

# ASP.NET 2.0 and Visual Studio 2005 Overview

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# Paul Litwin

## ◆ Developer

- Focus: ASP.NET, ASP, VB, C#, SQL Server, ...
- MCSD
- Microsoft MVP
- Lead Programmer with Fred Hutchinson Cancer Research Center

## ◆ Co-Founder and Senior Trainer

- Deep Training
  - [www.deeptraining.com](http://www.deeptraining.com)

## ◆ Conference Chair/Speaker

- Chair, Microsoft ASP.NET Connections
- Member INETA Speakers Bureau

## ◆ Author

- Author/co-author of a dozen books, including...
  - *ASP.NET for Developers*
  - *Access Cookbook, 2<sup>nd</sup> edition*
  - *Access 2002 Desktop/Enterprise Dev Handbook*

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# This Talk Brought to You By...

- ◆ INETA
  - [www.ineta.org](http://www.ineta.org)

# New Features at a Glance

Controls

Data Controls

Login Controls

Web Parts

Other New Controls

Page Framework

Master Pages

Themes and Skins

Mobility and Localization

Compilation

Services and APIs

Membership

Role Management

Profiles

Configuration

Site Maps

Health Monitoring

Other Services

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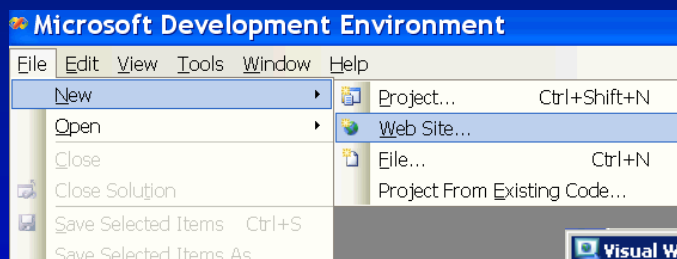
# IDE Changes

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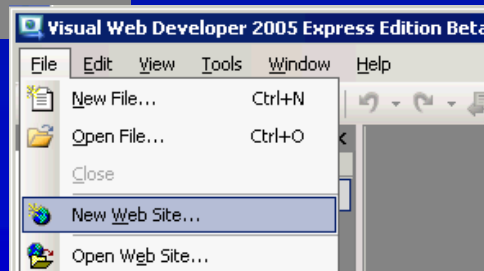
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# Getting Started with VS 2005

- ◆ 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)

- ◆ 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

## VS 2005 Highlights (2)

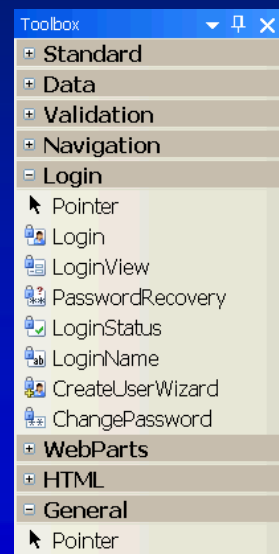
- ◆ Code-behind and inline code are equal citizens
  - Full support for IntelliSense for both styles
  - Choose your style in Add New Item dialog
- ◆ Source changes tracked in margin
  - Unsaved changes in yellow
  - Recently saved changes in green

## VS 2005 Highlights (3)

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

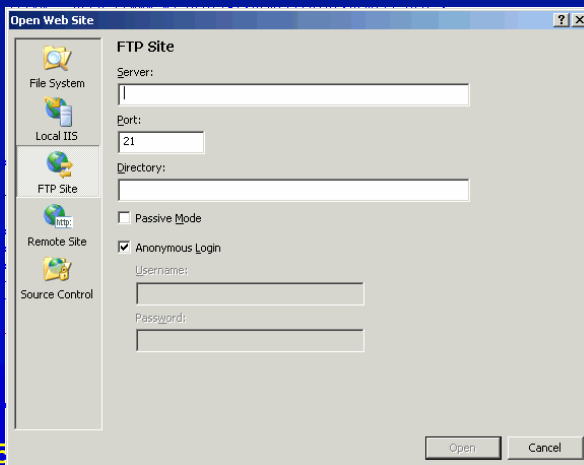
## VS 2005 Highlights (4)

- ◆ VB Now allows you to create event handlers from property sheet
- ◆ Moving windows easier
  - Thanks to window guides
- ◆ Toolbox categorizes controls



## VS 2005 Highlights (5)

- ◆ 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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## Visual Studio Options Expand @ Both Ends

- ◆ 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...

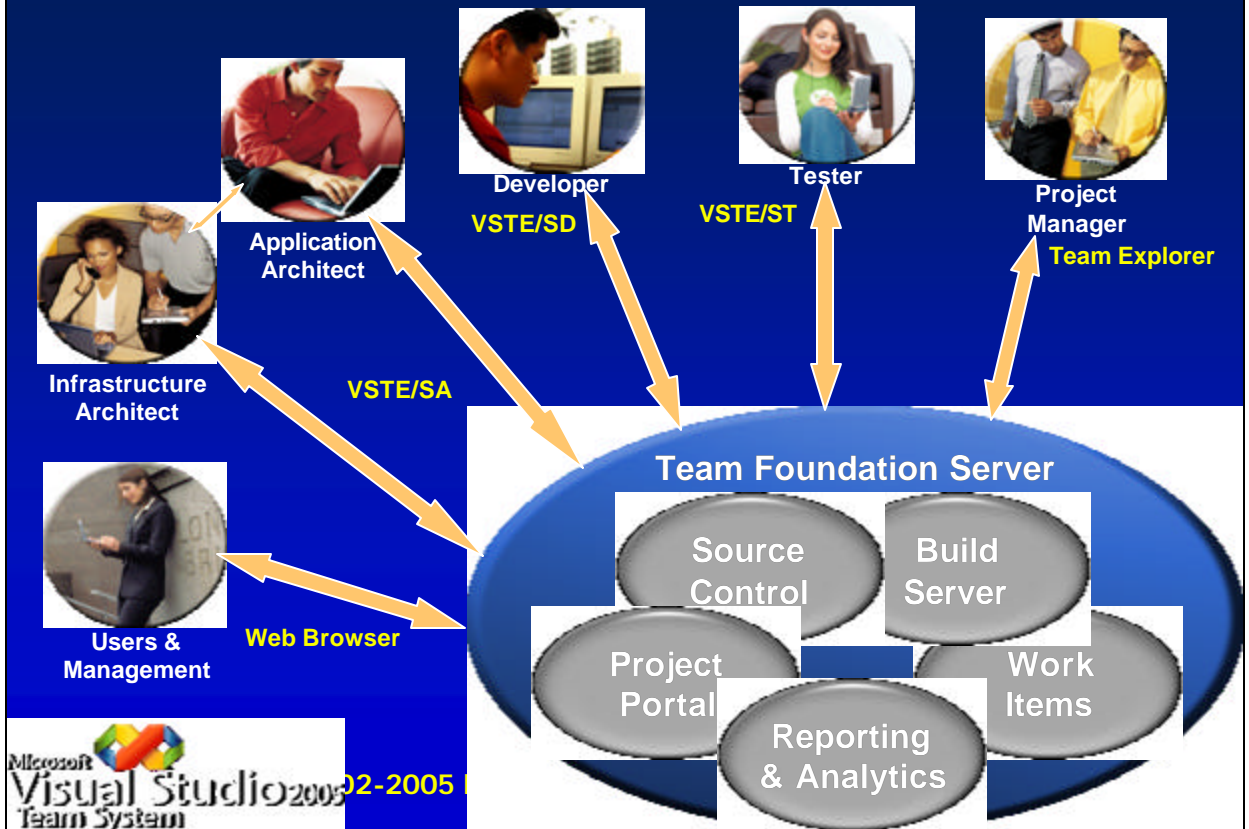
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# Expanding Visual Studio



# Expanding Visual Studio



# Visual Studio 2005

*"Personalized productivity"*



# 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

# 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

# New 2.0 Data-Bound Controls

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

# 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

## GridView with Updating

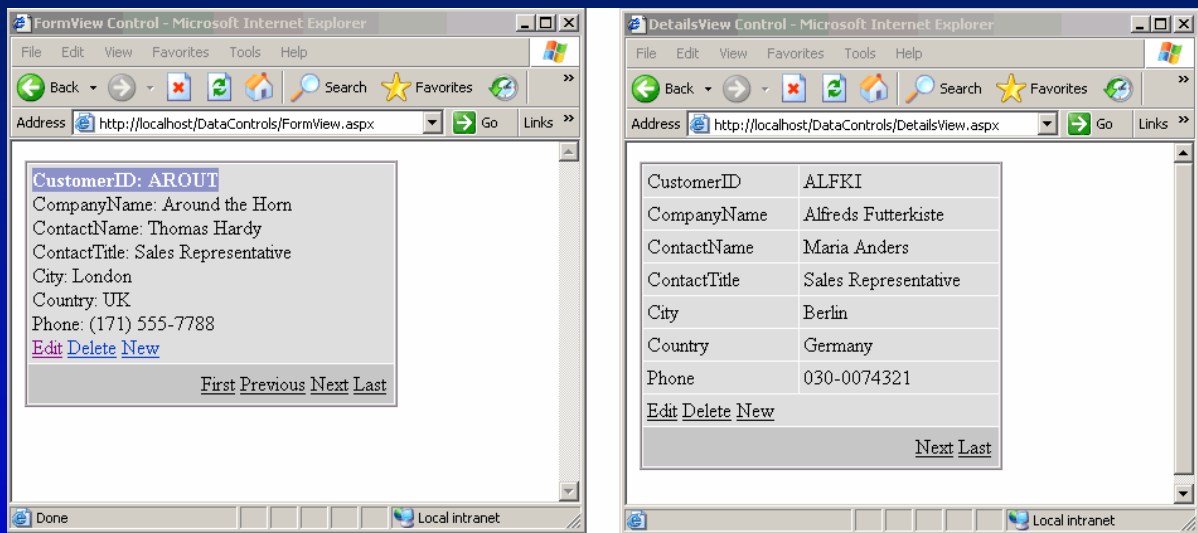
### Example: GridViewUpdate1.aspx

- ◆ 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

# 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

# FormView vs. DetailsView Controls



# Master Pages and Navigation

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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

# 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

# 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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# 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

## New Security Parts (2 of 2)

### ◆ Role Management

- Simplifies authorization code you have to write
- Works with Membership API
- Provider-based

### ◆ Personalization

- Simplifies storing of site personalization data in user profiles
- Support for strongly-typed profile properties
- Works with Membership API
- Provider-based

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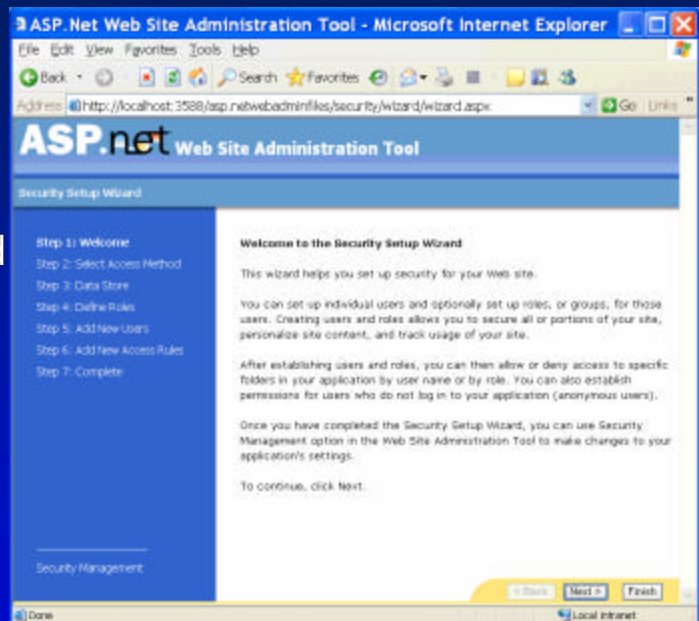
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# Forms Authentication

```
<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>
```

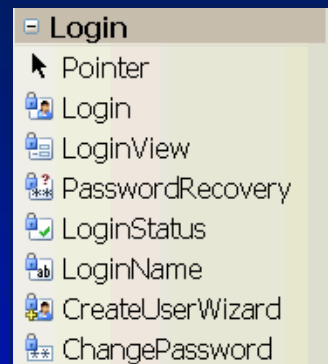
# Using Security Setup Wizard

- ◆ 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](#))



# 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



# 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()`

## 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

## Role Service

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

# 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>
```

# 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.";
}
```

## 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

# 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>
```

# Reading/Writing Profile Data

## Profiles.aspx

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

# Personalization Profiles

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

# 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

## What's Themable?

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

## 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

## Creating a Theme – Steps

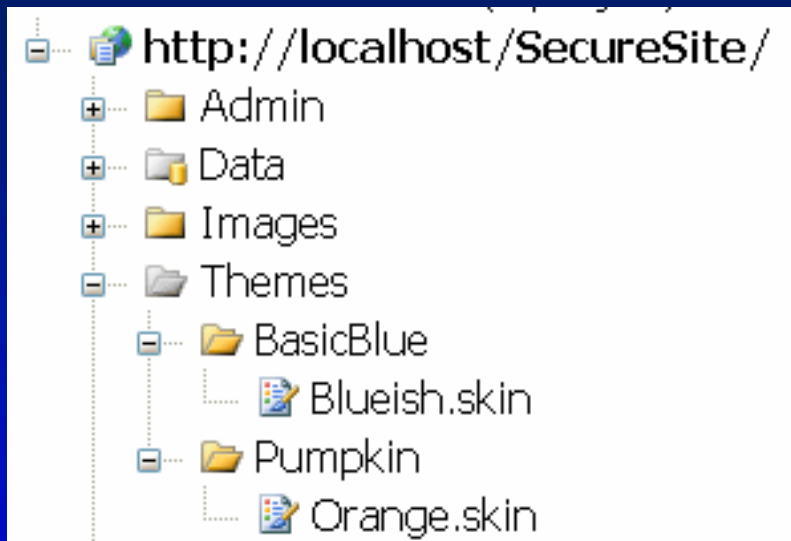
1. Add theme folder to app using **Add Folder|Themes folder**
2. Add .aspx page to theme folder.
3. Add controls to page
4. Customize the look of the controls
5. Remove ID attribute and any attributes that you do not want to be part of theme (e.g., Text)
6. Add SkinID attribute to any control to create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

# 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

# Theme & Skin Example

## AdditionalTopics/ThemedSite/Themes



# 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>
```

## Theme & Skin Example

### ThemedPage.aspx

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

## Other Cool Features

- ◆ Not enough time to discuss...
  - SQL cache dependencies
  - Validation groups
  - Cross-page posting
  - Pre-compilation of sites
  - No-source deployment
  - Web Parts

# 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

# Thank You

- ◆ Please complete your INETA evaluation forms!
- ◆ Contact me at
  - [paul@deeptraining.com](mailto:paul@deeptraining.com)
- ◆ Download materials (slides/samples)
  - [www.deeptraining.com/litwin](http://www.deeptraining.com/litwin)