



PROGRAMAÇÃO PARA INTERNET RICA

INTRODUÇÃO AO ASP.NET

Prof. Dr. Daniel Caetano

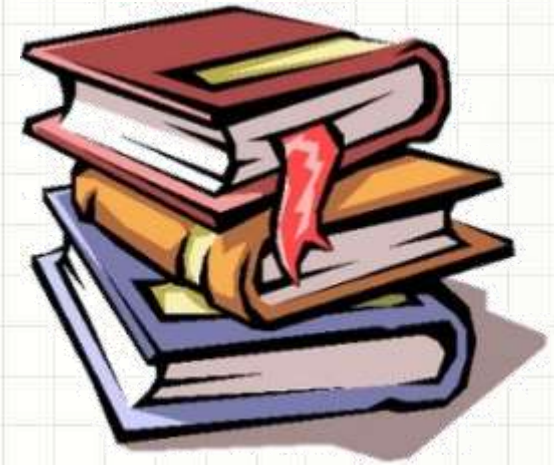
2012 - 2

Objetivos

- Conhecer a plataforma ASP.Net
- Compreender os elementos de um sistema ASP.Net
- Capacitar o aluno para criar páginas simples com o uso de ASP.Net



Material de Estudo



Material

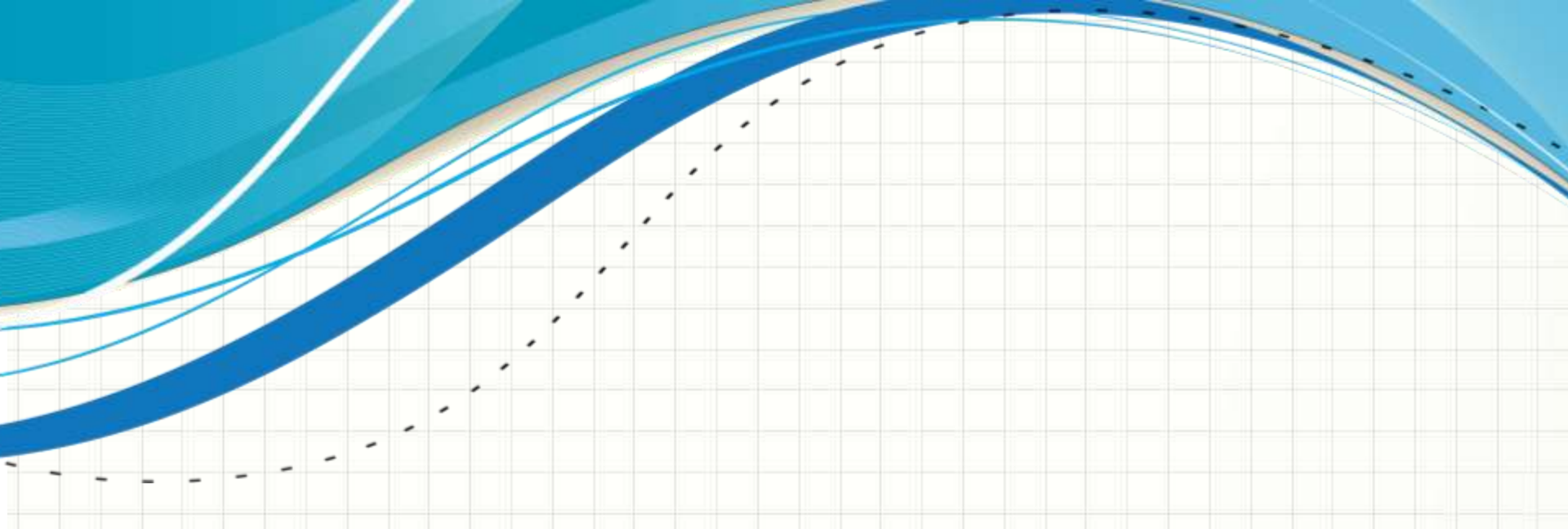
Acesso ao Material

Apresentação

<http://www.caetano.eng.br/>
(Aula 14)

Material Didático

Ajax, Rich Internet Applications e Desenvolvimento Web para Programadores (Asp.Net 2.0 e Asp.Net Ajax)



O QUE É ASP.NET?

Introdução

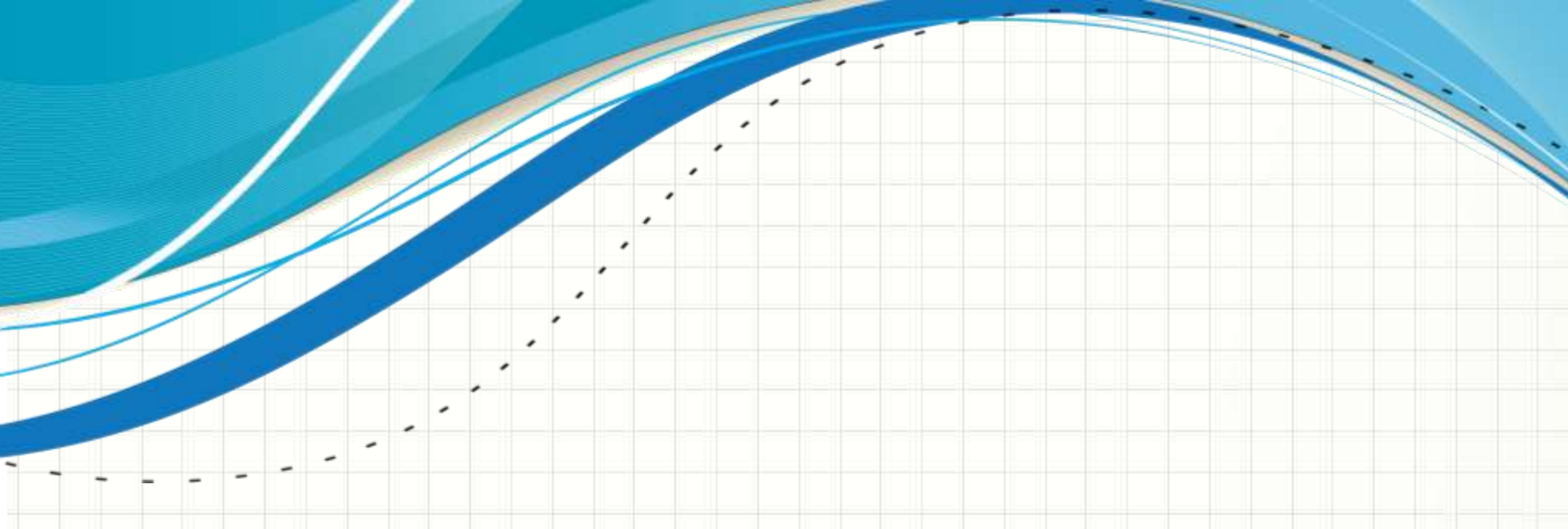
- ASP – Active Server Pages
 - Tecnologia Microsoft concorrente de:
 - PHP
 - JSP
 - Ruby
 - Baseada no Visual Basic
- Com o surgimento da plataforma .Net
 - ASP.Net
 - ASP/VB que usa o .Net

Introdução

- Quais os objetivos do ASP.Net?
 - Tornar o desenvolvimento Web mais parecido com o desenvolvimento desktop
 - Permitir integração simples de componentes Web com demais componentes .Net
- Qual o foco do ASP.Net?
 - Desenvolvimento de Sistemas Web
 - Em especial, sistemas de informação
 - Desenvolvimento de camada de visão Web para sistemas mais complexos

Introdução

- Vantagens:
 - Facilidade de Integração com .Net
 - Aprendizado rápido (para programadores .Net)
 - Uso de muitas funcionalidades prontas do .Net
 - Em casos simples, melhor desempenho que Java
- “Desvantagens”:
 - Parcialmente “amarrada” em soluções MS
 - Mono - http://www.mono-project.com/Main_Page
 - ASP/Visual Basic



ANATOMIA DE UMA APLICAÇÃO ASP.NET

Anatomia ASP.Net

- VisualStudio: tenta esconder tudo...
 - Para quê entender?
- Para saber o que é possível modificar!

- Programa ASP.Net básico: duas partes

- Formulário (visão): arquivo.**aspx**

JSP/XHTML

- *Code-behind* (controle): arquivo.aspx.**vb**

SERVLET

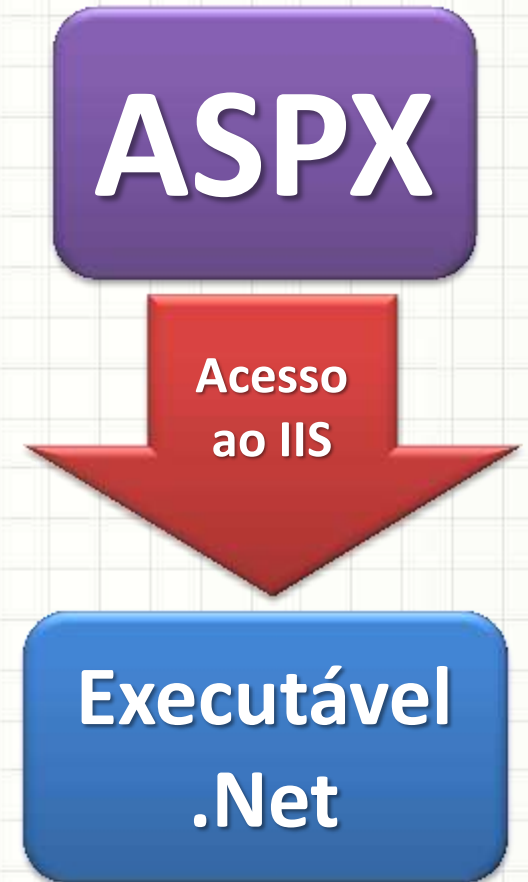
- *Code-behind*: espécie de **View Control**

Anatomia ASP.Net

- Formulário + Code-behind = Classe
 - Depois de gerado o código, eles são unidos
- Similar ao JSP
 - Na primeira execução...
 - ...Código é transformado em *bytecode* .Net
 - Primeira execução é mais lenta

Anatomia ASP.Net

- No fundo...
 - O que escrevermos...
 - ... No ASPX / VB...
 - ...será transformado...
 - ...em um programa, quando...
 - ...o usuário fizer o 1º acesso!
- Esse executável é guardado em um cache

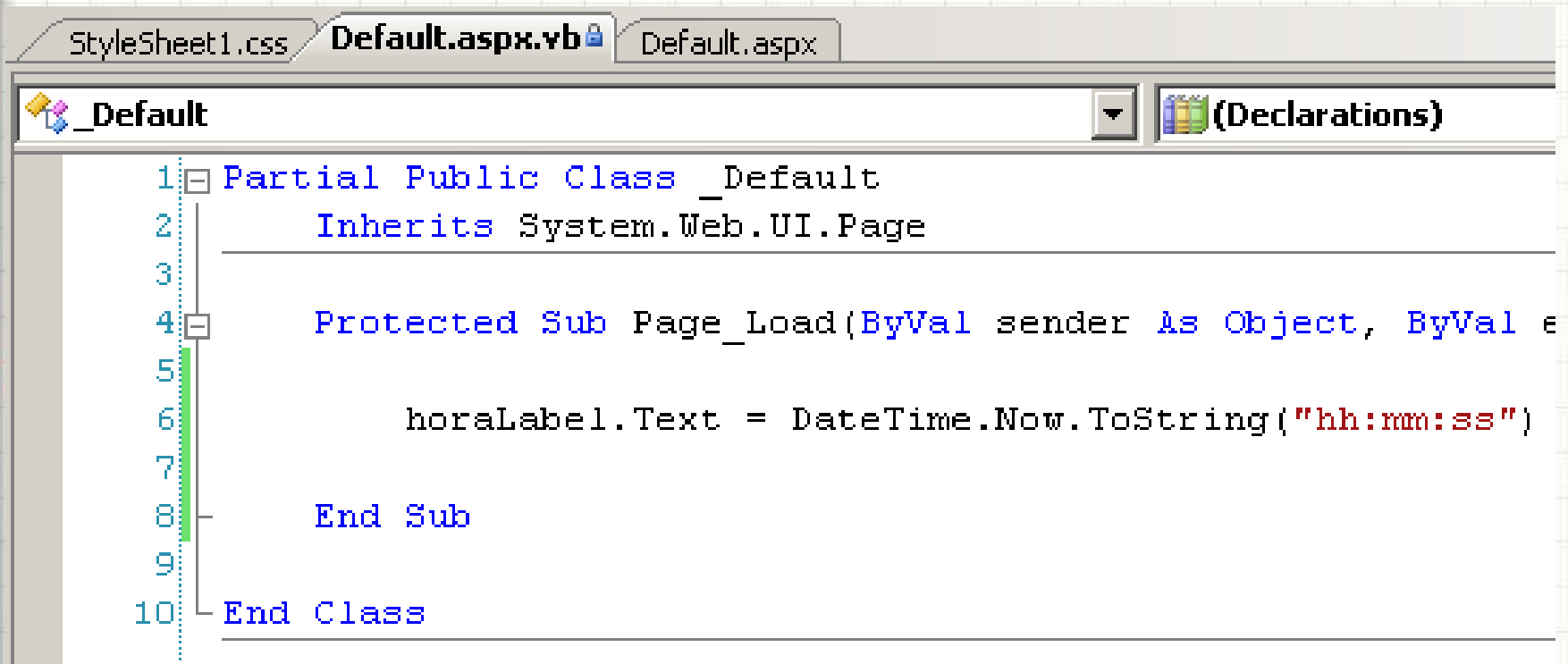


Anatomia ASP.Net – O ASPX



```
3
4 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://
5
6 <html xmlns="http://www.w3.org/1999/xhtml" >
7 <head runat="server">
8     <title>Untitled Page</title>
9     <link href="StyleSheet1.css" rel="stylesheet" type="text/css" />
10 </head>
11 <body bgcolor="#ccfff" >
12     <form id="form1" runat="server">
13     <div>
14         <h1 align="center" class="titulo">Hora no Servidor</h1>
15     </div>
16     <p align="center" style="">
17         Momento da última atualização da página:</p>
18     <p align="center">
19         <asp:Label ID="horaLabel" runat="server"
20             CssClass="hora" Text="Label"></asp:Label>
21     </p>
22     </form>
23 </body>
24 </html>
--
```

Anatomia ASP.Net – O VB



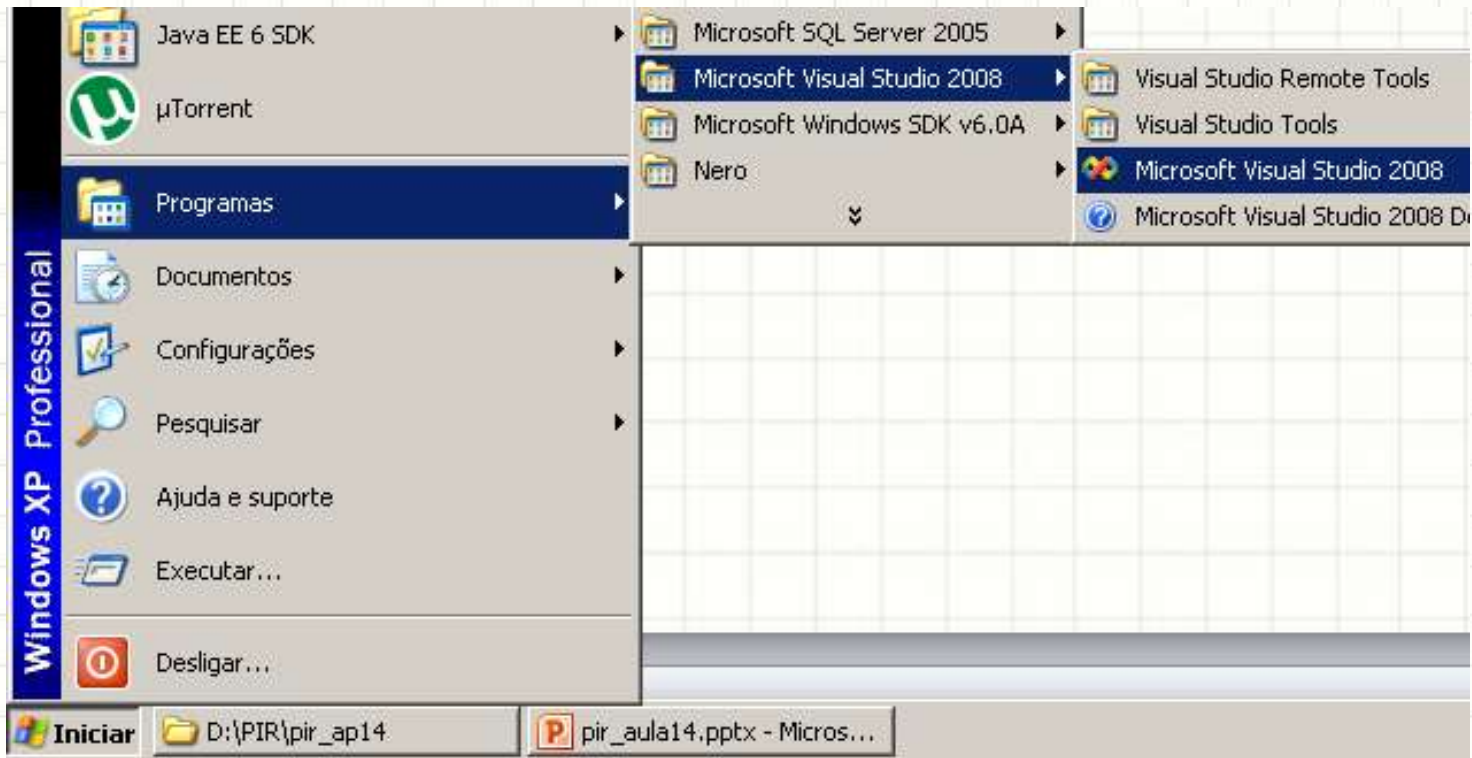
```
StyleSheet1.css  Default.aspx.vb  Default.aspx
_Default (Declarations)
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e
5
6         horaLabel.Text = DateTime.Now.ToString("hh:mm:ss")
7
8     End Sub
9
10 End Class
```



ASP.NET NA PRÁTICA

ASP.Net na Prática

- Primeiramente, inicie o Visual Studio 2008



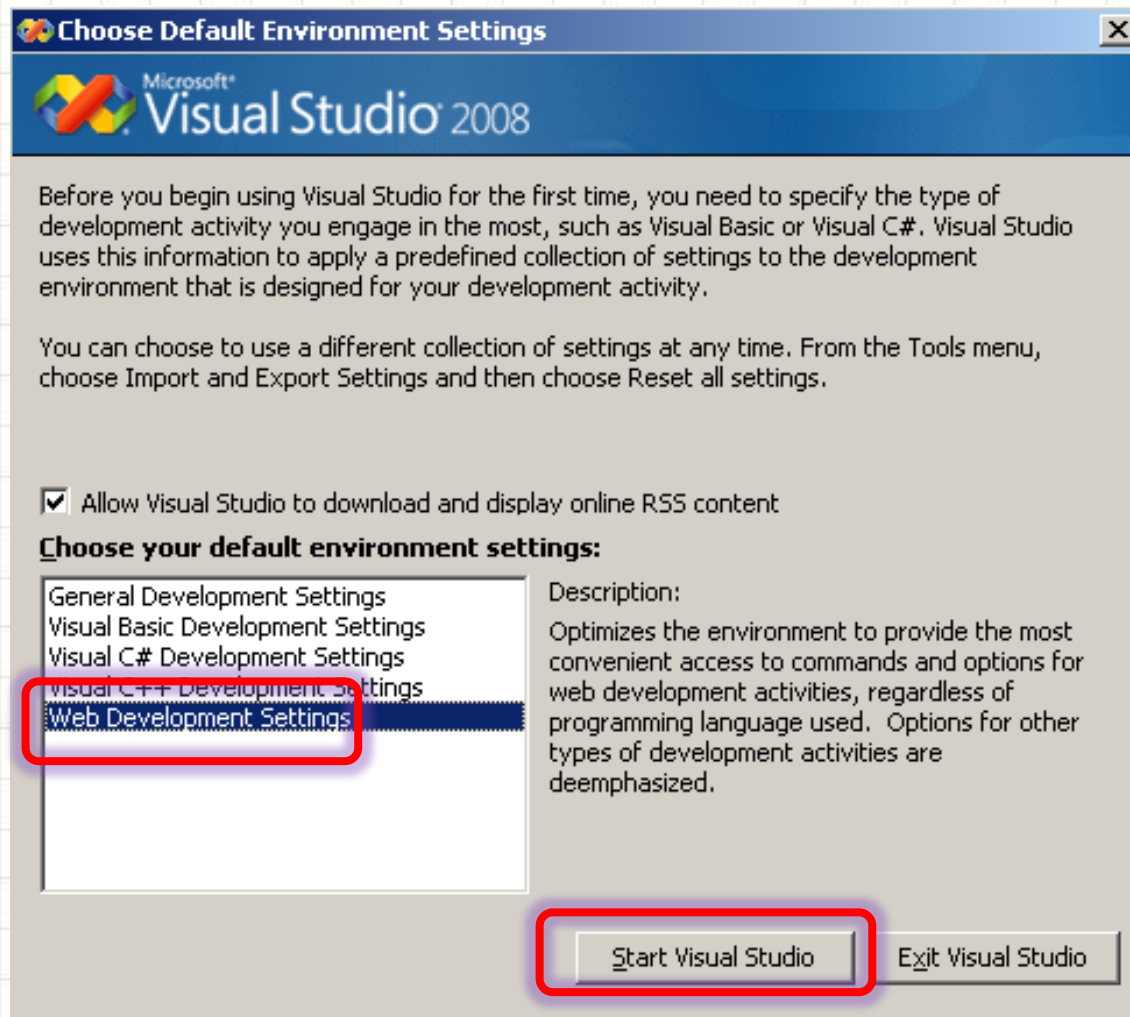
ASP.Net na Prática

- Primeiramente, inicie o Visual Studio 2008



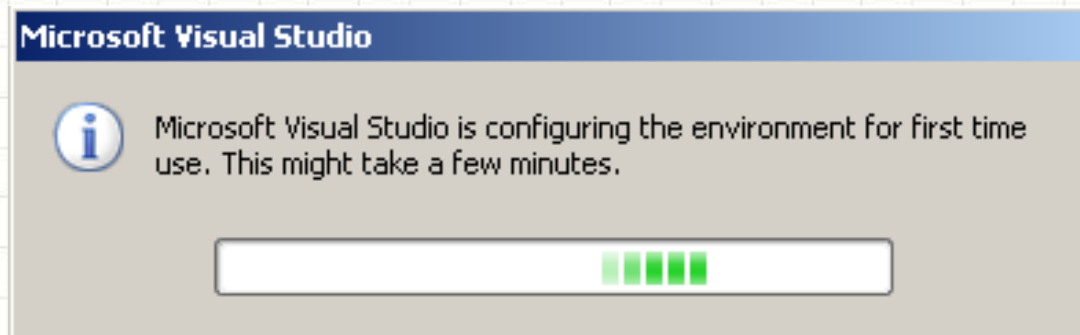
ASP.Net na Prática

- Primeira execução? **Web Development**



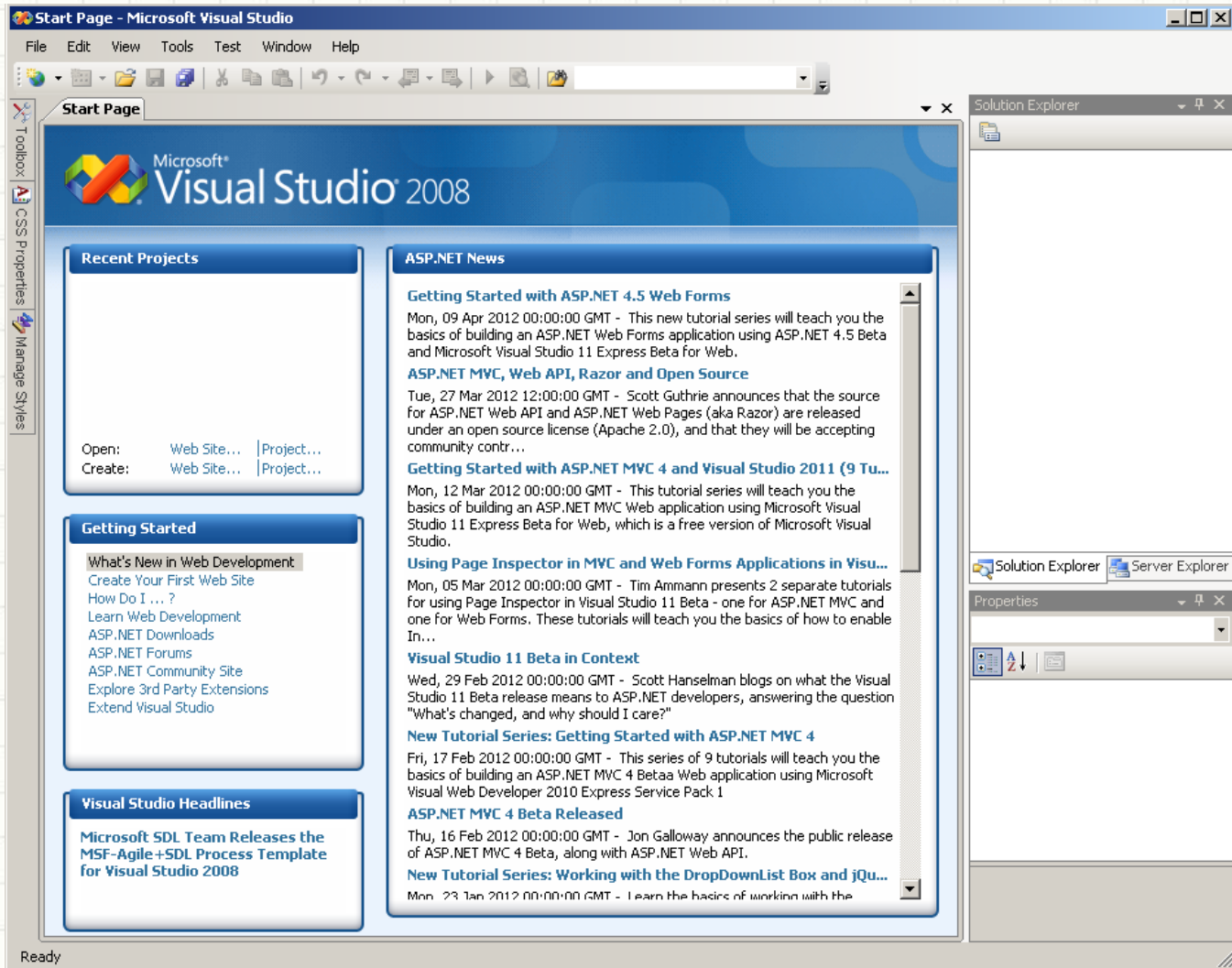
ASP.Net na Prática

- Aguarde o carregamento...



ASP.Net na Prática

- Esta é a tela principal



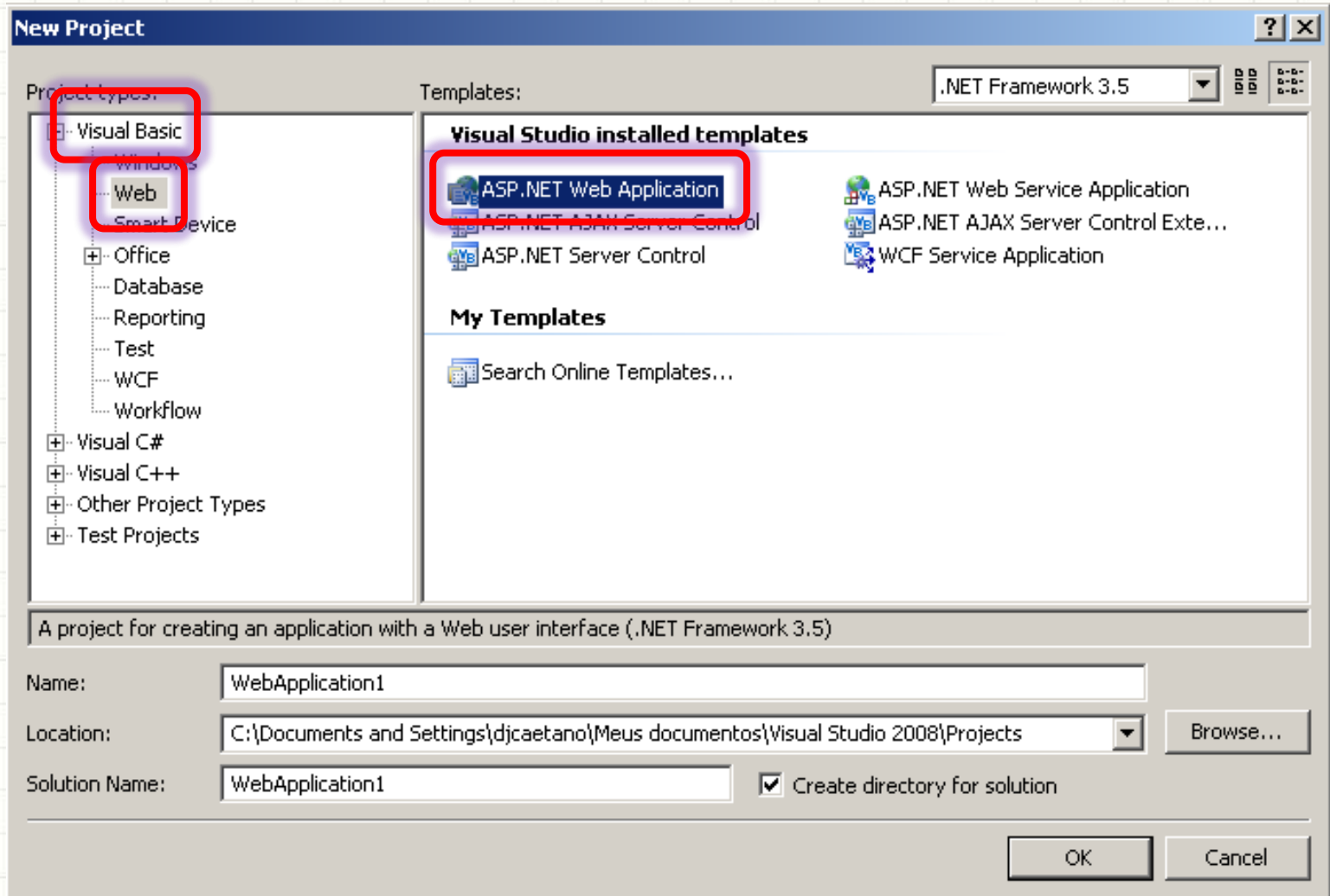
ASP.Net na Prática

- Vamos começar um novo projeto...



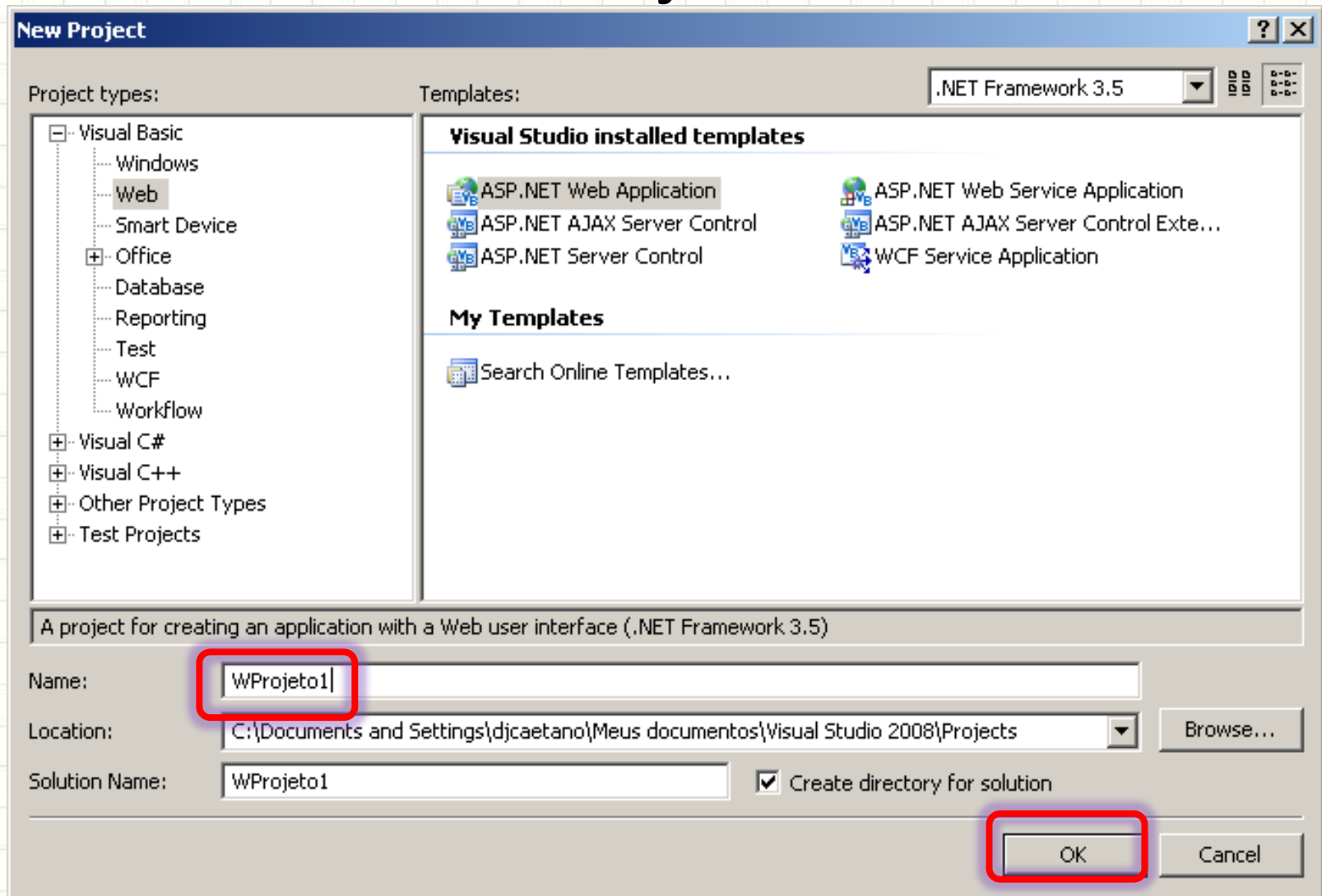
ASP.Net na Prática

- O projeto será **Visual Basic > Web**



ASP.Net na Prática

- Mude o nome: **WProjeto1**



ASP.Net na Prática

- E chegamos finalmente ao código

The screenshot shows the Microsoft Visual Studio IDE with the following components:

- Menu Bar:** File, Edit, View, Project, Build, Debug, Format, Tools, Test, Window, Help.
- Toolbox:** Visible on the left side.
- Client Objects & Events:** Shows "(No Events)".
- Code Editor:** Contains the following code:

```
1 <%@ Page Language="vb" AutoEventWireup="false"
2     CodeBehind="Default.aspx.vb" Inherits="WProjeto1._Default" %>
3
4 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.
5
6 <html xmlns="http://www.w3.org/1999/xhtml" >
7 <head runat="server">
8     <title>Untitled Page</title>
9 </head>
10 <body>
11     <form id="form1" runat="server">
12     <div>
13
14     </div>
15     </form>
16 </body>
17 </html>
18 |
```
- Solution Explorer:** Shows the project structure: WProjeto1, My Project, App_Data, Default.aspx, Web.config.
- Properties Window:** Shows properties for the document and the selected ALink control, including TraceMode, UICulture, and ALink (Color of all active links in the document).
- Bottom Bar:** Shows "Ready", "Ln 18", "Col 1", "Ch 1", and "INS".

ASP.Net na Prática

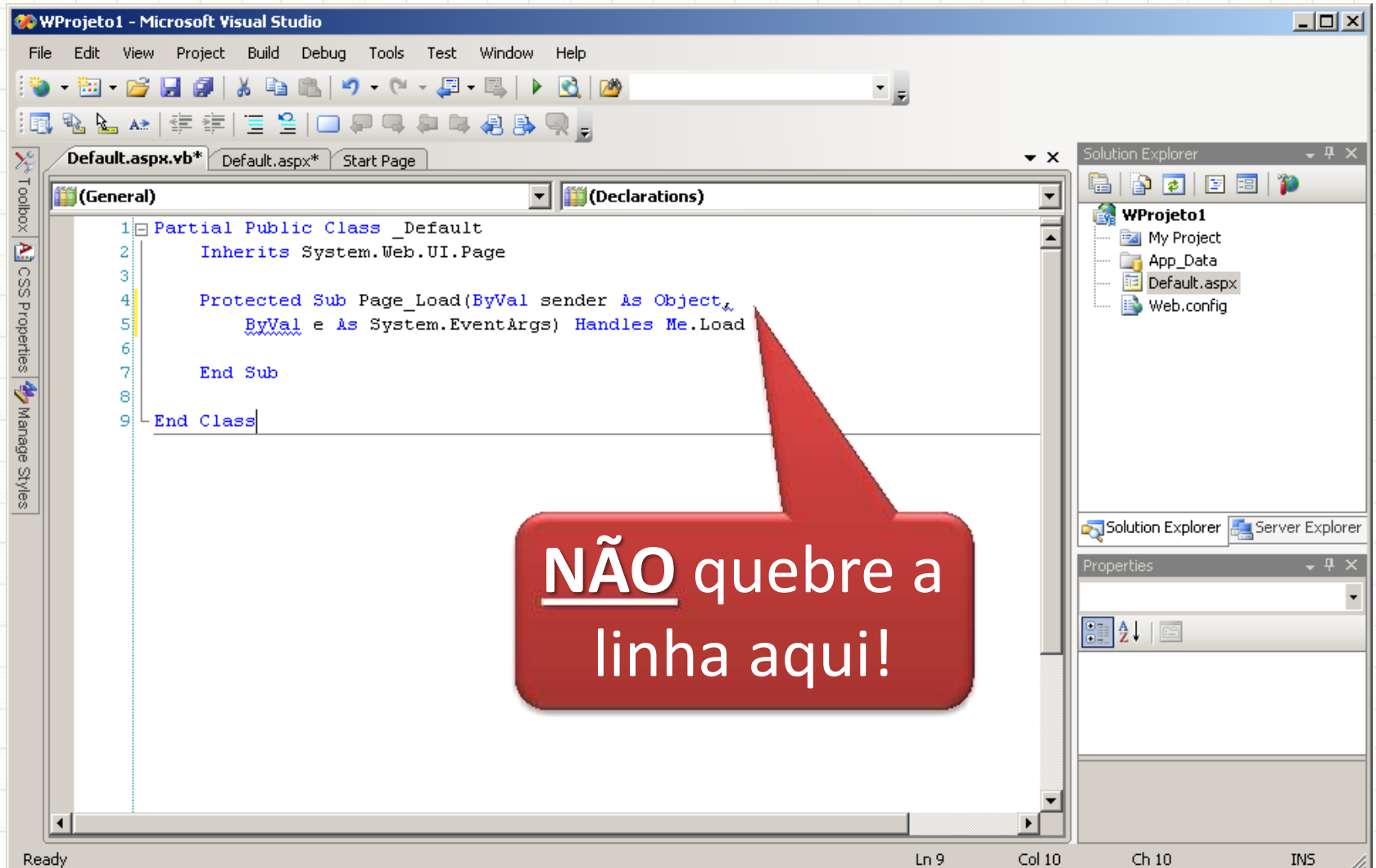
- Para vermos o código do servidor...

The screenshot displays the Microsoft Visual Studio IDE with the following details:

- Title Bar:** WProjeto1 - Microsoft Visual Studio
- Menu Bar:** File, Edit, View, Project, Build, Debug, Format, Tools, Test, Window, Help
- Toolbar:** Includes icons for file operations, editing, and running.
- Style Application:** Manual
- Target Rule:** (New Inline Style)
- Client Objects & Events:** (No Events)
- Code Editor:** Shows the source code of Default.aspx* in XHTML 1.0 Transitional format. The code includes a page declaration, a DOCTYPE, and an HTML structure with a form and a submit button.
- Solution Explorer:** Shows the project structure with a red box highlighting the 'View Code' button.
- Properties Window:** Shows the 'DOCUMENT' properties, including 'TraceMode', 'UICulture', and 'ALink'.
- Status Bar:** Ready, Ln 18, Col 1, Ch 1, INS

ASP.Net na Prática

- E aqui está o código em Visual Basic



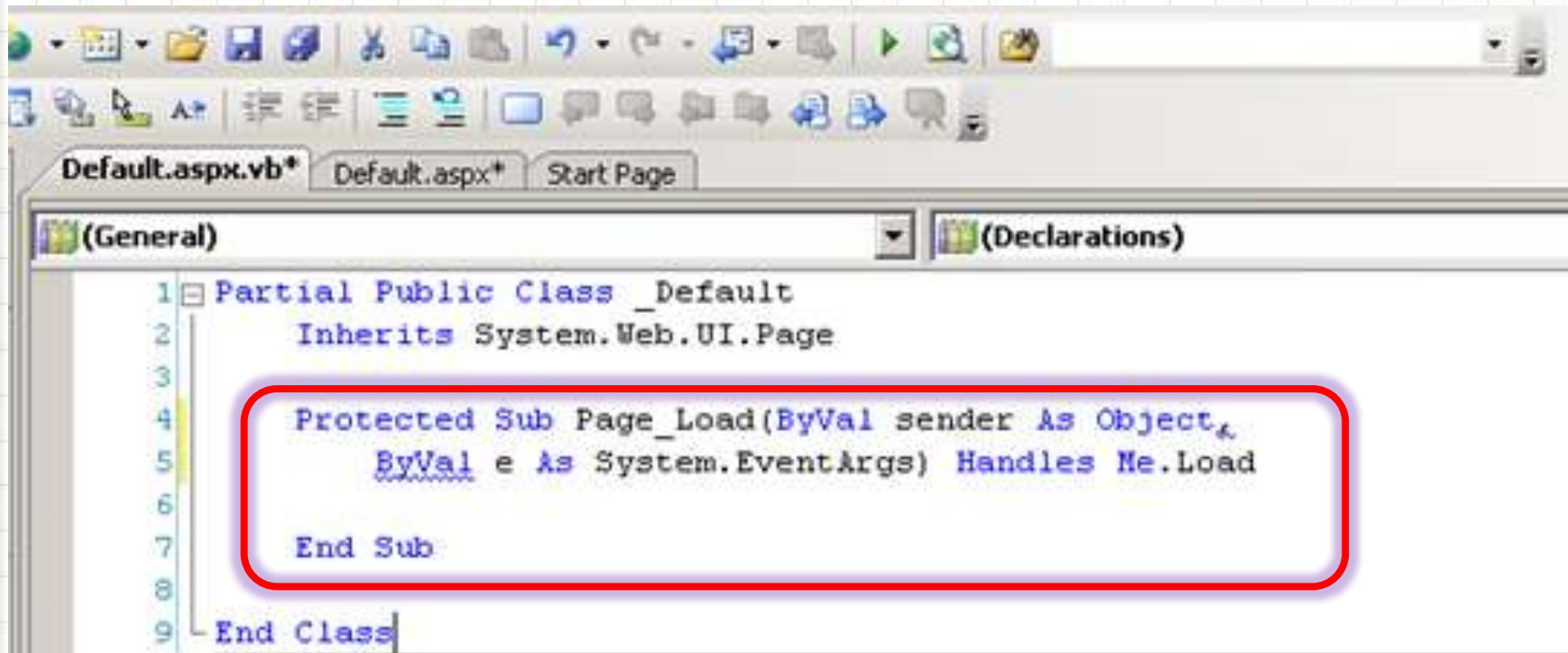
The screenshot shows the Microsoft Visual Studio IDE with the following components:

- Menu Bar:** File, Edit, View, Project, Build, Debug, Tools, Test, Window, Help.
- Toolbar:** Standard development tools like Save, Undo, Redo, Run, and Stop.
- Code Editor:** Displays the code for `Default.aspx.vb`. The code is as follows:

```
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object,
5         ByVal e As System.EventArgs) Handles Me.Load
6
7     End Sub
8
9 End Class
```
- Solution Explorer:** Shows the project structure for `WProjeto1`, including `My Project`, `App_Data`, `Default.aspx`, and `Web.config`.
- Properties Window:** Currently empty.
- Callout:** A red speech bubble with the text **NÃO quebre a linha aqui!** (Do not break the line here!) pointing to the line break in the `Page_Load` method signature on line 5.
- Status Bar:** Shows 'Ready', 'Ln 9', 'Col 10', 'Ch 10', and 'INS'.

ASP.Net na Prática

- Esta função é executada quando o evento **Page Load** ocorre



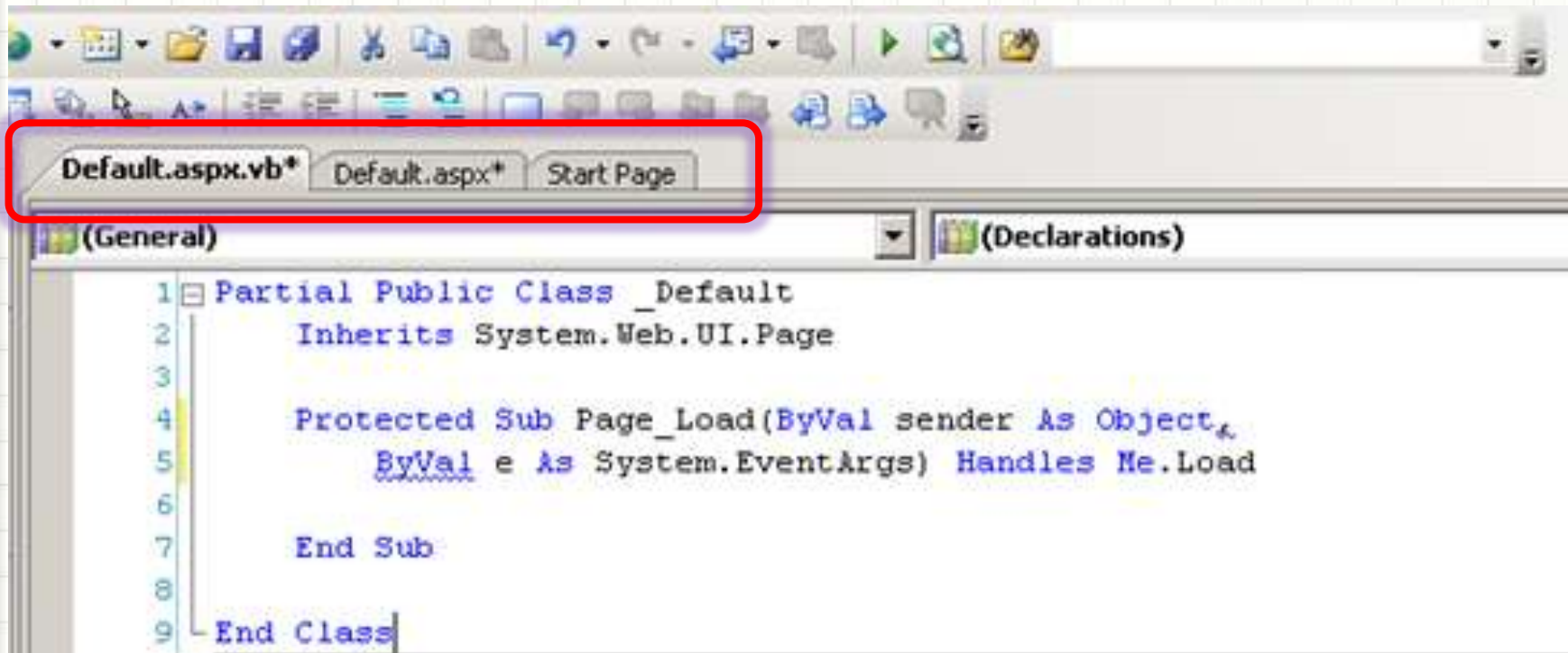
The screenshot shows the Visual Studio IDE with the code editor open to a file named 'Default.aspx.vb'. The code is as follows:

```
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object,
5         ByVal e As System.EventArgs) Handles Me.Load
6
7     End Sub
8
9 End Class
```

The code block for the `Page_Load` event is highlighted with a red rounded rectangle.

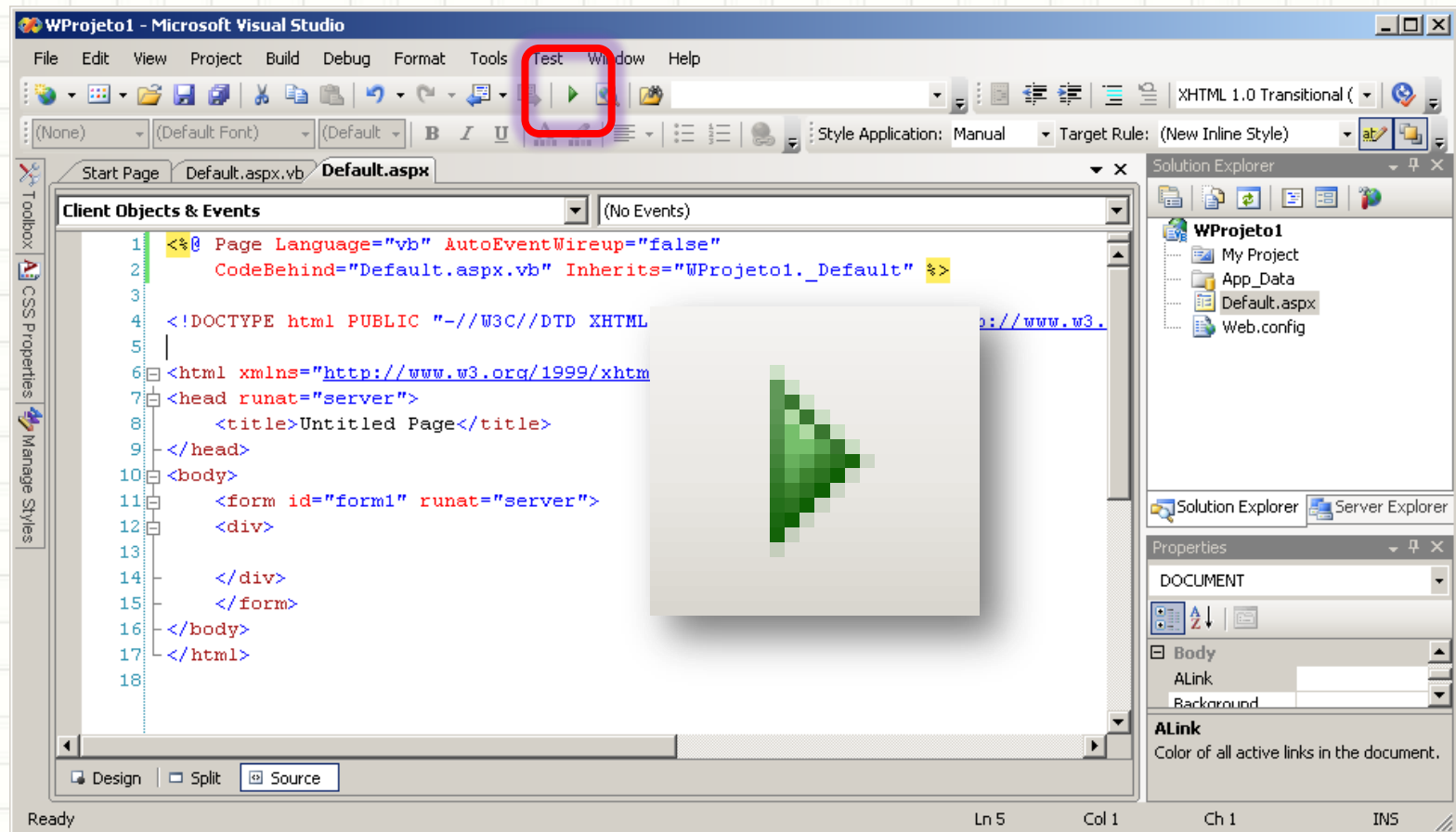
ASP.Net na Prática

- Para voltar a visualizar o ASPX, use as abas



ASP.Net na Prática

- Para testar, use o botão “play”

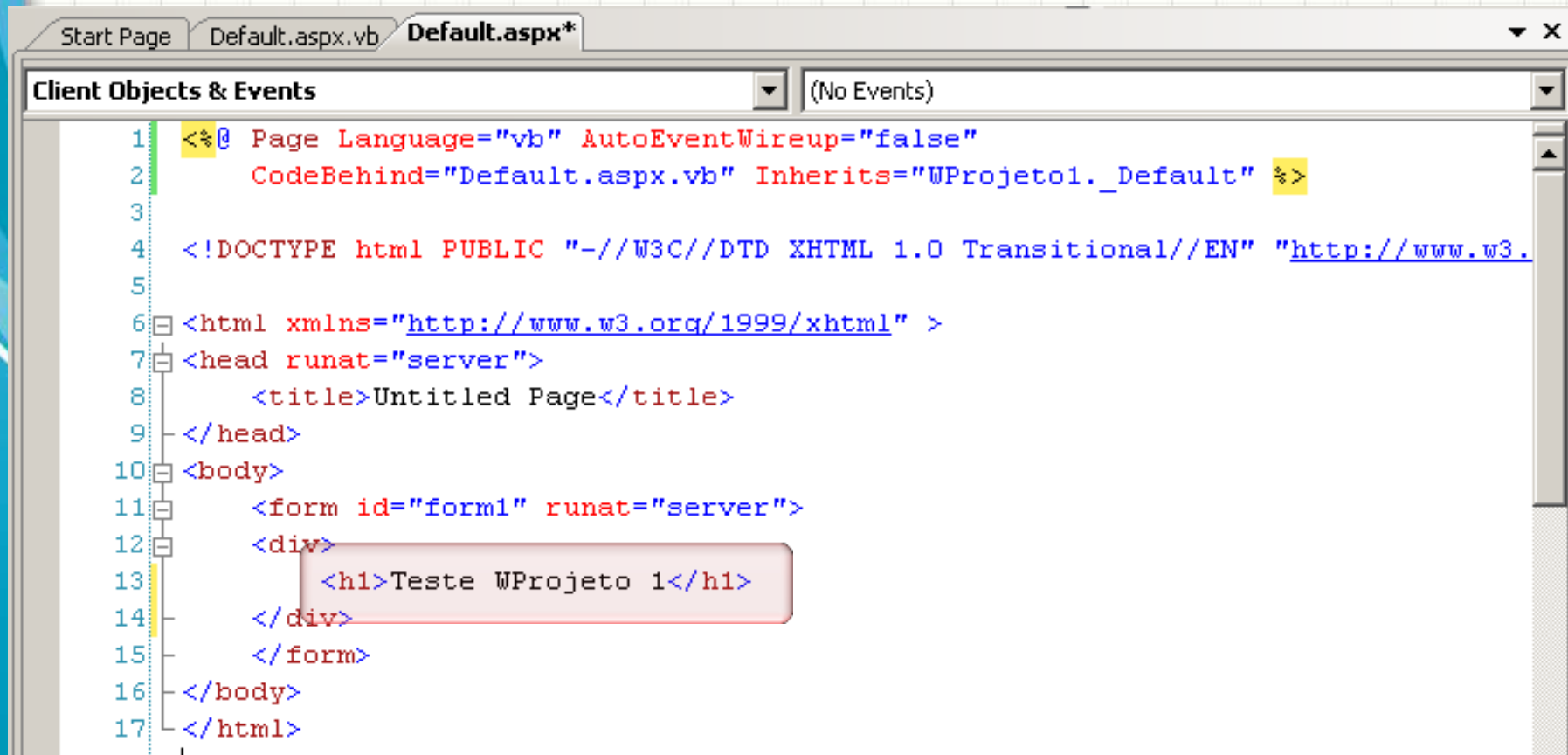


ASP.Net na Prática

- O que aconteceu?
 - **Não programamos nada!**
- Dicas:
 - **F5** também serve para executar...
 - **Shift + F5** serve para **parar** a execução
- Vamos acrescentar um código qualquer...

ASP.Net na Prática

- Experimente executar depois!



```
Start Page  Default.aspx.vb  Default.aspx*
Client Objects & Events  (No Events)
1  <%@ Page Language="vb" AutoEventWireup="false"
2      CodeBehind="Default.aspx.vb" Inherits="WProjeto1._Default" %>
3
4  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.
5
6  <html xmlns="http://www.w3.org/1999/xhtml" >
7  <head runat="server">
8      <title>Untitled Page</title>
9  </head>
10 <body>
11     <form id="form1" runat="server">
12     <div>
13         <h1>Teste WProjeto 1</h1>
14     </div>
15     </form>
16 </body>
17 </html>
```

ASP.Net na Prática

- Funcionou? Vejamos um outro jeito...

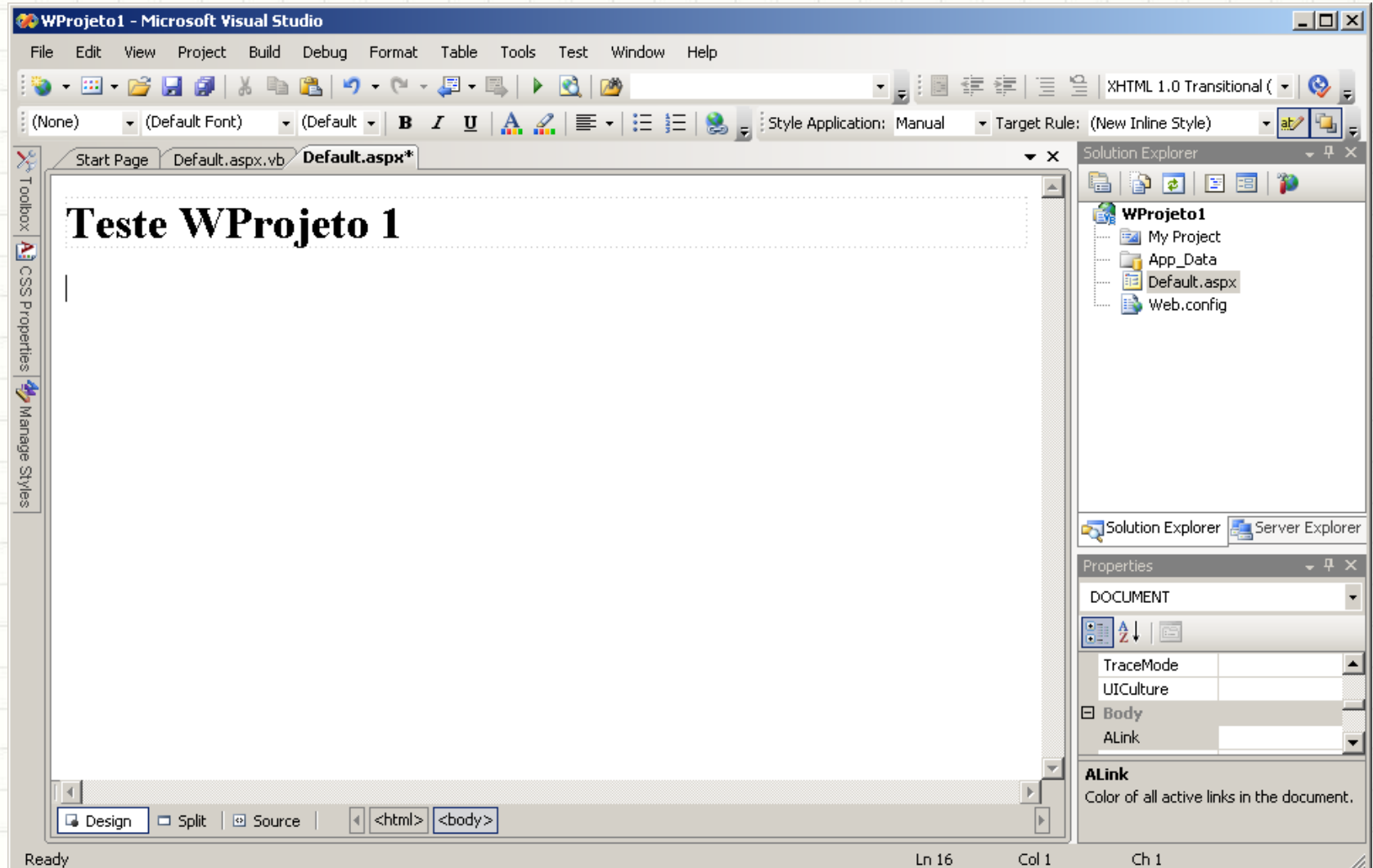
The screenshot shows the Microsoft Visual Studio IDE with the following components:

- Title Bar:** WProjeto1 - Microsoft Visual Studio
- Menu Bar:** File, Edit, View, Project, Build, Debug, Format, Tools, Test, Window, Help
- Toolbar:** Standard editing and development tools.
- Code Editor:** Contains the source code for Default.aspx. The code is as follows:

```
1 <%@ Page Language="vb" AutoEventWireup="false"
2     CodeBehind="Default.aspx.vb" Inherits="WProjeto1._Default" %>
3
4 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.
5
6 <html xmlns="http://www.w3.org/1999/xhtml" >
7 <head runat="server">
8   <title>Untitled Page</title>
9 </head>
10 <body>
11   <form id="form1" runat="server">
12     <div>
13       <h1>Teste WProjeto 1</h1>
14     </div>
15   </form>
16 </body>
17 </html>
18
```
- Solution Explorer:** Shows the project structure: WProjeto1, My Project, App_Data, Default.aspx, Web.config.
- Properties Window:** Shows properties for the selected element (A Link), including Background and ALink.
- View Buttons:** Design, Split, Source, <html>, <body>. The 'Design' button is highlighted with a red box.
- Status Bar:** Shows 'Ready', 'Ln 16', 'Col 1', 'Ch 1', and 'INS'.

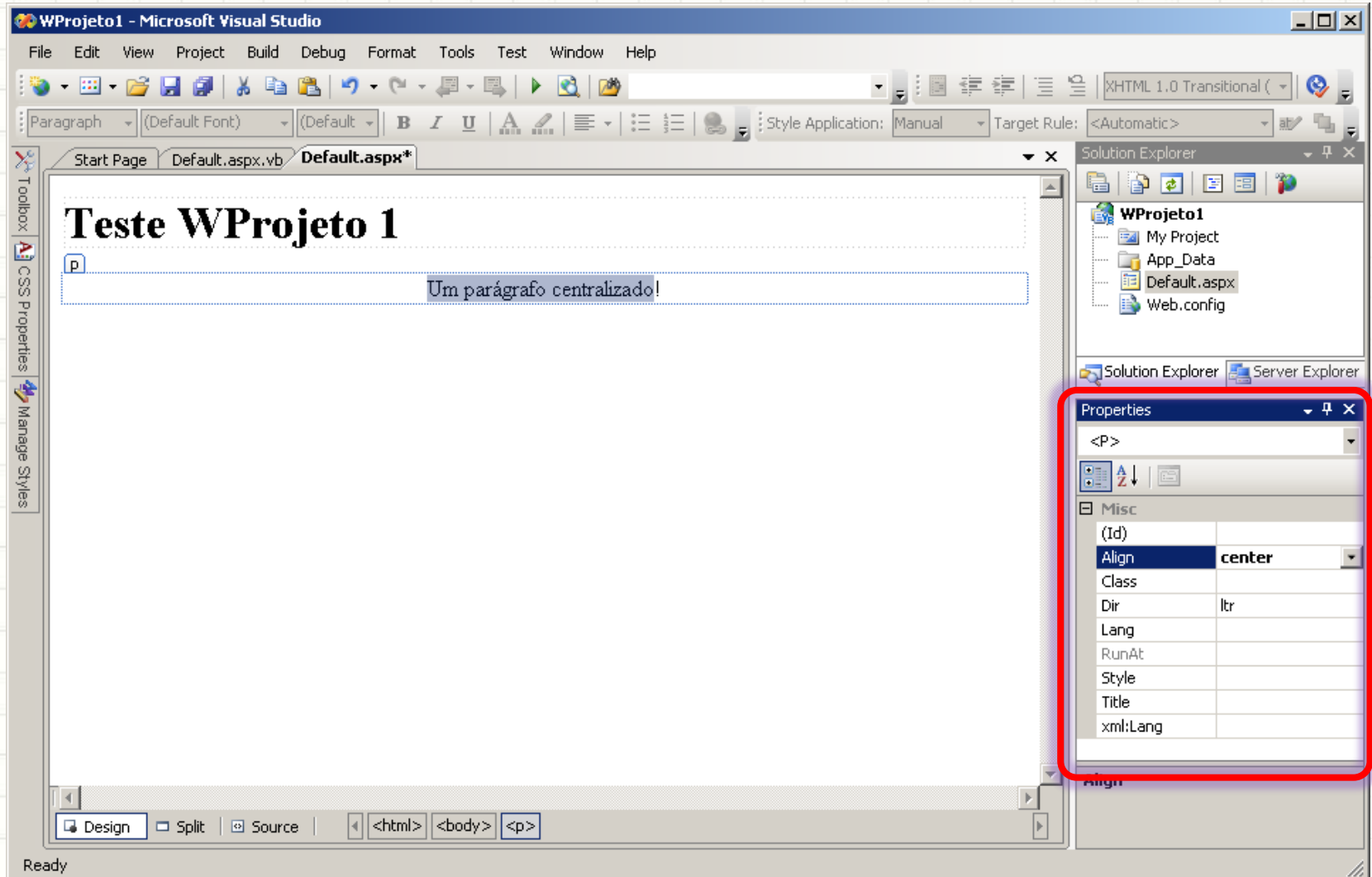
ASP.Net na Prática

- O modo Design permite edição direta



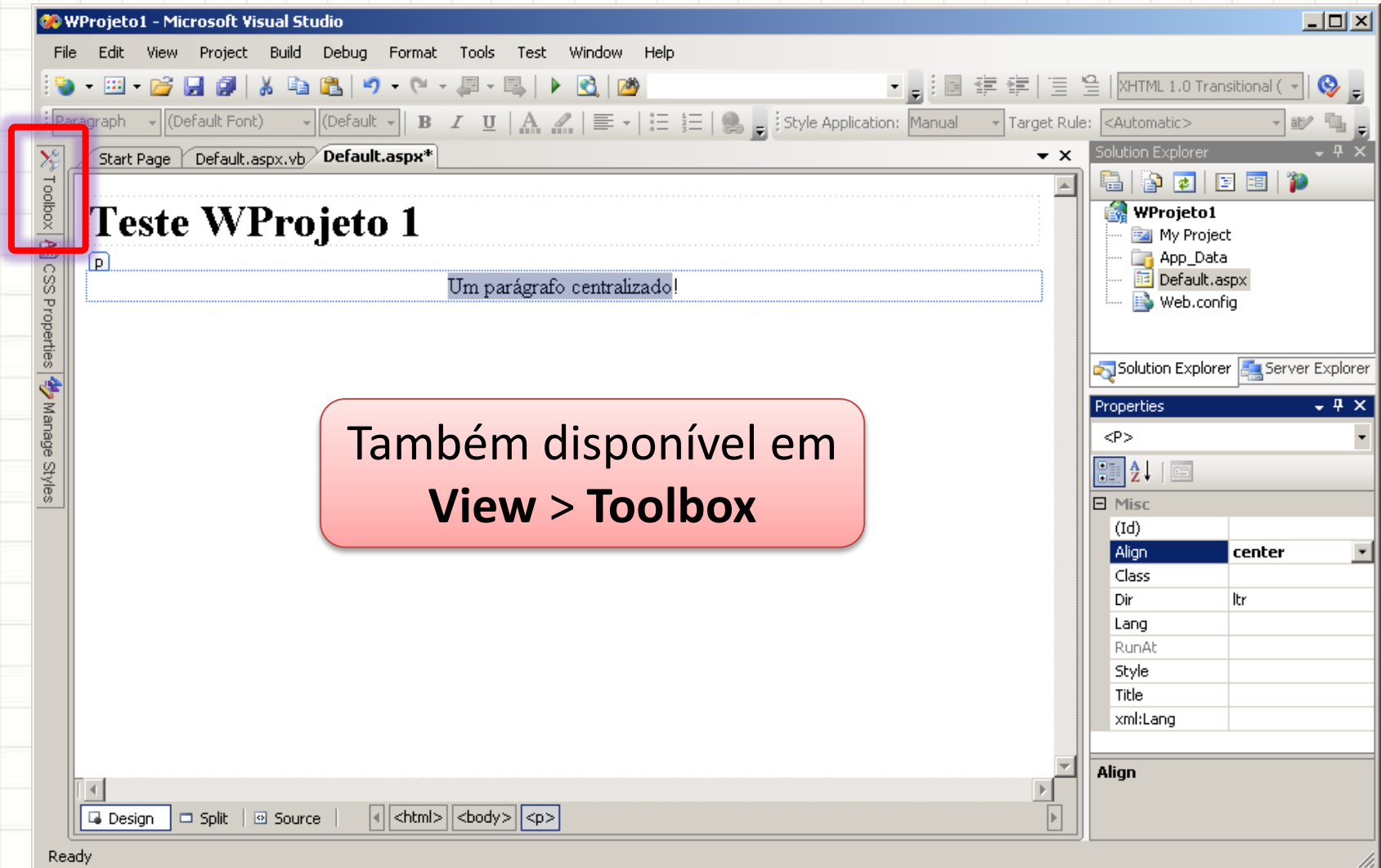
ASP.Net na Prática

- As propriedades são ajustadas na lateral...



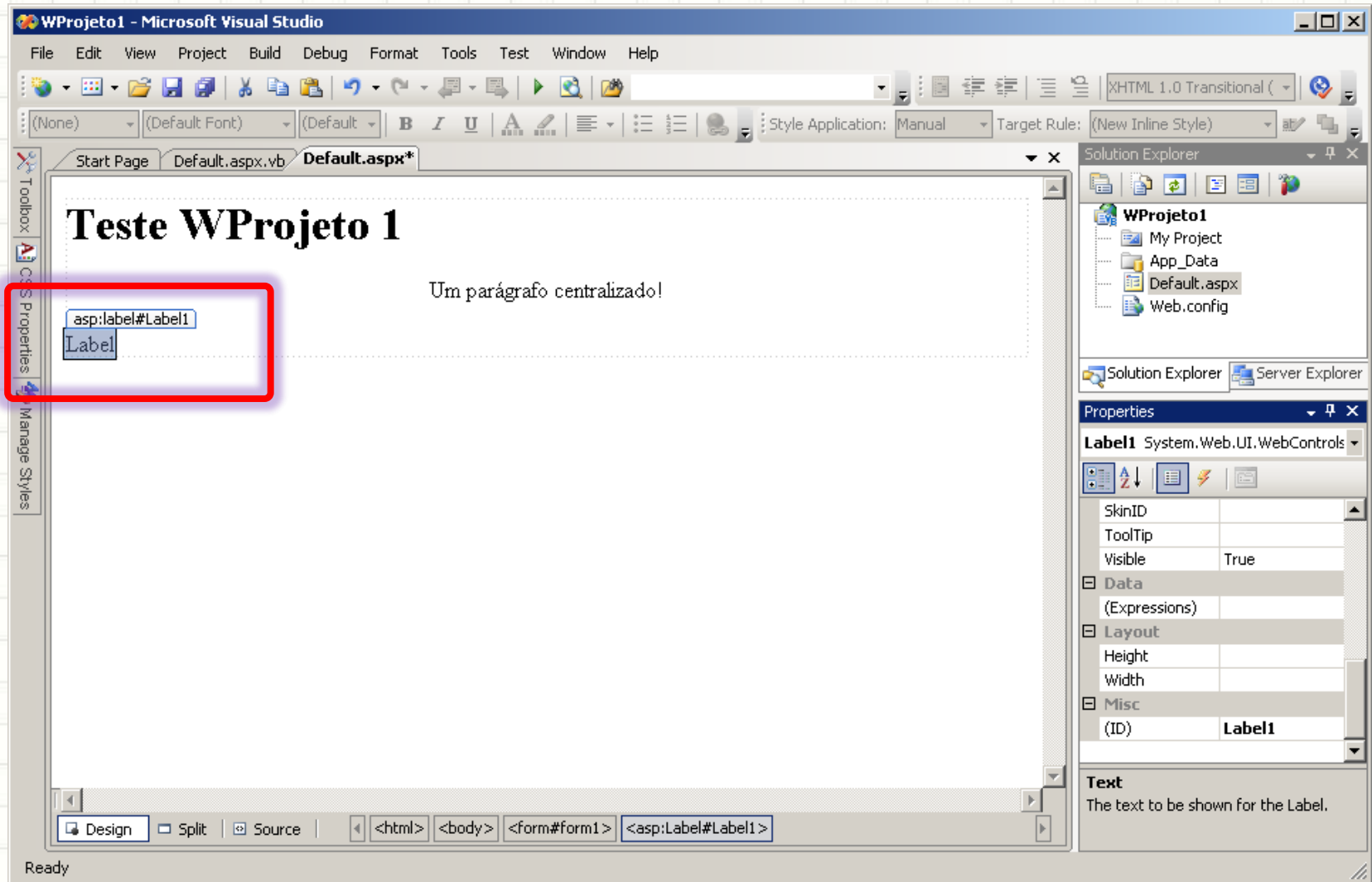
ASP.Net na Prática

- Cria-se elementos de form pela Toolbox



ASP.Net na Prática

- Arraste um **Label** para a tela...



ASP.Net na Prática

- E mude o id dele para horaLabel

The screenshot displays the Microsoft Visual Studio interface for a project named 'WProjeto1'. The main design area shows a web page with the following content:

Teste WProjeto 1

Um parágrafo centralizado!

asp:label#Label1
Label

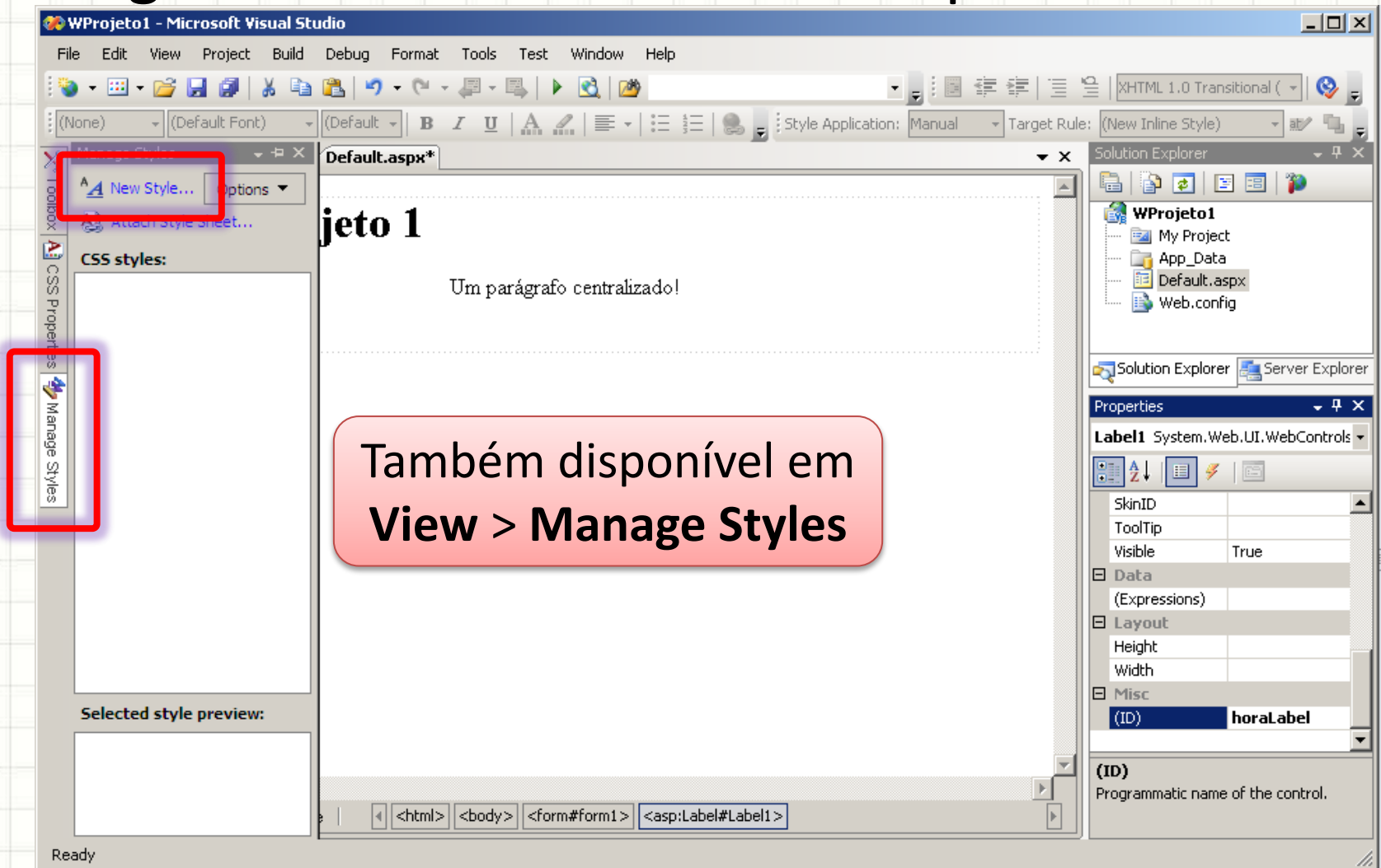
The Properties window on the right side of the IDE shows the configuration for the selected 'Label1' control. The 'Misc' section is expanded, and the 'ID' property is set to 'Label1', which is highlighted with a red rectangular box.

Property	Value
SkinID	
ToolTip	
Visible	True
Data (Expressions)	
Layout	
Height	
Width	
Misc	
(ID)	Label1
Text	
The text to be shown for the Label.	

The Solution Explorer on the right shows the project structure for 'WProjeto1', including folders for 'My Project', 'App_Data', and files for 'Default.aspx' and 'Web.config'.

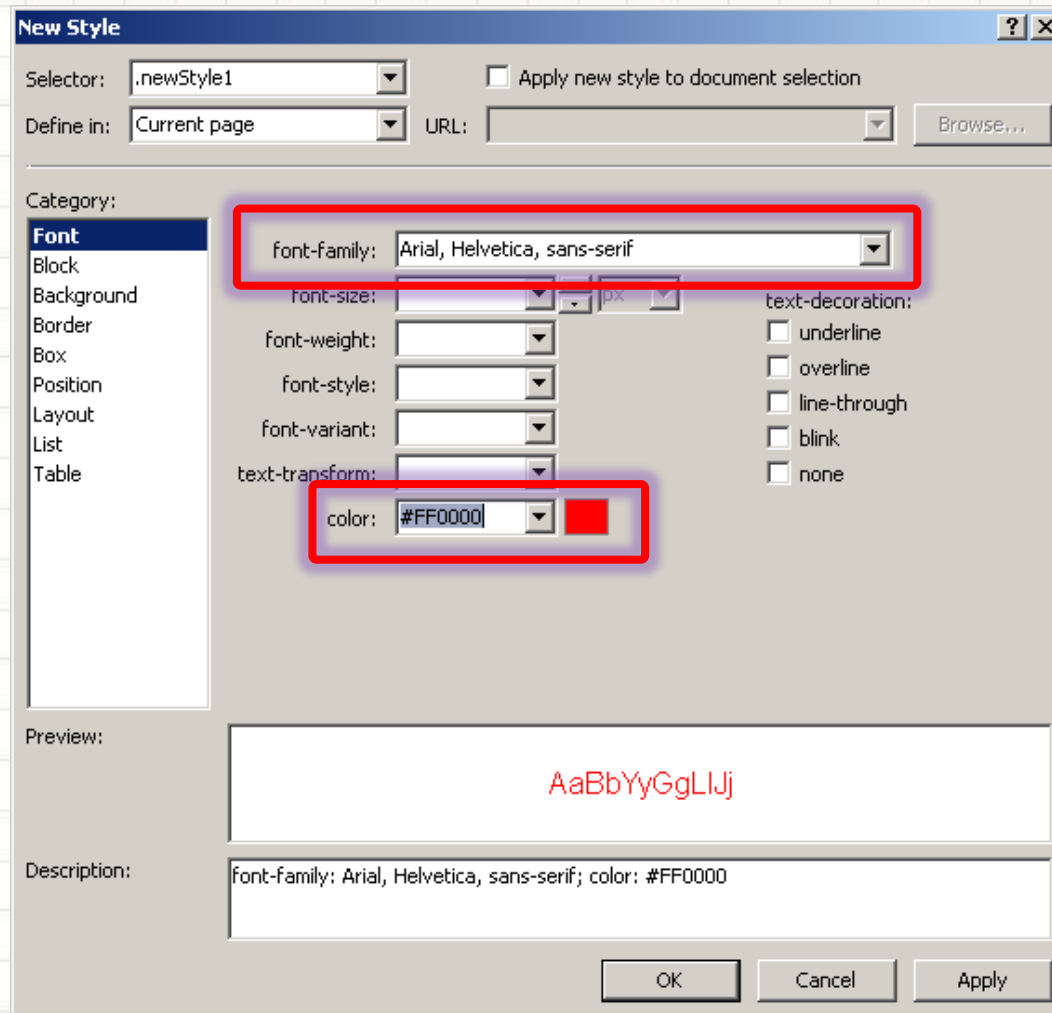
ASP.Net na Prática

- Agora vamos criar uma classe para o label



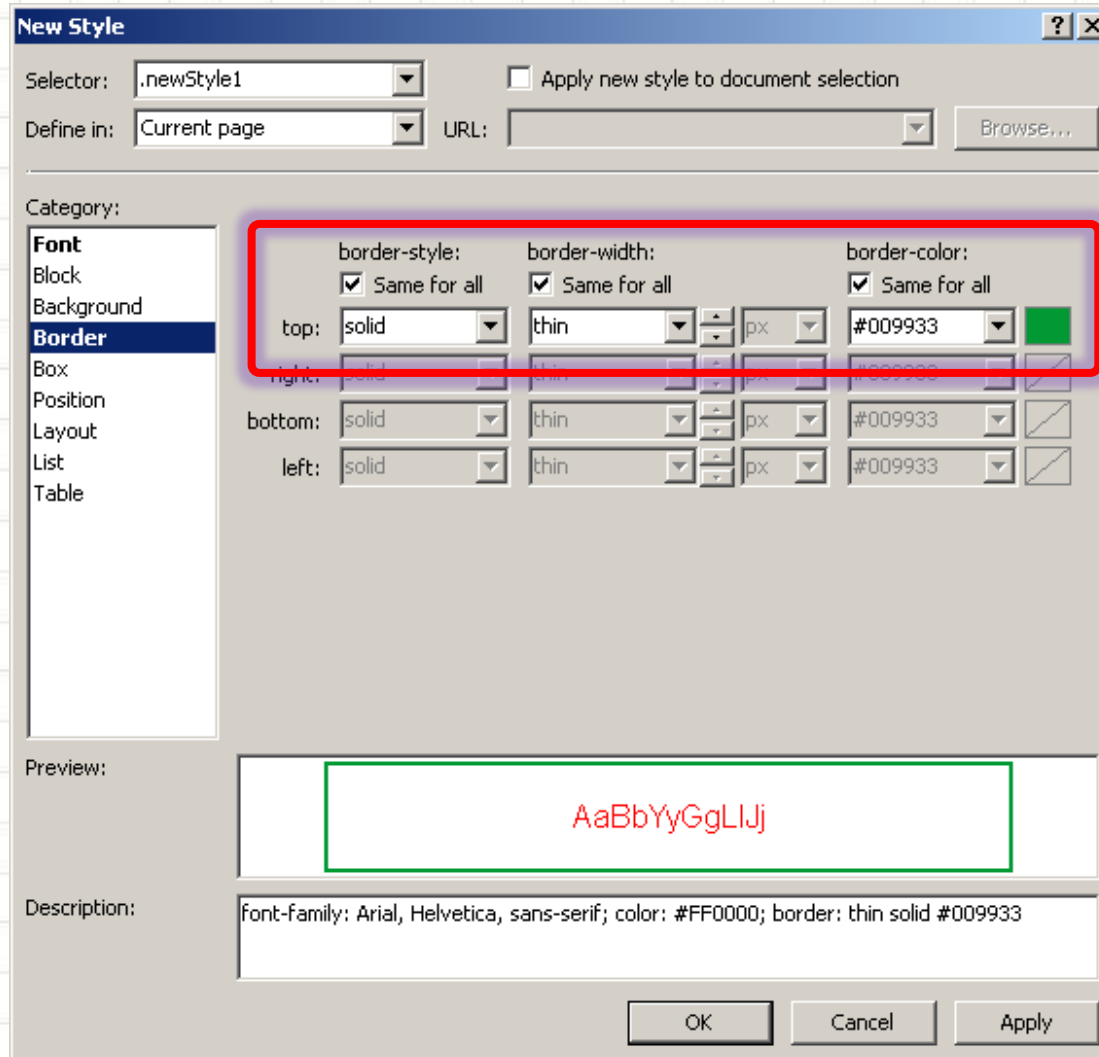
ASP.Net na Prática

- Mude a letra e a cor...



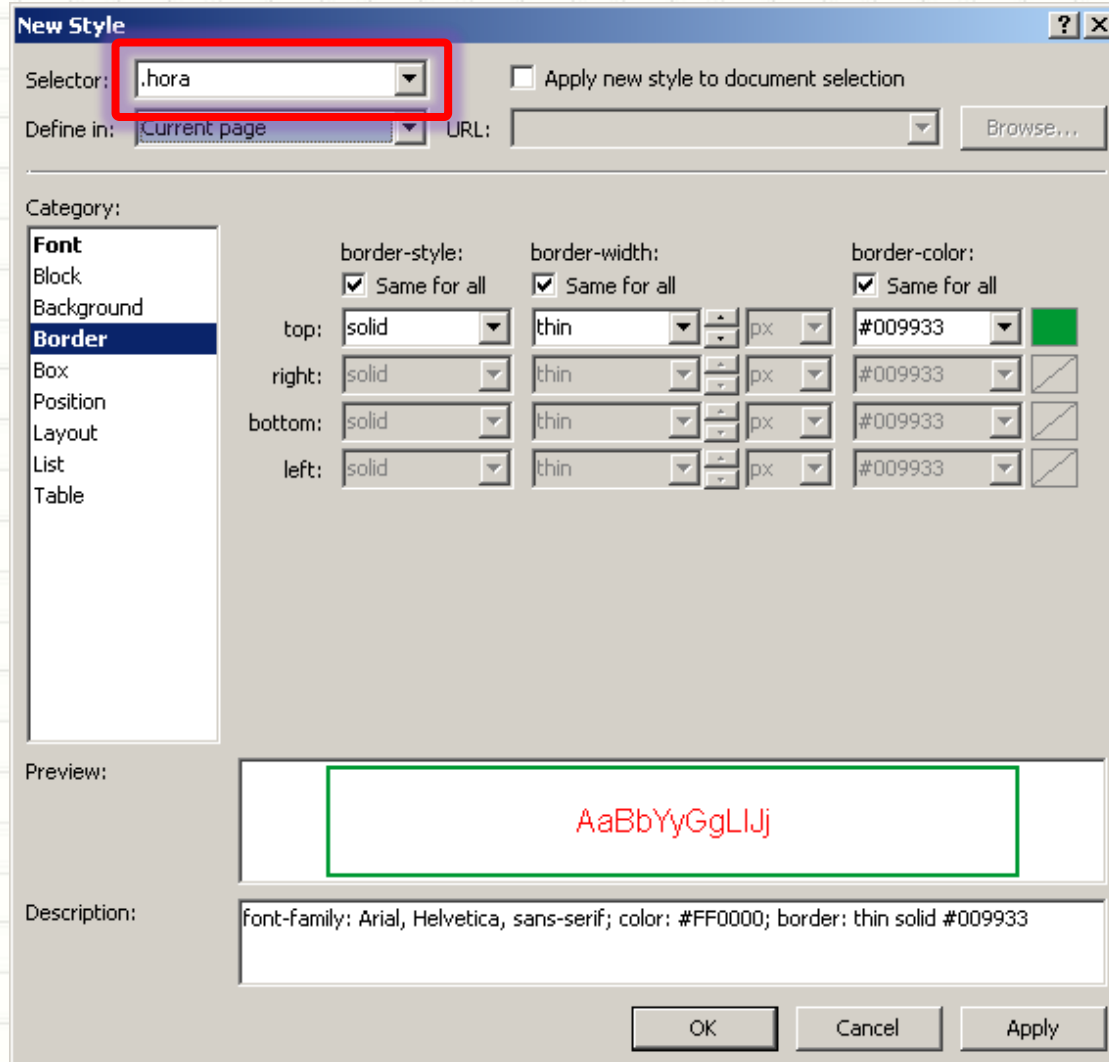
ASP.Net na Prática

- E a borda...



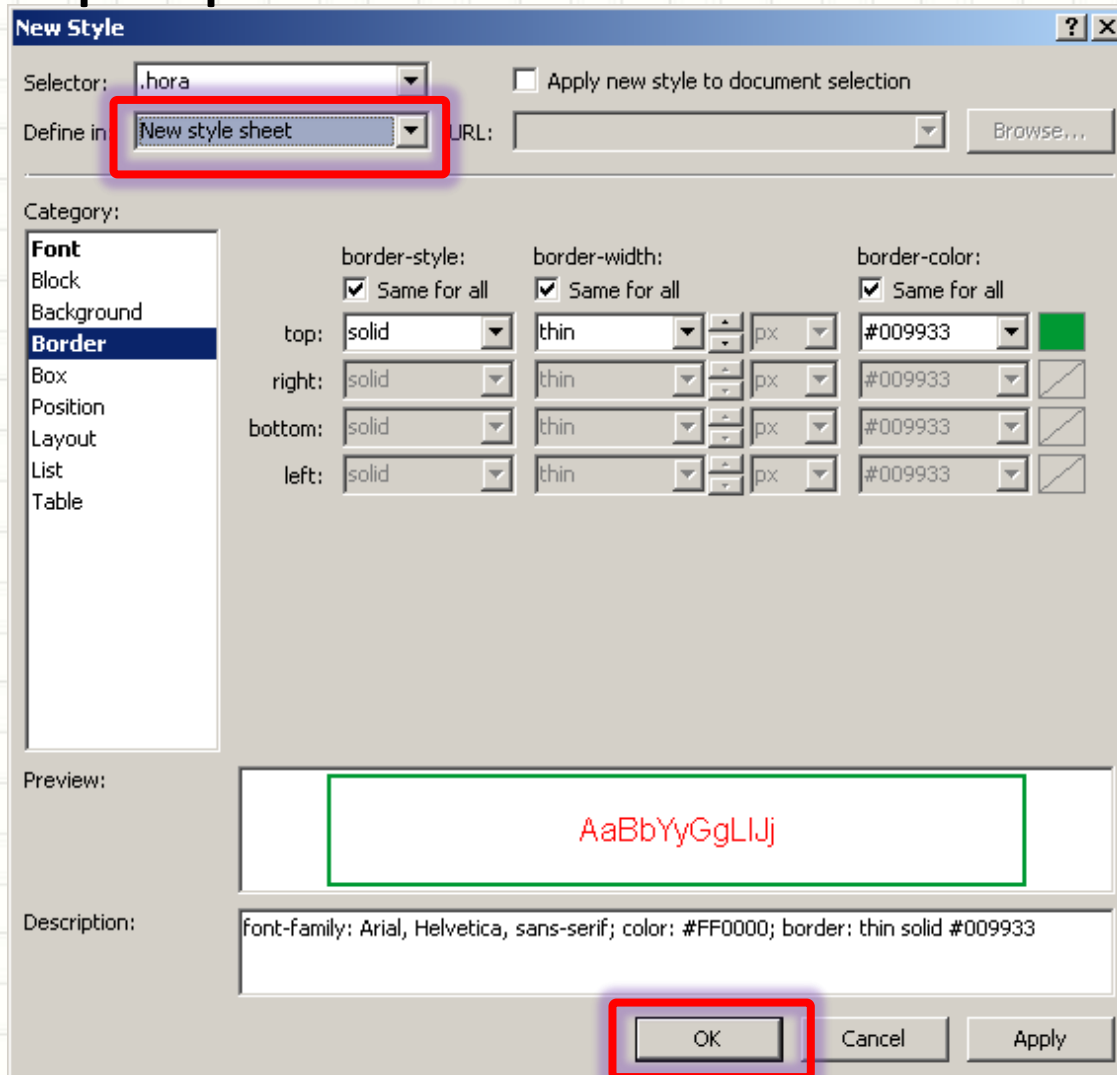
ASP.Net na Prática

- Dê o nome de “hora” para a classe:



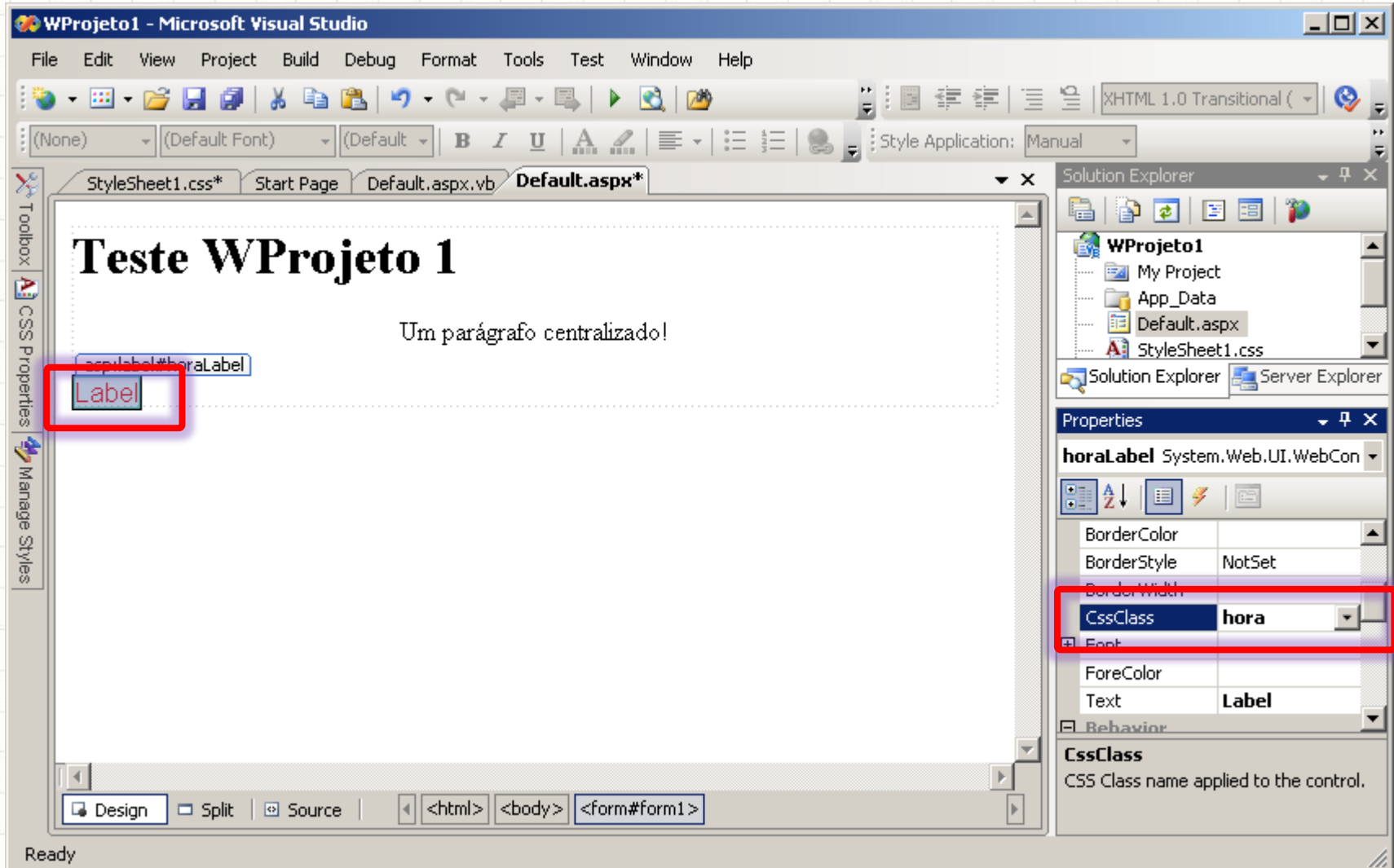
ASP.Net na Prática

- E indique para criar uma nova folha de estilo



ASP.Net na Prática

- Selecione o Label e mude a classe para “hora”



ASP.Net na Prática

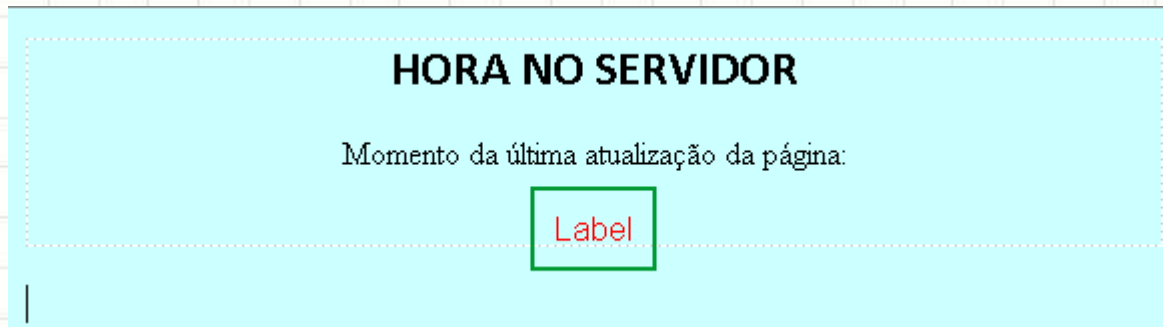
- Execute (F5) e veja o resultado!
- Abra o código fonte na janela do navegador
 - Observe como ficou o XHTML
 - Observe como ficou o CSS
- Prático?
 - Vantagens:
 - Reduz necessidade de “decorar”
 - WYSIWYG
 - Desvantagens:
 - Excessivamente burocrático
 - Nem todos os atributos estão nas janelas
 - As propriedades nem sempre ficam onde você deseja



ATIVIDADE

Atividade

- Modifique o visual apresentado para que fique como indicado abaixo:



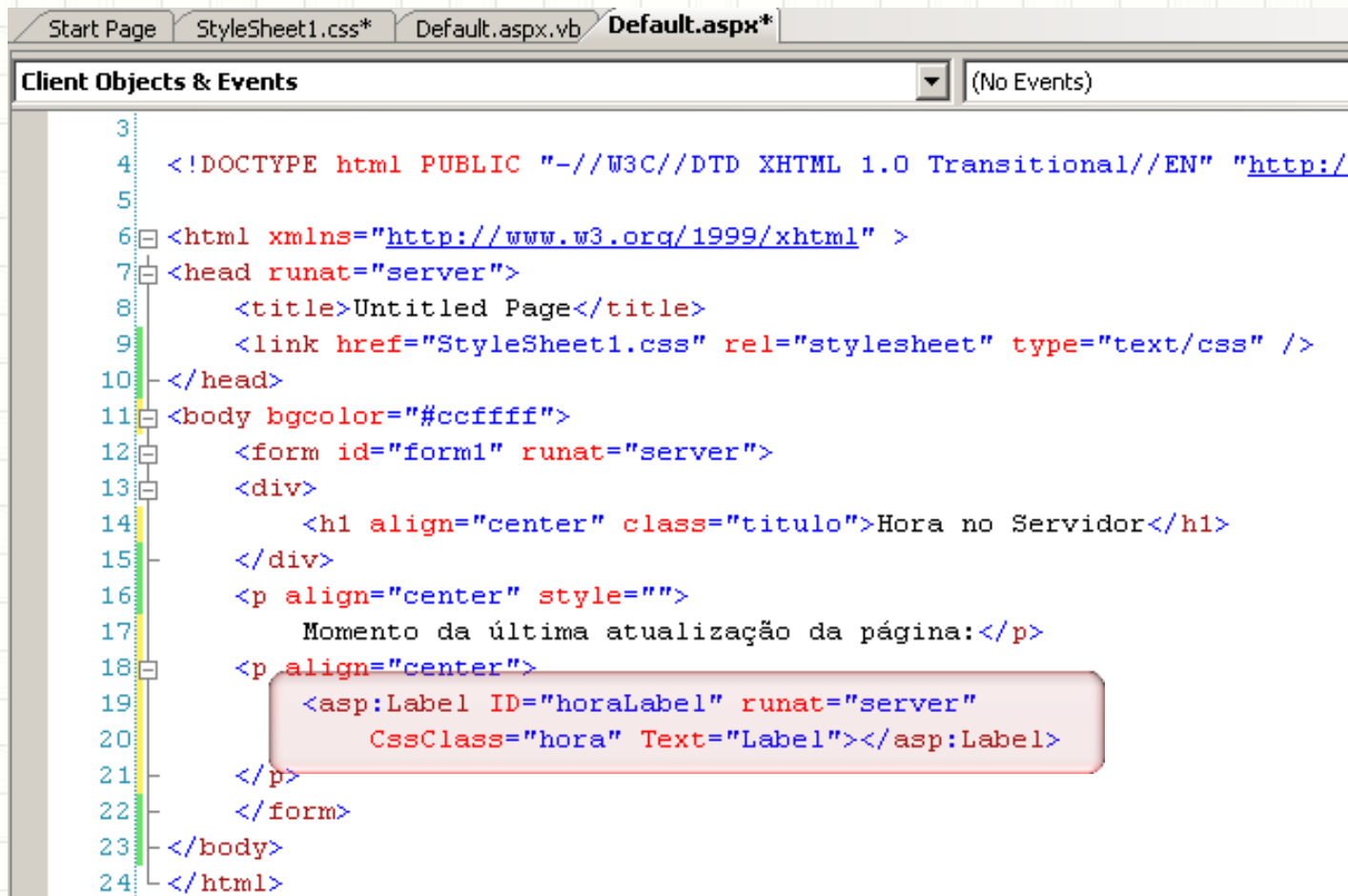
- Fonte do h1: Calibri, xx-large, small-caps
- Padding do label: 10px



IMPLEMENTANDO CÓDIGO

Código de Servidor com o ASP.Net

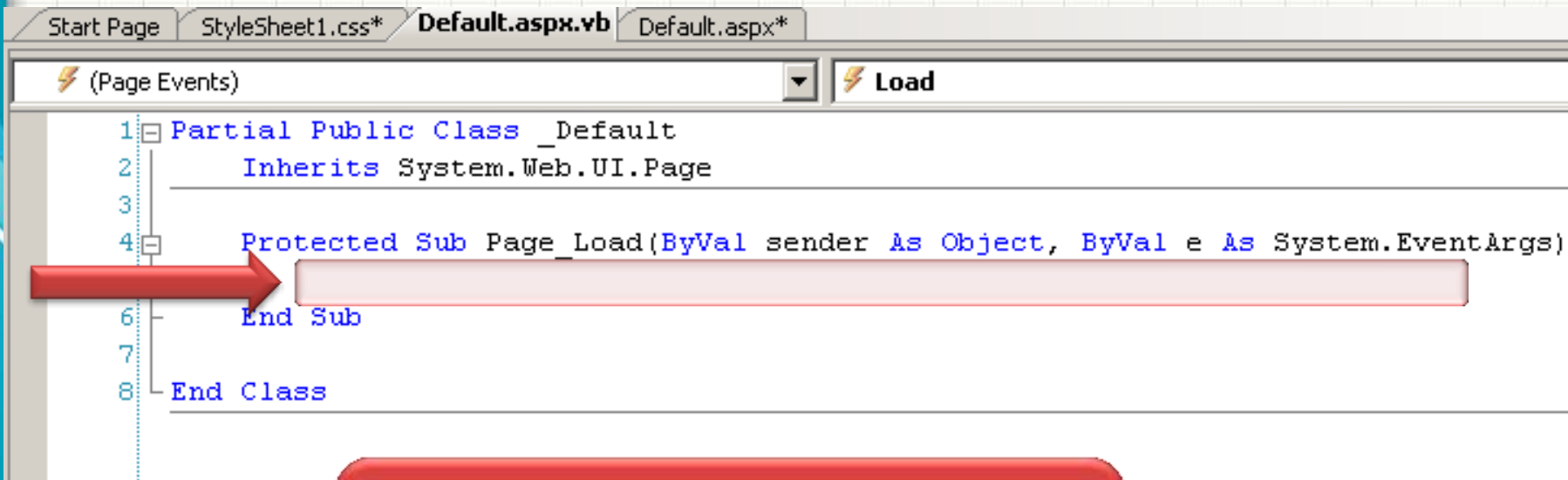
- Vamos ajustar a hora no Page Load
- O valor deve ser colocado no **horaLabel**



```
3
4 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://
5
6 <html xmlns="http://www.w3.org/1999/xhtml" >
7 <head runat="server">
8     <title>Untitled Page</title>
9     <link href="StyleSheet1.css" rel="stylesheet" type="text/css" />
10 </head>
11 <body bgcolor="#ccffff">
12     <form id="form1" runat="server">
13     <div>
14         <h1 align="center" class="titulo">Hora no Servidor</h1>
15     </div>
16     <p align="center" style="">
17         Momento da última atualização da página:</p>
18     <p align="center">
19         <asp:Label ID="horaLabel" runat="server"
20             CssClass="hora" Text="Label"></asp:Label>
21     </p>
22     </form>
23 </body>
24 </html>
```

Código de Servidor com o ASP.Net

- Vamos ao código **Default.aspx.vb**

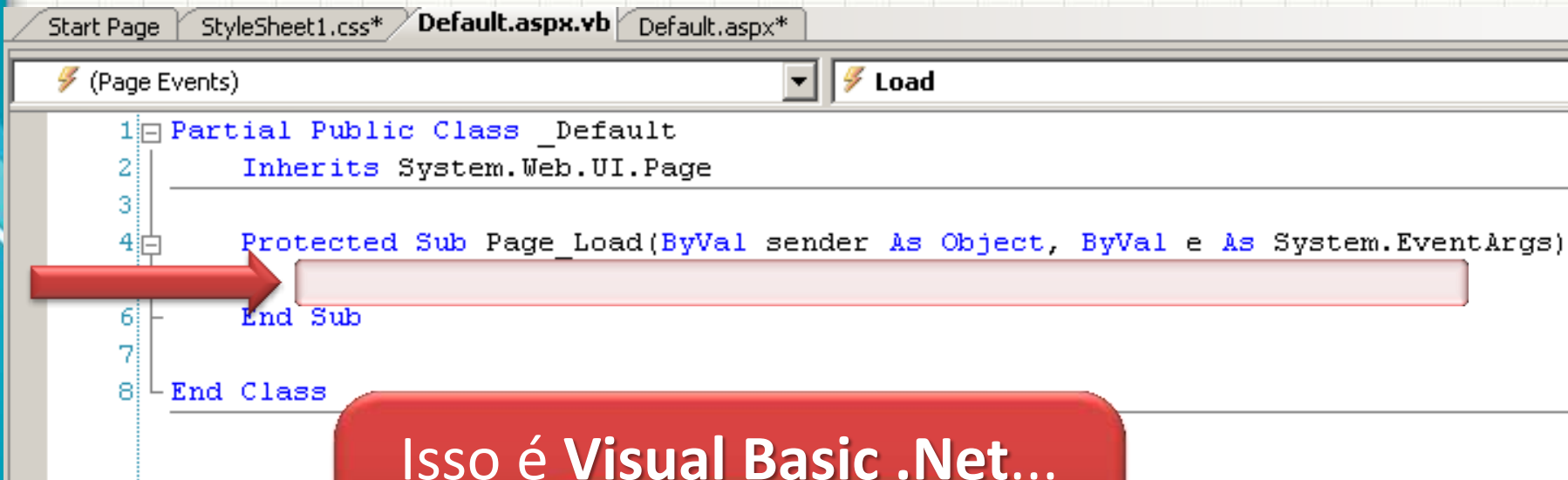


```
Start Page | StyleSheet1.css* | Default.aspx.vb | Default.aspx*  
⚡ (Page Events) | ⚡ Load  
1 Partial Public Class _Default  
2     Inherits System.Web.UI.Page  
3  
4 Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)  
6     End Sub  
7  
8 End Class
```

Aí é que entra o nosso código do Page_Load

Código de Servidor com o ASP.Net

- Vamos ao código **Default.aspx.vb**

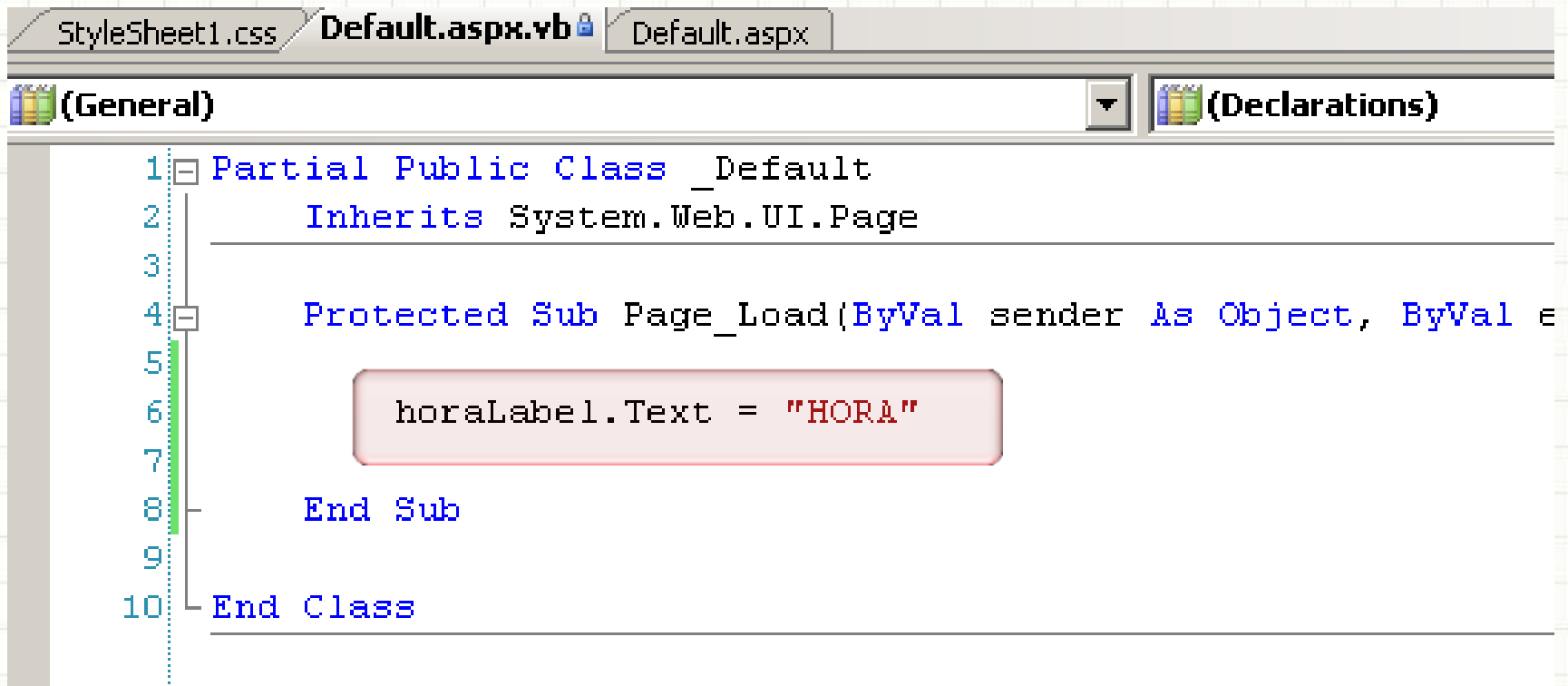


```
Start Page | StyleSheet1.css* | Default.aspx.vb | Default.aspx*  
⚡ (Page Events) | ⚡ Load  
1 Partial Public Class _Default  
2     Inherits System.Web.UI.Page  
3  
4 Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)  
6     End Sub  
7  
8 End Class
```

Isso é Visual Basic .Net...
Tudo que vocês
aprenderam, serve aqui!

Código de Servidor com o ASP.Net

- Mudemos o conteúdo do label para “HORA”

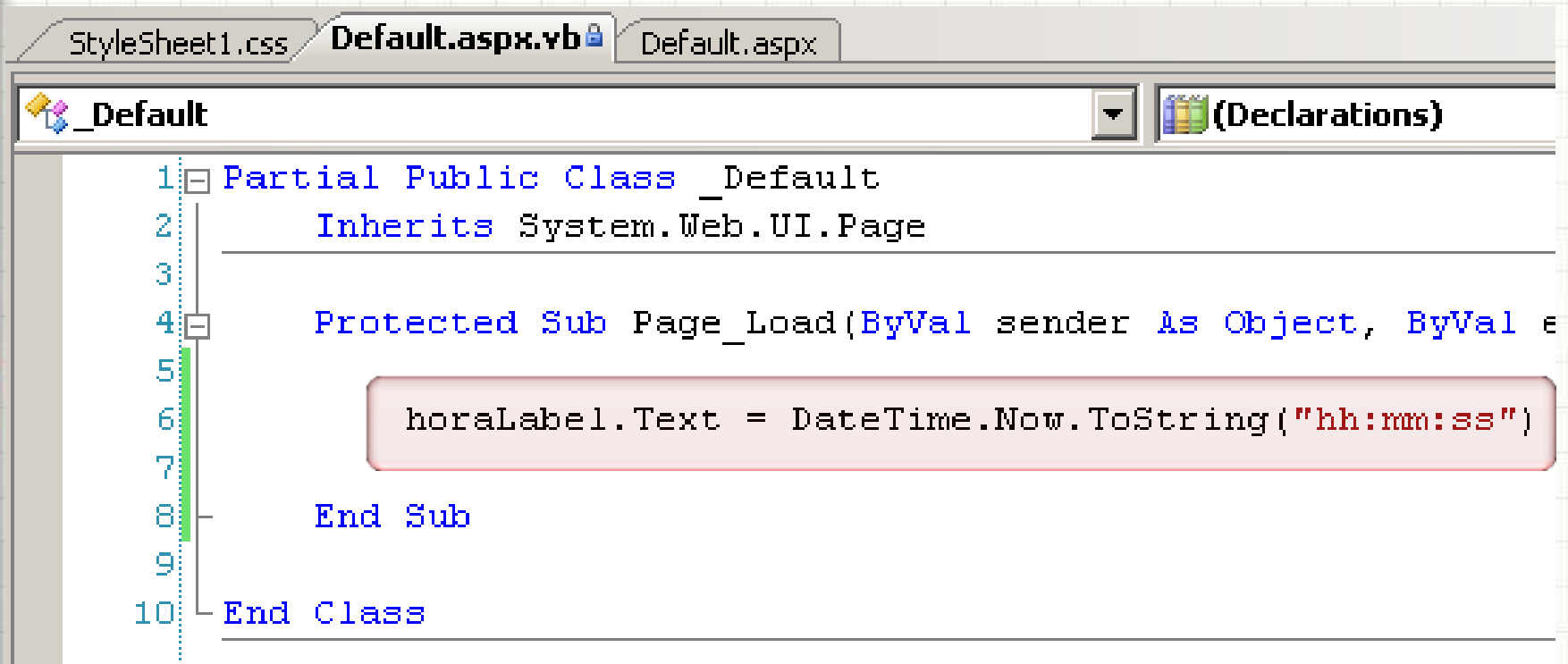


```
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e
5
6         horaLabel1.Text = "HORA"
7
8     End Sub
9
10 End Class
```

- Execute e observe o código XHTML gerado!

Código de Servidor com o ASP.Net

- Mudemos para a hora atual



```
StyleSheet1.css  Default.aspx.vb  Default.aspx
_Default (Declarations)
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e
5
6         horaLabel.Text = DateTime.Now.ToString("hh:mm:ss")
7
8     End Sub
9
10 End Class
```

- Execute e observe o código XHTML gerado!

Código de Servidor com o ASP.Net

- Voltemos para o ASPX... Modo design.

The screenshot displays the Microsoft Visual Studio interface for a project named 'WProjeto1'. The main design view shows a light blue page with the following content:

HORA NO SERVIDOR

Momento da última atualização da página:

Label

The Solution Explorer on the right shows the project structure:

- WProjeto1
 - My Project
 - App_Data
 - Default.aspx
 - StyleSheet1.css

The Properties window on the right shows the 'Text' property of the selected label control:

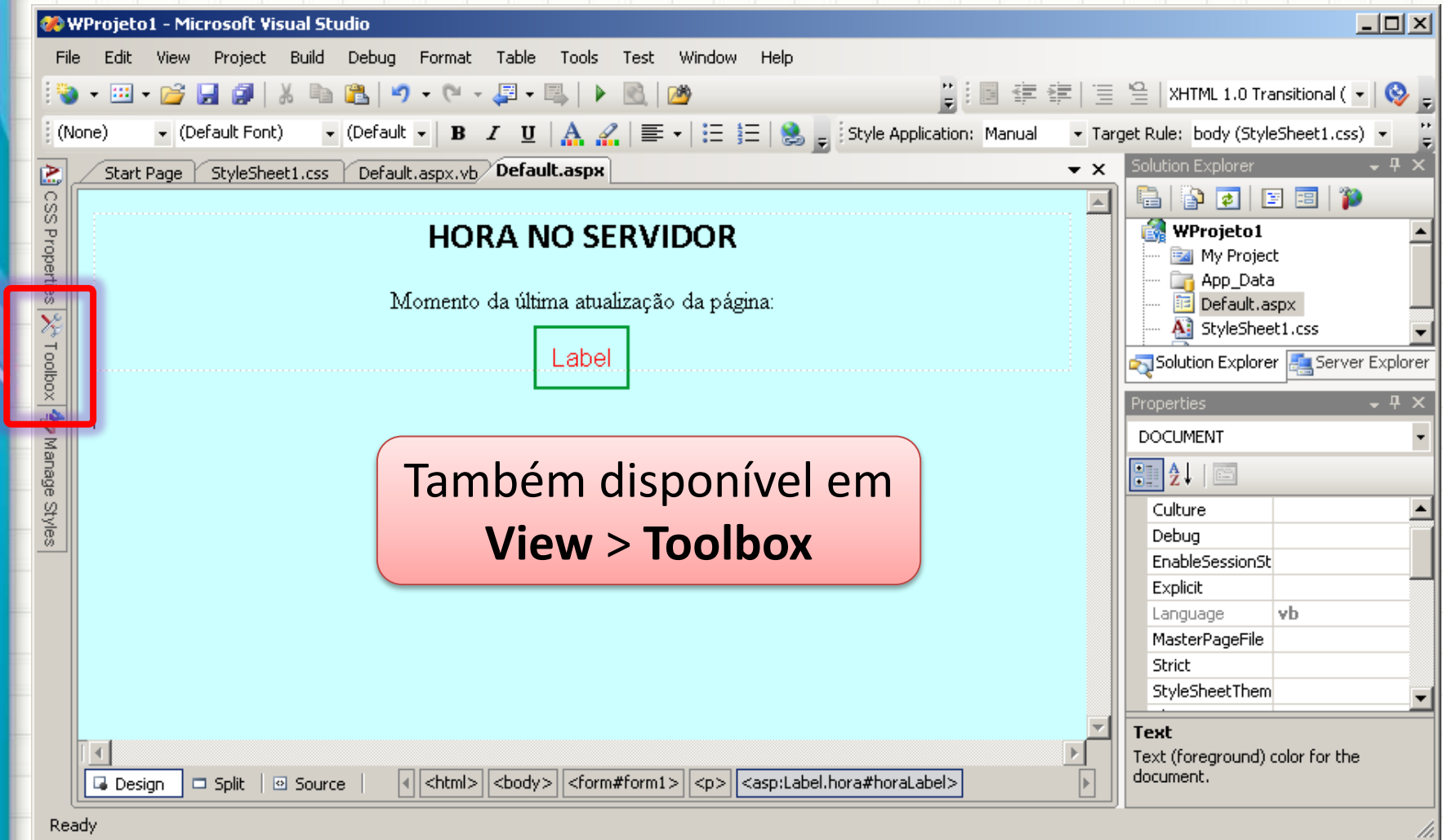
DOCUMENT	
Culture	
Debug	
EnableSessionSt	
Explicit	
Language	vb
MasterPageFile	
Strict	
StyleSheetThem	

The 'Text' property is highlighted, with the description: 'Text (foreground) color for the document.'

The status bar at the bottom shows the current code snippet: `<asp:Label.hora#horaLabel>`.

Código de Servidor com o ASP.Net

- Arraste um **Button** da ToolBox para o form



Código de Servidor com o ASP.Net

- E mude o texto dele para “Ajusta”

The screenshot shows the Microsoft Visual Studio interface for a web project named 'WProjeto1'. The main design view displays a light blue page with the text 'HORA NO SERVIDOR' and 'Momento da última atualização da página:'. Below this text is a button control. The Properties window on the right shows the 'Text' property of the button is set to 'Ajusta'. The Solution Explorer on the right shows the project structure with files like 'My Project', 'App_Data', 'Default.aspx', and 'StyleSheet1.css'. The status bar at the bottom indicates 'Ready', 'Ln 23', 'Col 65', and 'Ch 65'.

Código de Servidor com o ASP.Net

- E mude o ID dele para **bAjusta**

The screenshot shows the Microsoft Visual Studio IDE with a project named 'WProjeto1'. The main window displays the 'Default.aspx' file in Design view. The page content includes the text 'HORA NO SERVIDOR' and 'Momento da última atualização da página:'. Below this text is a button labeled 'Ajusta'. The button is highlighted with a green box, and a tooltip above it shows 'asp:button#Button1'. The Properties window on the right shows the 'ID' property of the button set to 'bAjusta', which is highlighted with a red box. The Solution Explorer on the right shows the project structure with 'Default.aspx' selected. The status bar at the bottom indicates 'Ready', 'Ln 23', 'Col 65', and 'Ch 65'.

Código de Servidor com o ASP.Net

- Agora dê um duplo clique no botão Ajusta

The screenshot shows the Microsoft Visual Studio IDE with a web page in Design view. The page content is as follows:

```
<html>  
<body>  
<form#form1>  
<p>  
<asp:Button#Button1>
```

The Solution Explorer on the right shows the project structure:

- WProjeto1
 - My Project
 - App_Data
 - Default.aspx
 - StyleSheet1.css

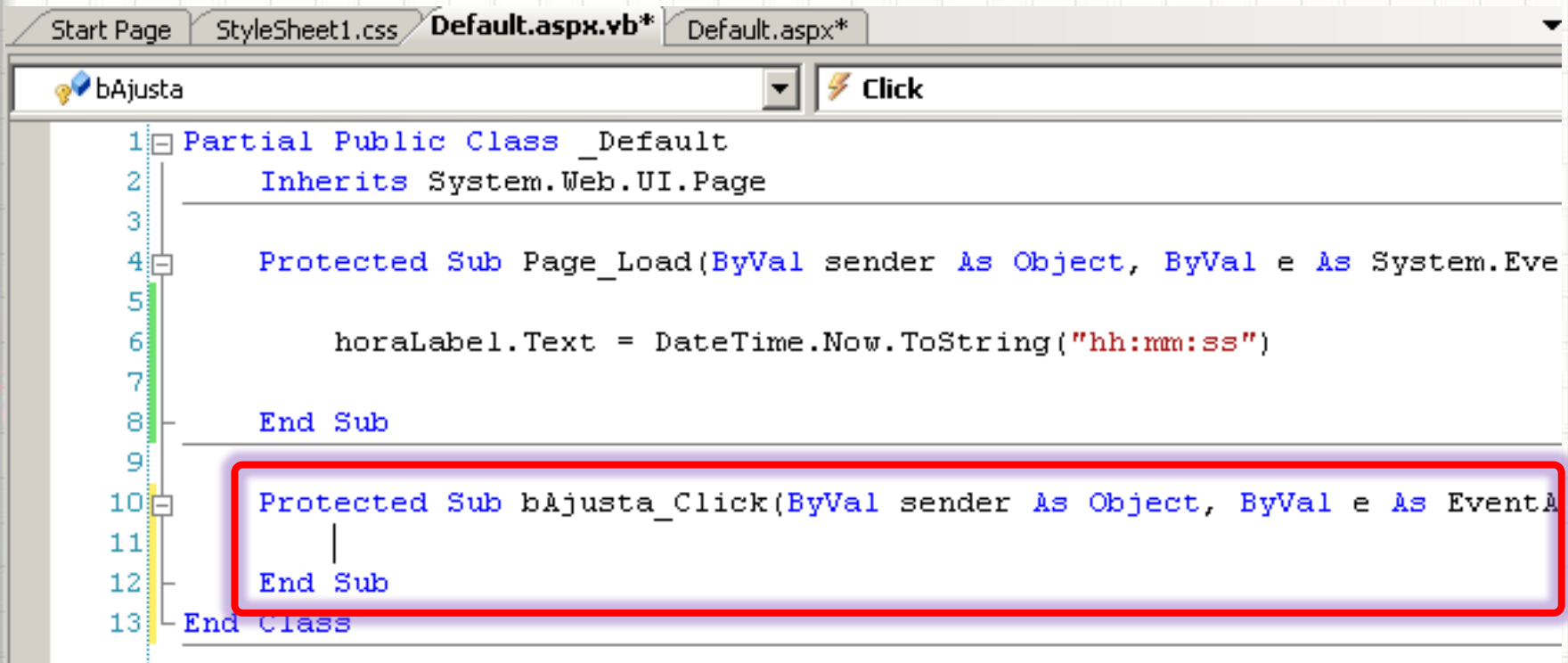
The Properties window on the right shows the properties for the selected **Button1** control:

- Visible: True
- Data (Expressions):
- Layout: Height, Width
- Misc: (ID) **bAjusta**

The status bar at the bottom shows the current position: Ready, Ln 23, Col 65, Ch 65.

Código de Servidor com o ASP.Net

- Seremos encaminhados para o **aspx.vb...**

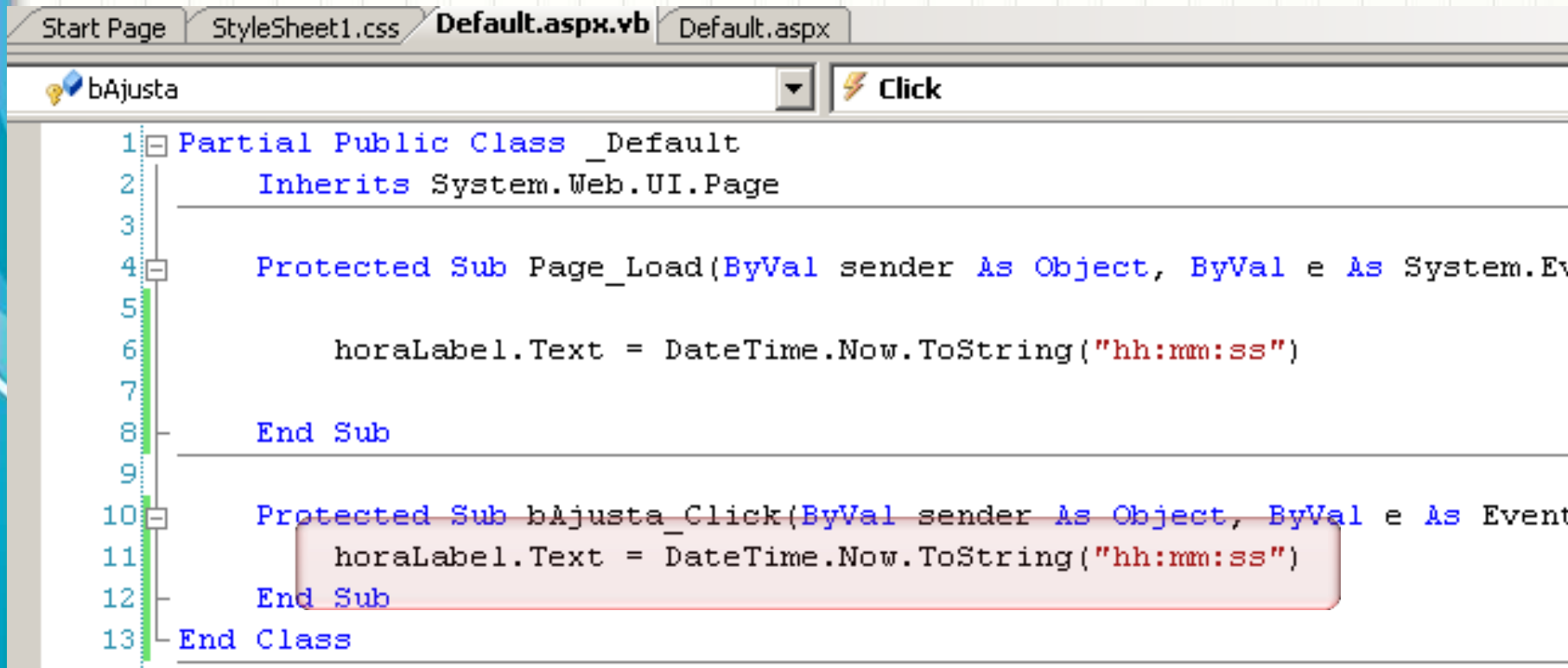


```
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
5
6         horaLabel.Text = DateTime.Now.ToString("hh:mm:ss")
7
8     End Sub
9
10    Protected Sub bAjusta_Click(ByVal sender As Object, ByVal e As EventArgs)
11    |
12    End Sub
13 End Class
```

Função executada no
evento bAjusta_Click

Código de Servidor com o ASP.Net

- Vamos atualizar o valor do **horaLabel**!



```
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
5
6         horaLabel.Text = DateTime.Now.ToString("hh:mm:ss")
7
8     End Sub
9
10    Protected Sub bAjusta_Click(ByVal sender As Object, ByVal e As EventArgs)
11        horaLabel.Text = DateTime.Now.ToString("hh:mm:ss")
12    End Sub
13 End Class
```

- **Execute** e veja o que ocorre... Olhe o código!

Código de Servidor com o ASP.Net

- Arraste agora um **TextField** para o form

The screenshot displays the Microsoft Visual Studio IDE with a web application project named 'WProjeto1'. The main design view shows a form with the following elements:

- Title: **HORA NO SERVIDOR**
- Text: Momento da última atualização da página:
- Control: A green-bordered box labeled **Label**.
- Control: A button labeled **Ajusta**.
- Control: A text box labeled **asp:textbox#prefixo**.

The Solution Explorer on the right shows the project structure:

- WProjeto1
 - My Project
 - App_Data
 - Default.aspx
 - StyleSheet1.css

The Properties window on the right shows the selected control's properties:

- Control: **prefixo** (System.Web.UI.WebControls.WebControl)
- Layout
 - Height: [blank]
 - Width: **127px**
 - Wrap: True
- Misc
 - (ID): **prefixo**
- (ID): Programmatic name of the control.

The bottom status bar shows the current HTML structure: `<html> <body> <form#form1> <p> <asp:TextBox#prefixo>`.

Drag corners to resize proportionally. Drag padding handles to resize padding. Press CTRL for more options.

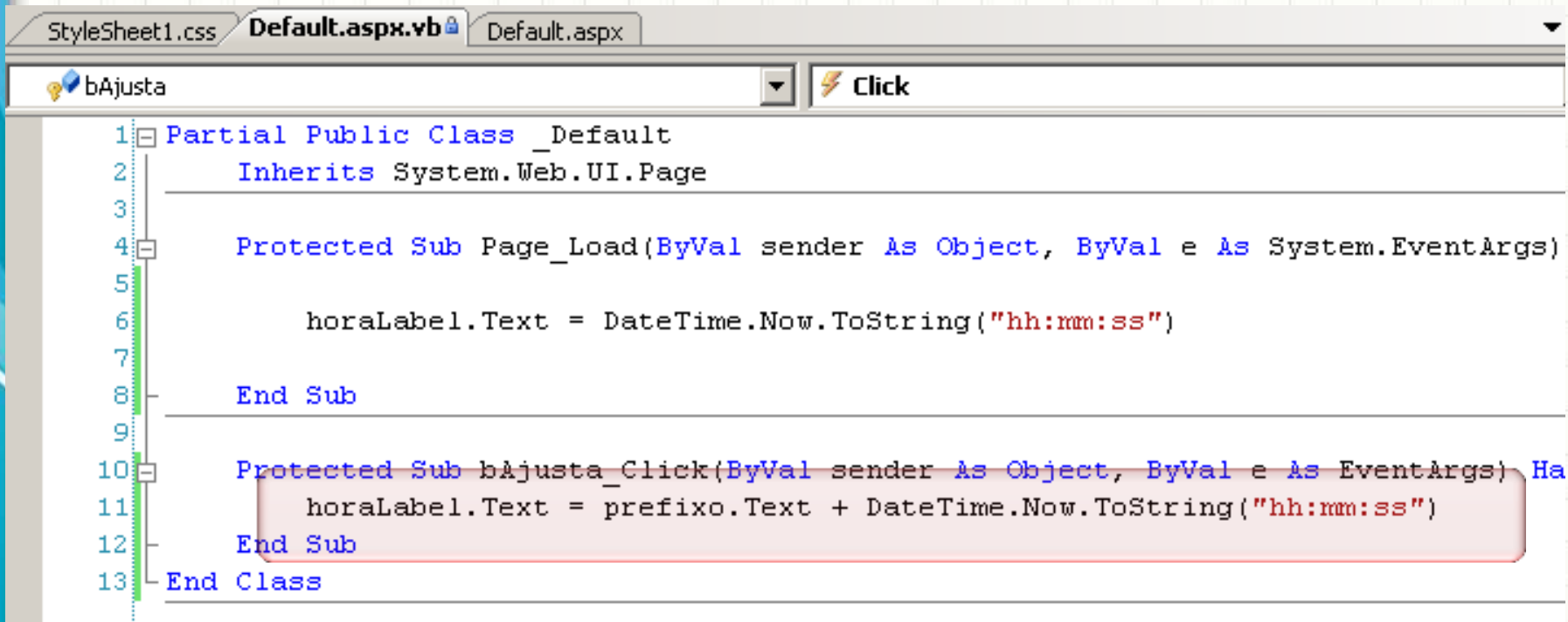
Código de Servidor com o ASP.Net

- E mude o ID dele para **prefixo**

The screenshot shows the Microsoft Visual Studio IDE with a web project named 'WProjeto1'. The main window displays the design view of 'Default.aspx'. The page content includes the heading 'HORA NO SERVIDOR', a label 'Momento da última atualização da página:', a 'Label' control, an 'Ajusta' button, and an 'asp:textbox#prefixo' text box. The Solution Explorer on the right shows the project structure with 'Default.aspx' selected. The Properties window on the right shows the 'prefixo' control selected, with the '(ID)' property set to 'prefixo', which is highlighted with a red box. The status bar at the bottom shows the current code view as '<asp:TextBox#prefixo>'. The bottom of the image contains the text: 'Drag corners to resize proportionally. Drag padding handles to resize padding. Press CTRL for more options.'

Código de Servidor com o ASP.Net

- E, no aspx.vb, mude o código do botão...



```
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
5
6         horaLabel.Text = DateTime.Now.ToString("hh:mm:ss")
7
8     End Sub
9
10    Protected Sub bAjusta_Click(ByVal sender As Object, ByVal e As EventArgs) Ha
11        horaLabel.Text = prefixo.Text + DateTime.Now.ToString("hh:mm:ss")
12    End Sub
13 End Class
```

- Experimente...
- Escreva algo no campo texto e use o botão!



ATIVIDADE

Atividade

- Inicie um projeto chamado Wcalc
- Crie um layout similar ao indicado abaixo

Parcela:	<input type="text"/>	p1
Parcela:	<input type="text"/>	p2
	<input type="button" value="Soma"/>	bSoma
Total:	<input type="text"/>	total

- Quando clicar em “Soma” as **Parcelas** devem ser somadas e o resultado colocado em **Total**
- Dica: **val(texto)** converte texto para número!
- Dica: **Dim x As Integer** declara x como inteiro!

Atividade - Solução

```
Default.aspx.vb | Default.aspx
bSoma | Click
1 Partial Public Class _Default
2     Inherits System.Web.UI.Page
3
4     Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
5
6     End Sub
7
8     Protected Sub bSoma_Click(ByVal sender As Object, ByVal e As EventArgs)
9         Dim par1, par2, tot As Integer
10
11         par1 = Val(p1.Text)
12         par2 = Val(p2.Text)
13         tot = par1 + par2
14         total.Text = tot
15     End Sub
16 End Class
```


Atividade 2

- Modifique o programa anterior para que ele apresente todas as 4 operações, uma em cada botão:
 - Soma
 - Subtração
 - Multiplicação
 - Divisão
- O programa deve indicar “Erro” em caso de divisão por zero

```
If [comparação] Then  
    [código]  
Else  
    [código]  
End If
```



CONCLUSÕES

Resumo

- ASP.Net: prático para aplicações web
 - Baseadas em formulários
- Visual Studio: há recursos de gerenciamento
 - Inclui gerenciamento de estilos (embora limitado)
- Visual Basic: quase tudo se aplica ao ASP.Net

- **TAREFA**
 - Trabalho B!



PERGUNTAS?

Próxima Aula



The End!



**BOM DESCANSO
A TODOS!**