	ImagePath	ServingSize
Chocolate City Milk	2	/quickstart/aspplus	8 fl oz (240 mL)
2% M Bessie Brand 2% M	1.19	/quickstart/aspplus	8 fl oz (240 mL)
Funny Farms Whole	1.29	/quickstart/aspplus	8 fl oz (240 mL)
Fruity Pops Descrip	4.07	/quickstart/aspplus	3/4 cup (30 g)
U.F.O.s Cereal Des	3.34	/quickstart/aspplus	1 cup (30 g)
Healthy Grains Cer	3.78	/quickstart/aspplus	3/4 cup (30 g)
Super Sugar Strike	4.17	/quickstart/aspplus	3/4 cup (30 g)
Brown Barrel Root I	1.1	/quickstart/aspplus	4 fl oz (120 mL)
Bargain Cola Descri	0.89	/quickstart/aspplus	6 fl oz (180 mL)
Super Red Pop Sod	1.1	/quickstart/aspplus	4 fl oz (120 mL)
Lemon Lime Quench	1.05	/quickstart/aspplus	6 fl oz (180 mL)
Marigold Whole Milk	1.39	/quickstart/aspplus	8 fl oz (240 mL)

The **Solution Explorer** pane on the right shows the project 'WebApplication1' with files: References, Config.web, Global.asax, Styles.css, WebApplication1.disco, and WebForm1.aspx.

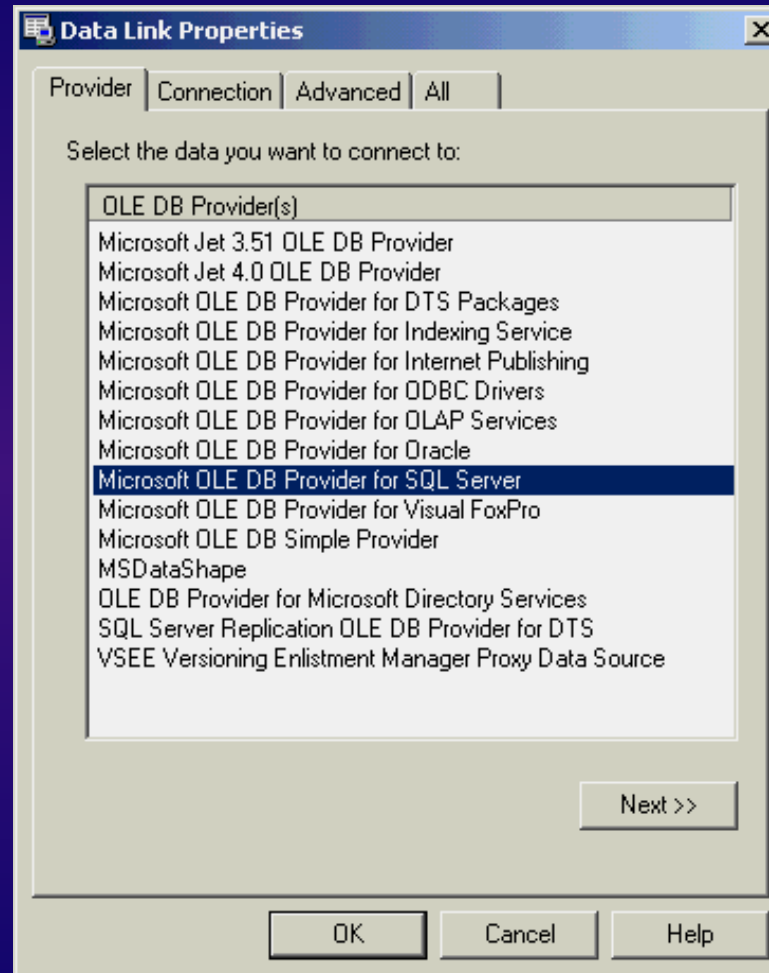
The **Properties** pane at the bottom right shows the 'Products' table properties. The 'Misc' section includes (Name) Products, Owner dbo, and Type Table. The 'Type' section shows Type.

V. Building Apps with VS.NET Data

The screenshot displays the Microsoft Visual Basic .NET [design] environment for a web application named 'WebApplication1'. The main window shows a data table titled 'dbo.Products : Table (GrocerToGo)' with the following columns: ProductID, CategoryID, ProductName, ProductDescription, UnitPrice, ImagePath, and ServingSize. The table contains 15 rows of product data. The Solution Explorer on the right shows the project structure, including 'WebApplication1' (1 project) with files like 'References', 'Config.web', 'Global.asax', 'Styles.css', 'WebApplication1.disco', and 'WebForm1.aspx'. The Properties window on the right shows 'Selected Object (Class name unavailable)'. The Output window at the bottom shows the build status: 'Build: 1 succeeded, 0 failed, 0 skipped'.

ProductID	CategoryID	ProductName	ProductDescription	UnitPrice	ImagePath	ServingSize
1001	1	Chocolate City Milk	Chocolate City Milk	2	/quickstart/aspplus	8 fl oz (240 mL)
1002	1	Bessie Brand 2% M	Bessie Brand 2% M	1.19	/quickstart/aspplus	8 fl oz (240 mL)
1003	1	Funny Farms Milk	Funny Farms Whole	1.29	/quickstart/aspplus	8 fl oz (240 mL)
2001	2	Fruity Pops	Fruity Pops Descrip	4.07	/quickstart/aspplus	3/4 cup (30 g)
2002	2	U.F.O.s Cereal	U.F.O.s Cereal Des	3.34	/quickstart/aspplus	1 cup (30 g)
2003	2	Healthy Grains	Healthy Grains Ceri	3.78	/quickstart/aspplus	3/4 cup (30 g)
2004	2	Super Sugar Strike	Super Sugar Strike	4.17	/quickstart/aspplus	3/4 cup (30 g)
3001	3	Purple Rain	Brown Barrel Root I	1.1	/quickstart/aspplus	4 fl oz (120 mL)
3002	3	Extreme Orange	Bargain Cola Descri	0.89	/quickstart/aspplus	6 fl oz (180 mL)
3003	3	Kona Diet Cola	Super Red Pop Sod	1.1	/quickstart/aspplus	4 fl oz (120 mL)
3004	3	Fizzy Fizzing Drink	Lemon Lime Quench	1.05	/quickstart/aspplus	6 fl oz (180 mL)
1005	1	Marigold Whole Milk	Marigold Whole Milk	1.39	/quickstart/aspplus	8 fl oz (240 mL)

V. Building Apps with VS.NET Data



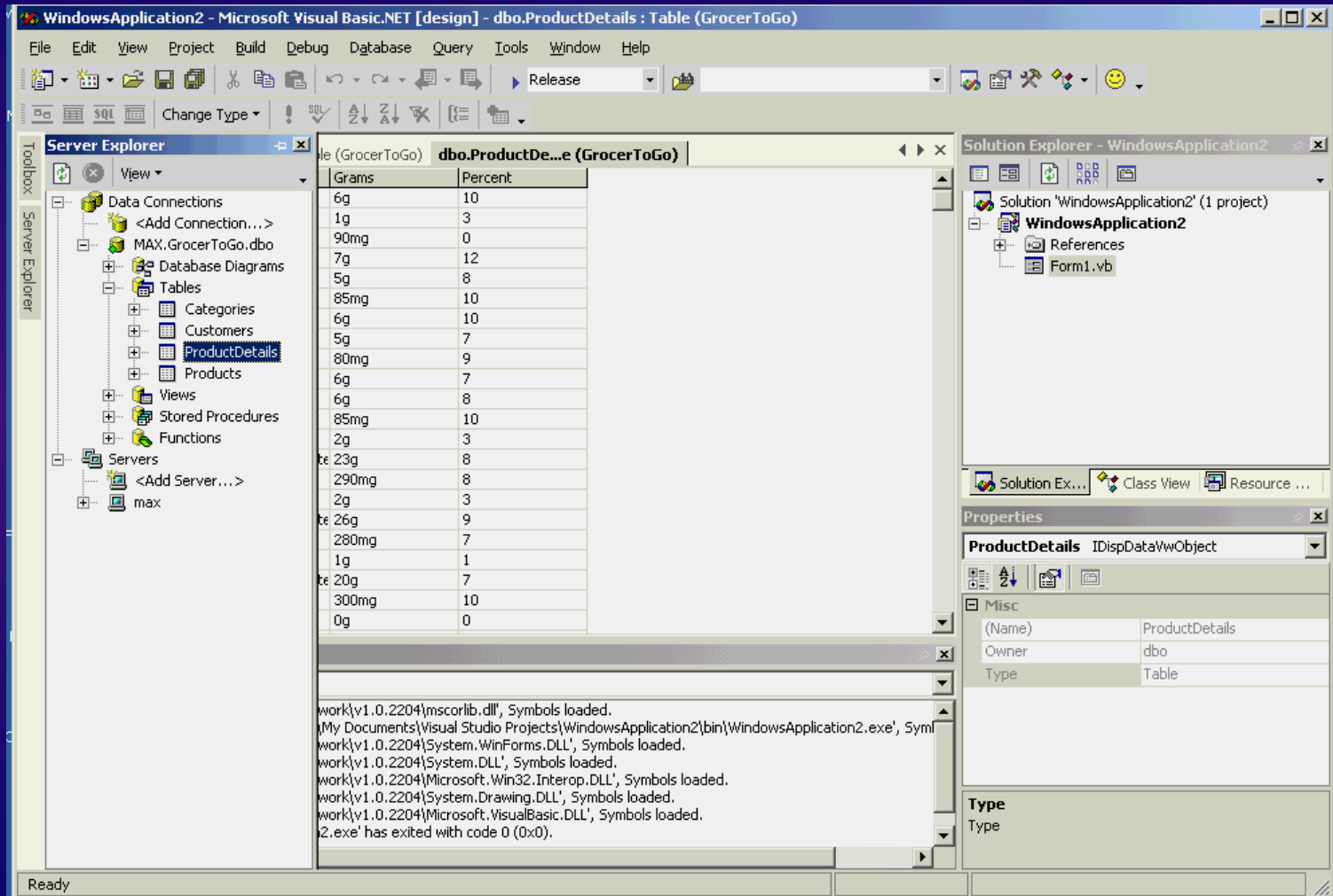
V. Building Apps with VS.NET Data

The image shows a 'Data Link Properties' dialog box with four tabs: 'Provider', 'Connection', 'Advanced', and 'All'. The 'Connection' tab is selected. The dialog contains the following elements:

- Specify the following to connect to SQL Server data:**
 - 1. Select or enter a server name:** A dropdown menu showing 'MAX' and a 'Refresh' button.
 - 2. Enter information to log on to the server:**
 - ☒ Use Windows NT Integrated security
 - ☐ Use a specific user name and password:
 - User name:
 - Password:
 - ☐ Blank password ☐ Allow saving password
 - 3. ☒ Select the database on the server:** A dropdown menu showing 'GrocerToGo'.
 - ☐ Attach a database file as a database name:
 - GrocerToGo
 - Using the filename:

- Test Connection** button
- OK**, **Cancel**, and **Help** buttons at the bottom.

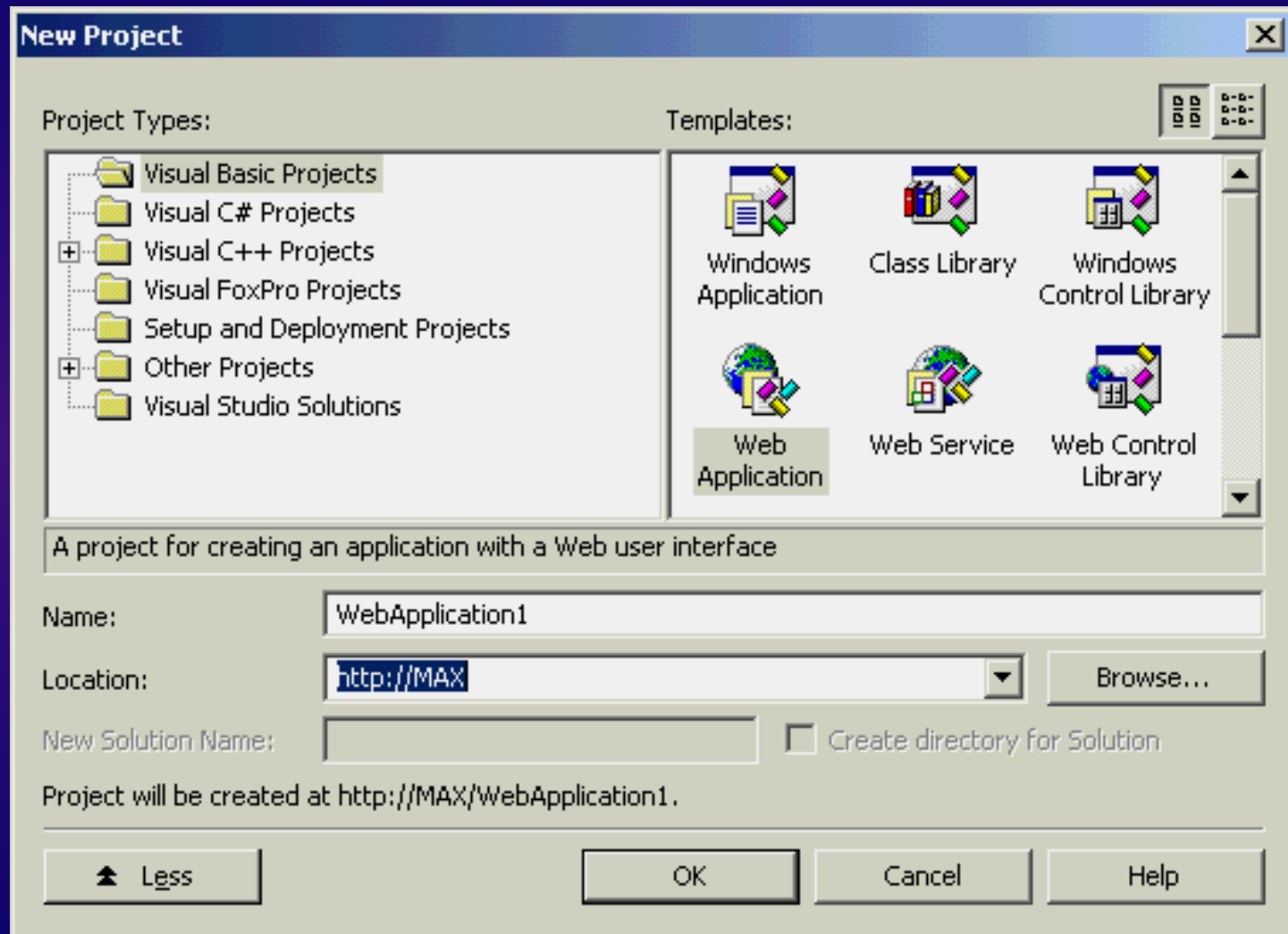
V. Building Apps with VS.NET Data



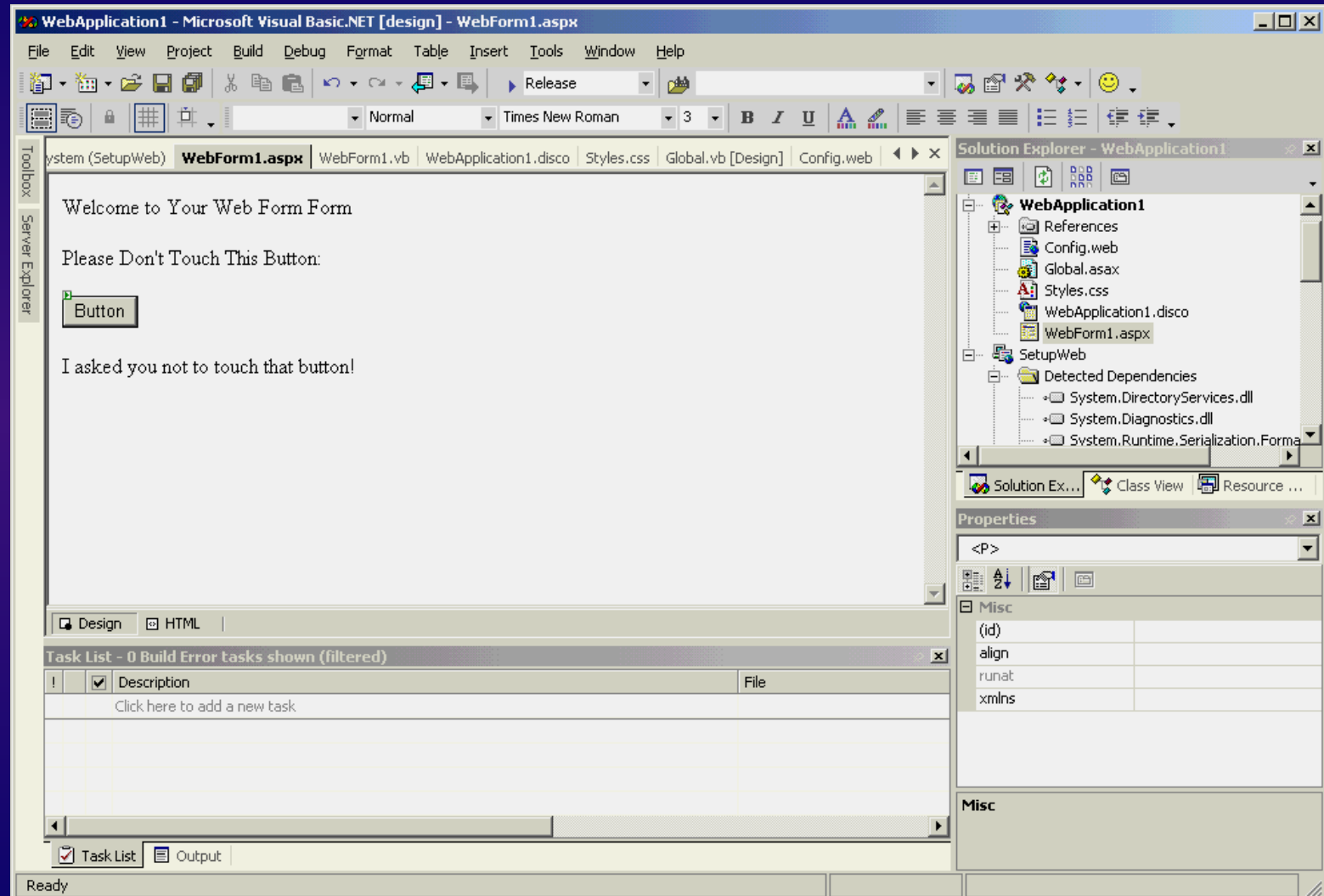
V. Building Apps with VS.NET ASP.NET

- ◆ The environment for building .NET apps
- ◆ WebForms
- ◆ Web Services
- ◆ The mechanisms

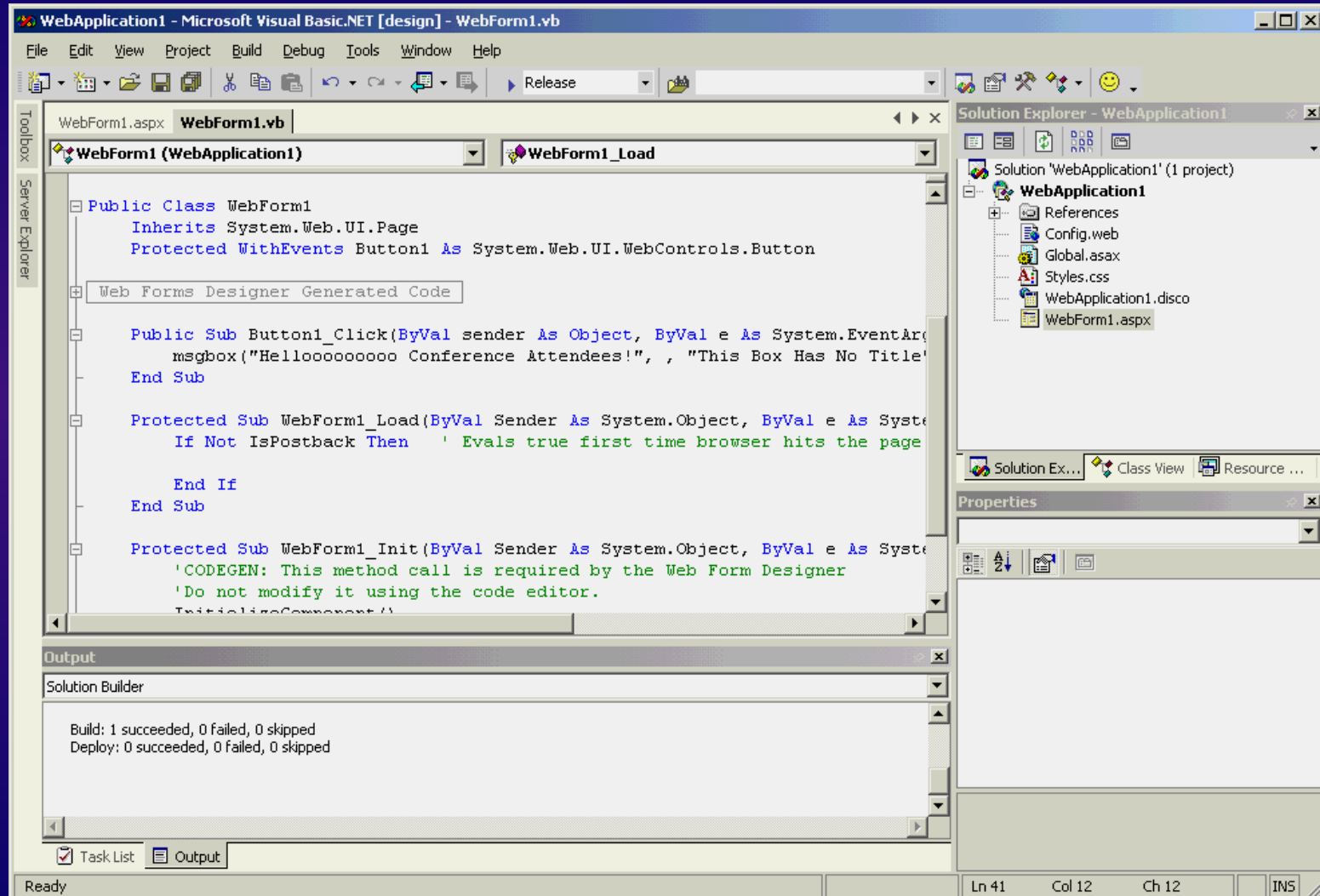
V. Building Apps with VS.NET ASP.NET



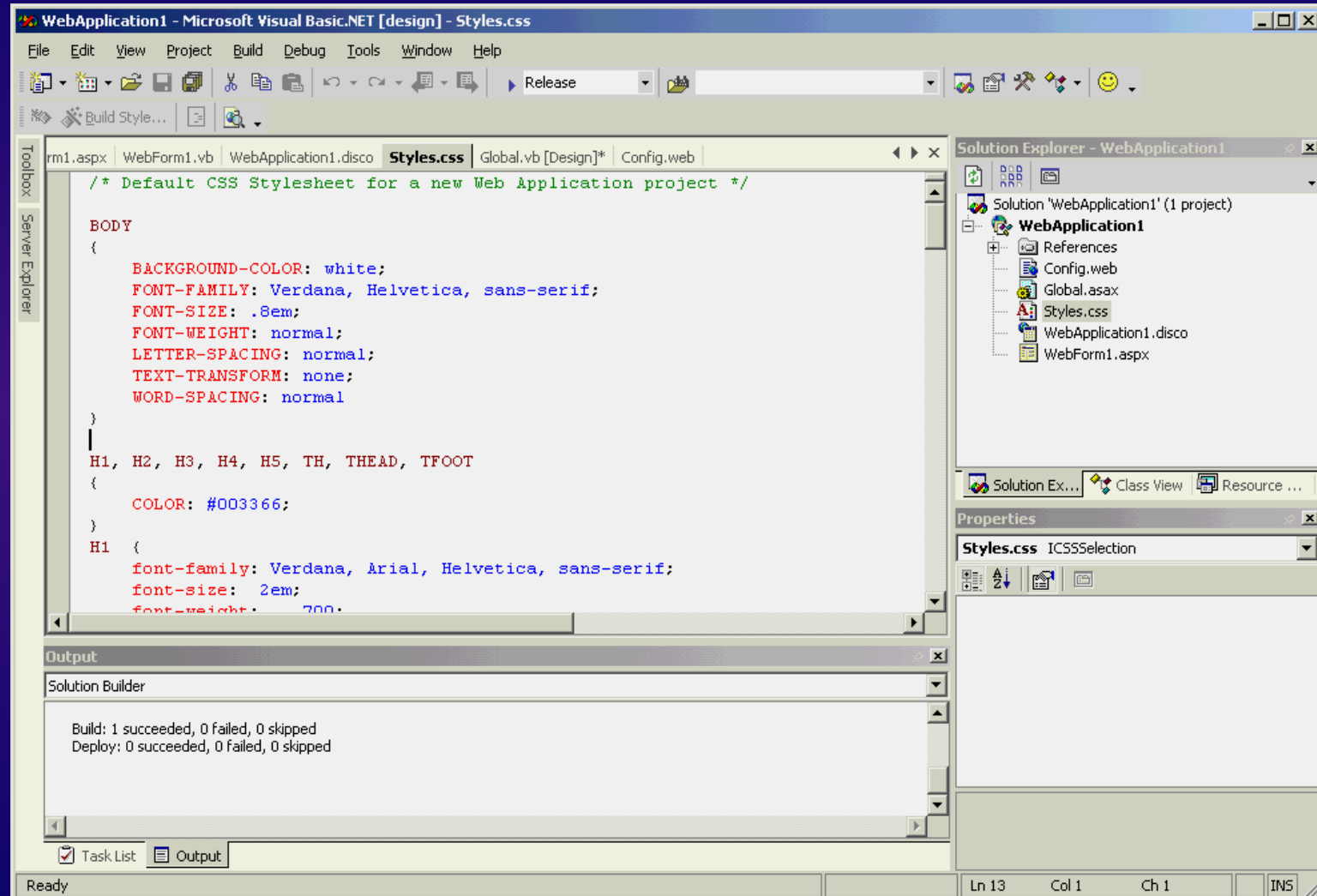
V. Building Apps with VS.NET ASP.NET



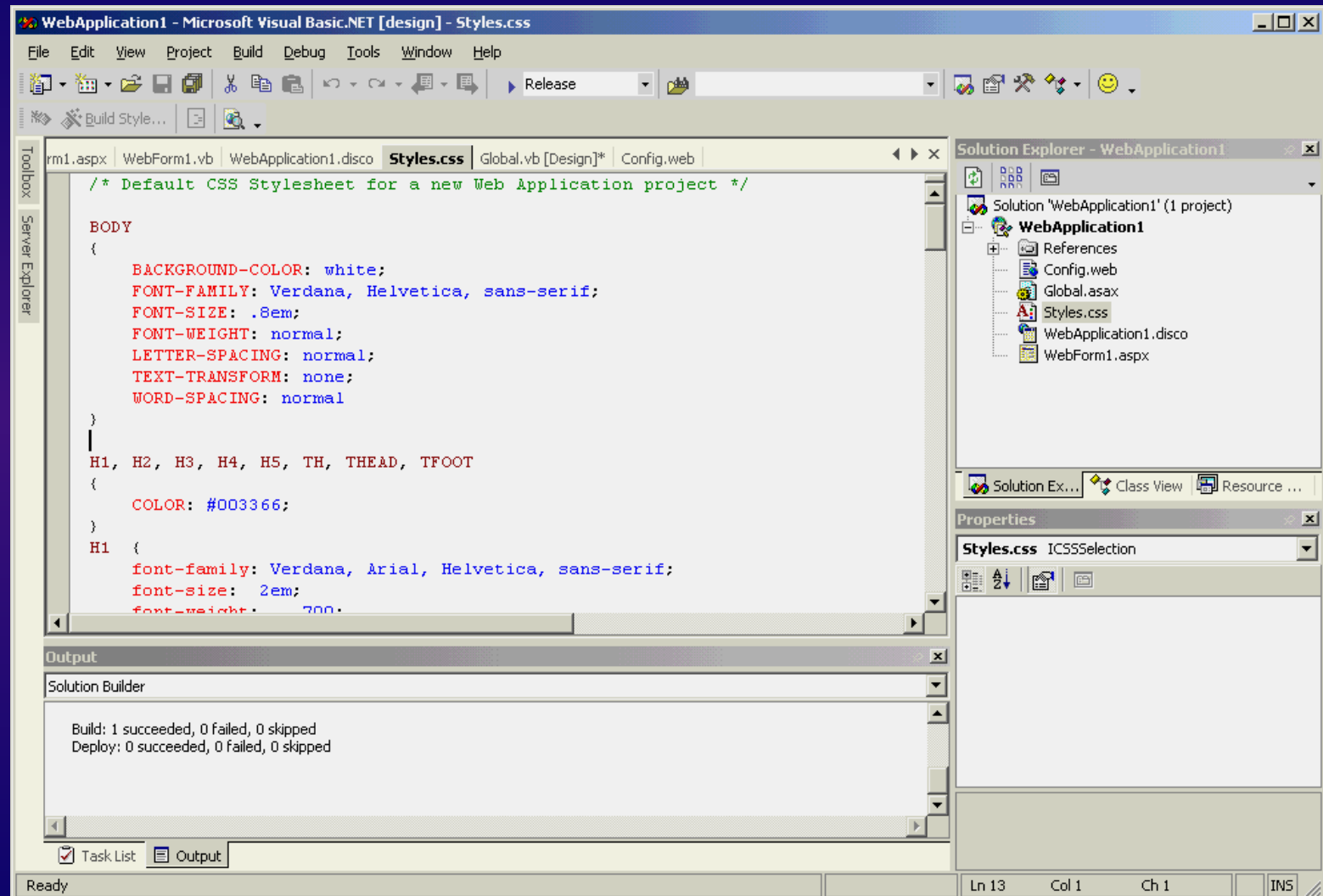
V. Building Apps with VS.NET ASP.NET



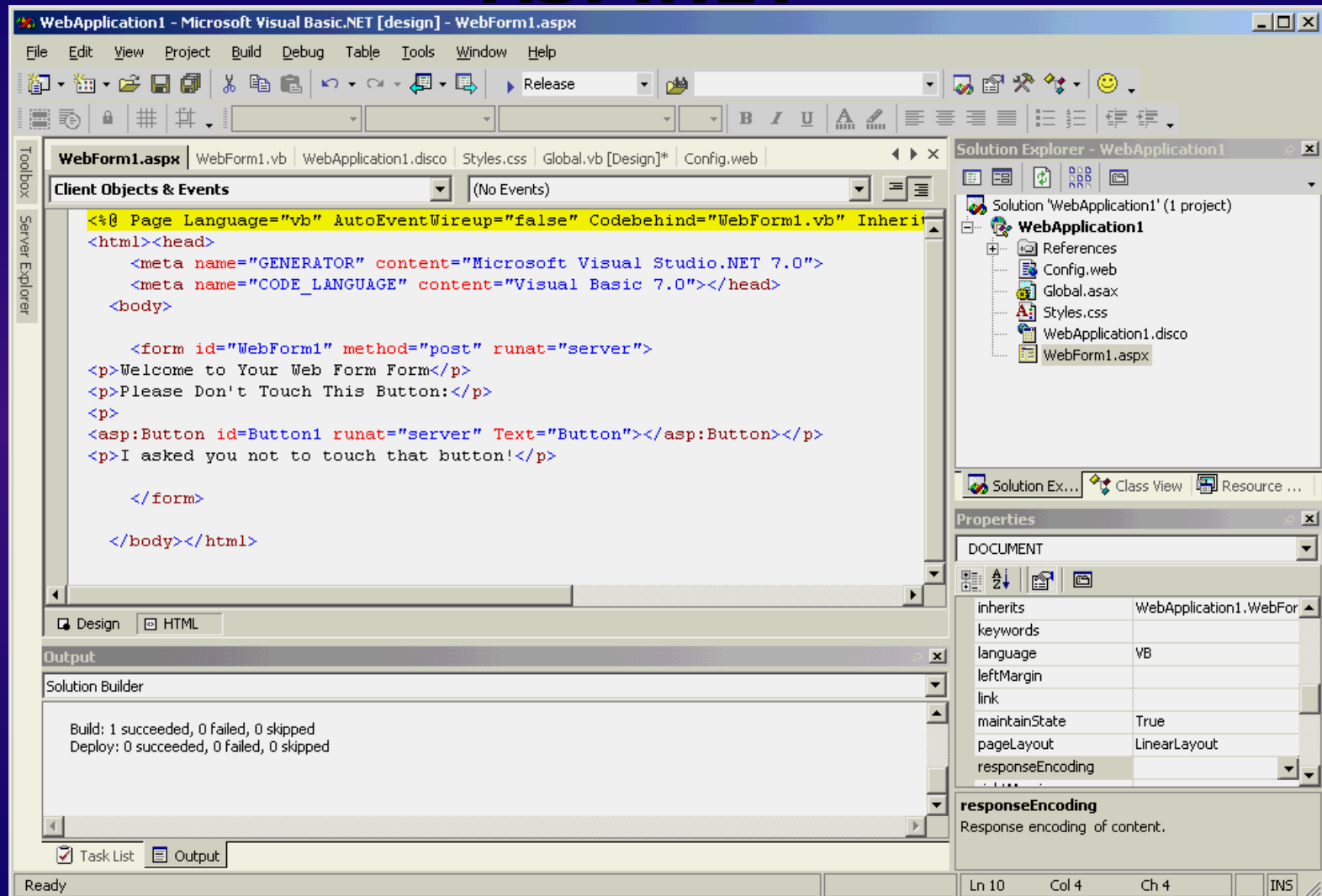
V. Building Apps with VS.NET ASP.NET



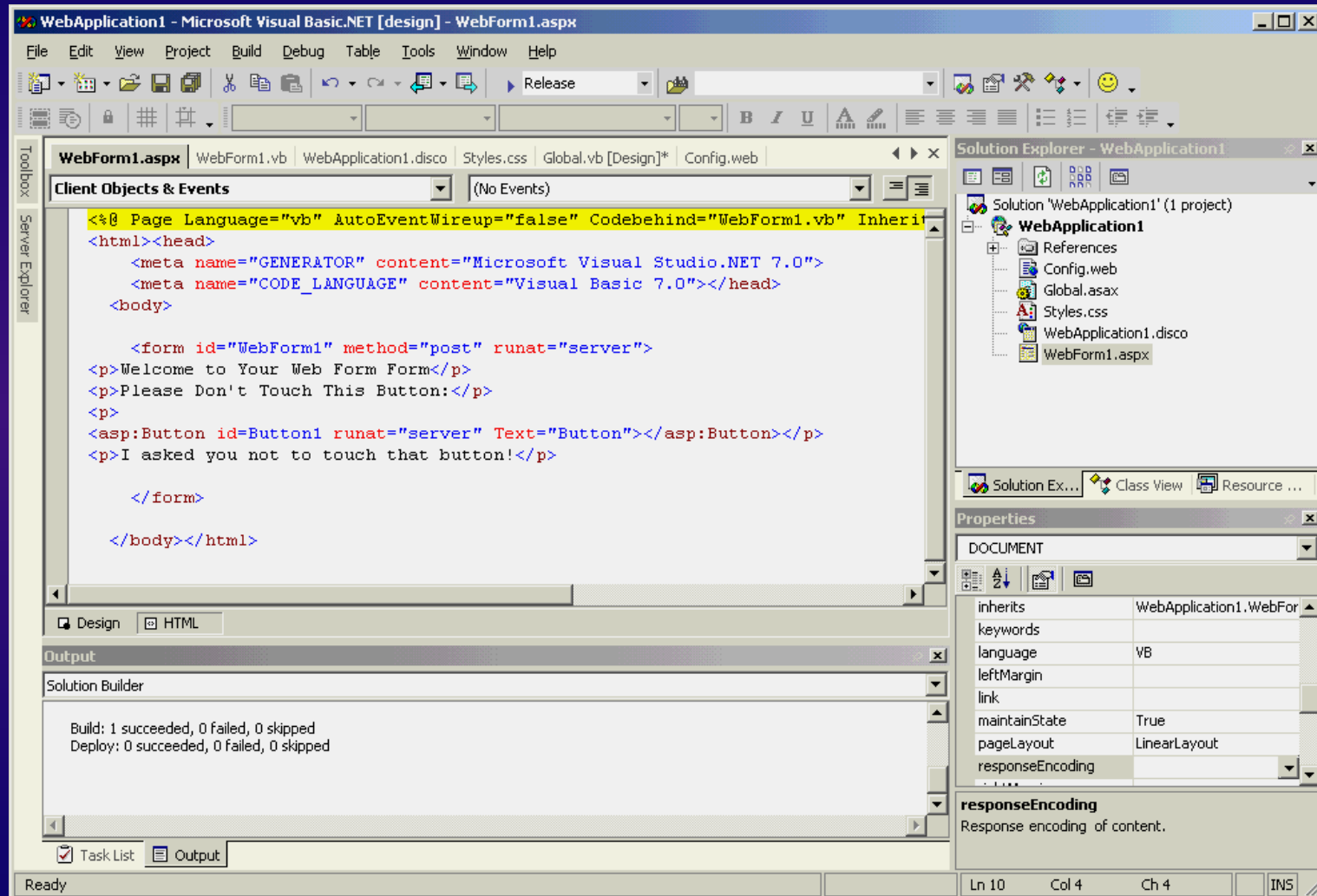
V. Building Apps with VS.NET ASP.NET



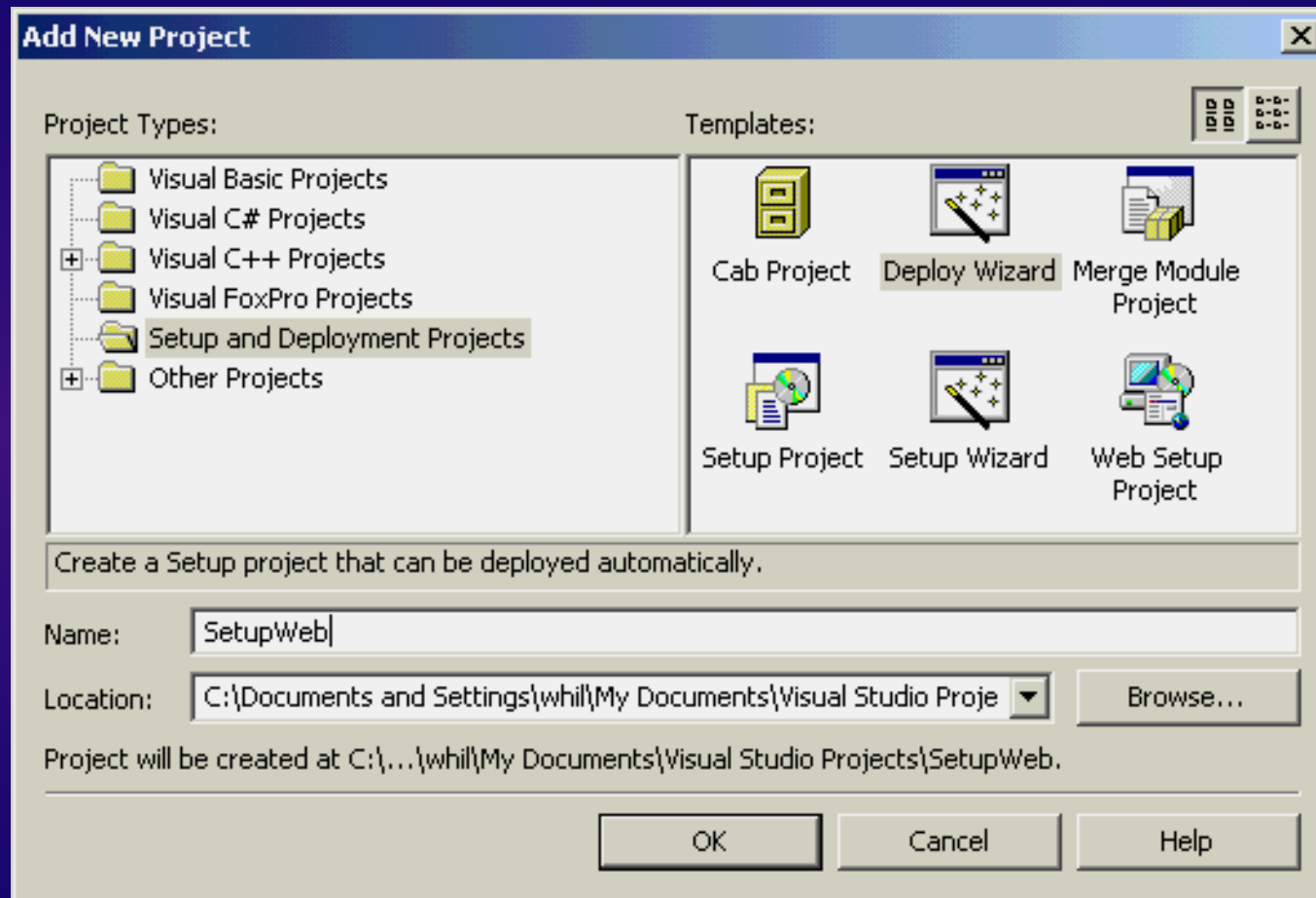
V. Building Apps with VS.NET ASP.NET



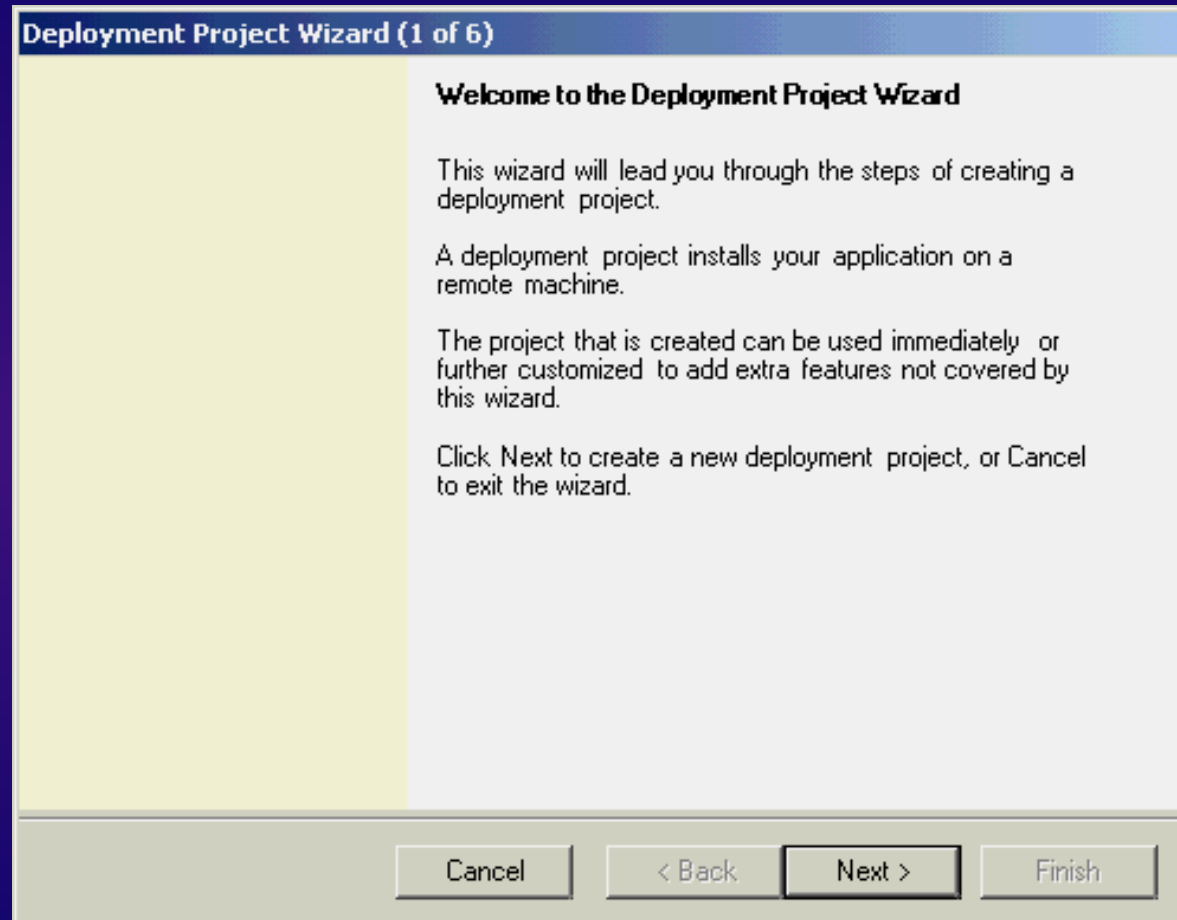
V. Building Apps with VS.NET ASP.NET



V. Building Apps with VS.NET Deployment



V. Building Apps with VS.NET Deployment




V. Building Apps with VS.NET Deployment


Deployment Project Wizard (2 of 6)

Choose a project type

The type of deployment project determines where and how files will be installed on a target computer.



What do you want to do?

 **Deploy an application to a remote machine**

- ☐ Deploy a rich client application
- ☒ Deploy a web application


Cancel < Back Next > Finish

V. Building Apps with VS.NET Deployment

Deployment Project Wizard (3 of 6)

Choose what project outputs to include

You can include outputs from other projects in your solution. Outputs can include files built by the project, source files, or content files.



Which project file groups do you want to include?

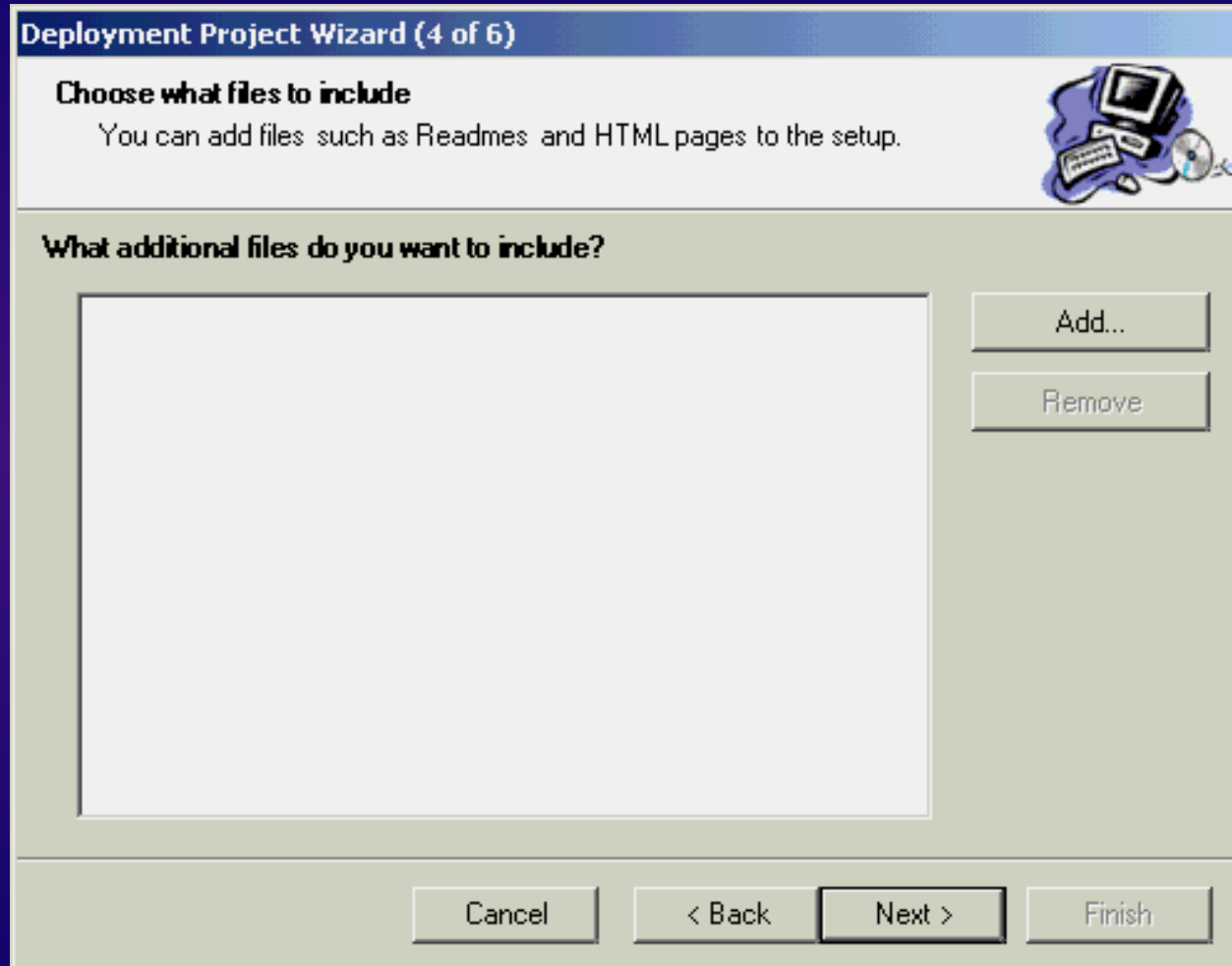
- ☒ Primary output from 'WebApplication1'
- ☒ Localized resources from 'WebApplication1'
- ☒ Debug Symbols from 'WebApplication1'
- ☒ Content Files from 'WebApplication1'
- ☒ Source Files from 'WebApplication1'

Description:

Contains all source files in the project.

Cancel < Back Next > Finish


V. Building Apps with VS.NET Deployment



V. Building Apps with VS.NET Deployment

Deployment Project Wizard (5 of 6)

Choose where to deploy to
Specify the remote machine to deploy to by providing its simple computer name.



Which remote machine do you want to deploy to?

Computer name:

Example: ComputerName

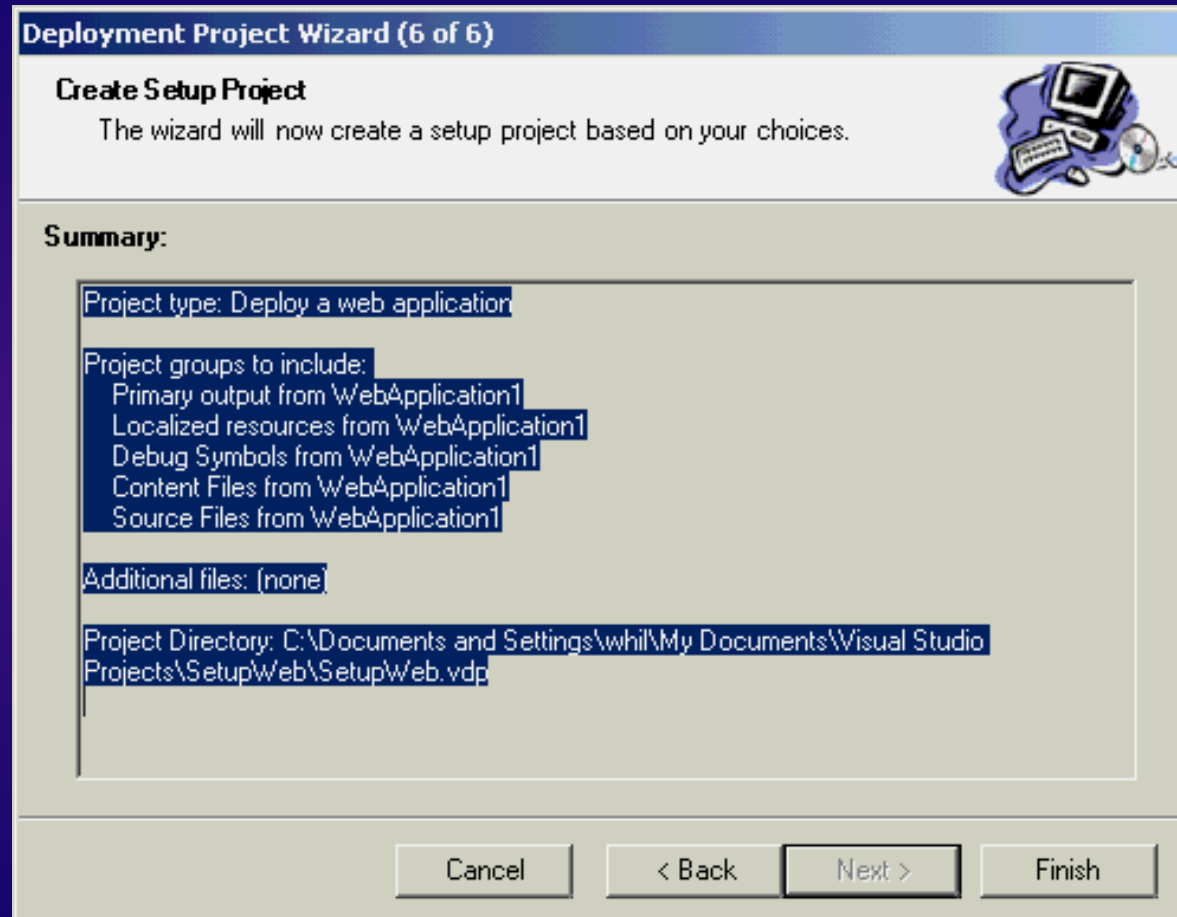
In order to deploy to a remote computer, the remote computer must have Visual Studio extensions installed and you must have administrative privileges on the remote computer.

Do you want to deploy this project now?

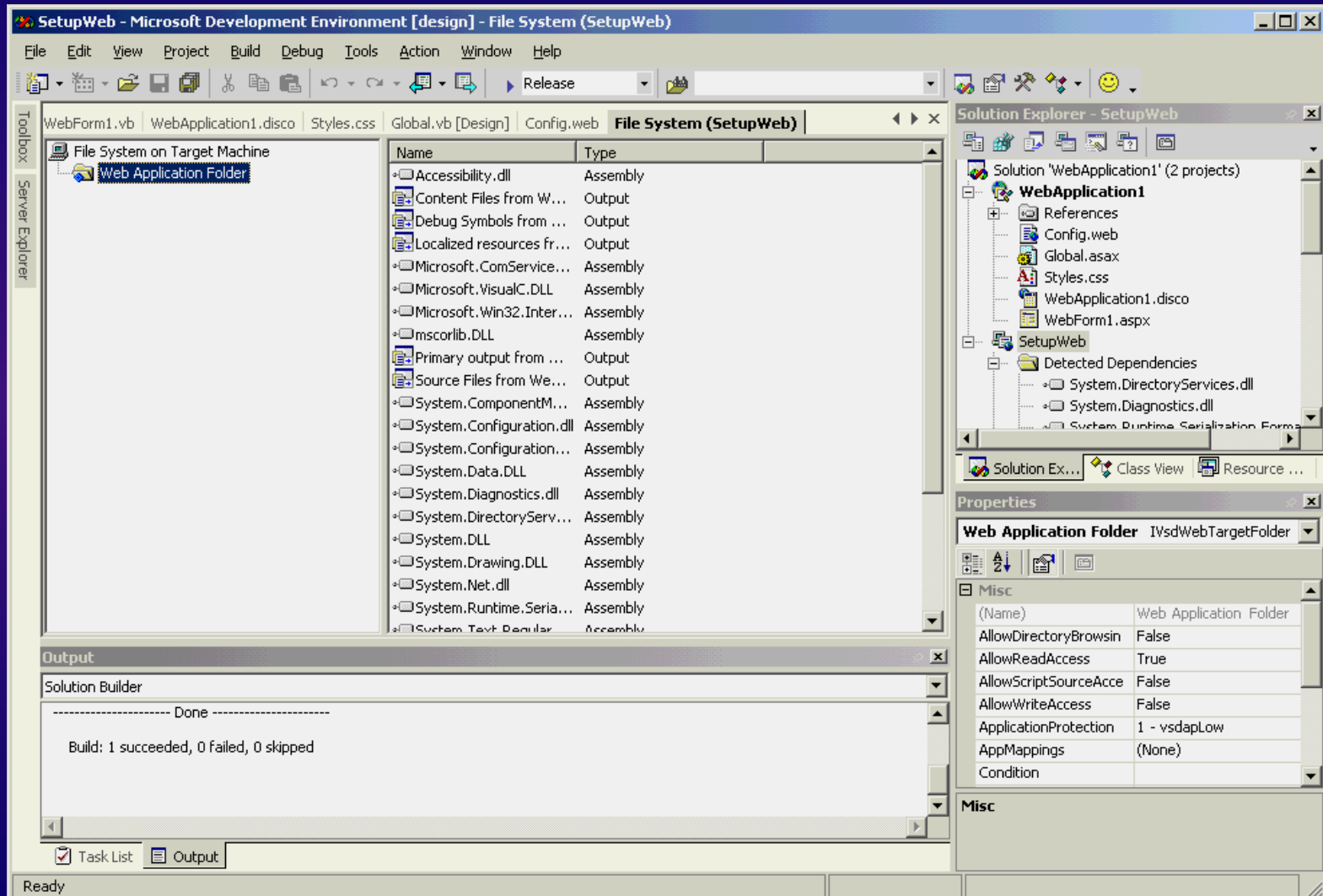
☐ Yes, create the project and deploy it to this remote machine immediately.

☒ No, create the project and I will deploy it later.

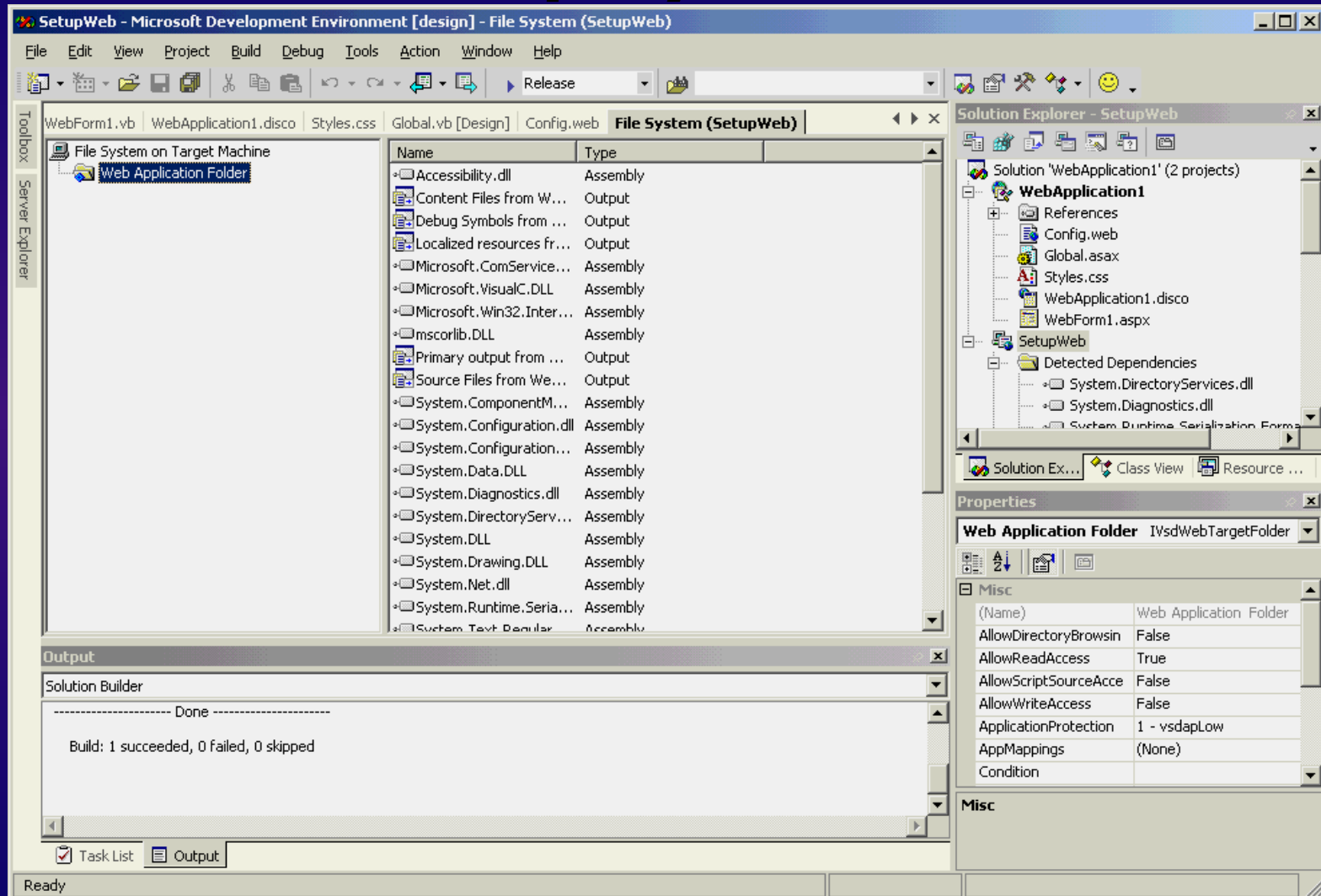
V. Building Apps with VS.NET Deployment



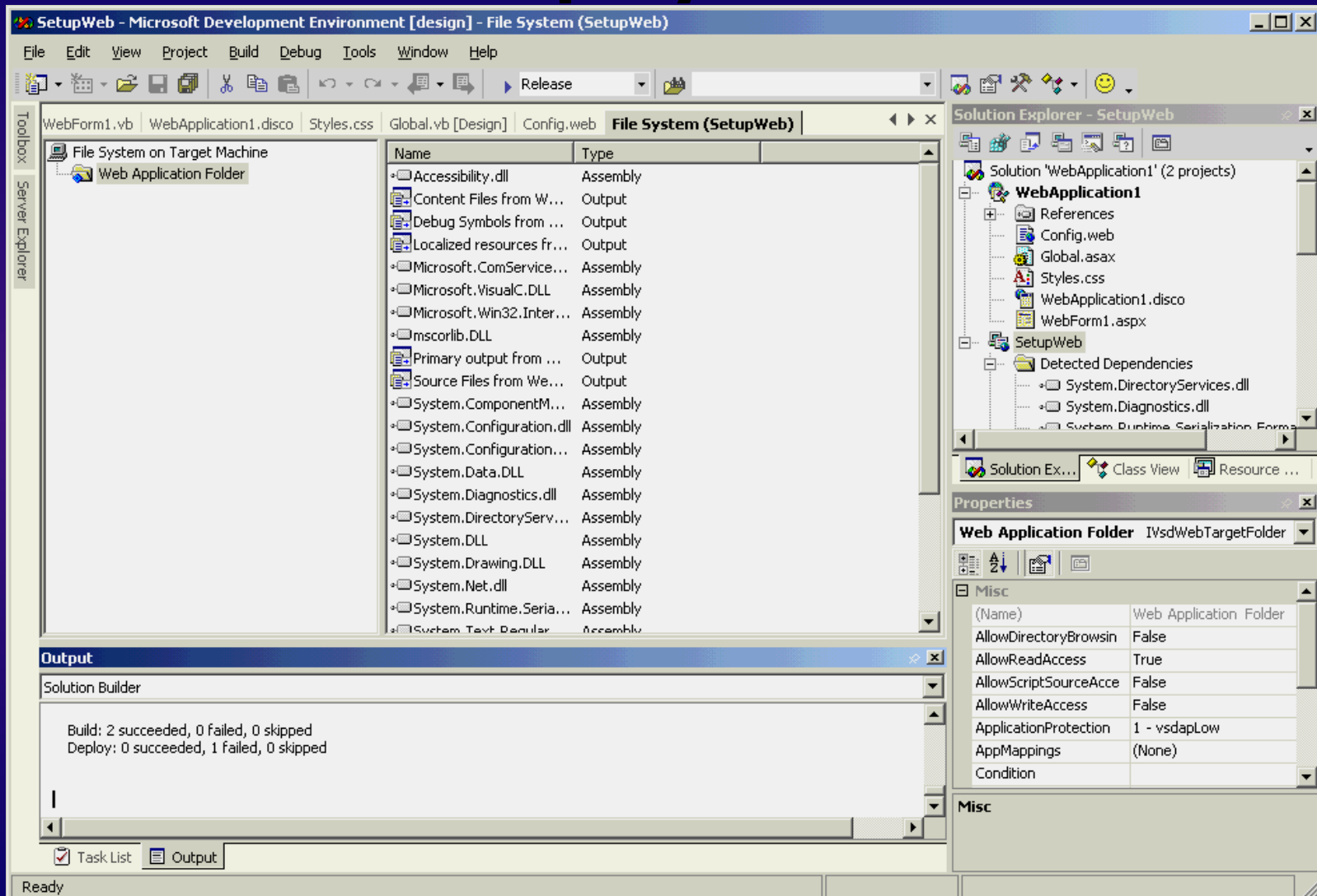
V. Building Apps with VS.NET Deployment



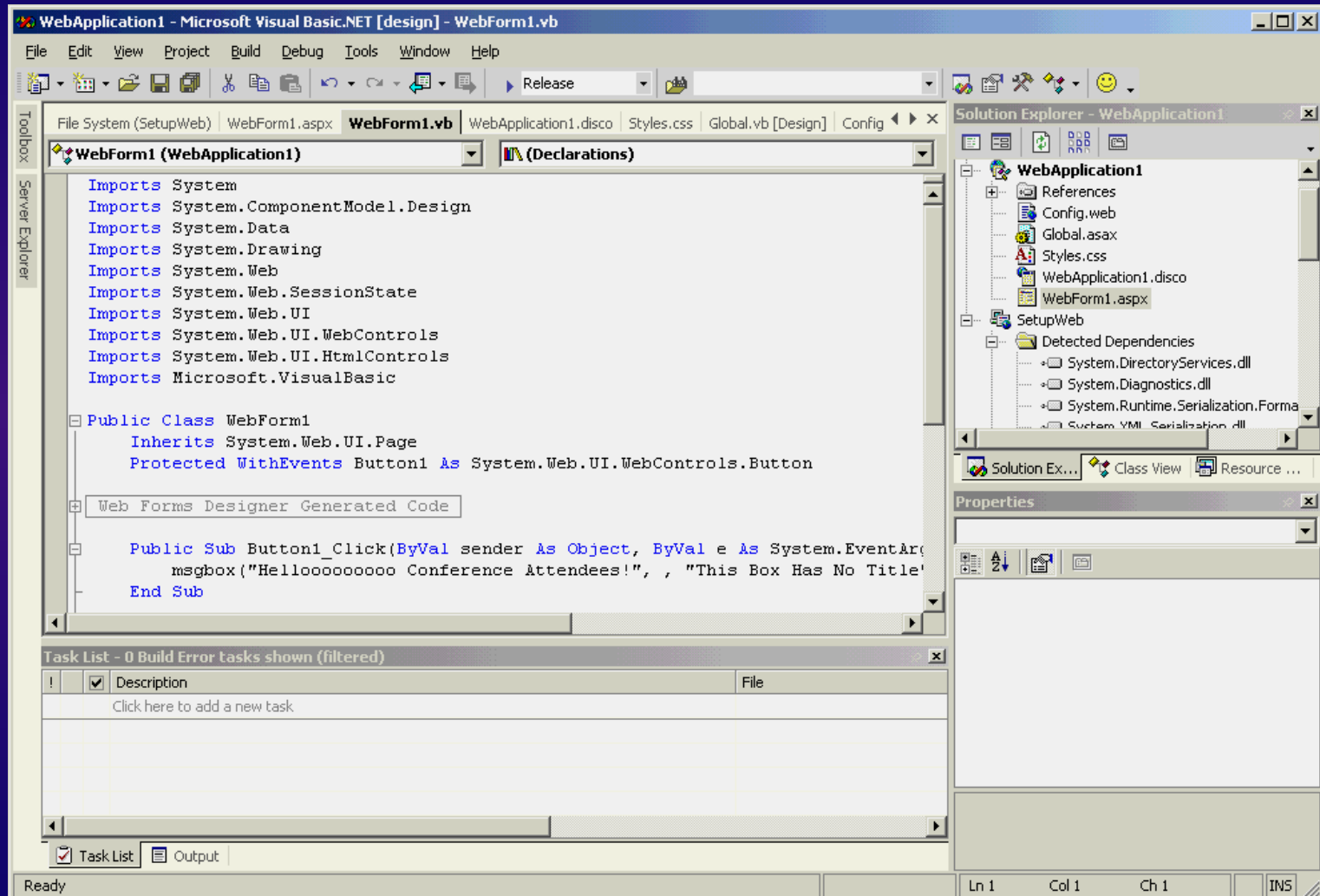
V. Building Apps with VS.NET Deployment



V. Building Apps with VS.NET Deployment



V. Building Apps with VS.NET Deployment



VI. Terminology – I

- ◆ Web services
- ◆ Managed code
- ◆ ASP.NET
- ◆ ASP+
- ◆ COM+ (Component Services)
- ◆ WinForms
- ◆ WebForms
- ◆ C# (“See Sharp”)
- ◆ CLR (“Common Language Runtime”)

VI. Terminology - II

- ♦ **Common Type System**
- ♦ **IDL (Interface Definition Language)**
- ♦ **Exception handling**
- ♦ **Managed execution**
- ♦ **Managed data**
- ♦ **Metadata (wrt CLR)**
- ♦ **MSIL (Microsoft Intermediate Language)**
- ♦ **JIT Compiler**
- ♦ **PE (Portable Executable)**
- ♦ **COFF (Common Object File Format)**
- ♦ **Type-safe code**

VI. Terminology - III

- ◆ **CLR (“Common Language Runtime”)**
- ◆ **Assembly (static and dynamic)**
- ◆ **Assembly Manifest**
- ◆ **Shared Names**
- ◆ **Application Domain**
- ◆ **Runtime Hosts**
- ◆ **Value Types**
- ◆ **Namespaces**
- ◆ **Common Language Specification**
- ◆ **Code Access Security**
- ◆ **Role-based Security**

VI. Terminology - IV

- ◆ **.ASMX files**
- ◆ **Discovery (“Web Service”)**
- ◆ **.disco files**
- ◆ **SOAP (“Simple Object Access Protocol”)**
- ◆ **SDL (“Service Description Language”)**
- ◆ **State management**
- ◆ **Windows Service Applications**
- ◆ **ADO.NET**
- ◆ **Application (vs. Assembly)**
- ◆ **Garbage Collection**

VII. Whither Our Fox?

- ♦ **The Facts**
- ♦ **One Possible Future – Marketing**
- ♦ **One Possible Future – Product**

Thank-You-Good-Night!

**Please remember to fill out your
evaluation.**