

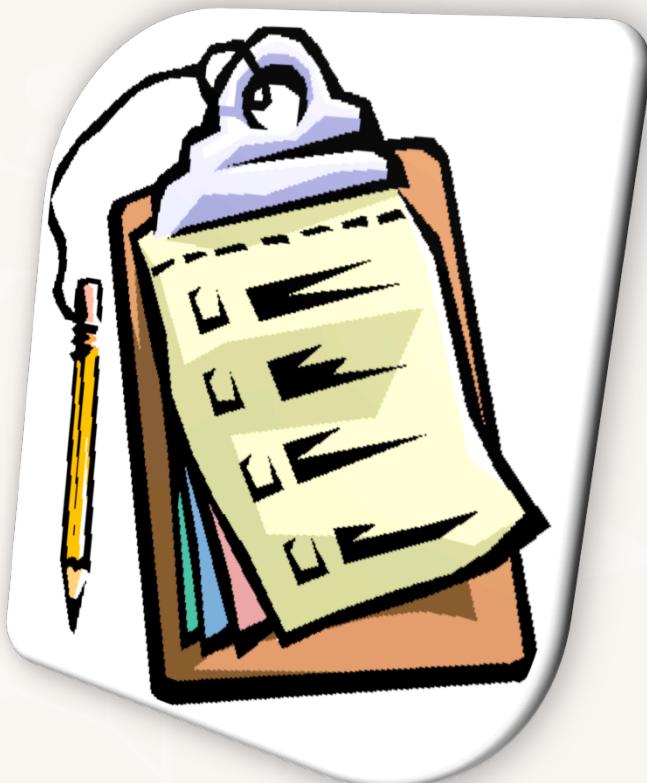


# **INTRODUCING ASP.NET AND THE .NET PLATFORM**

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# Outline

- **Introduction**
- **What is ASP.NET ?**
- **Installing the Required Software**
- **Writing Your First ASP.NET Page**



# Introduction

- ASP.NET is one of the most popular web development technologies on the planet
- The first version was released in 2002, and since then, Microsoft has continued the tradition of releasing a powerful web development framework that allows web developers to do more with less.
- ASP.NET has experienced rapid growth among the established corporate world, as well as becoming the choice for many freelance developers.

# Introduction

- ASP.NET has many advantages:

- Well-established IDE (Integrated Development Environment) called Microsoft Visual Studio
- Advanced security and performance frameworks that handle many of the mundane tasks automatically on the server side,
- Freeing the developer to create more full-fledged web applications and websites.
- ASP.NET lets you write web applications in a variety of familiar programming. We will focus only on the two most popular .NET languages, Visual Basic.NET (often referred to simply as VB.NET or VB) and C# (pronounced “See-Sharp”).

# Introduction

- It has new features that build upon its predecessor to improve performance, security, and interoperability with the latest browsers.
- It comes available with new development tools, including Visual Web Developer 2010 Express Edition and SQL Server 2008 R2 Express Edition, both of which are free.

# What is ASP.NET ?

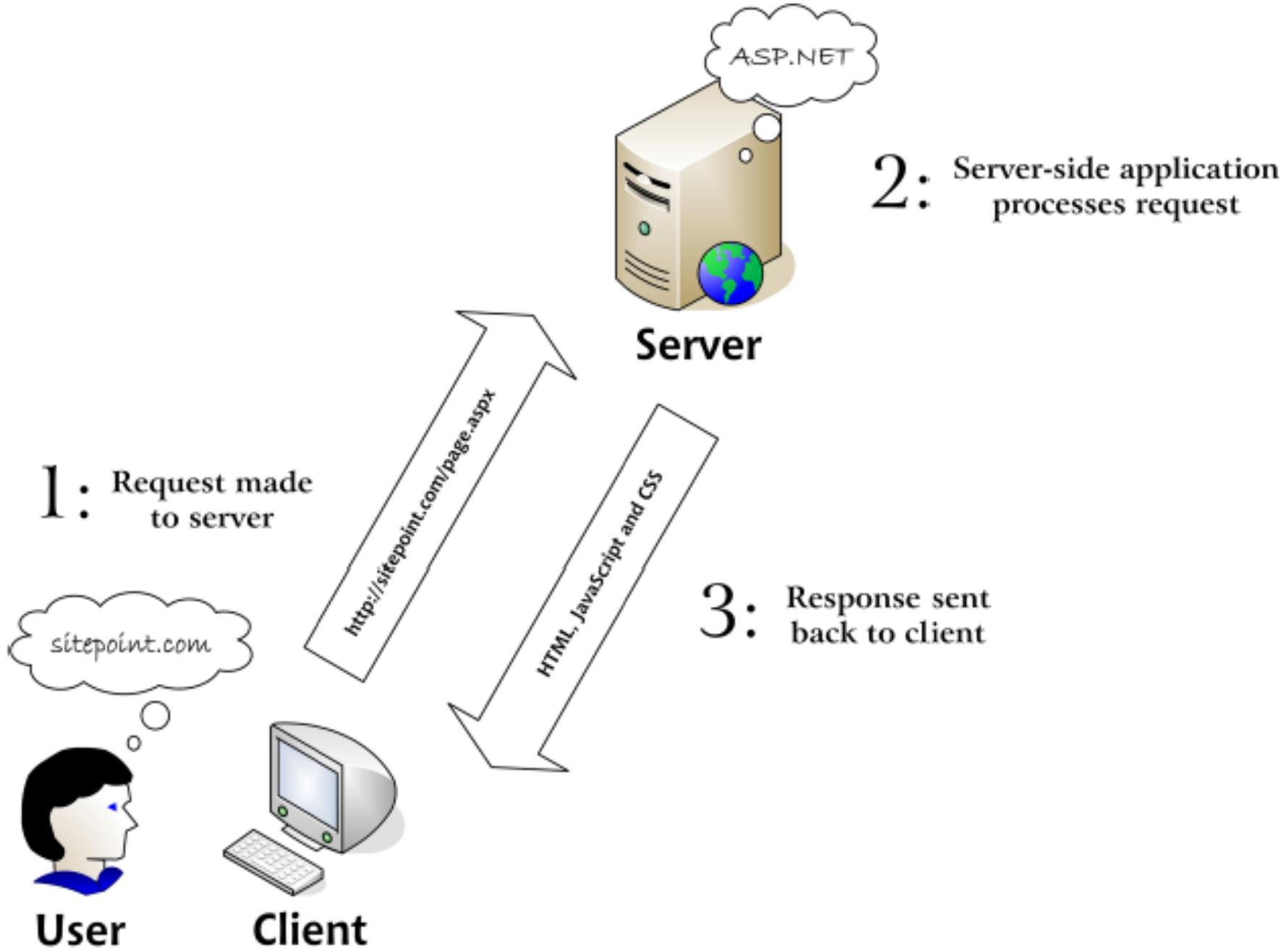
- **ASP.NET** is a sophisticated and powerful web development framework.
- Development with ASP.NET requires not only an understanding of HTML and web design, but a firm grasp of the concepts of object oriented programming and development.
- ASP.NET is a server-side technology for developing web applications based on the Microsoft .NET Framework

# What is ASP.NET ?

In the case of ASP.NET, the code in the page is read by the server and used to generate the HTML, JavaScript, and CSS, which is then sent to the browser.

- A server-side technology: it runs on the web server.
- **Client-side technologies** such as HTML, JavaScript, and Cascading Style Sheets (CSS),  
it runs in the web browser

When a web browser requests a web page created with only client-side technologies, (front page) the web server simply grabs the files that the browser (or client) requests and sends them the Client web browser. The client is entirely responsible for reading the markup in those files and interpreting that markup to display the page on the screen.



# What is ASP.NET ?

- **User** The transaction starts and ends with the user. The user operates on the web client software and interprets the results.
- **Web client** This is the software program that the person uses to interact with the web application. The client is usually a web browser, such as Internet Explorer or Firefox.
- **Web server** This is the software program located on the server. It processes requests made by the web client.

# What is ASP.NET ?

- ASP.NET is a technology for developing web applications
- A web application is dynamic in nature, and often considered to be a web version of standard desktop software. Google Mail is an excellent example of a web application.
- Web applications usually (but not always) store information in a database, and allow visitors to the site to access and change that information. Many different programming technologies and supported languages have been developed to create web applications; PHP, JSP

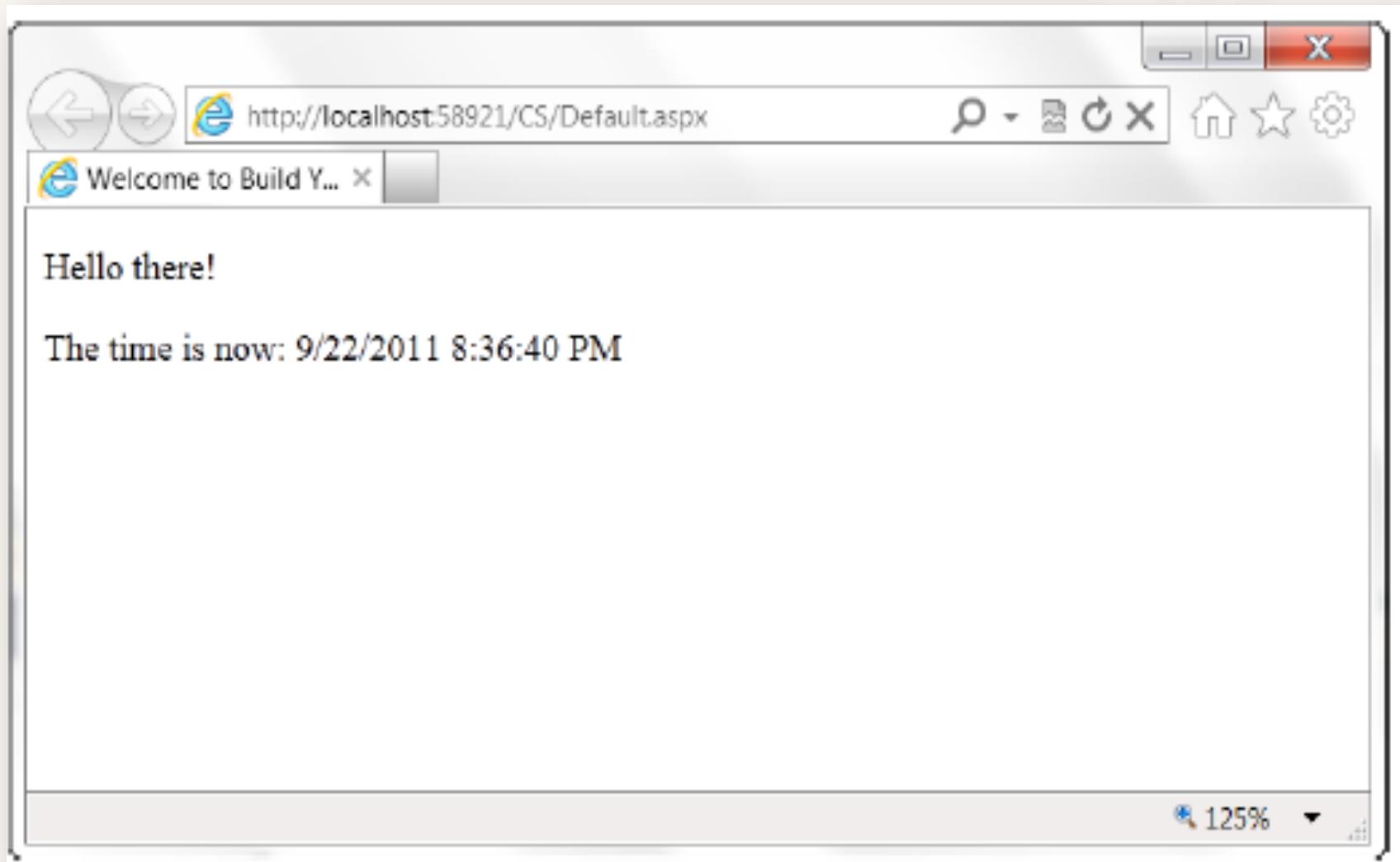
# What is ASP.NET ?

- ASP.NET uses the Microsoft .NET Framework.
- The .NET Framework collects all the technologies needed for building Windows desktop applications, web applications, web services, and so on into a single package, and makes them available to many programming languages.

# Installing the Required Software (page 5-11)

- **Visual Web Developer 2008 Express Edition**
  - Visual Web Developer 2008 is a free, powerful web development environment for ASP.NET 3.5. It includes features such as a powerful code, HTML and CSS editor, project debugging, IntelliSense (Microsoft's code autocompletion technology).
- **.NET Framework 3.5 and the .NET Framework Software Development Kit (SDK)**
  - As we've already discussed, the .NET Framework drives ASP.NET. You're likely to have the .NET Framework already, as it installs automatically through the Windows Update service. Otherwise, it'll be installed together with Visual Web Developer.
- **Microsoft SQL Server 2005 Express Edition**
  - This is the free, but still fully functional, version of SQL Server 2005. This software is a Relational Database Management System whose purpose is to store, manage, and retrieve data as quickly and reliably as possible.
- **SQL Server Management Studio Express**
  - Because the Express Edition of SQL Server doesn't ship with any visual management tools, you can use this free tool, also developed by Microsoft, to access your SQL Server 2005 database.

# Writing Your First ASP.NET Page



# Writing Your First ASP.NET Page

To create this page in Visual Web Developer, you'll need to follow a few simple steps:

1. Start Visual Web Developer, and choose File > New Web Site (or hit the default keyboard shortcut, Shift+Alt+N).
2. Choose ASP.NET Web Site for the template and File System for the location type. This location type tells Visual Web Developer to create the project in a physical folder on your disk, and execute that project using the integrated web server.
3. Choose the language in which you prefer to code your pages.

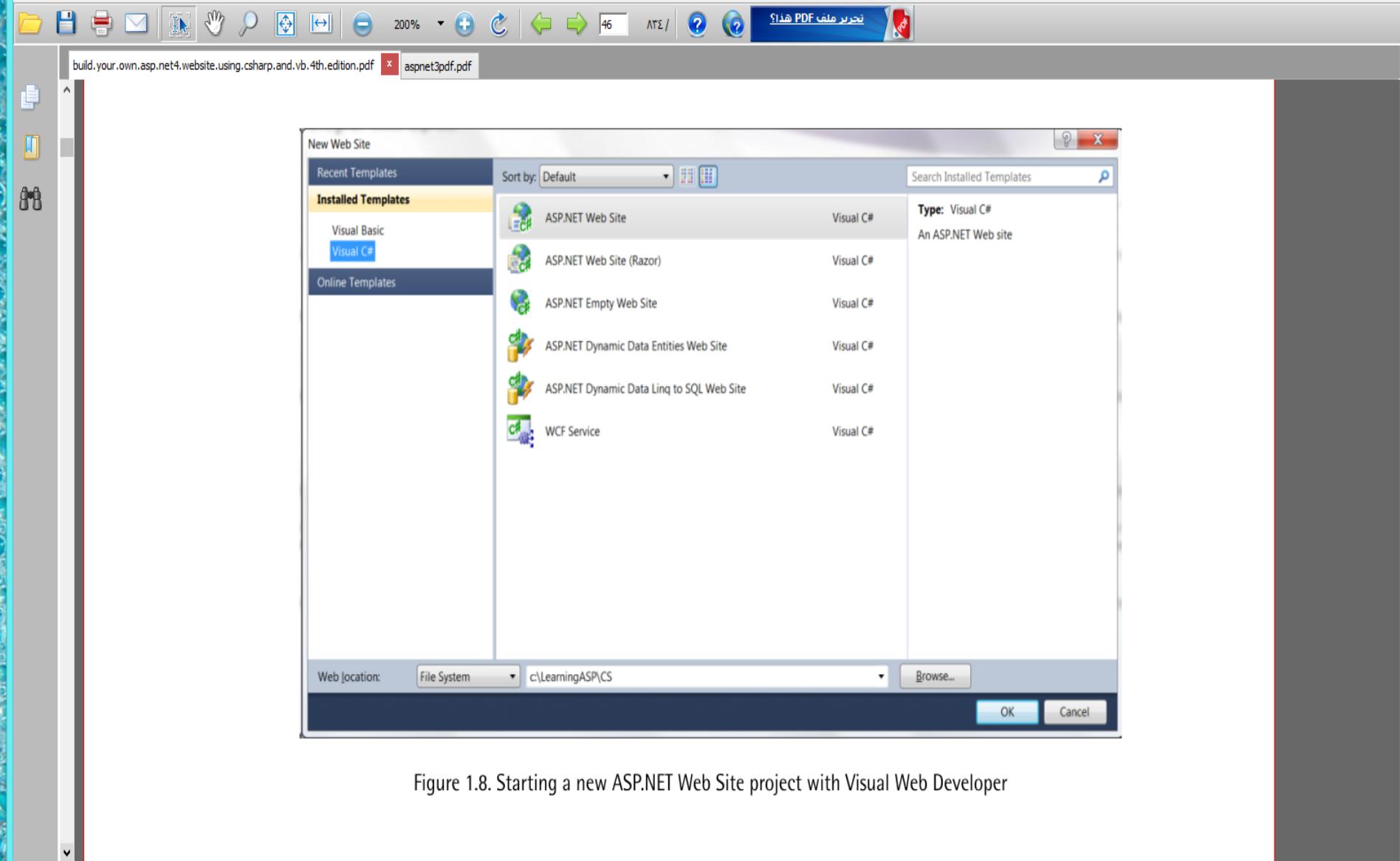
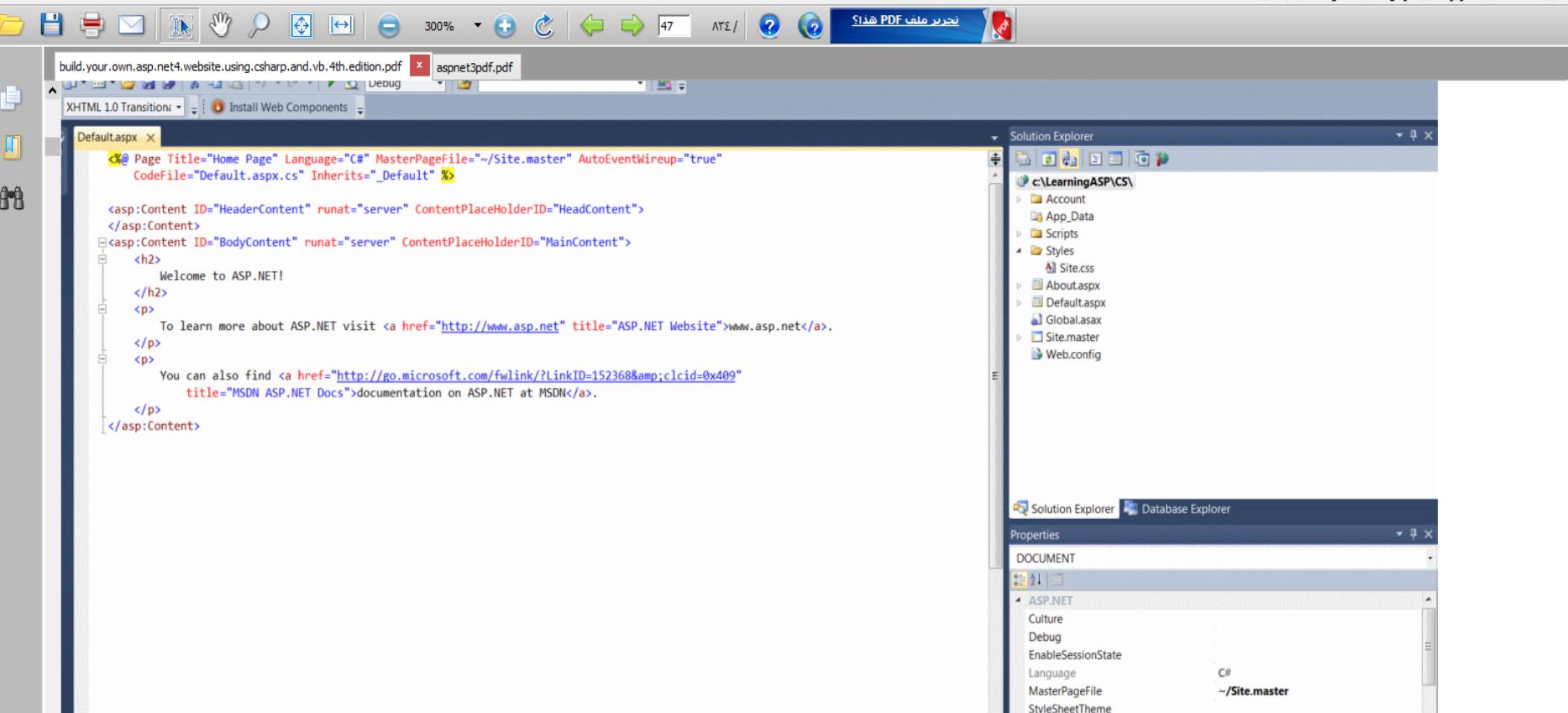


Figure 1.8. Starting a new ASP.NET Web Site project with Visual Web Developer



After clicking OK, Visual Web Developer will create the project along with several files to ease your transition into the ASP.NET development world. Your project Will also come with

- a Site master file, which represents a template applied to your Entire site automatically.
- Your Project contains an empty App\_Data folder,
- a Scripts Folder which includes jQuery files,
- Styles which contains a basic Site.css style sheet,
- a basic Default.aspx file,
- and a basic configuration file,

The main panel in the Visual Web Developer interface is the page editor, in which you'll see the HTML source of the Default.aspx web page. Edit the title of the page to something more specific Than Home Page, such as Welcome to Build Your Own ASP.NET 4 Website!:

```
<html xmlns="http://www.w3.org/1999/xhtml">
    <head runat="server">
        <title>Welcome to Build Your Own ASP.NET 4 Website!
        </title>
    </head>
    <body>
        <form id="form1" runat="server">
            <div>
                <p>Hello there!</p>
                <p>
                    The time is now:
                    <asp:Label ID="myTimeLabel" runat="server" />
                </p>
            </div>
        </form>
    </body>
</html>
```

# Writing Your First ASP.NET Page

```
<body>
  <form id="form1" runat="server">
    <div>
      <p>Hello there!</p>
      <p>
        The time is now:
        <asp:Label ID="myTimeLabel" runat="server" />
      </p>
    </div>
  </form>
</body>
</html>
```

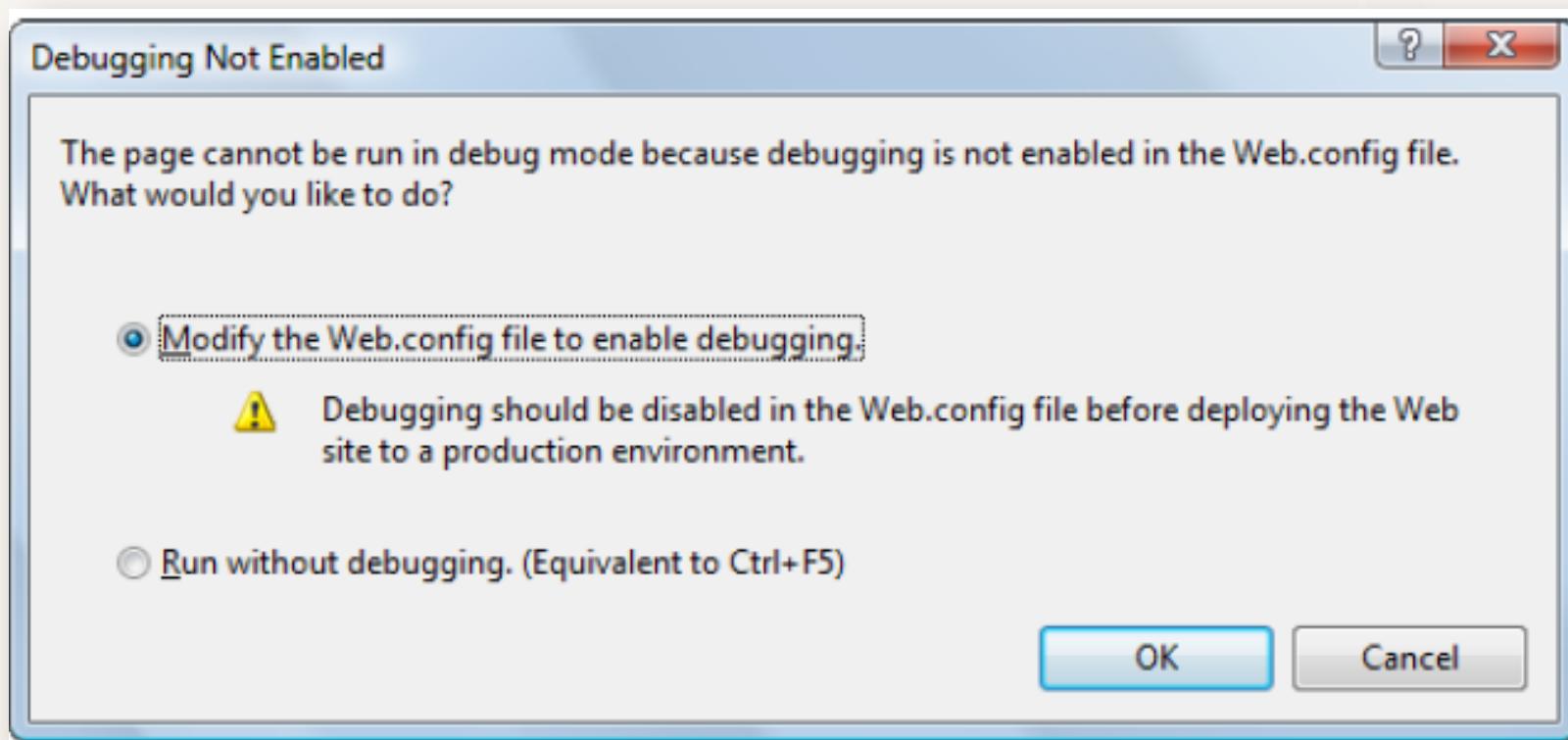


The diagram illustrates the structure of an ASP.NET page. It shows the HTML code for a basic page with a form containing a div. Inside the div, there are two paragraphs: one with static text "Hello there!" and another containing an ASP.NET Label control. A callout arrow originates from the opening tag of the Label control and points to a rectangular box with a drop shadow. The box contains the text "Web Server Control" in a bold, dark font, indicating that the Label control is a server-side control used for displaying dynamic content.

# Writing Your First ASP.NET Page

- The **Label control** is one of the simplest controls in .NET, which lets you insert dynamic content into the page.
- The **asp:** part of the tag name identifies it as a built-in ASP.NET tag.
- **<asp:Label/>** is probably one of the most frequently used.
- The **runat="server"** attribute value identifies the tag as something that needs to be handled on the server.

The first time you do this, Visual Web Developer will let you know that your project isn't configured for debugging, and it'll offer to make the necessary change to the configuration (Web.config) file for you—see Figure Confirm the change by clicking OK





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If Script Debugging is not enabled in Internet Explorer, you'll get the dialog shown in Figure 1.11. Check the **Don't show this dialog again** checkbox, and click **Yes**.

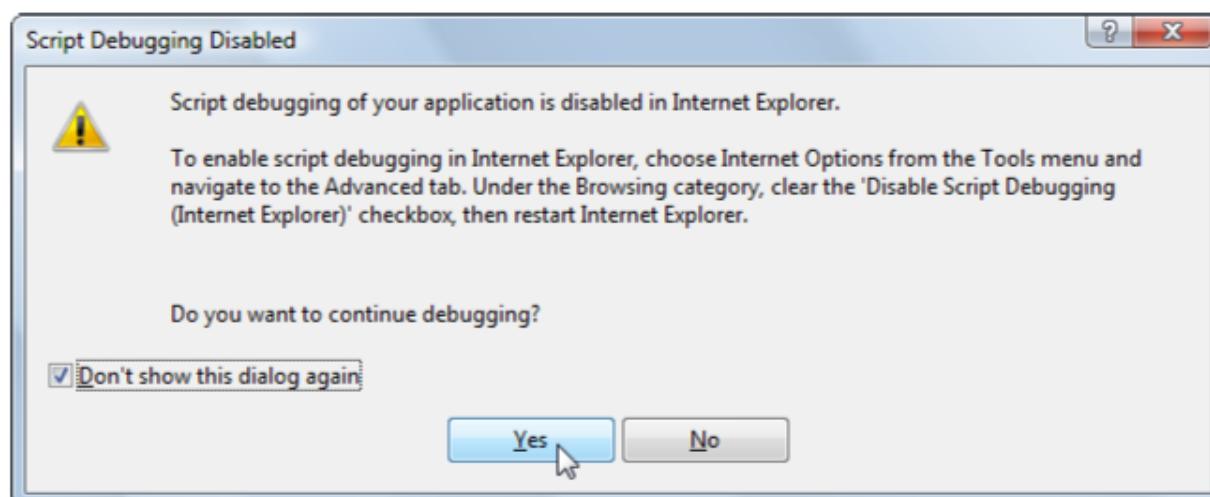
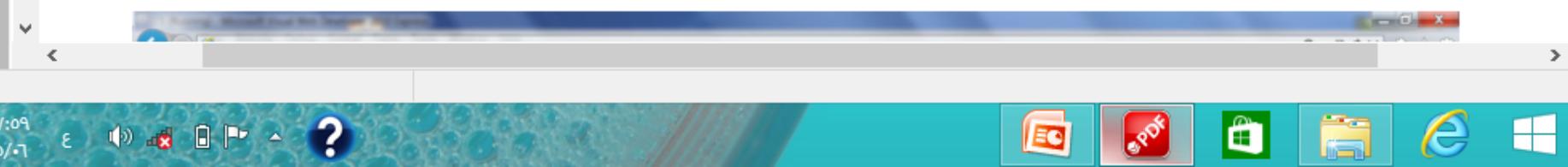


Figure 1.11. Enabling script debugging in Internet Explorer

After all the notifications are out of the way, you should have a page like that in Figure 1.12:





## Set Your Default Browser to Internet Explorer

When executing the project, the website is loaded in your system's default web browser. For the purposes of developing ASP.NET applications, we recommend configuring Visual Web Developer to use Internet Explorer, even if this is not your preferred web browser. We recommend Internet Explorer because it integrates better with Visual Web Developer's .NET and JavaScript debugging features. For example, Visual Web Developer knows to automatically stop debugging the project when the Internet Explorer window is closed. To change the default browser to be used by Visual Web Developer, right-click the root node in **Solution Explorer**, choose **Browse With**, select a browser from the **Browsers** tab, and click **Set as Default**.

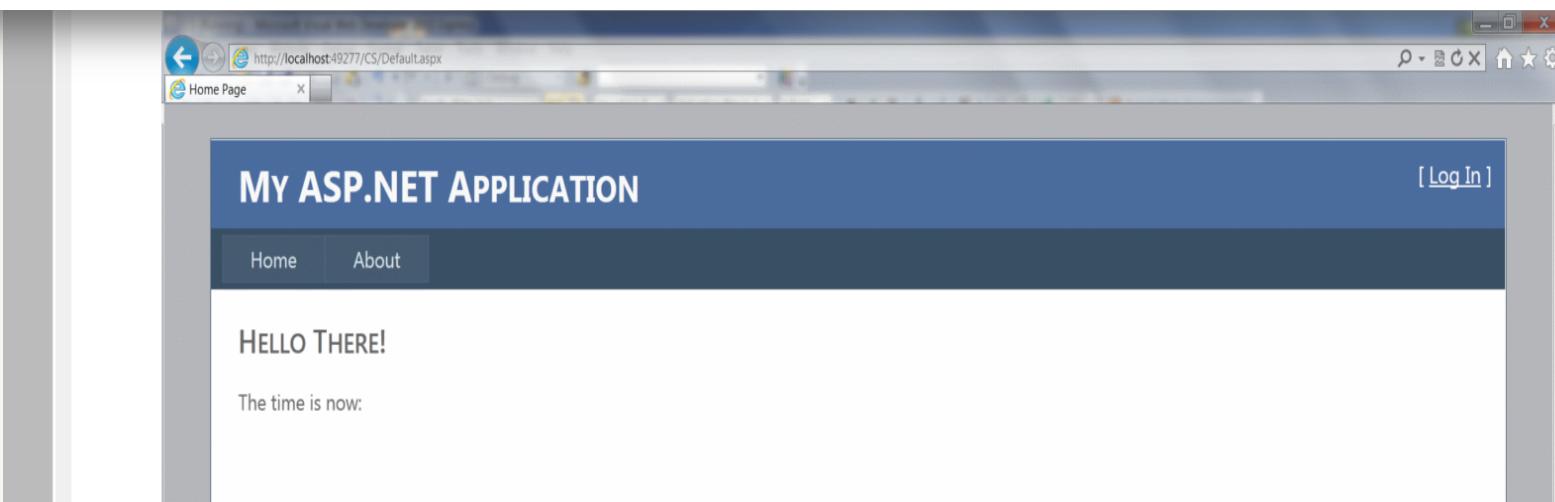


Figure 1.12. Executing your first ASP.NET web page

# Writing Your First ASP.NET Page

- ASP.NET allows web forms (.aspx pages) to contain C# or VB.NET code, or they can use separate files—named code-behind files—for storing this code
- There are many ways in which you can open that file code:
  - You can click the **View Code icon** at the top of the Solution Explorer window
  - right-click the Default.aspx file in Solution Explorer and choose **View Code**
  - or click the **+ symbol** to expand the Default.aspx entry.

Default.aspx.cs × Default.aspx

```
_Default.cs
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

public partial class _Default : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
    }
}
```

C# version contains a definition for a method called `Page_Load`. This is the method that executes automatically when the project is executed, and we want to use it to write the code that will display the current time inside the Label control.

Default.aspx.vb × Default.aspx

(General)

```
Partial Class _Default
    Inherits System.Web.UI.Page

End Class
```

the VB.NET version doesn't



## C# is Case Sensitive

C#, unlike VB, is case sensitive. If you type the case of a letter incorrectly, the page won't load. If these languages look complicated, don't worry: you'll learn more about them in Chapter 3.

```
public partial class _Default : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
        myTimeLabel.Text = DateTime.Now.ToString();
    }
}
```

# Writing Your First ASP.NET Page

- **DateTime** is a class that's built into the .NET Framework; it lets you perform all sorts of useful functions with dates and times.  
(returns the current date and time.)
- The .NET Framework has thousands of these classes, which do countless handy things.
- The classes are collectively known as the **.NET Framework Class Library**.

# Html source code returned to client Browser

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>
      Welcome to Build Your Own ASP.NET 4 Web Site!
    </title>
  </head>
  <body>
    <form name="form1" method="post" action="Default.aspx"
      id="form1">
      <div>
        <input type="hidden" name="__VIEWSTATE" id="__VIEWSTATE"
          value="..." />
      </div>
      <div>
        <p>Hello there!</p>
        <p>
          The time is now:
          <span id="myTimeLabel">5/13/2008 3:10:38 PM</span>
        </p>
      </div>
    </form>
  </body>
</html>
```