



Universiti  
Malaysia  
**PAHANG**  
Engineering • Technology • Creativity

# BCS 2203 | WEB APPLICATION DEVELOPMENT

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## COURSE OUTCOMES

- Create and define your website's structure
- Showing the user's current location in the site's structure using a breadcrumb
- Displaying the site's structure using TreeView web control
- Using the Menu Web Control

## What is Site Map

- The classification of a website's pages into logical categories is defined as site map.
- Based on amazon.com, which part is defined as site map?

The screenshot shows the Amazon.com homepage. On the left, a sidebar menu is open, displaying a hierarchical list of product categories. A red bracket highlights this menu, which serves as the site map. The main content area features a large banner for the 'Fire HD7 Kids Edition' tablet, priced at \$159 (down from \$189). Below the banner, there are several product recommendations, including 'The Elder Scroll Online (PC)' for 358 RM, a 'DIY Seafaring Shop' for 49.90 RM, a 'DIY Coffee Shop' for 49.90 RM, and a 'Shopping Street 3D Puzzle Music Shop' for 45 RM. The bottom of the page includes a footer with the URL 'www.amazon.com/gp/site-directory/ref=nav\_sad' and a 'ghy by Dolphin Deals' watermark.

www.amazon.com

Apps New Tab Rob J Hyndman - WiMAX Mobile Stati... P1: Speedometer Imported Forecasting: principl... Selamat datang ke P... Imported From IE

amazon.co.jp Shopping from Japan?

amazon Try Prime

Zuriani's Amazon.com Today's Deals Gift Cards Sell Help

GREEN MONDAY Deals Are Here

Shop by Department Search All Go

Unlimited Instant Videos  
Digital Music  
Appstore for Android  
Amazon Cloud Drive  
Kindle E-readers & Books  
Fire Tablets  
Fire TV  
Fire Phone  
Books & Audible  
Movies, Music & Games  
Electronics & Computers  
Home, Garden & Tools  
Beauty, Health & Grocery  
Toys, Kids & Baby  
Clothing, Shoes & Jewelry  
Sports & Outdoors  
Automotive & Industrial  
Credit & Payment Products  
Full Store Directory

ire HD7 Kids Edition

HEY BREAK IT, WE'LL REPLACE IT. QUESTIONS ASKED.

\$189  
\$159 Limited-time offer

358 RM The Elder Scroll Online (PC)

49.90 RM DIY Seafaring Shop - Miniature European ...

49.90 RM DIY Coffee Shop - Miniature European Sho...

45 RM Shopping Street 3D Puzzle Music Shop

ghy by Dolphin Deals

www.amazon.com/gp/site-directory/ref=nav\_sad

- Example:

Amazon.com has its site broken into product and categories such as books, music, DVD's and so forth. Each of these sections is further categorized by genre.

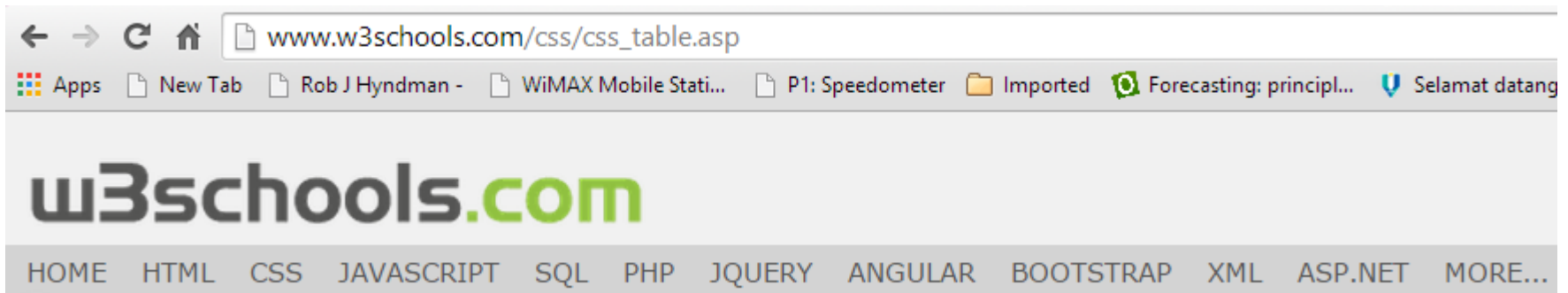
# What is Site Navigation

- Site navigation is the collection of user interface elements that assist users in browsing the site.
- Common navigation elements include:
  - ✓ Menus
  - ✓ Treeviews
  - ✓ Breadcrumbs
- These user interface elements serve two tasks:
  - ✓ They let users know where in the site they are currently visiting
  - ✓ They make it easy for the users to quickly jump to another part of the site

- ASP.NET includes 3 navigation web controls:
  - ✓ SiteMapPath
    - Provides a breadcrumb, which is a single line of text showing the user her location in the website's structure.
  - ✓ TreeView
    - Displays a hierarchical view of site's structure.
  - ✓ Menu
    - Display the same data as the treeview, but render it as a collection of menu items and submenus.

## SiteMapPath Control

- Provides a breadcrumb (a single line of text showing the user her location in the website's structure) navigation ability in a website that allows a user to jump from the current page to any of the page up until the home page
- Eg: The SiteMapPath control when [www.w3schools.com/css/css\\_table.aspx](http://www.w3schools.com/css/css_table.aspx) is visited through a browser
- A breadcrumb allows the user to quickly see where she is in the site and to navigate back through the logical hierarchy







## Breadcrumbs?

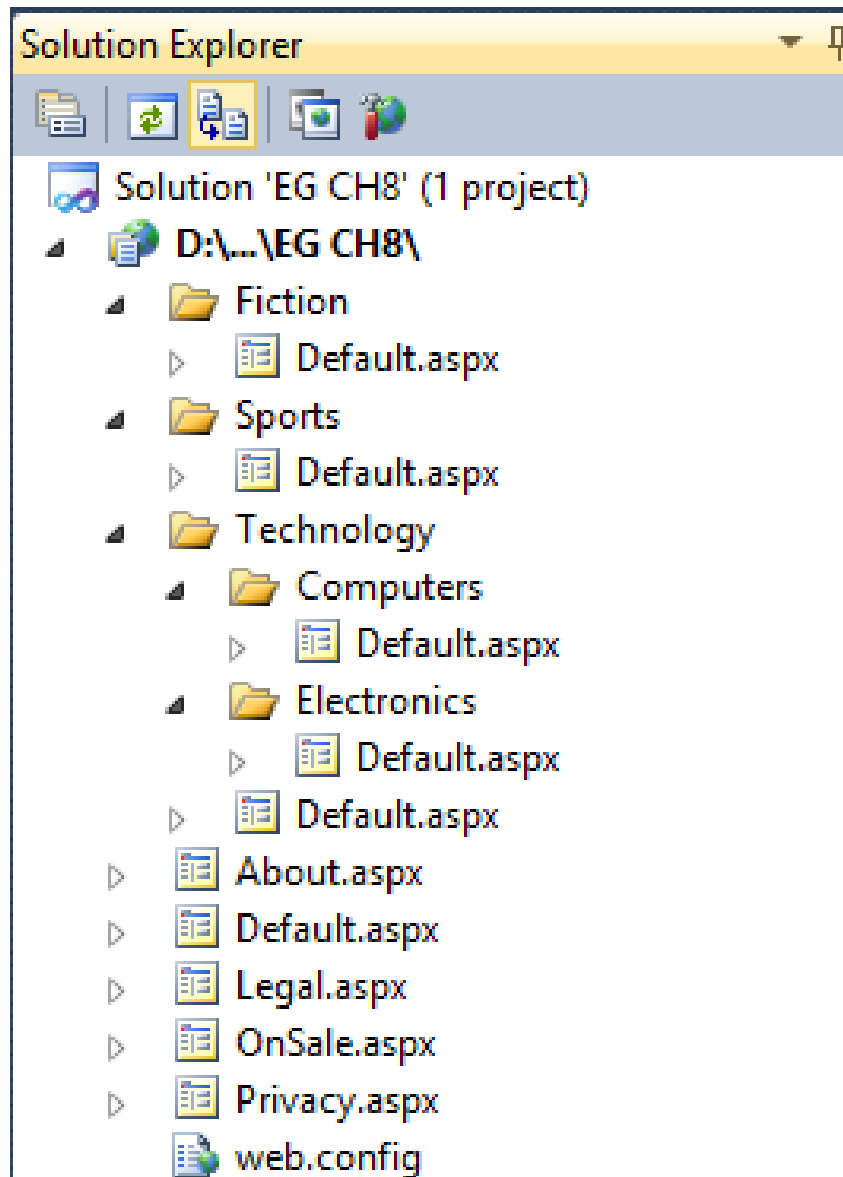


## Defining the Website's Structure Using a Site Map

Steps:

- Create a new ASP.NET website
- Add 5 new ASP.NET pages:
  - ✓ Default.aspx
  - ✓ OnSale.aspx
  - ✓ Legal.aspx
  - ✓ Privacy.aspx
  - ✓ About.aspx
- Later, add 3 folders to the website: Sports, Fiction, and Technology
- In each of these folders, add a single ASP.NET page, Default.aspx.
- Finally, in the Technology folder, add 2 subfolders, Computers and Electronics, adding a Default.aspx page to each of these subfolders.

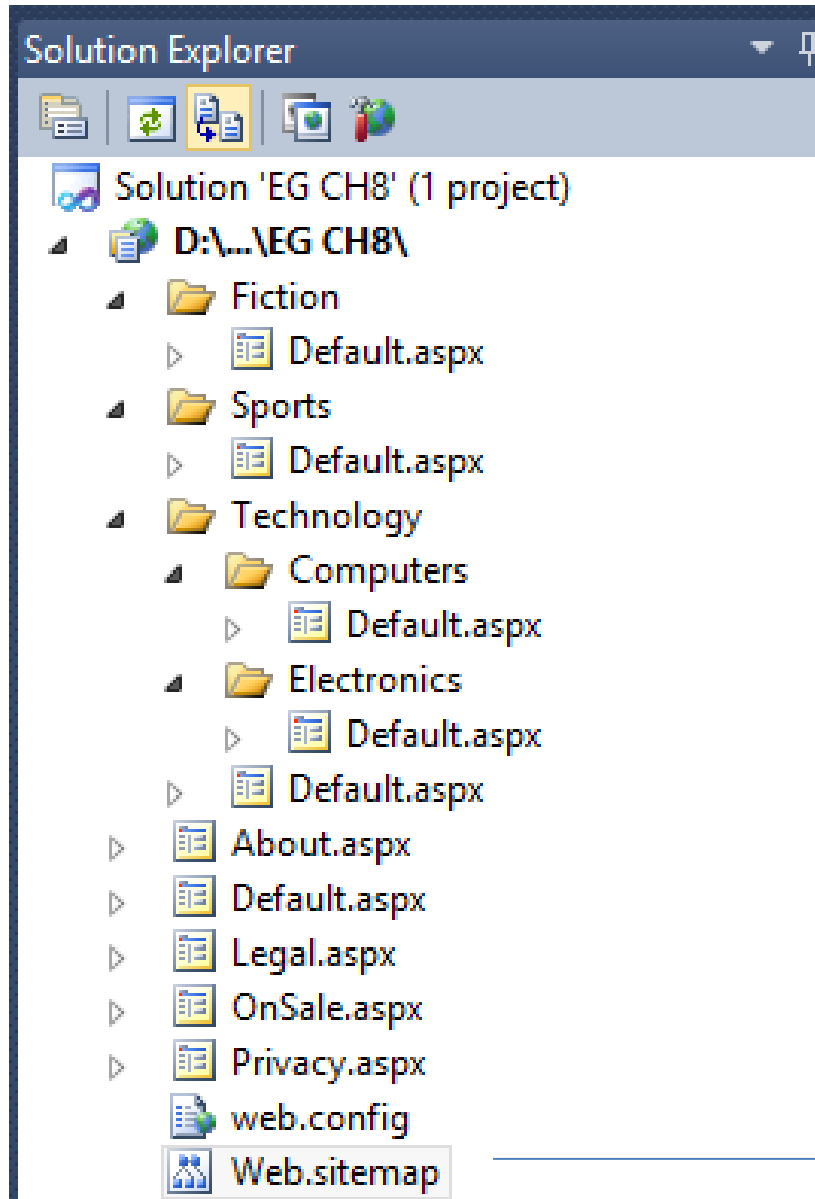
- To add a folder, right click the project name in the Solution Explorer – New Folder
- To add a webpage to a particular folder, right click that folder in the Solution Explorer – Add New Item



# Adding the Site Map

- Follow the same steps as you normally would to add an ASP.NET page to the project
  - ✓ Right click project name in the Solution Explorer -> Add New Item
  - ✓ From Add New Item -> Site Map -> Add

- ❖ Put the site map in the root directory
- ❖ Leave the name of the file as Web.sitemap



When adding a site map to your project, remember to:

1. Put the site map in the root directory
2. Leave the name of the file as Web.sitemap.

If you place this file in another folder or choose a different name, the navigation Web controls won't be able to find the site map because, by default, they look for a file named Web.sitemap in the root directory.

The Site Map

```
Web.sitemap X Technology/Electronics/Default.aspx* Technology/Computers/Default.aspx*
<?xml version="1.0" encoding="utf-8" ?>
<siteMap xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0" >
  <siteMapNode url="" title="" description="">
    <siteMapNode url="" title="" description="" />
    <siteMapNode url="" title="" description="" />
  </siteMapNode>
</siteMap>
```

The default content of the Site Map

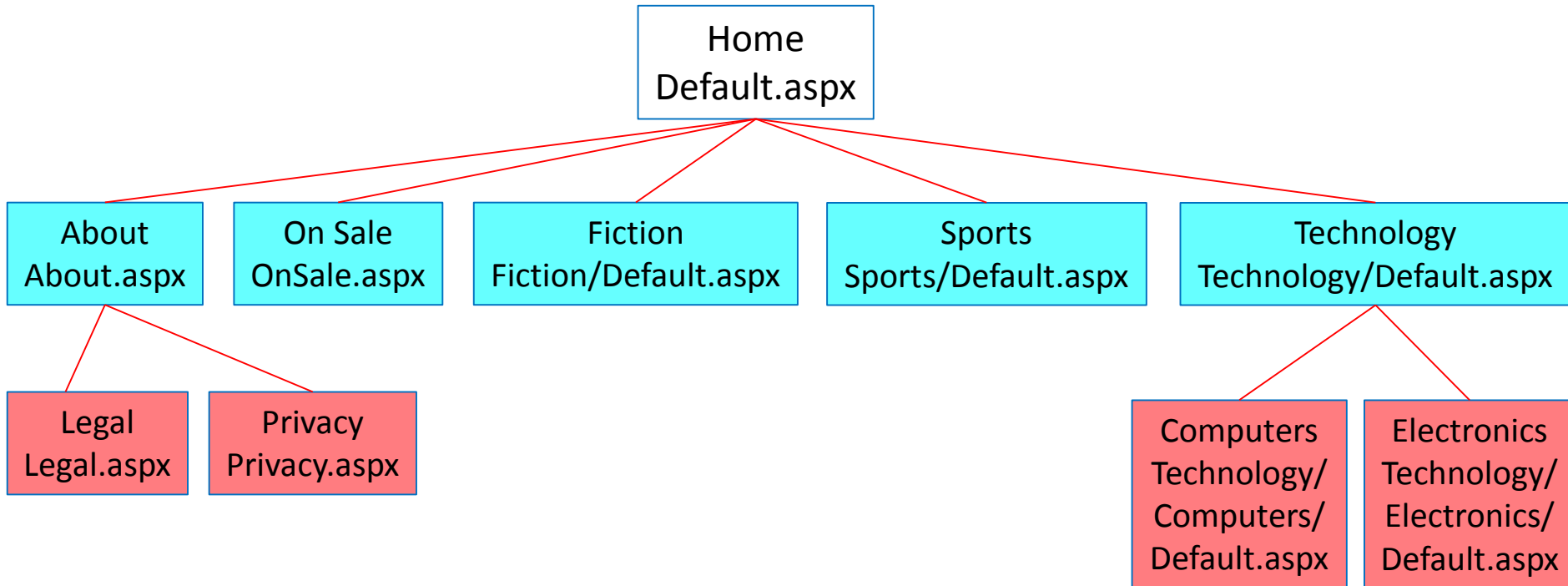
Formatting rules in editing the content of the Site Map:

1. Case sensitive

Eg: If you write <SITEMapNode>, you'll get an error.

2. All elements must have opening and closing tags

## Building the Site Map





- To implement this structure in an ASP.NET site map:
  - ✓ Clear out the `<SiteMapNode>` elements, from line 3-6
  - ✓ Top to down of the hierarchy, add a `<siteMapNode>` for each section

First, let add a `<siteMapNode>` element for the Home section:

```
<?xml version="1.0" encoding="utf-8" ?>  
<siteMap xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0" >  
  <siteMapNode url ="Default.aspx" title ="Home" description =""/>  
</siteMap>
```

- Because the next sections in the hierarchy exist as descendants of the Home section, the corresponding <siteMapNode> elements will be nested within the Home <siteMapNode> element. There are 5 sections, requiring 5 <siteMapNode> elements:

```
Web.sitemap* X Technology/Electronics/Default.aspx Default.aspx Technology/Computers/Default.aspx Tec
<?xml version="1.0" encoding="utf-8" ?>
<siteMap xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0" >
  <siteMapNode url="Default.aspx" title="Home" description="">
    <siteMapNode url="About.aspx" title="About" description=""/>
    <siteMapNode url="OnSale.aspx" title="On Sale" description=""/>
    <siteMapNode url="Fiction/Default.aspx" title="Fiction" description=""/>
    <siteMapNode url="Sports/Default.aspx" title="Sports" description=""/>
    <siteMapNode url="Teacnology/Default.aspx" title="Technology" description=""/>
  </siteMapNode>
</siteMap>
```

If you continue this process through the remainder section, you'll eventually wind up with the site map as shown below:



```
<?xml version="1.0" encoding="utf-8" ?>
<siteMap xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0" >
  <siteMapNode url ="Default.aspx" title ="Home" description ="">

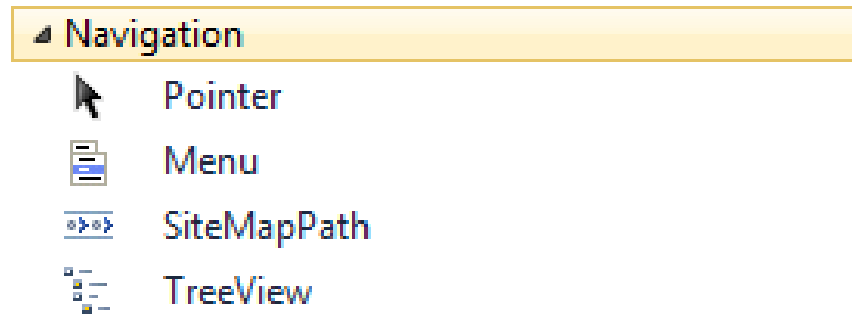
    <siteMapNode url ="About.aspx" title ="About" description ="">
      <siteMapNode url ="Legal.aspx" title ="Legal" description =""/>
      <siteMapNode url ="Privacy.aspx" title ="Privacy" description =""/>
    </siteMapNode>

    <siteMapNode url ="OnSale.aspx" title ="On Sale" description =""/>
    <siteMapNode url ="Fiction/Default.aspx" title ="Fiction" description =""/>
    <siteMapNode url ="Sports/Default.aspx" title ="Sports" description =""/>

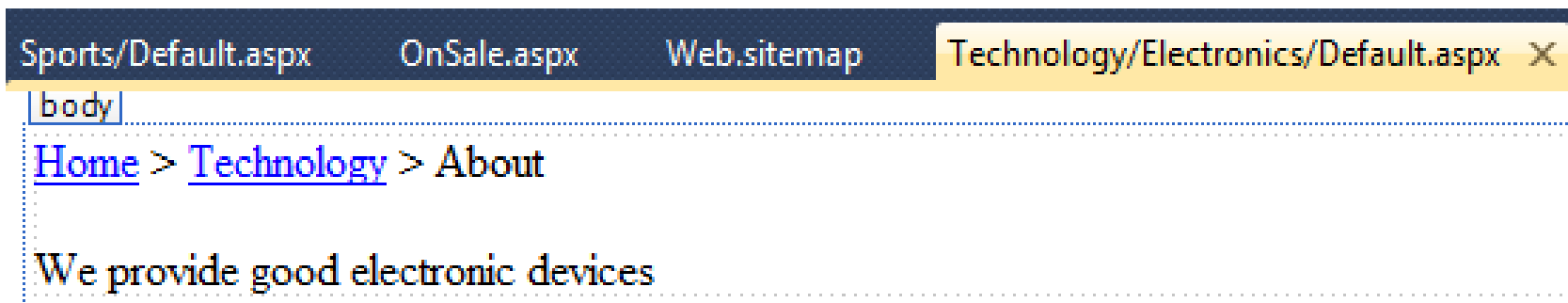
    <siteMapNode url ="Tecnology/Default.aspx" title ="Technology" description ="">
      <siteMapNode url ="Technology/Computers/About.aspx" title ="About" description =""/>
      <siteMapNode url ="Technology/Electronics/About.aspx" title ="About" description =""/>
    </siteMapNode>

  </siteMapNode>
</siteMap>
```

## Displaying a Breadcrumb with the SiteMapPath control



Now, try add the SiteMapPath control to the Default.aspx pages in the root directory, in the Technology folder, and in the Computers subfolders





# Displaying the Site's Structure in a TreeView

- TreeView
  - ✓ Displays a hierarchical view of the site's structure.
- Example:
  - ✓ Adding a TreeView to the Home section (Default.aspx in the root folder)
    1. Add a SiteMapDataSourceControl to the page (Toolbox -> Data section)
    2. Add TreeView control to the page
    3. From its smart tag, select SiteMapDataSource we just added to the page from the Choose Data Source drop-down list

Jobs.aspx

ContactUs.aspx

Careers.aspx



Home.aspx\*



We

## Home Page

SiteMapDataSource - SiteMapDataSource1  
asp:treeview#TreeView1

 Home  
     Careers  
        Jobs  
        Contact



### TreeView Tasks

Auto Format...

Choose Data Source:

SiteMapDataSource1



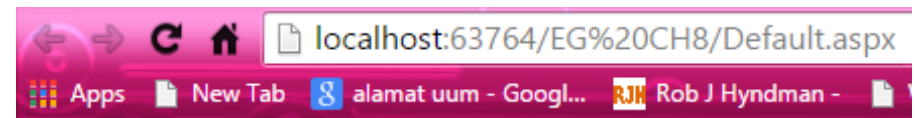
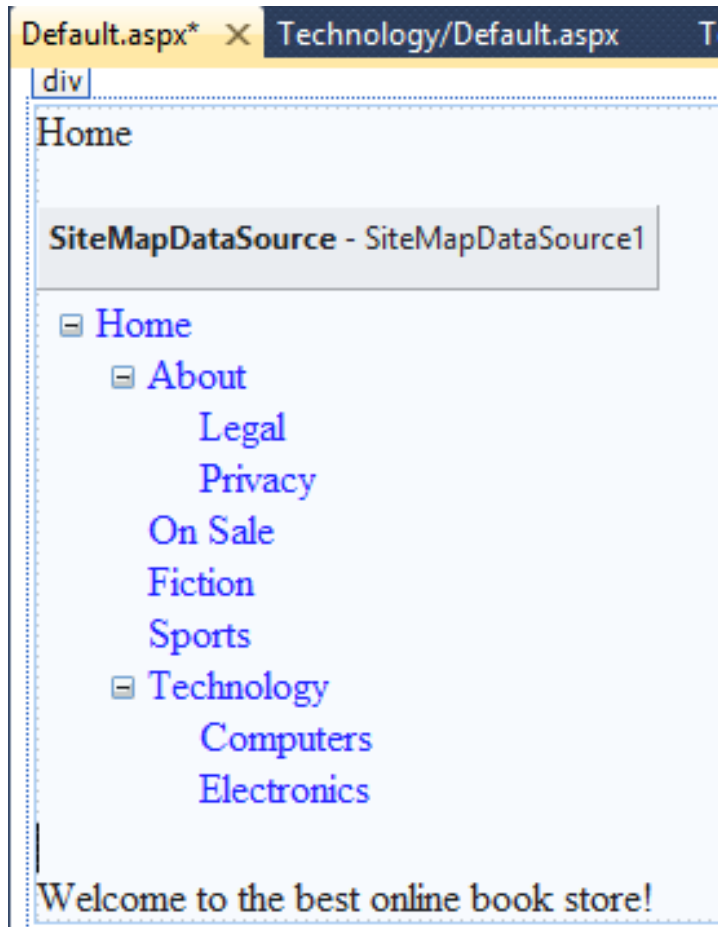
Refresh Schema

Edit TreeNode Databindings...



Show Lines

# CHAPTER 8| SITE MAP AND SITE NAVIGATION



Home

- Home
  - About
    - Legal
    - Privacy
    - On Sale
    - Fiction
    - Sports
  - Technology
    - Computers
    - Electronics

Welcome to the best online book store!

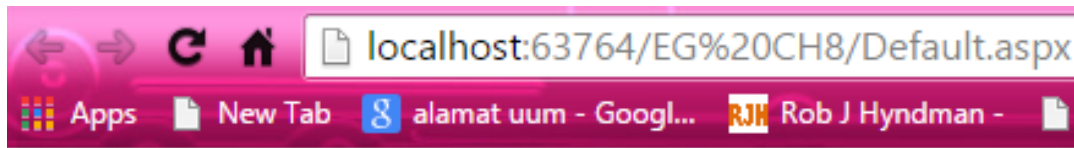
### Using Menus to Show the Site's Structure

- Similarly like TreeView, the Menu Control displays the entire contents of the site map with the aid of SiteMapDataSource control.

TreeView	Menu
Display contents as a tree	Displays the items using a menu interface



# CHAPTER 8| SITE MAP AND SITE NAVIGATION



Home

[-] Home

[-] About

Legal

Privacy

On Sale

Fiction

Sports

[-] Technology

Computers

Electronics

TreeView

Home ▶ About      ▶ Legal  
On Sale      Privacy  
Fiction  
Sports  
Technology ▶

Menu

Welcome to the best online book store!

# CHAPTER 8| SITE MAP AND SITE NAVIGATION

Home

- [-] Home
  - [-] About
    - Legal
    - Privacy
  - On Sale
  - Fiction
  - Sports
- [-] Technology
  - Computers
  - Electronics

Types of Nodes in TreeView	Description
Root Nodes	These nodes have no parent
Parent Nodes	These nodes are other than the Root Nodes that have children nodes
Leaf Nodes	These Nodes have a parent but no children nodes
Selected Nodes	The selected node in the one that corresponds to the current page being visited.



## Configuring the Menu's Static and Dynamic Portions

Home ▶ About      ▶ Legal  
On Sale      Privacy  
Fiction  
Sports  
Technology ▶

### Static:

The static portion of the menu is always shown when the page is viewed

### Dynamic:

The dynamic portion is shown only when the user interacts with the menu

### Summary

- The SiteMapPath displays a breadcrumb, showing the user the current page he is visiting and its location in the site map hierarchy
- The TreeView and Menu controls display the entire site map, either as a tree or a menu.
- To use the TreeView or Menu, you need to first add a SiteMapDataSource control to the page.

To be continued at Chapter 9...