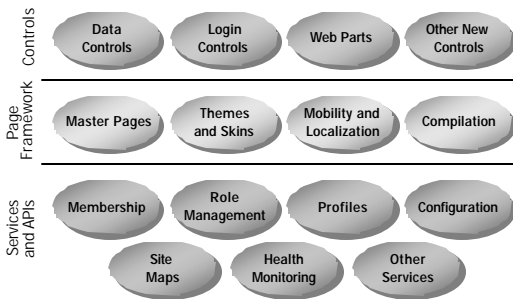


ASP.NET 2.0 and Visual Studio 2005 Overview

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New Features at a Glance



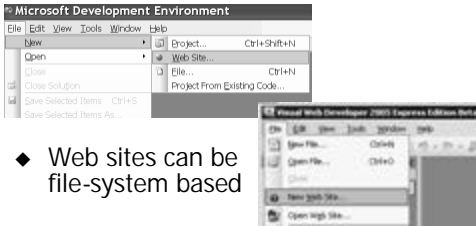
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IDE Changes

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Getting Started with VS 2005

- ◆ No need to create a project
- ◆ Instead create a new Web Site



- ◆ Web sites can be file-system based

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VS 2005 Highlights (1 of 6)

- ◆ Editor doesn't reformat HTML unless you ask it to!
- ◆ Selection preserved when switching between Design and Source (HTML) views
- ◆ Can now validate HTML against additional browsers and XHTML
- ◆ Edit and Continue is reborn!

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VS 2005 Highlights (2 of 6)

- ◆ Code-behind and inline code are equal citizens
 - Full support for IntelliSense for both styles
 - Choose your style in Add New Item dialog
- ◆ Source changes tracked in margin
 - Unsaved changes in yellow
 - Recently saved changes in green

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VS 2005 Highlights (3 of 6)

- ◆ IntelliSense works everywhere
 - HTML
 - Code
 - Page directives
 - Web.config
 - Design view
 - Technically these are smart tags

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VS 2005 Highlights (4 of 6)

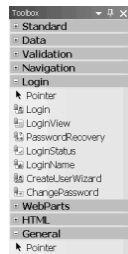
- ◆ Speaking of Config Files
 - Three ways to edit settings
 1. Use IntelliSense within web.config file
 2. Select ASP.NET tab inside of IIS Admin application, click Edit Configuration btn
 - Extensive control of web.config settings
 3. Select Website | ASP.NET Configuration
 - Not as complete as IIS Admin tool
 - Includes Security Setup wizard
 - Works with non-IIS sites

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VS 2005 Highlights (5 of 6)

- ◆ Creating event handlers now consistent across languages (VB or C#)
 - Can do it from property sheet for both languages
- ◆ Moving windows easier
 - Thanks to window guides
- ◆ Toolbox categorizes controls



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VS 2005 Highlights (6 of 6)

- ◆ VS ships with personal Web server
 - No need to create a virtual root
 - Next version of Cassini Web server
- ◆ Lots of ways to connect to a site



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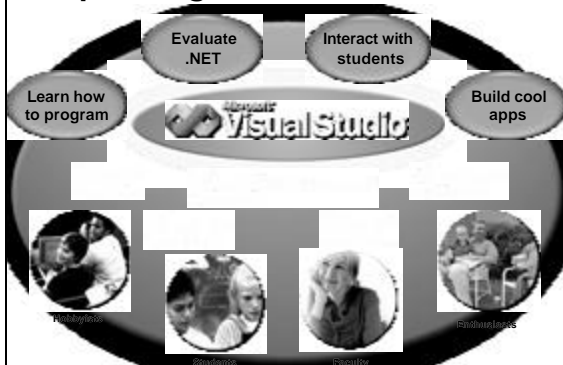
And Did I Mention...

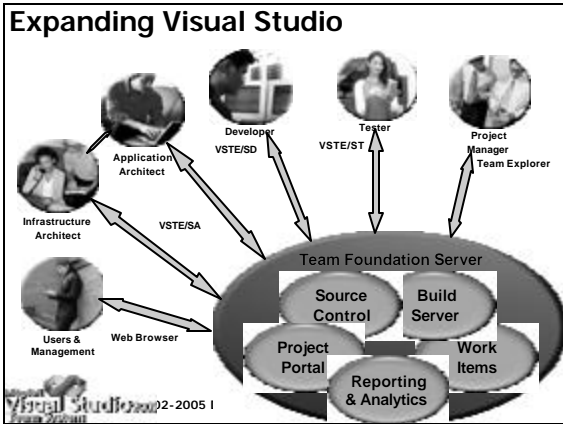
- ◆ Express Editions
 - low-cost entry point for enthusiast/hobbyist/part-time dev
- ◆ Team System
 - An expanded version of VS that speaks to the whole design/development/testing life-cycle
 - client/server, collaboration based
 - robust/scalable source control
 - work item (e.g., bugs) tracking
 - unit testing, load testing
 - code analysis
 - project portal
 - lots more...

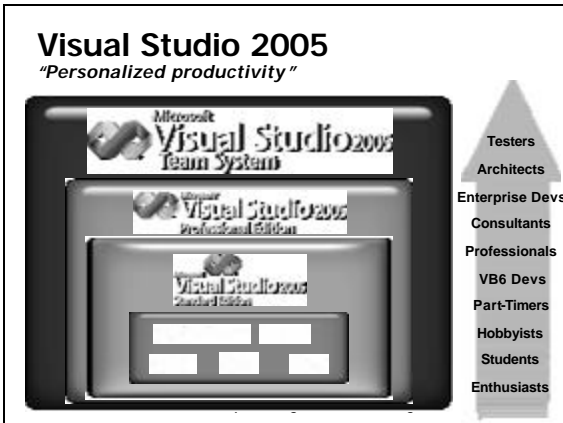
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Expanding Visual Studio







Data Controls

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Binding Data to Controls

- ◆ ASP.NET 1.x supported rich 1-way binding syntax but you still had to write quite a bit of code to get data in and out of controls
- ◆ ASP.NET 2.0 supports two-way (read/write) binding with no code in many situations

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Data Source Control

- ◆ A family of controls that assist in data binding
 - Middleman between data bound controls and data sources
- ◆ Types of Data Source Controls
 - Tabular
 - SqlDataSource
 - AccessDataSource
 - ObjectDataSource
 - Hierarchical
 - XmlDataSource
 - SiteMapDataSource

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New 2.0 Data-Bound Controls

- ◆ List Controls
 - BulletedList
- ◆ Composite Controls
 - GridView
 - DetailsView
 - FormView
- ◆ Hierarchical Controls
 - TreeView
 - Menu

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GridView Control

Example: GridView.aspx

- ◆ A “code-less” DataGrid
- ◆ Walk-through of grid with automatic sorting (ascending & descending), pagination
 1. Add GridView to page
 2. Using GridView Tasks pane, choose DataSource
 3. Check EnablePaging & EnableSorting

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GridView with Updating

Example: GridViewUpdate1.aspx

- ◆ Can also be done without code
 1. Add GridView to page
 2. Choose Data Source
 - On “Configure the select statement” page
 - Click Advanced Options
 - Check “Generate Insert, Update, and Delete statements”
 3. Configure GridView
 - Check “Enable Editing” and/or Enable Deleting

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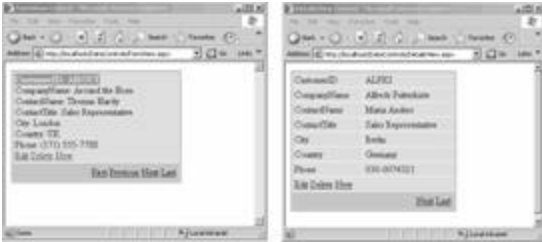
The Single-Record Form Problem

- ◆ ASP.NET 1.x provided no help to the developer having to create a single-record “form” view of data
- ◆ ASP.NET 2.0 gives us two solutions
 - DetailsView – fixed look (supports styles but no field templates); can’t get at individual fields
 - FormView – fully templated (VS will generate basic template for you); will work with validation controls
- ◆ Both support editing, pagination

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FormView vs. DetailsView Controls



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Master Pages and Navigation

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Navigation

- ◆ Three Pieces
 1. Navigation SiteMap
 - Web.sitemap XML file
 - Allows you to create a sitemap for navigation purposes
 2. SiteMapDataSource
 - Reads Web.sitemap file and makes available to TreeView control
 3. Controls
 - TreeView – displays navigation tree
 - Menu – displays flyout menus
 - SiteMapPath – "breadcrumb" path

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Master Pages

- ◆ Major shortcoming of ASP.NET 1.x: lack of any easy way to create page templates that other pages can inherit
- ◆ Enter ASP.NET 2.0 Master Pages
 - Easy and powerful way to create a common layout for all (or a subset of) pages in site
 - Support for multiple levels of master pages
 - WYSIWYG support for master pages in Visual Studio

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Mastering Master Pages

- ◆ Arrange content on master page (.master extension)
 - Add placeholders for content pages using the ContentPlaceHolder element
- ◆ Create pages based on master page
 - Use MasterPageFile attribute in page directive
 - Add content to Content element

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Master Pages Demo

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Login Controls and Security

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New Security Parts (1 of 2)

- ◆ Forms Authentication
 - Cookieless authentication now supported
- ◆ Login Controls
 - UI controls for managing login of users
- ◆ Membership
 - Standardized solution for storing forms authentication data
 - Membership.ValidateUser method
 - Login controls wrap up membership service
 - Provider-based

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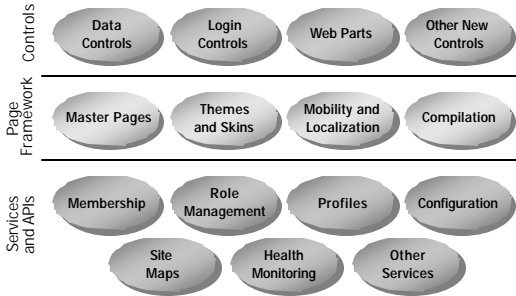
New Security Parts (2 of 2)

- ◆ Role Management
 - Simplifies authorization code you have to write
 - Provider-based
- ◆ Personalization
 - Simplifies storing of site personalization data in user profiles
 - Support for strongly-typed profile properties
 - Provider-based

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New Features at a Glance



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Forms Authentication

```
<authentication mode="Forms">
  <forms name="name"
    cookieless=UseCookie|UseUri|AutoDetect|
      UseDeviceProfile
    defaultUrl={URL}
    domain=domain name
    loginUrl="url"
    protection="All|None|Encryption|Validation"
    timeout="30"
    path="/"
    requireSSL="true|false"
    slidingExpiration="true|false">
  </forms>
</authentication>
```

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Using Security Setup Wizard

- ◆ Walks you through setting up authentication, membership provider, users, and role management for Web site
- ◆ Can setup Forms or Windows auth
- ◆ Start wizard from Web Site Admin Tool (Website | ASP.NET Configuration)



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Login Controls

- ◆ Login – log in users (goes on login page)
- ◆ LoginView – displays different views based on whether user is authenticated
- ◆ PasswordRecovery – recover or reset lost password
- ◆ LoginStatus – displays login or logout link
- ◆ LoginName – displays login name for authenticated users
- ◆ CreateUserWizard – steps user through wizard to create new account
- ◆ ChangePassword – changes password for user



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Login Controls Demo

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Membership Service

- ◆ Saves you from having to manage users and passwords
- ◆ Login controls may obviate need to directly work with the classes in many cases
- ◆ Choice of providers (SQL Server, Access, etc.)
- ◆ Example Uses
 - Authenticate User
 - Membership.ValidateUser()
 - Find User by Email address
 - Membership.FindUsersByEmail()
 - Estimate number of users online
 - Membership.GetNumberOfUsersOnline()

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Role Service

- ◆ Simplifies authorization using roles
- ◆ Manage roles at design time using ASP.NET Web Admin tool
 - Or use Roles and RoleProvider classes at runtime
- ◆ Use LoginView control to display custom content per role
 - Order RoleGroup elements from highest to lowest precedence (e.g., Admin first, etc.)
- ◆ Or use User.IsInRole() method from code

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Role Service

- ◆ Role data carried between pages by ASP.NET using encrypted cookies
- ◆ Reduces round-trips to database for role information

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LoginView Roles Example LoginView.aspx

```
<asp:LoginView ID="lvRoles" Runat="server">
  <RoleGroups>
    <asp:RoleGroup Roles="Admins"><ContentTemplate>
      This message prints for members of the Admins group.
    </ContentTemplate>
  </asp:RoleGroup>
    <asp:RoleGroup Roles="Managers"><ContentTemplate>
      This message prints for members of the Managers
      group.
    </ContentTemplate>
  </asp:RoleGroup>
    <asp:RoleGroup Roles="Users"><ContentTemplate>
      This message prints for members of the Users group.
    </ContentTemplate>
  </asp:RoleGroup>
</RoleGroups>
</asp:LoginView>
```

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IsInRole Roles Example Roles.aspx.cs

```
protected void Page_Load(...)
{
    // Order by highest to lowest
    if (User.IsInRole("Developers"))
        lblRole.Text = "Developer. You rule!";
    else if (User.IsInRole("Managers"))
        lblRole.Text = "Manager. So?";
    else if (User.IsInRole("Users"))
        lblRole.Text = "Lowly user";
    else
        lblRole.Text = "Not logged in.";
}
```

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Personalization Service

- ◆ No need to create fields in a database to keep track of personalization data
- ◆ Allows you to strongly type your personalization data
- ◆ You maintain personalization data in user profiles

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Creating a Profile

```
<profile
defaultProvider="AspNetSqlProvider">
  <properties>
    <add name="sex" type="System.String"/>
    <add name="age" type="System.Int32" />
    <add name="color"
type="System.String"/>
    <add name="birthdate"
type="System.DateTime" />
  </properties>
</profile>
```

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Reading/Writing Profile Data Profiles.aspx

```
protected void cmdSave_Click(...)
{
    Profile.sex = txtSex.Text;
}
protected void cmdGet_Click(...)
{
    txtSex.Text = (string)Profile.sex;
}
```

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Personalization Profiles

- ◆ Especially useful for customizing...
 - Themes
 - Web Parts

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Themes and Skins

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Themes & Skins

- ◆ Theme
 - Collection of property settings (skins) that allow you to define a standard look of pages and controls
- ◆ Skin
 - Set of visual attributes applied to a control

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What's Themable?

- ◆ Properties that control appearance
- ◆ Does not include content or behavior attributes such as AllowPaging, AutoPostBack

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Creating a Theme – Basics

- ◆ Create folder under your site's Themes folder
- ◆ Theme name is derived from folder name
- ◆ Theme folder may contain .skin, .css, and image files

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Creating a Theme – Steps

1. Add theme folder to app using Add Folder|Theme folder
2. Add .aspx page to theme folder.
3. Add controls to page
4. Customize the look of the controls
5. Remove ID attribute and any attributes that you do not want to be part of theme (e.g., Text)
6. Add SkinID attribute to any control to create alternate skins
7. Remove all non-control content from file
8. Rename file to .skin extension

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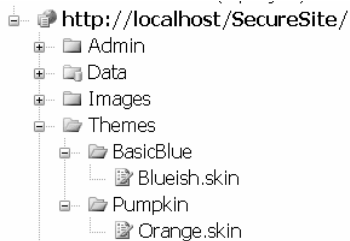
Applying Themes

- ◆ Add attribute to Page directive of page
 - Theme attribute
 - Theme settings override any local settings
 - StyleSheetTheme attribute
 - Local settings override theme settings
 - Themes can also be applied programmatically in the Page_PreInit event by setting the Page's Theme or StyleSheetTheme property
- ◆ Reference SkinIDs when appropriate to get alternate skin for control

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Theme & Skin Example AdditionalTopics/ThemedSite/Themes



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Theme & Skin Example

Pumpkin\Orange.skin

```
<asp:Label Runat="server" ForeColor="Orange"
Font-Names="Comic Sans MS"></asp:Label>
<asp:TextBox Runat="server" ForeColor="Orange"
Font-Names="Comic Sans MS"></asp:TextBox>
<asp:Button Runat="server" ForeColor="Orange"
Font-Names="Comic Sans MS" />
...
<asp:Label SkinId="Reverse" Runat="server"
ForeColor="White" BackColor="DarkOrange" Font-
Names="Comic Sans MS" ></asp:Label>
<asp:TextBox SkinId="Reverse" Runat="server"
ForeColor="White" BackColor="DarkOrange" Font-
Names="Comic Sans MS"></asp:TextBox>
```

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Theme & Skin Example

ThemedPage.aspx

```
<%@ Page Language="VB"
Theme="Pumpkin" ... %>
...
<asp:TextBox
SkinID="Reverse" ID="txtAge"
Runat="server" Width="63px"
Height="22px">
```

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Themes

- ◆ Can also be set dynamically from code
- ◆ Need to set theme in Page_PreInit event

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Other Topics

- ◆ Caching Enhancements
- ◆ Cross-Page Posting
- ◆ Compilation Improvements
- ◆ Validation Groups

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Caching Dependencies

- ◆ Work with SQL Server 7/2000
 - Works by ASP.NET polling database
- ◆ Work even better with SQL Server 2005
 - No polling necessary

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Creating SQL Cache Dependency on SqlDataSource

- ◆ Set a few properties in property sheet



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Creating SQL Cache Dependency from Code

```
Cache.Insert("dsTitles",  
dsCache, new  
SqlCacheDependency("pubs",  
"titles")
```

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Cross-Page Posting

- ◆ Ability to use Web server controls even when posting across pages
- ◆ Use PostBackUrl property of button control to indicate target of post
- ◆ On Target page, you can retrieve control values using code like...

```
strValue =  
PreviousPage.FindControl("txtName")
```

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What's New in Compilation

- ◆ Autocompile anything
 - CS files, VB files, RESX files, and so on
 - Simply drop files into special directories
 - Extensible with custom build providers
- ◆ New code-behind model
 - Fixes fragilities in version 1
 - Relies on partial class support in compilers
- ◆ Precompile and deploy without source
- ◆ Much richer Copy Project menu

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Precompilation

- ◆ Precompile.axd precompiles sites in place to avoid first-access delays



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Deploying without Source

- ◆ Aspnet_compiler.exe precompiles sites and deploys without source code
- ◆ Accessible from Visual Studio via Build|Publish menu

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Validation Groups

ValidGroups.aspx

- ◆ Allows you to group together related validation controls
- ◆ Button in one group will not trigger controls in a separate group

```
<asp:Button ID="cmdSearchCity" Runat="server"
Text="Search" ValidationGroup="CitySearch" />

<asp:RequiredFieldValidator ID="rfvSearchName"
Runat="server" ErrorMessage="Enter name."
ControlToValidate="txtSearchName"
ValidationGroup="NameSearch">
</asp:RequiredFieldValidator>
```

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Conclusion

- ◆ ASP.NET 2.0 is an exciting new update
- ◆ Visual Studio 2005 gets much better
- ◆ Data controls make two-way data binding easy and reduce code significantly
- ◆ Master pages make visual inheritance of a page template a snap
- ◆ Numerous security enhancements make the management of users, roles, profiles so much easier
- ◆ Themes allow you to provide a consistent & configurable look to pages
- ◆ Other cool features include cache dependencies, validation groups, x-page posting, precompilation, etc.
- ◆ The above features and more make ASP.NET 2.0 / VS 2005 a must-have upgrade

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Thank You

- ◆ Download materials (slides/samples)
 - cfs.fhcrc.org

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