

Chapter 7

ASP.NET Site Navigation

*Agriculture, manufactures,
commerce and navigation: the
four pillars of our prosperity*

Thomas Jefferson, First Annual
Message to Congress, Dec. 8, 1801

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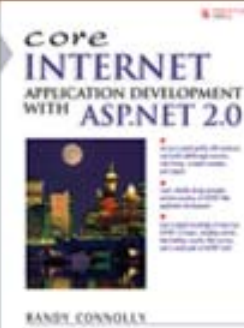
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Overview

- This chapter examines the unique navigation features in ASP.NET 2.0
- It covers:
 - Overview of ASP.NET navigation
 - XML Site Map
 - SiteMapPath control
 - Menu control
 - TreeView control

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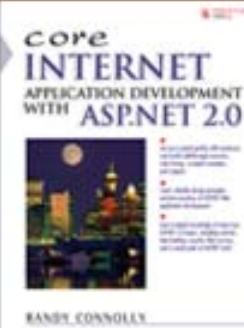
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Overview of ASP.NET Site Navigation

- When first designing a site, one of the very first tasks performed is to design the organization structure for the site.
 - This organization structure is usually some type of hierarchical organization of pages.
 - This hierarchical structure is generally referred to as a **site map**.

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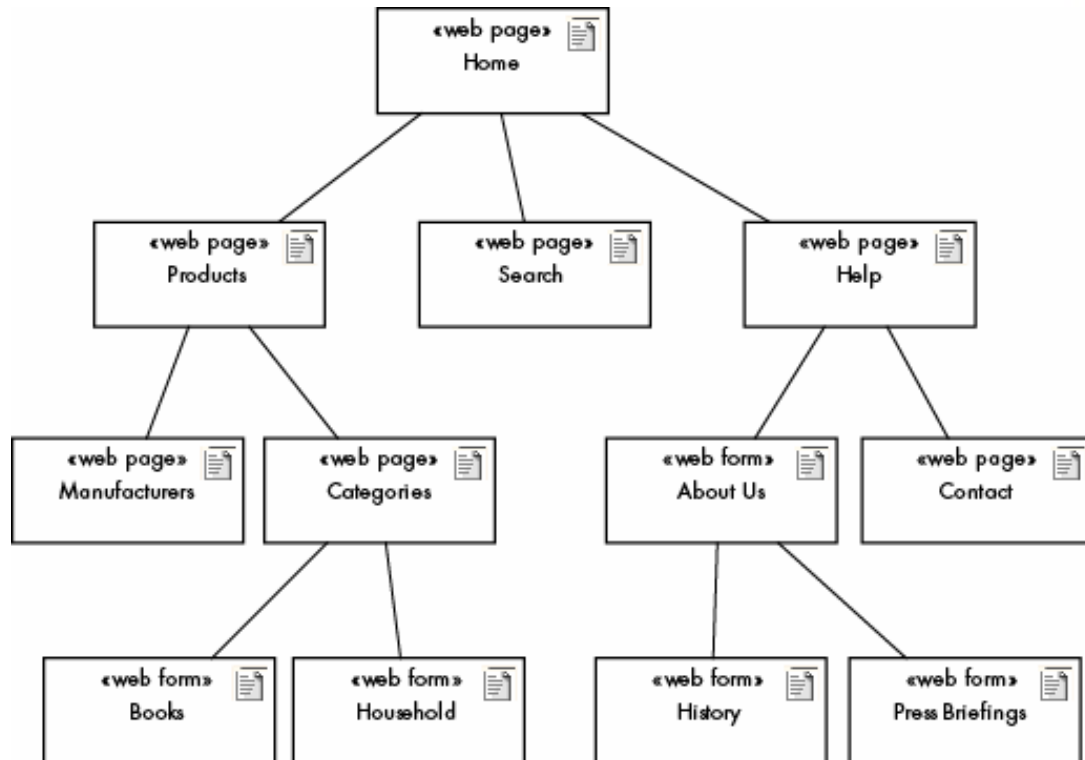
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Example Site Map

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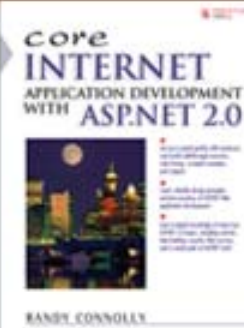
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Features

- The site navigation features in ASP.NET 2.0 contain:
 - controls for displaying a site map
 - a consistent mechanism to allow the developer to separate the data for the site map from its presentation in these new controls.

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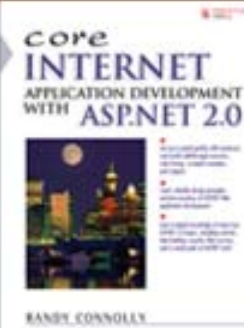
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Separating View from Content

- The ASP.NET site navigation system allows all of a site's navigation links to be stored in an external data store.
 - special Web server controls can use this navigation data to render the links in a bulleted list or in one of the new navigation controls
 - i.e., as a menu, tree, or breadcrumb.

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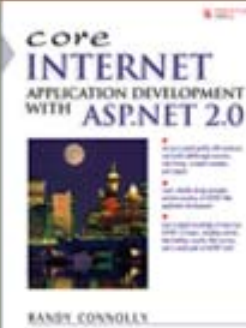
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Separating View from Content

- The architecture of this system accomplishes reduces the coupling between the organization structure for the site and the way it is presented in the Web page.
- By separating the data of the navigation system from its eventual presentation, the site becomes a great deal easier to maintain and customize.

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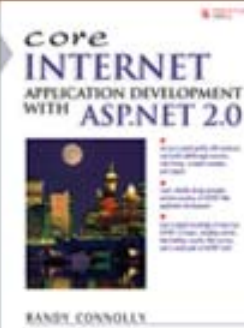
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Provider Model

- The site navigation system in ASP.NET 2.0 uses what Microsoft calls the **provider model**.
- A provider is a software module that provides a uniform programming interface between a service and a data source.
 - It abstracts the actual storage media so that you can code to the provider API rather than to the specific details of a particular data source.

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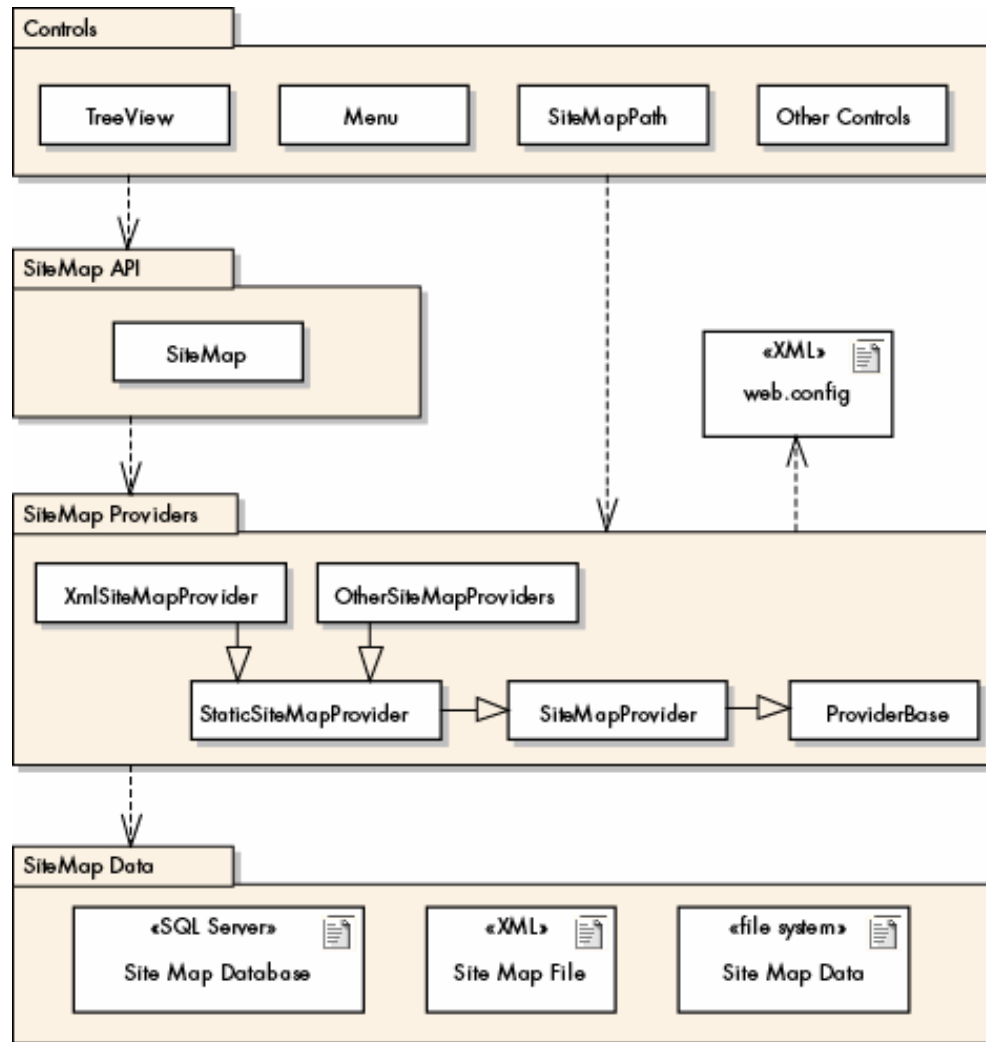
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Provider Model

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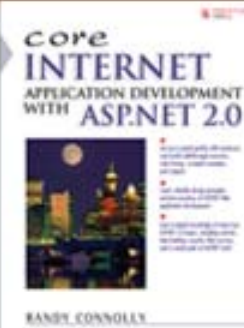
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XML Site Map

- To use the new ASP.NET site navigation controls, you must define the organizational structure of the site in some type of external data source.
- The source for this data map can be an XML file, a database, or even a file system hierarchy.

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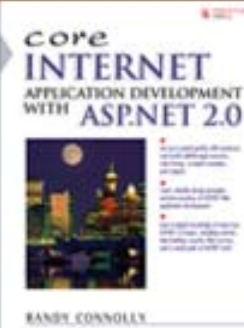
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XML Site Map

- By default, ASP.NET 2.0 uses the `XmlSiteMapProvider`
 - This uses a special XML file named `Web.sitemap` to contain the site structure
 - The navigation controls then consume this file and display its contents as a menu, tree, or breadcrumb.
 - You can create this XML site map file directly within Visual Studio.

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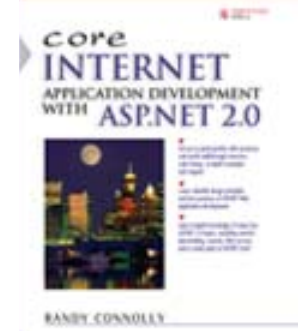
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```
<?xml version="1.0" encoding="utf-8" ?>
<siteMap
  xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0">
  <siteMapNode url="BookHome.aspx" title="Home" >
    <siteMapNode url="Catalog.aspx" title="Catalog" >
      <siteMapNode url="Categories.aspx" title="Categories" >
        <siteMapNode url="List.aspx?cat=1" title="Graphics" />
        <siteMapNode url="List.aspx?cat=2" title="Internet" />
        <siteMapNode url="List.aspx?cat=3" title="Networking" />
      </siteMapNode>
      <siteMapNode url="Series.aspx" title="Series" >
        <siteMapNode url="List.aspx?series=1" title="Core Series" />
        <siteMapNode url="List.aspx?series=2"
          title=".NET Series" />
        <siteMapNode url="List.aspx?series=3"
          title="Signature Series"/>
      </siteMapNode>
    </siteMapNode>
    <siteMapNode url="Search.aspx" title="Search" />
    <siteMapNode url="Help.aspx" title="Help" >
      <siteMapNode url="About.aspx" title="About Us" />
      <siteMapNode url="Contact.aspx" title="Contact Us" />
    </siteMapNode>
  </siteMapNode>
</siteMap>
```

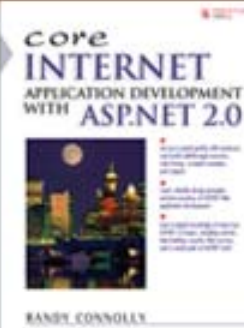


Consuming the Site Map

- Site maps are principally intended to be used by the special navigation controls included as part of version 2.0 of ASP.NET.
- You can also use the XML site map with *any* of the Web server controls that support data binding.

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Consuming the Site Map

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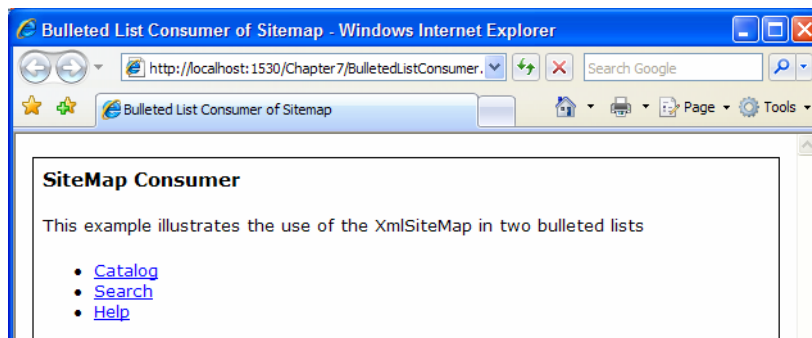
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```
<asp:SiteMapDataSource ID="siteSource"  
  runat="server"  
  ShowStartingNode="false" />
```

1. Add a SiteMapDataSource control. By default this references the web.config file.

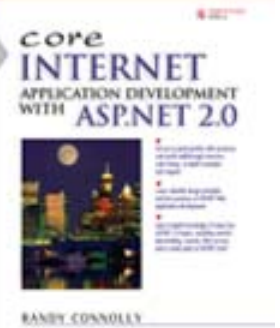
```
<asp:BulletedList id="someList" runat="Server"  
  DataSourceID="siteSource"  
  DisplayMode="HyperLink" />
```

2. Reference the SiteMapDataSource control in any control that supports data-binding.



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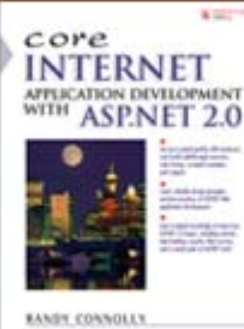
SiteMapPath Control

- The SiteMapPath control displays a navigation path (also known as a **breadcrumb**) that shows the user the current page location and displays links as a path back to the home page.

[Home](#) > [Help](#) > Contact Us

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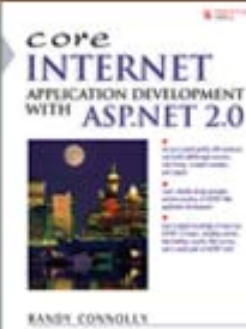
SiteMapPath Control

- You can easily add a `SiteMapPath` control to any page that has a matching `siteMapNode` in your site map.

```
<asp:SiteMapPath ID="smpBreadcrumb" runat="server" />
```

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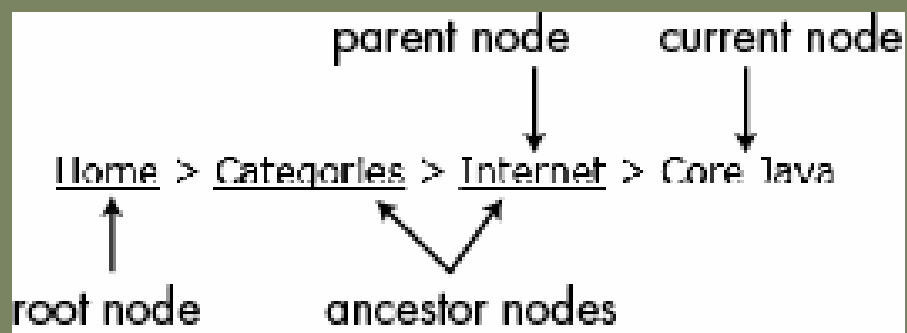


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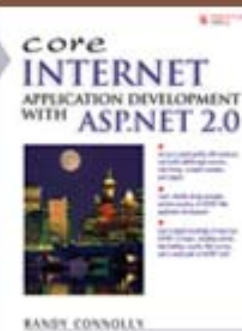
SiteMapPath Control

- Consists of a number of `SiteMapNodeItem` objects, where each of these **node** objects corresponds to an element in the navigation path.
 - Each node is separated by a **path separator** (by default, the > symbol).



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SiteMapPath Control

- The `SiteMapPath` control can be customized via style elements or template elements.

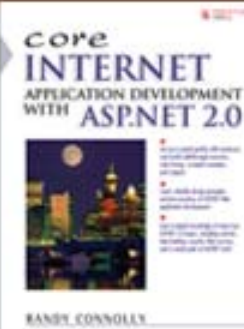
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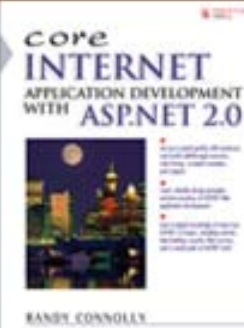
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Menu Control

- Displays a navigation hierarchy as links.
- Supports both static and dynamic (pop-up) menu options.
- Can be extensively customized via style and template tags.
- Works with the site map infrastructure.

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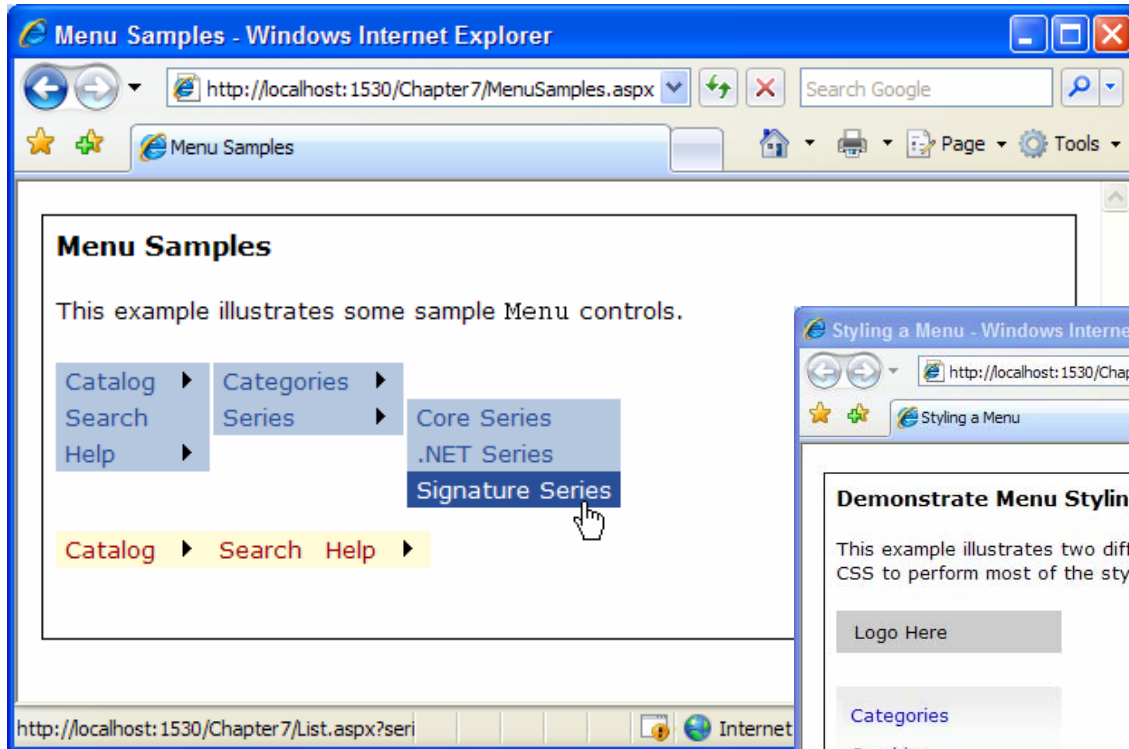
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Menu Control

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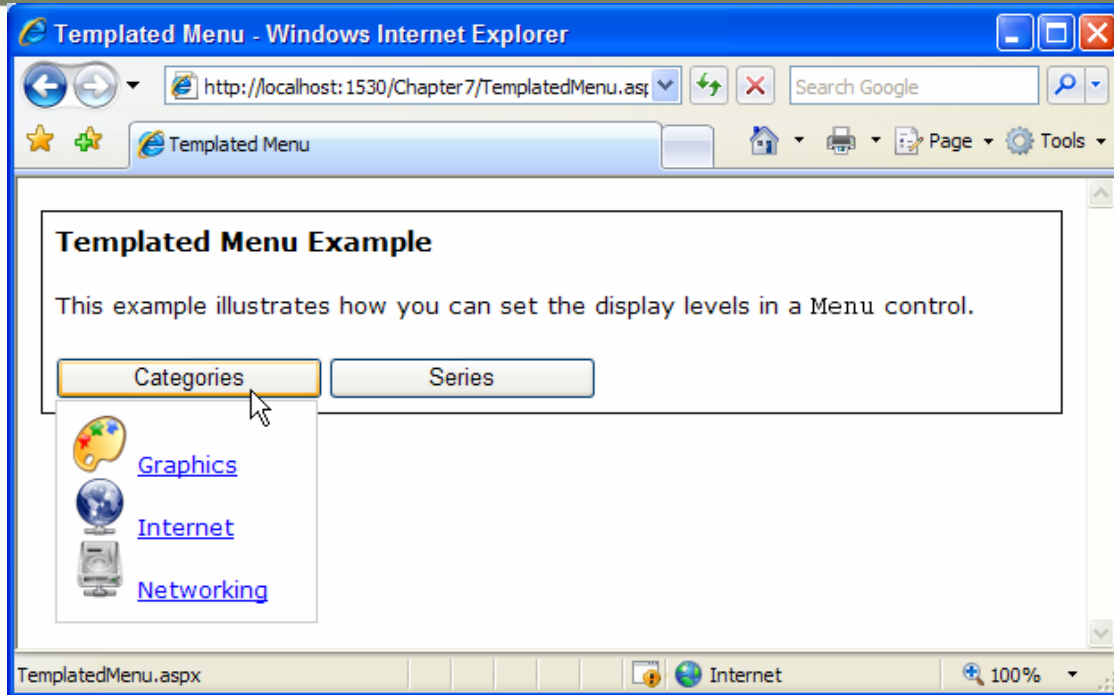


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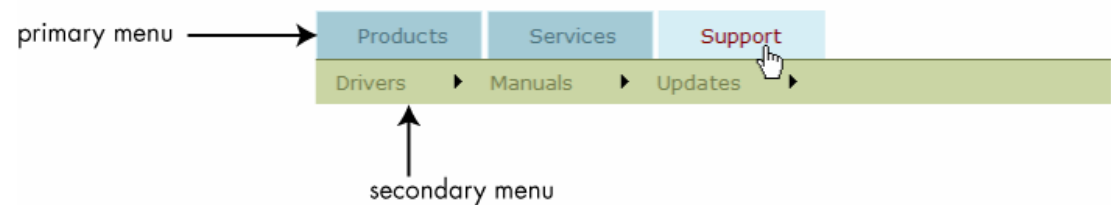
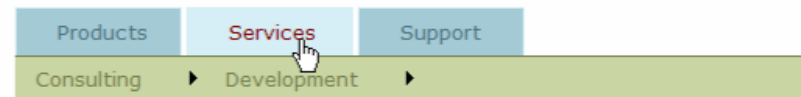
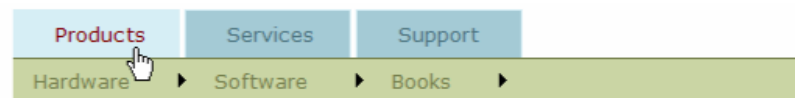
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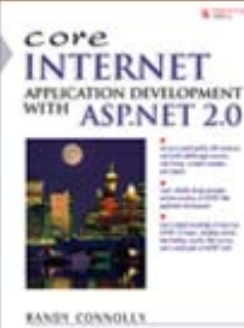


TreeView Control

- Used to display any type of hierarchical data.
- Can be used in conjunction with site maps or it can be used to display other types of hierarchical data.
- Can be extensively customized via style and template tags

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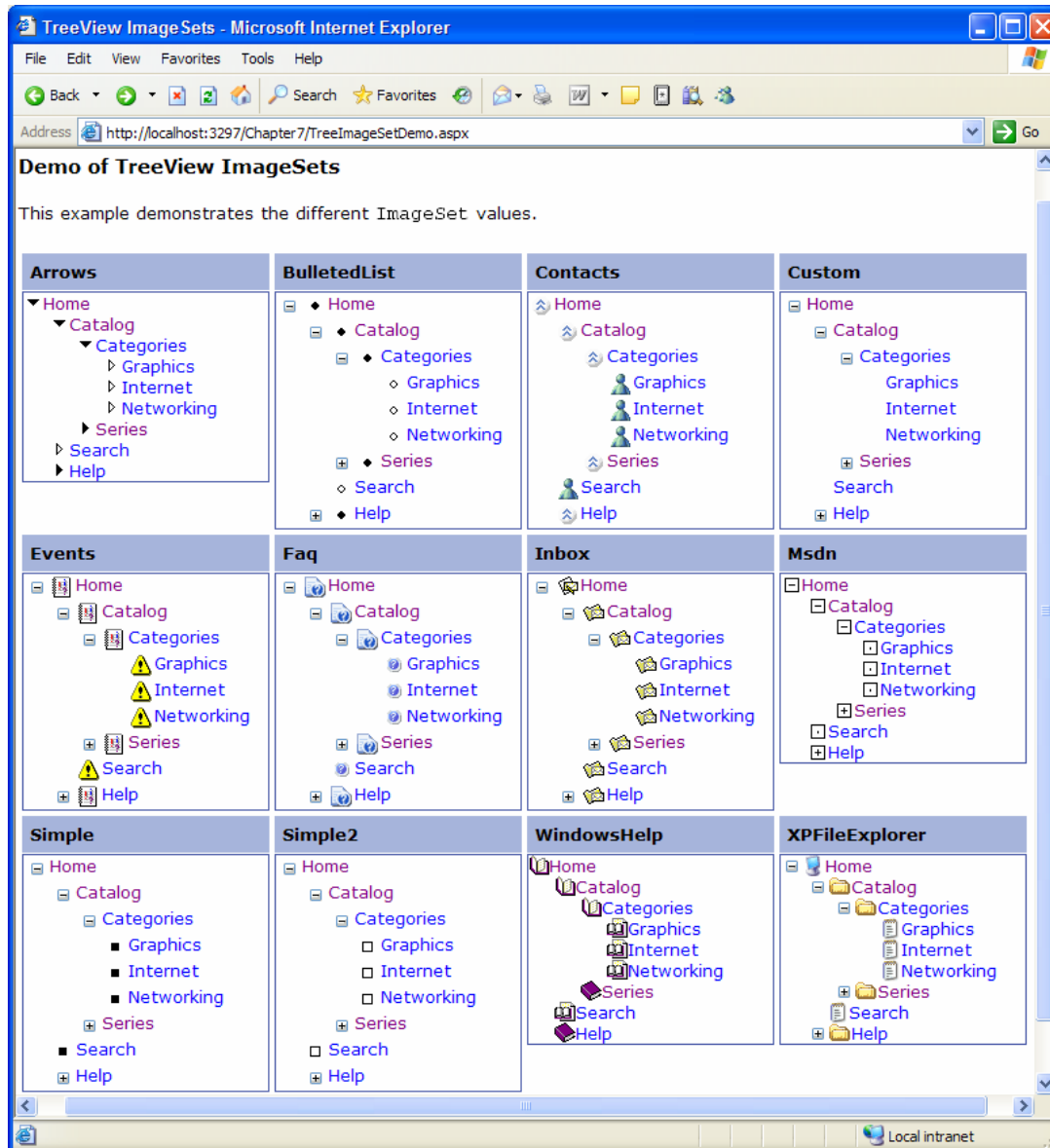
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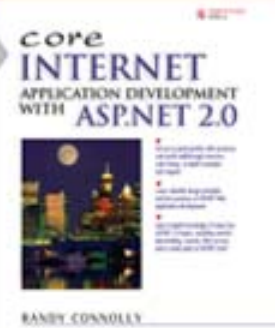
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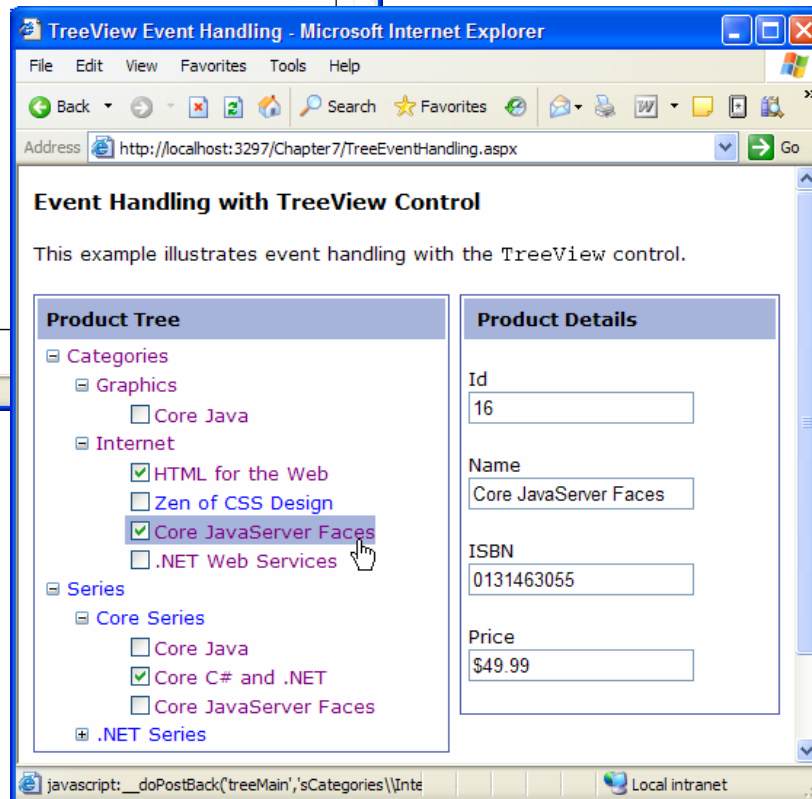
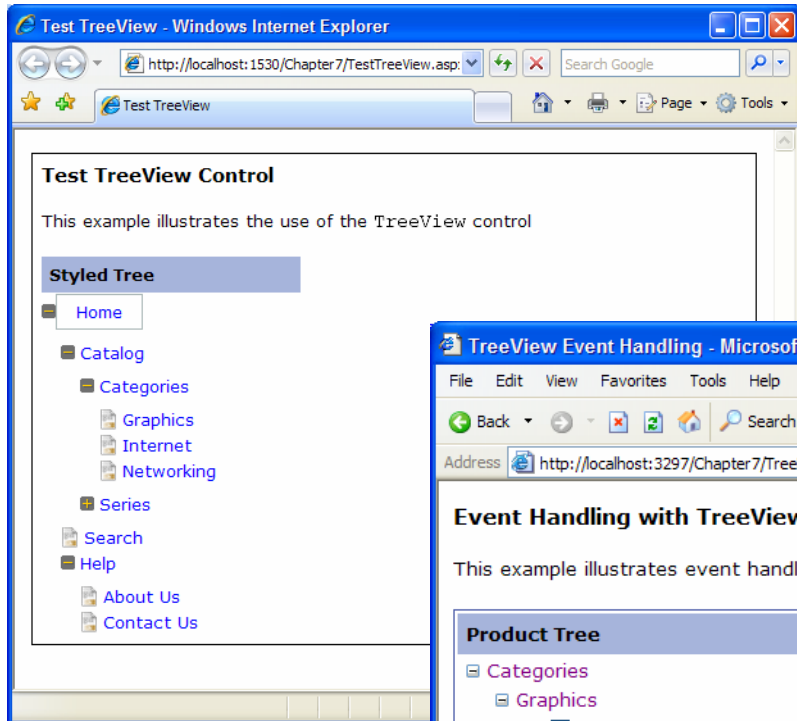


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