1 ☐ **GETTING STARTED WITH VISUAL STUDIO**

CST272—Relational Database Programming

2 ☐ **STATIC AND DYNAMIC WEB APPLICATIONS**

- Static web pages
  - Created with HTML—renders the same every time the page is displayed
- Dynamic web pages
  - Allow users to interact with the web page
  - May change appearance or content each time it is viewed
  - One tool for creating dynamic content is Microsoft's Active Server Pages .NET (ASP.NET) used to build server-side web applications
    - Code that builds the page runs on the server

3 ☐ **AN ASP.NET "WEB SITE" PROJECT**

- In Visual Studio a Web Site application is a folder (a storage location or "repository") that contains files and folders that make up the project
- Similar to an HTML website

4 ☐ **STARTING VISUAL STUDIO**

- Start Visual Studio as you would any other application:
  - Find it in the "Start" menu
  - Double-click a shortcut icon on the "Desktop"
  - Click an icon on the Task Bar
- Launches the "What would you like to do?" window:
  - Open a project or solution
  - Create a new project

6 ☐ **CREATING A NEW WEB SITE PROJECT (PAGE 1)**

- Or if you already are in Visual Studio, to create a new ASP.NET project:
  1. Select the File command from the menu bar
  2. Click New from the "File" menu
  3. Click Project… from the "New" submenu

7 ☐ **CREATING A NEW WEB SITE PROJECT (PAGE 2)**

- Alternately to create the new project:
  1. Select the down arrow point (▼) on the New Project button from the "Standard" toolbar
  2. Click New Project… from the "New Project" submenu

8 ☐ **CREATING A NEW WEB SITE PROJECT (PAGE 3)**

- Then in the "Create a new project" dialog window:

1. Make sure the "C#" programming language is selected in the first dropdown list
   - To make it easier to find correct template, select "Windows" and "Web" from the other dropdown lists
2. Select the ASP.NET Web Application (.NET Framework) template (scroll down to find it)
   - *Not* "ASP.NET Core Web Application"
3. Click the <Next> button

10 ☐ **CREATING A NEW WEB SITE PROJECT (PAGE 4)**

- In the "Configure your new project" dialog window:
  1. Give the project a Project name
  - The "Project name" and the "Solution name" by default are the same
  2. Enter the project folder Location
     - Click the <...> (browse) button to find the desired folder location
  3. Leave Place solution and project in the same directory checkbox "unchecked"
  4. Click the <Create> button

12 ☐ **CREATING A NEW WEB SITE PROJECT (PAGE 5)**

- In the "New ASP.NET Project" dialog window, from "Select a template:" select option Empty and click <Create> button (make no other changes)
- *If you see* the "Configure Microsoft Azure Web App" dialog window, click the <Cancel> button

15 ☐ **AN ASP.NET WEB SITE (PAGE 1)**

- Types of files in a website:
  - ASP.NET web forms—dynamic (interactive) web forms with two files:
    1. The .aspx file which is the web page
    2. The .aspx.cs file that contains the Visual C# code
  - Image files—for the website
  - Configuration files—the file "web.config" provides information for the server
  - Static HTML web pages—HTML code only; no ASP .NET web controls

16 ☐ **AN ASP.NET WEB SITE (PAGE 2)**

- Types of files in a web site (*con.*):
  - Stylesheet files—".css" files that provide additional information that tells browser how to format HTML and ASP.NET elements
    - Useful for creating consistent style on web page, or all pages on the website
  - Script files—source code that runs on the client machine in the browser, e.g. JavaScript or VbScript

- Database files (a major part of this course)

17 **WEB FORMS IN ASP.NET (PAGE 1)**

- The Web Form consists of two components:
  - The HTML template (".aspx" extension)
    - The actual web page that contains the design layout, content and controls
  - A collection of code in a procedural language such as C# that commonly is *located behind* the Web Form ("aspx.cs" extension)
    - The "code behind the page"

18 **WEB FORMS IN ASP.NET (PAGE 2)**

- The ASP.NET Form web control handles most of the "HTML" detail processing for the developer
- The input controls are generated using ASP.NET web controls, e.g. ASP:TextBox and ASP:CheckBox
- The ASP:Button web control is rendered by ASP.NET as a submit button
  - Form is submitted or function/method is executed when button is clicked

19 **WEB FORMS IN ASP.NET (PAGE 3)**

- The format of the Form web control which wraps around all the ASP.NET elements is:

```
<form id="FormID" runat="server">
  ...
</form>
```

  - This block is inserted automatically into every new ASP.NET web document

20 **WEB FORMS IN ASP.NET (PAGE 4)**

- When the Button control is clicked, the web form is rendered as a postback <form> element (a POST method) which causes the web form to be reloaded …
  - Code (Visual C#) that should execute when the form is submitted is assigned to the Click event of the Button
- Additional hidden <input> elements are generated which provide information to ASP.NET

21 **ADDING A NEW ITEM (PAGE 1)**

- To add a new item/document to an ASP.NET project:
  1. Select Project from the menu bar
  2. Click Add New Item… from the "Website" menu
- Or find "Add New Item" by right-clicking the website folder name in the "Solution Explorer" window

22 ☐ **ADDING A NEW ITEM (PAGE 2)**

- In the "Add New Item" dialog window:
  1. Select Web from Visual C# in the "Installed" pane (narrows the search)
  2. Select the document type—an ASP.NET document page is a Web Form
     - Or could be a CSS stylesheet or a SQL Server database
  3. Type filename (appropriate *extension* will be added)
  4. Click <Add> button—new item added to "Solution Explorer" window

24 ☐ **VISUAL STUDIO DEVELOPER INTERFACE (PAGE 1)**

- Integrated Development Environment (IDE)—the shared development environment
- Document windows (view and edit documents)
- Resource Tools:
  - Solution Explorer—lists project files and resources (images, databases, etc.)
  - Server Explorer—manages the "connections" to databases

25 ☐ **VISUAL STUDIO DEVELOPER INTERFACE (PAGE 2)**

- Resource Tools (*con.*):
  - Properties window—for setting properties for objects, controls, and classes
  - Document Tabs—allows switching easily between open documents
  - Toolbox—contains commonly used controls
  - Error List window—contains "to do" list, e.g. errors that must be corrected before the application runs successfully

26 ☐ **DOCUMENT VIEWS**

- The tabs at the bottom left of the Document window let the designer select among the following views:
  - Source view—the actual ASP.NET code
  - Design view—an approximation of the web page that will render in browser
  - Split view—Source view in upper window and Design view in lower window

28 ☐ **"RUN" THE WEB SITE**

- "Running" an ASP.NET Web Site application means to view it in a browser
- An application may be executed by clicking the <Start debugging> button on the "Standard" toolbar
- If the "Debugging Not Enabled" dialog window appears, select "Modify the web.config file to enable debugging." radio button and click <OK>
- Close the browser window to stop "running"

30 ☐ **SAVE THE WEB SITE**

- To save current document, click <Save> button on "Standard" toolbar

- It should not be necessary to name it in "Save As" dialog window since it was given a name when it was created initially
- Click "Save All" button to right of "Save As" to save *all open documents*

31 **OPEN A WEB SITE (PAGE 1)**

- When you start Visual Studio and open the "What would you like to do?" window, you are given the option to "Open a project or solution"
  - An existing project

32 **OPEN A WEB SITE (PAGE 2)**

- Or if you already are in Visual Studio, to open an existing ASP.NET project:
  1. Select the File command from the menu bar
  2. Click Open from the "File" menu
  3. Click Project/Solution… from the "Open" submenu

33 **OPEN A WEB SITE (PAGE 3)**

- In the "Open Web Site" dialog window:
  1. Select the *folder* name that contains the Solution file (the main "top" folder)
  2. Select the filename with the ".sln" extension
  3. Click the <Open> button

34 **OPEN A WEB SITE (PAGE 4)**

- It also is possible to launch Visual Studio and open the Web Site by double-clicking filename with ".sln" extension in "Windows Explorer"

35 **THE FORMATTING TOOLBAR**

- Block Format (*see next slide*)
- Font Size
- Bold
- Italic
- Underline
- Foreground Color
- Background Color
- Align
- Convert to Hyperlink

36 **BLOCK FORMAT**

- The Block Format dropdown menu option on the "Formatting Toolbar" provides *style formatting*
- Implemented for each group of text elements separated by the <Enter> key

- Paragraph (a block of text lines followed by double-spacing); the default dropdown option
- Heading 1 (largest) through Heading 6 (smallest) (double-spaced title or subtitle in boldface)
- Unordered List (a bulleted list)
- Ordered List (a numbered list)
- Etc.