TARC
TUNKU ABDUL RAHMAN UNIVERSITY COLLEGE

Server Controls and Site Design

Chapter 2

What Are You Going To Learn?

- At the end of this lesson, you will be able to:
  - explain ASP.NET Development Model
  - Indentify and use the appropriate server controls to create the ASP.NET Web forms.
  - Use master pages and site map for a Website.

ASP.NET Development Models:

- ASP.NET supports three different development models:
  - Web Pages
  - MVC (Model View Controller)
  - Web Forms (this is covered in our syllabus).

ASP.NET Web Pages

- Simplest ASP.NET model
- Built around single web pages
- Similar to PHP and classic ASP
- Use server scripting (called Razor) with VB or C#
- Provided with built-in templates and helpers for database, video, graphics, social media, etc.

PHP Example

```
<h1>Sample PHP Web Pages</h1>
    <?php
        echo “Today is “ . date(“Y/m/d”);
    ?>
```

ASP Example

```
    <h1>Sample ASP.NET Web Pages</h1>
        <p>Today is <% response.write(date()) %></p>
```

ASP.NET Web Pages Example

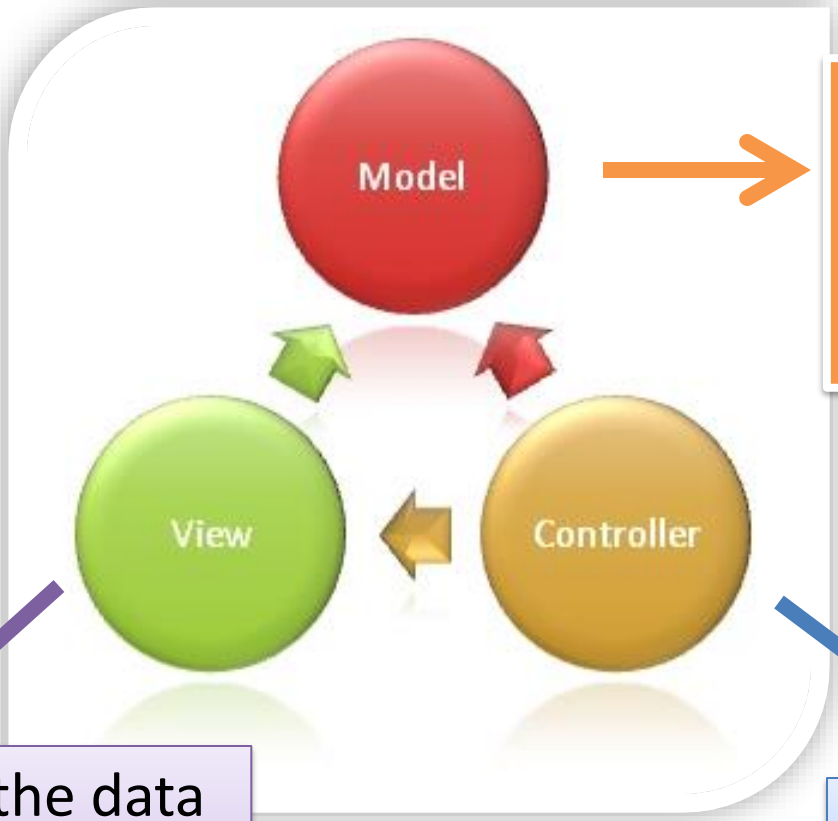
```
<html>
    <body>
        <h1>Sample ASP.NET Web Pages</h1>
        <p>Today is @DateTime.Now</p>
    </body>
</html>
```

Razor is a markup syntax that lets you embed server-based code (Visual Basic or C#) into web pages

Web Pages with Database

```
@{ var db = Database.Open("SmallBakery");
    var query = "SELECT * FROM Product"; }
    <html>
    <body>
    <h1>Small Bakery Products</h1>
    <table border="1" width="100%">
    <tr><th>Product</th> <th>Price</th> </tr>
    @foreach(var row in db.Query(query))
    {
    <tr> <td>@row.Name</td><td>row.Price</td> </tr>
    }
    </table>
    </body>
    </html>
```

Model View Controller (MVC)



represents the application core (the business logic layer)

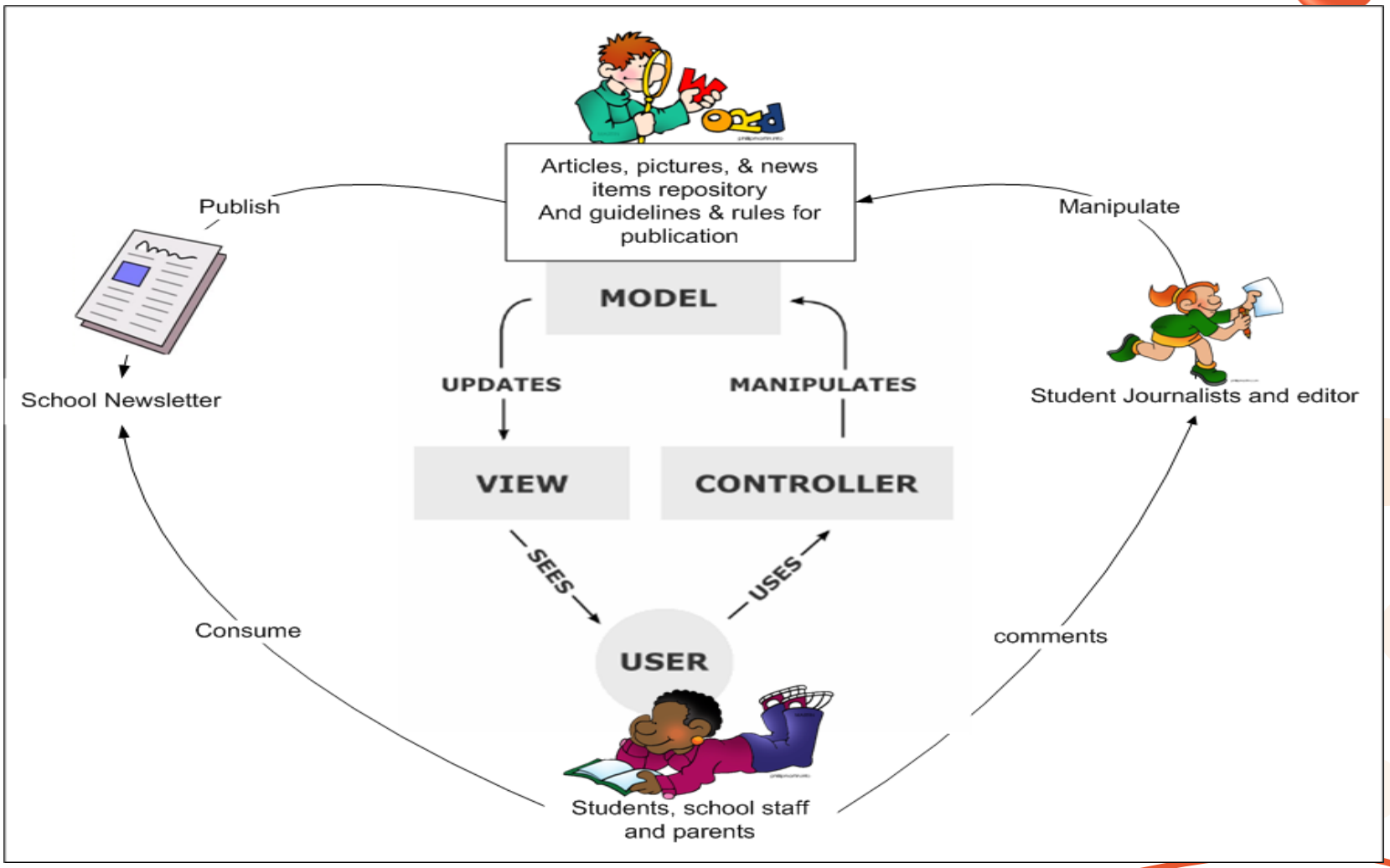
To display the data (the display/view layer)

To handle input (the input control layer)

ASP.NET MVC

- MVC is a framework for building web applications using a MVC (Model View Controller) design.
- Visual Web Developer is a development tool tailor made for ASP.NET MVC (and Web Forms).

Model-view-controller - concept



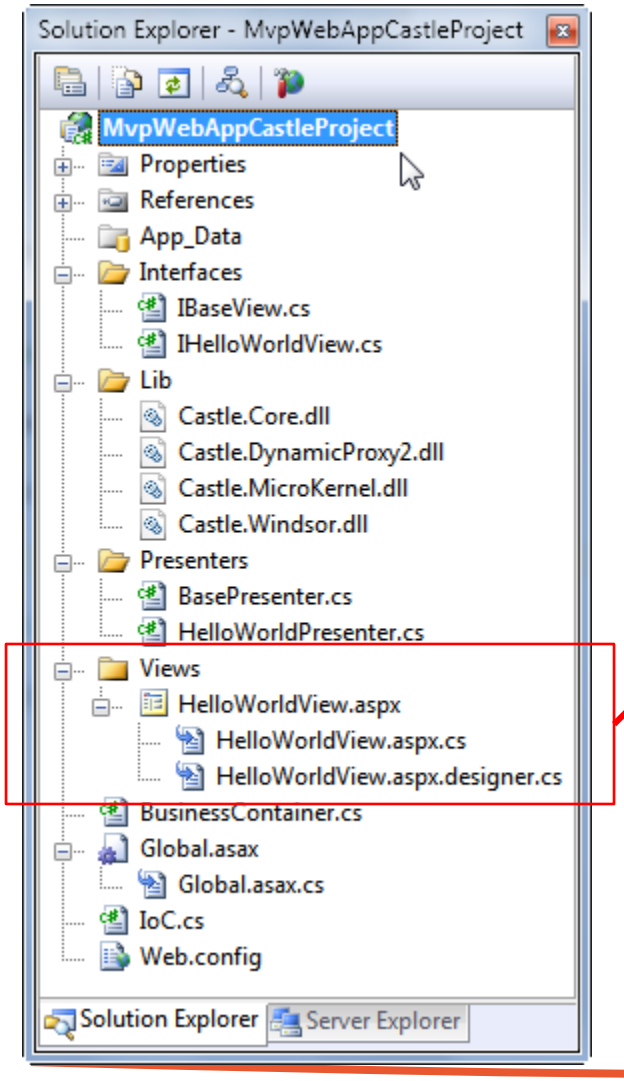
ASP.NET Web Forms

- The traditional ASP.NET and oldest event-driven development model
- Web pages with added server controls, server events, and server code.

ASP.NET Web Forms

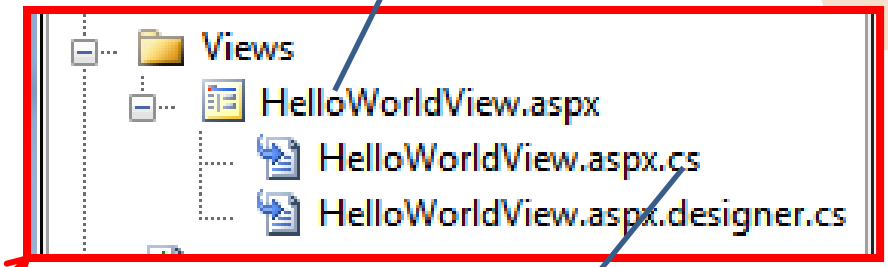
- refers to the grouping of two distinct blocks of code:
  - HTML template – presentation of the Web form on the browser.
  - ASP.NET code – holds a script containing the Web form's processing logic.

Web Forms (Physical view)



Static HTML + Server controls

Presentation Layer



server code in C# (also known as **code-behind**)

To create dynamic content

Web Form Syntax in the Presentation Layer

```
<body>
    <form ID="MyForm" runat="server">
        ... here we place the server controls...
    </form>
</body>
```

Benefits of ASP.NET Server Controls

Intuitive直观的 object model	• Expose the HTML elements of a page in an intuitive **object model.**
Enable view state	• Automatically retain the value of their properties by participating in **view state**.
Separate design from logic	• Enable you to cleanly **separate** the **design** content of a page **from** the application **logic**.
Browser compatibility	• Enable you to maintain **browser compatibility** while still supporting advanced browser features.

Server Controls and HTML Tags

ASP.NET Web Control	Similar HTML Form Tag
`<asp:Label>`	`<Span>, <Div>`
`<asp:ListBox>`	`<Select>`
`<asp:DropDownList>`	`<Select>`
`<asp:TextBox>`	`<Input Type="Text">`
`<asp:RadioButton>` and `<asp:RadioButtonList>`	`<Input Type="Radio">`
`<asp:CheckBox>` and `<asp:CheckBoxList>`	`<Input Type="CheckBox">`
`<asp:Button>`	`<Input Type="submit">`

HTML control, HTML Server control and Server control

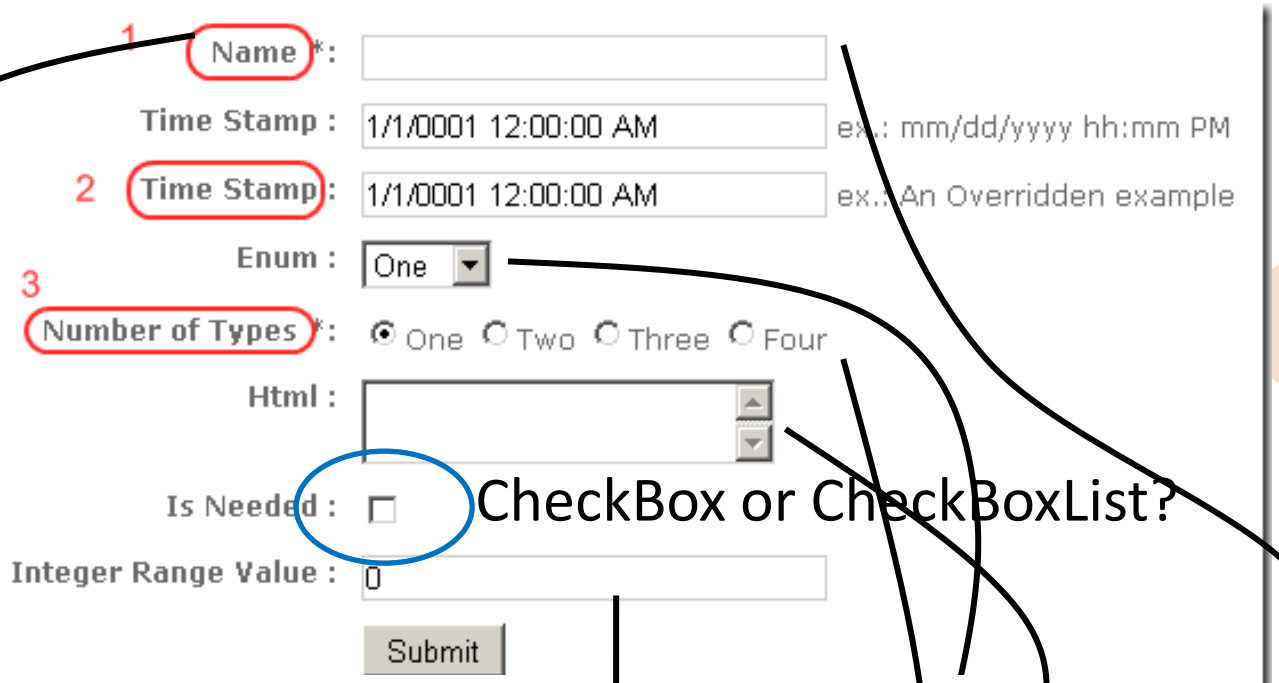
	HTML Control	Server Control
	<input type="text" />	<asp:TextBox ID="txtName" runat="server" />
Processed by whom?	By web browser	By server
Why use it?	Basic control rendering and client-side scripting	- Allows server to intervene and process. - Enables view state which allows value to be retain even after page is refreshed. - Circumvent browser compatibility issue.
Limitations	Need to consider browser compatibility	Must be processed by a server

ASP.NET Server Controls Syntax

- All server controls must have two attributes
  - ***runat*** and ***ID***
- E.g.:

```
<asp:Label id="lblMyLabel"
runat="server">Sale Ends May
2nd</asp:Label>
```

Example with Code



CheckBox or CheckBoxList?

```
<asp:RadioButtonList id="radType" runat="server">
<asp:TextBox id= "txtHtml" rows= "2" TextMode= "MultiLine" runat="server"
/>
<asp:TextBox id="txtValue" runat="server" Text="0"/>
```

Questions

- Suggest appropriate ASP.NET server controls that you should use in order to **obtain** the following data from a user:

1. Name
2. Gender
3. Address
4. Date of birth
5. Favourite TV Channel

Ans

1. <asp:TextBox id= "txtName " rows= "2" TextMode= “SingleLine" runat="server" />
2. <asp:RadioButtonList id=“gender" runat="server">
3. <asp:TextBox id= "txtAddress " rows= "2" TextMode= "MultiLine" runat="server" />
4. <asp:TextBox id= "txtDOB" rows= "2" TextMode= “Date" runat="server" />
5. <asp:TextBox id= "txtFavouriteTVChannel " rows= "2" TextMode= "MultiLine" runat="server" />

TARC
TUNKU ABDUL RAHMAN UNIVERSITY COLLEGE

Site Design

Master Page and Site Map

Creating a Consistent Look and Feel Site

- A site benefits from a consistent look and feel, which generally includes the following:
  - A common header and menu system for the entire site.
  - A bar on the left side of the page offering some page navigation options.
  - A footer providing copyright information and a secondary menu for contacting the webmaster.

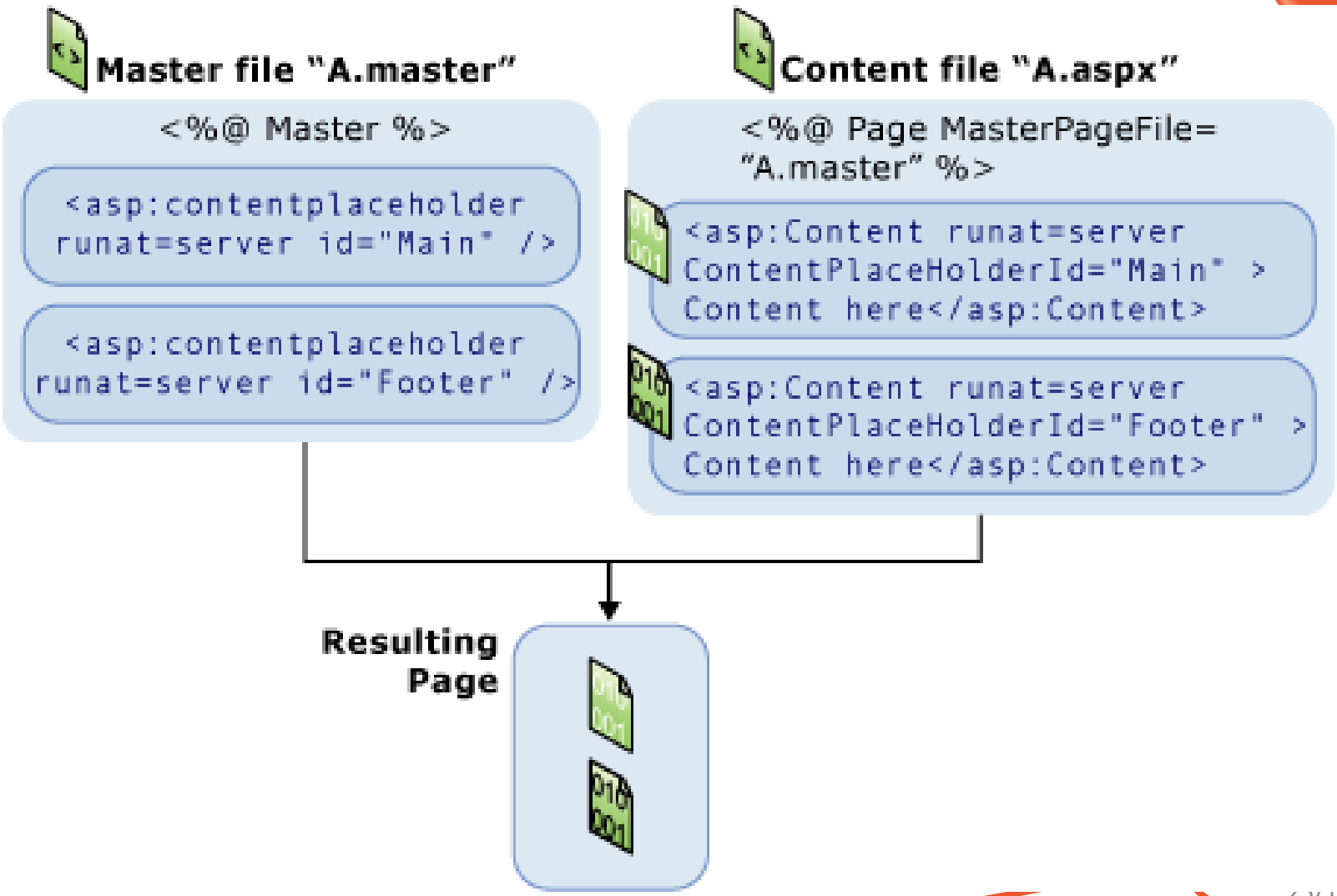
Creating a Consistent Look and Feel Site

Master Pages

defines the layout to be used by all pages based on the Master.

Essential elements (e.g. Header, menu) will be presented on every page

ASP.NET Master Page



Advantages of Master Page

- Easy to create
  - You simply apply the same Master Page to the new content page.
- Easy to maintain
  - If you decide to completely modify the design of your website, you can modify just a single Master Page to change the appearance of all the pages in your application.

Provide clear navigation mechanisms

- orientation information, navigation bars, a site map, etc. should be provided
  - to increase the likelihood可能性 that a person will find what they are looking for at a site.

Site Map

- It is an overview of the pages within a website.
- It is a list of pages of a web site accessible to Web crawlers or users
- This allows visitors to quickly jump to any section of a website listed in the site map.
- This also gives visitors a good overall picture of how the site is organized and clearly defines all the resources the website has to offer

Designing a Site Map

- site maps can be organized in a variety of ways. Typically organized in hierarchical fashion, most use an outline form, with pages arranged by topic.
- Can include pages for major categories and subcategories of the website

ASP.NET Site Map

- ASP.NET holds this information in an XML file named `Web.sitemap`. This file is used as the source of data for menu and navigation controls.
- Navigation controls that can use together with site map:
  - TreeView
  - SiteMapPath (breadcrumbs)
  - Menu

Default XML Site Map file name

ASP.NET Site Map - Code

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
  <siteMap>
    <siteMapNode title="Home" url="/aspnet/w3home.aspx">
      <siteMapNode title="Services">
        <siteMapNode title="Training" url="/aspnet/training.aspx" />
        <siteMapNode title="Support" url="/aspnet/support.aspx"
description="Online support" />
      </siteMapNode>
    </siteMapNode>
  </siteMap>
```

Main node (first level)

First Category: Services (2nd level)

Child nodes under "Services" (3rd level)

ASP.NET Site Map - Code

- Explanation of the three main attributes of `<siteMapNode>:`
  - **`title`** : The title to be displayed
  - **`Description`**: A longer description that associates with a node. It is the tooltip that will appears when you hover the node.
  - **`url`** : A URL that points to a page or other resource. Include this if you want it to be a hyperlink

ASP.NET Site Map - Code

- Therefore the output of the code:

Remark: Underline the text if it is a hyperlink

Question

- Write the Code in the `web.sitemap` for the following structure:
  - Home [Default.aspx]
    - Products
      - Health Care [healthcare.aspx]
      - Sports [sports.aspx]
    - Services
      - Contact Us [contact.aspx]
      - Redemption [redemption.aspx]

This shows a tooltip "contact your nearest store"

This shows a tooltip "gift redemption"

Question

- Identify 2 different errors of the code below:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
    <siteMap>
    <siteMapNode title=“Product" url= "" >
          <siteMapNode title=“Health Care" url=“healthcare.aspx ">
          <siteMapNode title=“Supplements" url=“supplements.aspx" >
     </siteMapNode>
     <siteMapNode title="Services">
         <siteMapNode title="Training" url="training.aspx " >
         <siteMapNode title="Support" url=“support.aspx"  >
      </siteMapNode>
    </siteMap>
```

TARC
TUNKU ABDUL RAHMAN UNIVERSITY COLLEGE

Site Map: Site Map structure

DEMO

Next Week

- Event-driven Programming
  - Page Event
  - Server Control Event