

1.264 Lecture 20

Web Controls, Forms, part 2

Start Visual Studio. Open the Lecture18/19 Web site
Next class: No reading. Exercises due after class

Frameworks for Web-database systems

- **Microsoft .NET Framework**
 - Windows, IIS, SQL Server, ASP.NET and C# or other languages
- **Java Enterprise Edition (JEE 6 or, older, J2EE)**
 - Any OS, Glassfish/Apache, any database, Java
- **LAMP open source framework**
 - Linux, Apache, MySQL, php
- **All can essentially interoperate**
 - Choices based on cost-speed-performance-security-stability tradeoff: Java -> .NET -> LAMP
 - All have similar features, though details vary

ASP.NET

- **Web pages are .aspx pages. They have 2 parts:**
 - 1. Aspx page, which is considered a Web form
 - 2. Microsoft ASP.NET server code that converts the controls on the .aspx page into XHTML that is sent back to a client (browser or application)
 - XHTML code is generated dynamically based on database queries and programs that run on the server, such as optimization or design tools
 - Web sites are compiled to check for errors, just like software programs (**Debug-> Build Web Site** to check for errors)
 - Event-driven model, as we've seen in our exercises:
 - DataInserted, DataUpdated, DataDeleted events

Review: Display, edit and delete data

- Open Web site Lecture18 in VSW
- File -> New File-> Web Form: Customers2
- Drag SqlDataSource into ContentPlaceHolder
 - SELECT * FROM Customers ORDER BY Company
 - Click 'Advanced' and generate edit, update, delete SQL
 - Test and save
- Drag GridView onto SqlDataSource
 - Set data source
 - Enable paging, sorting, edit, delete
- Put a header <h2> at the top of the ContentPlaceHolder: "Customers"
- Save and test: edit, delete
 - Can't delete a customer if they have an order
 - Insert not present in GridView

Review: Display, edit, insert, delete data

- **File -> New File-> Web Form: SalesReps**
- **Drag SqlDataSource into ContentPlaceholder**
 - **SELECT * FROM SalesReps ORDER BY Name**
- **Drag GridView onto SqlDataSource**
 - **Enable paging, sorting, selection**
- **Drag a second SqlDataSource into ContentPlaceholder, below the first one**
 - **SELECT * FROM SalesReps WHERE ...**
 - **Click WHERE button: RepNbr, =, Control, GridView1, Add**
 - **Click Advanced button: Generate INSERT,UPDATE,DELETE**
- **Drag FormView control onto 2nd SqlDataSource**
 - **Choose second SqlDataSource as data source**
- **Add <h2>, save and test in browser**

Review: Display, edit, delete: part 2

- **GridView doesn't update when you change data. To make it do so:**
 - In Design view, click on FormView
 - Click Events button (lightning bolt) in Properties window
 - Double-click ItemInserted event
 - Add following code
 - `GridView1.DataBind();`
 - Then double-click ItemDeleted event and add same code
 - And double-click ItemUpdated event and add same code
- **Save and test your page**

Exercise 1: Edit data between two tables

- Use 3 SqlDataSources, 2 GridViews and FormView
 - Display and edit orders for a customer
 - You can use this to display and edit line items in an order in homework 7/8
- Steps to create CustomerOrders page:
 - Insert SqlDataSource1: select * from customers
 - Drag Gridview1 on data source 1: enable select
 - Insert SqlDataSource2: select * from orders
 - Where customer is selected value from Gridview1
 - Drag Gridview2 on data source 2: enable select
 - Insert SqlDataSource3: select * from orders
 - Where order is selected value from Gridview2
 - Advanced: Enable insert, delete, update
 - Drag FormView1 on data source 3
 - Add GridView2.DataBind() to events as in previous slide
 - Add header <h2>

Solution 1

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Customer Orders

	CustNbr	Company	CustRep	CreditLimit
Select	522	Amaratunga Enterprises	89	75000.0000
Select	211	Connor Co	89	50000.0000
Select	890	Feni Fabricators	53	1000000.0000

	OrderNbr	Cust	Prod	Qty	Amt	Disc
Select	2	522	Riveter	2	4000.0000	0.3
Select	3	522	Crane	1	500000.0000	0.4

OrderNbr: 2

Cust: 522

Prod: Riveter

Qty: 2

Amt: 4000.0000

Disc: 0.3

Edit Delete New

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Exercise 2: Passing a WHERE parameter across pages

- You can get parameters for WHERE clause from:
 - Control (e.g., GridView)
 - Cookie
 - QueryString (e.g., localhost/Order?ID=22)
 - Session variables, profiles, etc.
- Exercise:
 - Create SalesReps2.aspx with two hyperlinks
 - Office 1: SalesReps3.aspx?office=1
 - Office 2: SalesReps3.aspx?office=2
 - Create SalesReps3.aspx. On it:
 - SqlDataSource1 WHERE RepOffice= QueryString office
 - Put GridView on SQLDataSource1
 - Open SalesReps2 in browser and click on links
 - You may use this to display your catalog in homework 7

Solution 2

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[Home](#) > [SalesReps](#) > [SalesReps2](#)

Sales Reps 2

Office 1

Office 2

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Solution 2, cont.

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[Home](#) > [SalesReps](#) > [SalesReps2](#) > [SalesReps3](#)

Sales Reps 3

RepNbr	Name	RepOffice	Quota	Sales
53	Bill Smith	1	100000.0000	0.0000

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Exercise 3: Inserting data, other features

- **Exercise: Improve the Web site**
 - Add/edit the page links in the nav bar in MIT.master
 - Create an Offices.aspx page if you have time
 - Add header (h2) text on the pages created today
 - Edit website.map to include new pages created today
 - This is what the 'breadcrumb' navigation uses as its map
 - Add text to Default.aspx, your home page
 - Test the 'Contact us' link; it should send email
 - Add titles to the pages you created (<title>)
 - Write some SQL by hand in the SQLDataSource wizard
 - Check the INSERT statement in CustomerOrders.aspx to confirm it does not have a primary key field, because the customer number is IDENTITY (auto-generated)

Hints

- **Remember to save pages in VSW after making changes**
 - * on tab means the page has not been saved
- **Remember to refresh the browser after you make a change to a Web page and are testing it**
 - The browser caches the page, and doesn't know that you've changed it unless you force a refresh
- **Back up your work**
 - Copy your Web site to another Web site on your computer periodically

Summary

- **.NET (and JEE 6, LAMP) framework allows Web site construction from controls**
 - **Data connection controls**
 - **Grid, form, data, detail views for display**
 - **Validation controls (we didn't cover them)**
 - **Navigation controls (SiteMapPath, others)**
 - **Login and permission controls**
 - **AJAX: Asynchronous Javascript and XML**
 - **Does the sorting in GridView, for example**
 - **Web services: machine-to-machine controls**
 - **We cover this in the next classes**

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1.264J / ESD.264J Database, Internet, and Systems Integration Technologies
Fall 2013

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