Kentico CMS 5.5 Tutorial ASPX

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Part I

Introduction

1 Introduction

1.1 Kentico CMS Overview

Kentico CMS for ASP.NET helps you create powerful dynamic websites with minimum effort. This document will guide you through the most important features of the system step-by-step, so that you can start creating your own websites.

This document was written for evaluators and new users. It's intended for developers who create the websites. It's not intended for end-users without programming knowledge.

If you need a more detailed documentation of some features, please see one of the following documents:

- Developer's Guide
- Web parts and Controls Reference
- API Reference
- Database Reference

Kentico CMS Support

You get free technical support during your evaluation period. If you need any help, please visit http://www.kentico.com/Support.aspx.

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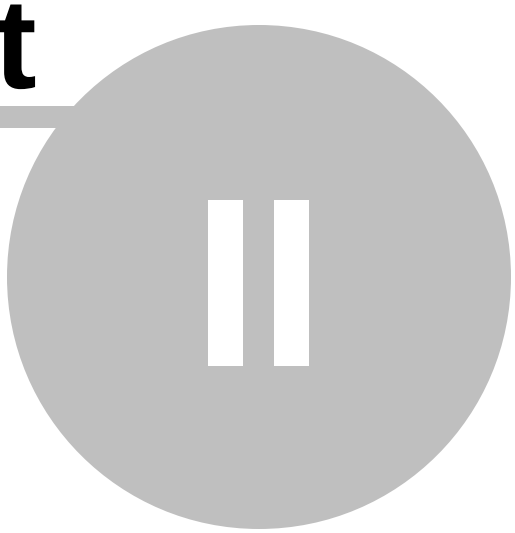
Part



Installation

2 Installation

2.1 Prerequisites

Before you start the installation, please make sure you have the following software installed. Other configurations may work too, but the system was not tested on them.

Server-side Requirements

- Windows XP, 2003, 2008, 2008 R2, Windows Vista Home Premium/Business/Enterprise/Ultimate or Windows 7 (both 32bit and 64bit)
- Microsoft .NET Framework 2.0 or higher
- Microsoft Internet Information Services (IIS) or Visual Studio/Visual Web Developer 2005/2008 built-in web server
- Microsoft SQL Server 2005, 2008 (including free SQL Server Express Edition)

Hosting Requirements

- ASP.NET 2.0 (or higher) and Microsoft SQL Server 2005/2008 support
- Medium-trust or full-trust permissions for the ASP.NET application
- If the server uses medium trust, ASP.NET AJAX 1.0 must be installed on the server.
- It's recommended that your hosting plan comes with 125 MB or more memory and 100+ MB database.

You can use your favorite hosting provider or choose from our hosting partners.

Development Tools

If you want to create custom web parts or integrate custom code, you need **Visual Studio 2005/2008** or **Visual Web Developer 2005/2008 Express Edition**.

Supported Client Browsers for Content Editors

- IE 7.0, IE 8.0 (compatibility mode)
- Firefox 3.5
- Safari 4.0 or Firefox 3.5 on Mac OS

Supported Client Browsers for Site Visitors

- IE 6.0, IE 7.0, IE 8.0 (compatibility mode)
- Firefox 1.0.5+
- Mozilla 1.7.1+
- Netscape 7.1+
- Opera 7.52+
- Safari or Firefox on Mac OS

(the visitor browser requirements depend on functionality used on the website)

Required experience

Although Kentico CMS allows you to create dynamic websites without programming, you may need to

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create custom web parts or to add custom code when developing a more complex website. You should be able to create a simple application in ASP.NET 2.0 using Visual Studio 2005 and have some experience with relational databases and SQL, so that you can leverage the flexibility of Kentico CMS.

2.2 Setup installation

Troubleshooting installation issues

If you encounter any problems during the installation, please see **Kentico CMS Developer's Guide -> Installation and deployment -> Troubleshooting installation issues** or contact our support at http://www.kentico.com/Support.aspx

Run KenticoCMS.exe and follow the installation wizard:

Read and accept the license agreement and click **Next**. Choose the installation location of the binary files and documentation on your disk. After the setup completes the installation, choose to **Launch Kentico CMS Web Installer** and click **Finish**.

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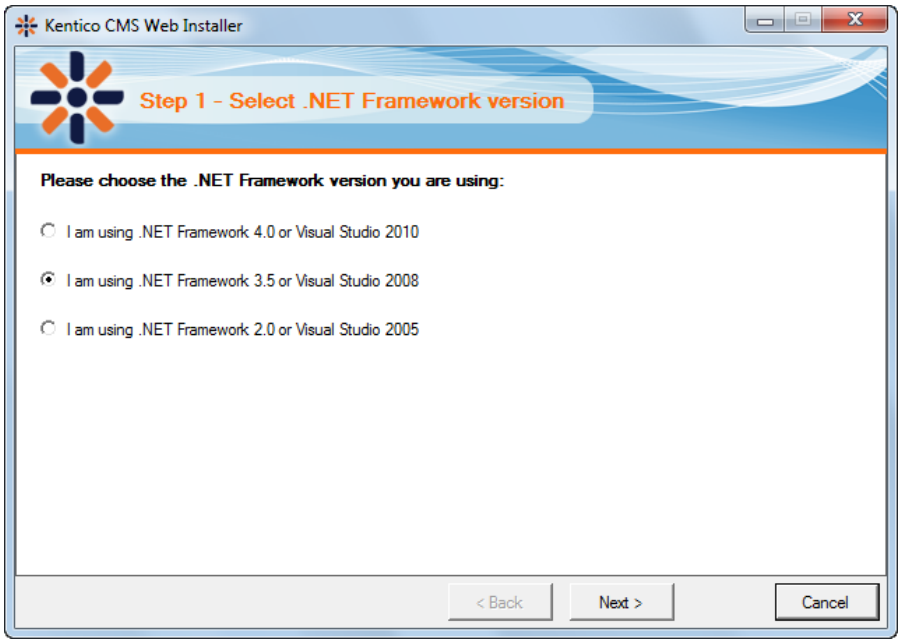
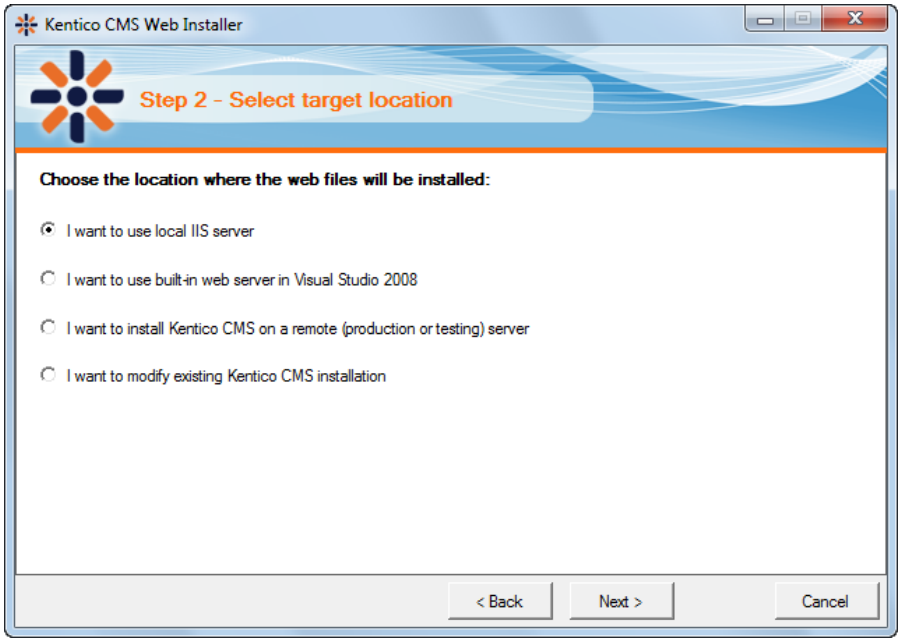
2.3 Web application installation

Now you should see the Kentico CMS Web Installer. If you cannot see it, you can always run it from **Start menu -> All Programs -> Kentico CMS -> Kentico CMS Web Installer**.

First, you need to choose the version of .NET Framework and Visual Studio that you wish to use. Click **Next**.



Now choose to use either IIS server or Visual Studio built-in web server (if you do not have IIS installed). Click **Next**.



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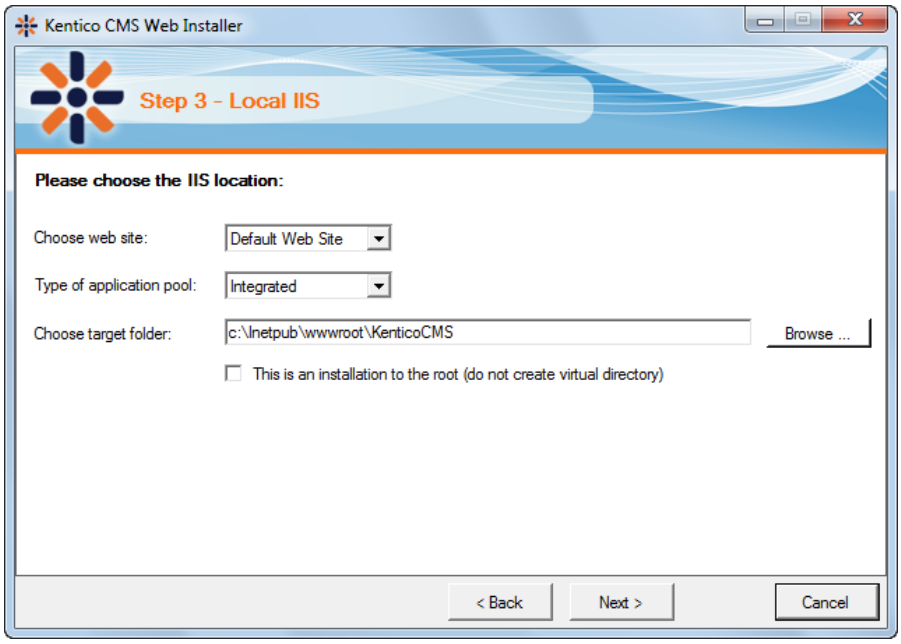
IIS installation

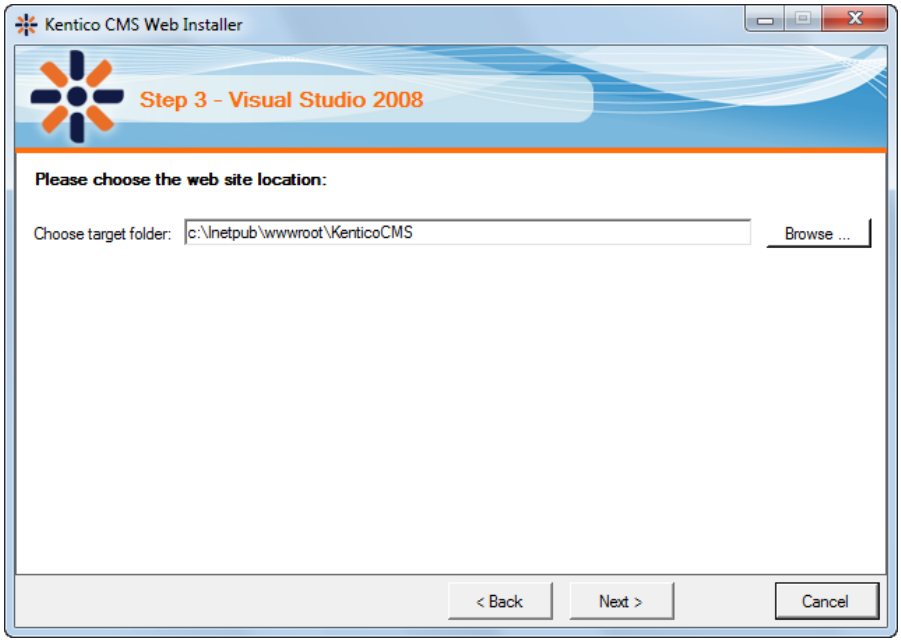
If you choose the IIS server, you can choose the website where the virtual directory will be created and the folder on your local disk where project files will be deployed. The installer will create a new virtual directory on your server and configure it for ASP.NET. Click **Next**.

Please note: if you are installing Kentico CMS into the root of your website (such as http://www.domain.com) and do not wish to create a virtual directory (such as http://www.domain.com/cms), please check the **This is an installation to the root (do not create virtual directory)** check-box.



Visual Studio installation

If you chose to use the built-in server in Visual Studio, you only need to specify the local disk where the project files will be deployed. Click **Finish**.



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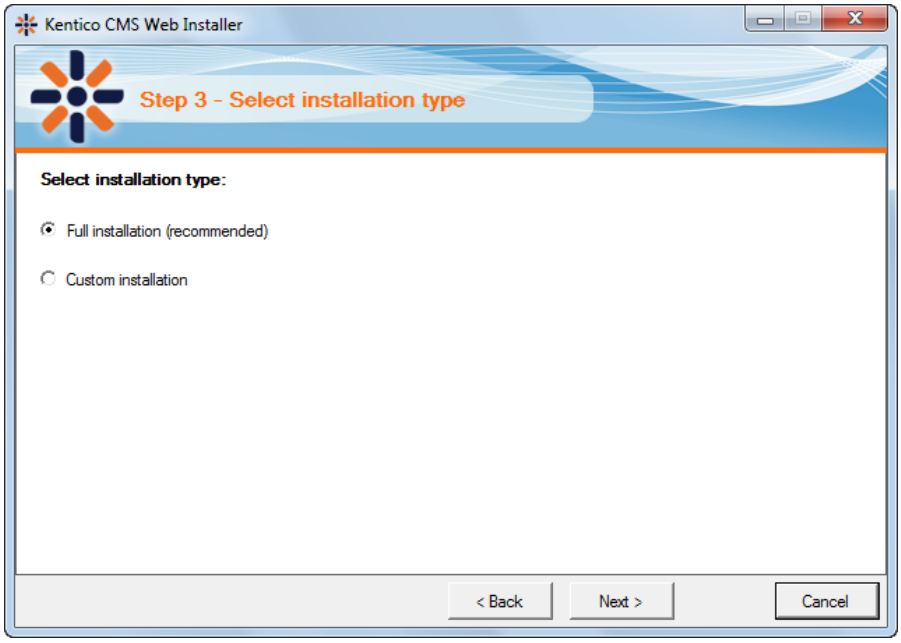
Type of installation

No matter if you chose the IIS or VS installation, the next step after specifying the target folder is the selection of installation type. The following two types of installation are available:

- **Full installation** - this is the recommended option for the purposes of this tutorial; in this type of installation, all components of the CMS will be installed
- **Custom installation** - in this type of installation, one extra step will be displayed, letting you choose which components you want to include in the installation

Click **Next** to start the installation process.



After the setup copies all files, you will see the link for opening the web application in browser or the web project in Visual Studio. **Click the link.**

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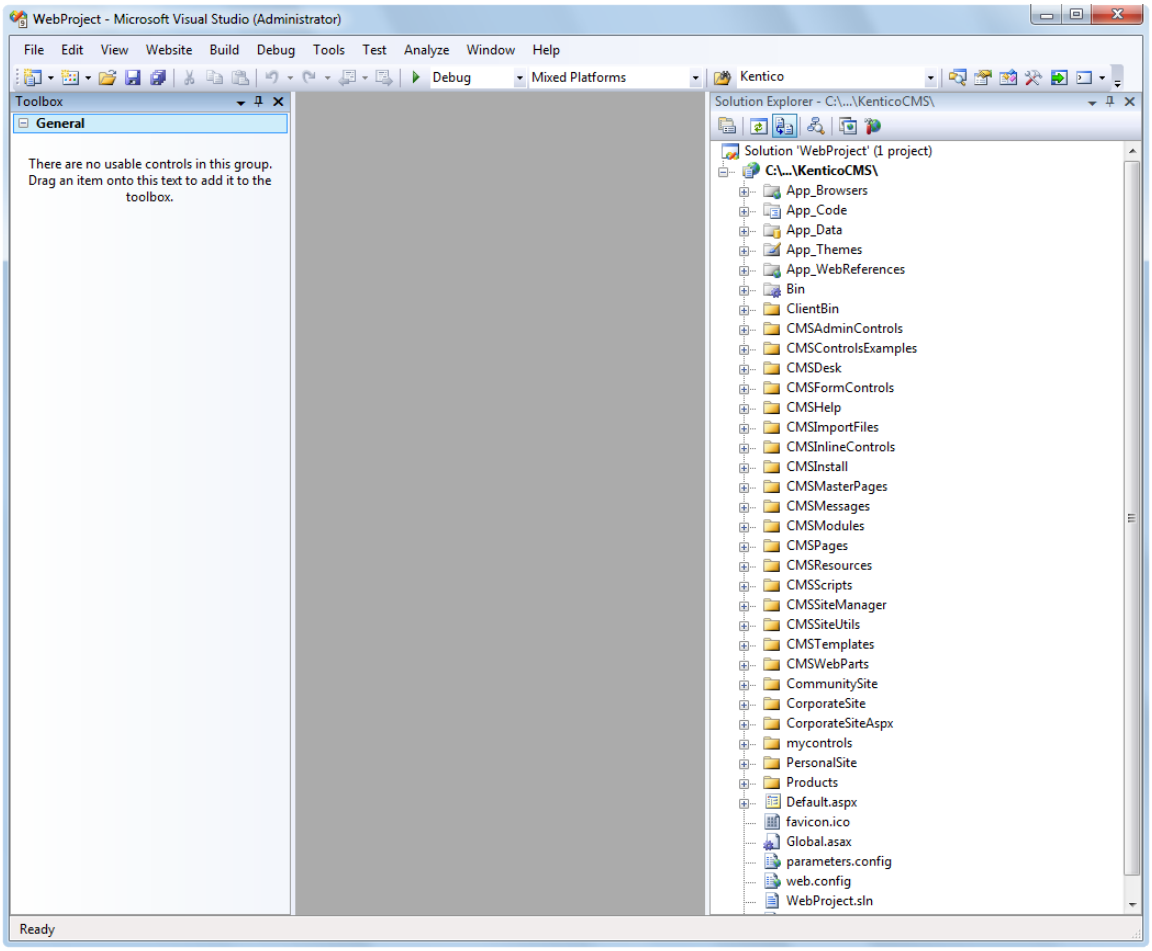
Opening the website in Visual Studio

If you chose Visual Studio installation, the project is opened in Visual Studio:



Choose **Debug -> Start without debugging** from the main menu. The site will be displayed in new browser window using the built-in web server.

When you cannot open the website in Visual Studio

If the link for opening the project in Visual Studio doesn't work, you may need to start Visual Studio manually and choose **File -> Open -> Web Site...** and locate the project folder on your disk manually.

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2.4 Database setup and Corporate Site

Now you should see the **Database setup** in your web browser.

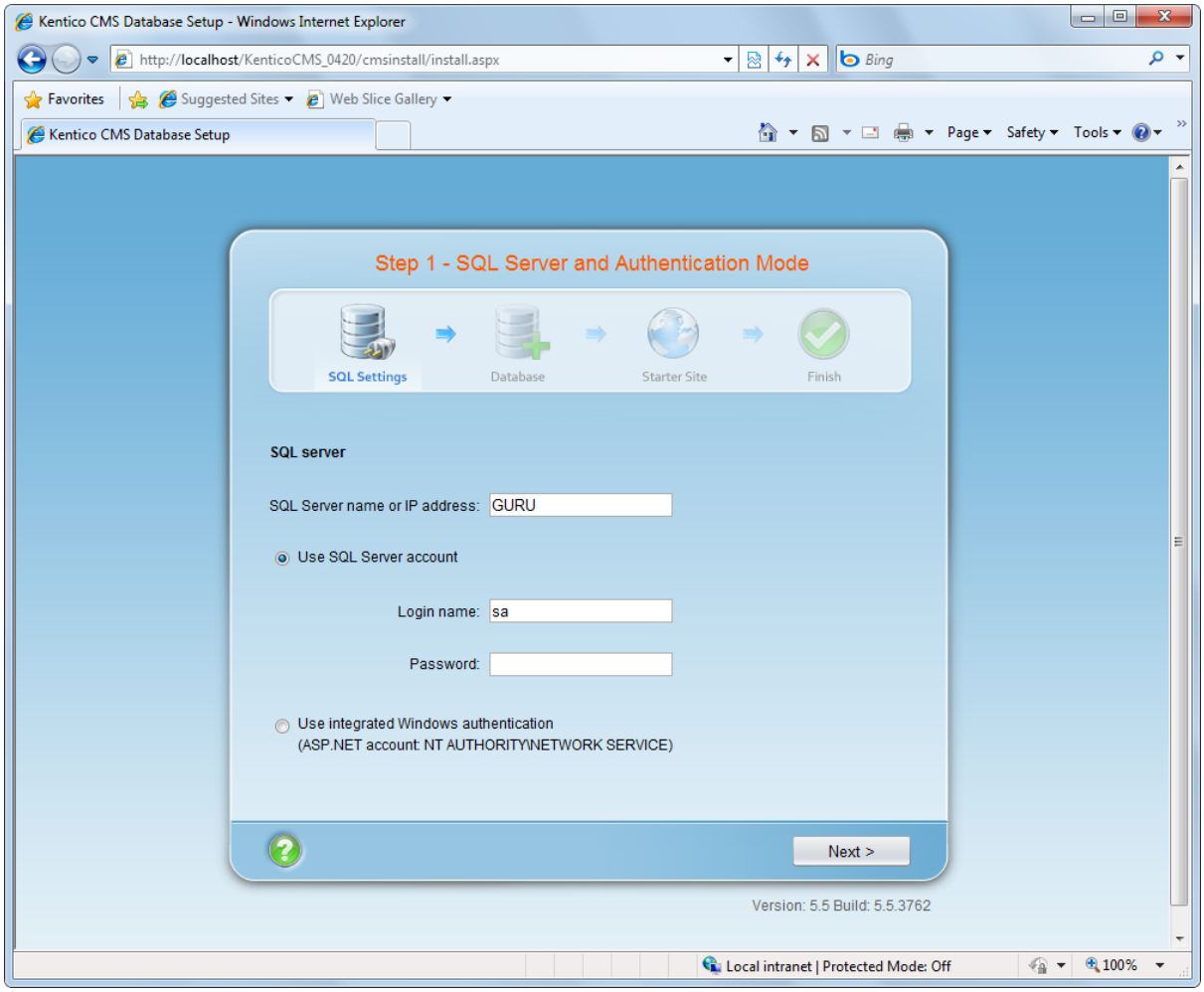
In the first step, choose the SQL Server name or IP address. If you are using SQL Server 2005 Express Edition, the default server name is .\SQLExpress or (local)\SQLExpress.

You can use either SQL Server authentication (recommended) or integrated Windows authentication.

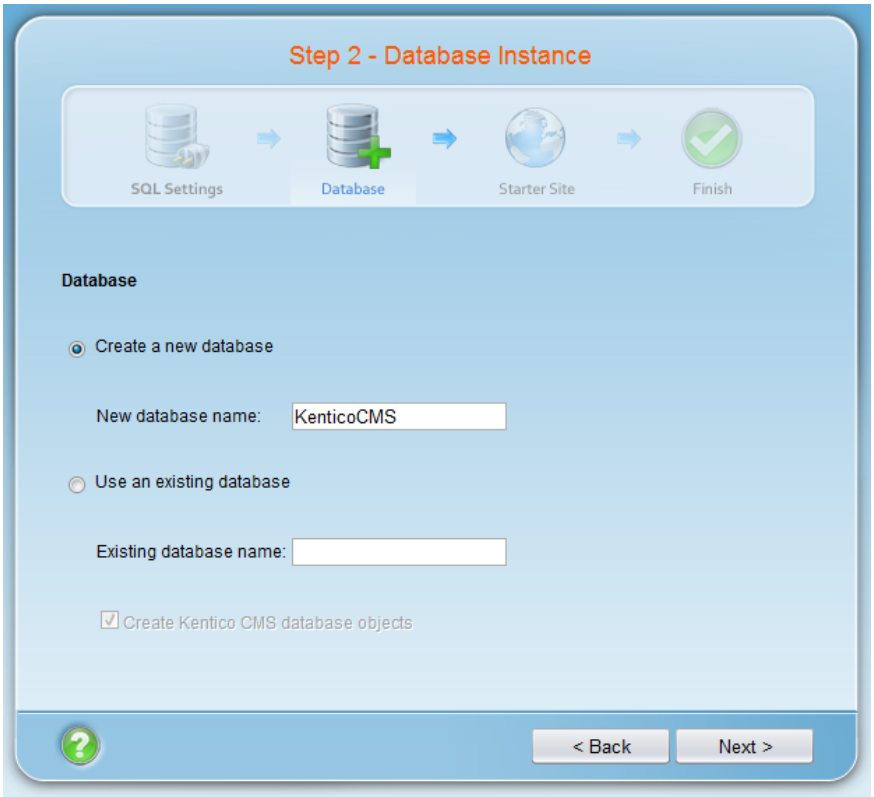
- In case you use **SQL Server account**, you need to enter the user name (such as **sa**) and password.
- In case you use **Windows authentication**, you need to ensure that the ASP.NET account of the name displayed in the brackets has an appropriate login name in your SQL Server.

The account must be granted with permissions for creating new databases or for creating database objects in an existing database.

Click **Next**.



In the **Database Instance** step, choose **Create a new database**, enter the name of the new database into the **New database name** field and click **Next**.



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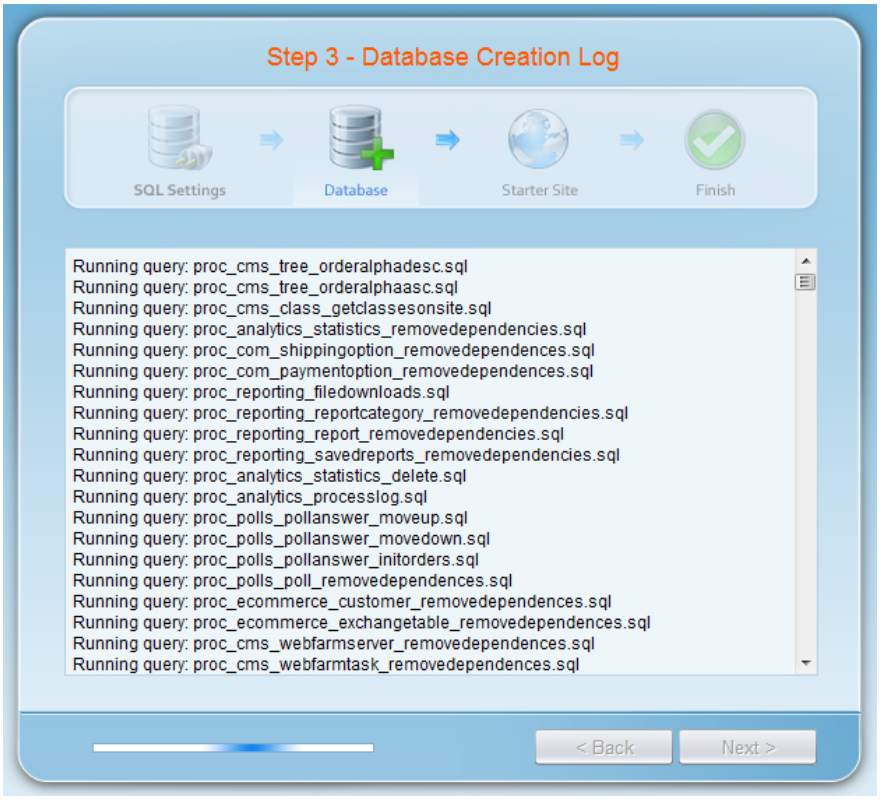
The database creation log will be displayed.



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When the database is created, you will be asked to enter your license key. If you do not have a license key yet, click **Next** to continue in the trial mode. The functionality of the trial mode is the same as the full version.

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In the **Starter Site** step, you can choose from the following options:

- **Choose a starter site:**
  - **Corporate Site (portal engine)** - this option installs the sample corporate site - it is **recommended** for most users, especially **for evaluators**.
  - **Corporate Site (ASPX templates)** - this option is recommended only for experienced ASP.NET developers who want to use ASPX page templates instead of portal templates.
  - **E-commerce site** - this sample site can be used as a starting point for creating your own e-shop and shows the possibilities of Kentico CMS's E-commerce module.
  - **Personal site** - this is a web template suitable for a simple personal site.
  - **Community site** - complex web template suitable for community webs, showing Kentico CMS's social networking features in practice.
  - **Blank site** - this is a blank site without any content; you will use it to create a new site from scratch.
  - **Blank site ASPX** - the same as above, but for ASPX poage templates.

- **Continue to the New site wizard** - this option is recommended if you are starting a new site from scratch.
- **Import an existing Kentico CMS website** - use this option is you already created a website with Kentico CMS and need to import it into the new installation (e.g. on the production server).

For the purpose of this guide, please choose to **create sample Corporate Site (ASPX templates)** and click **Next**. You will see the confirmation and a link to your new website:

A log displaying creating of the site will be displayed. When it's finished, you will be displayed with the final step that you can see in the screenshot below. Click the **Continue to the new web site** link.

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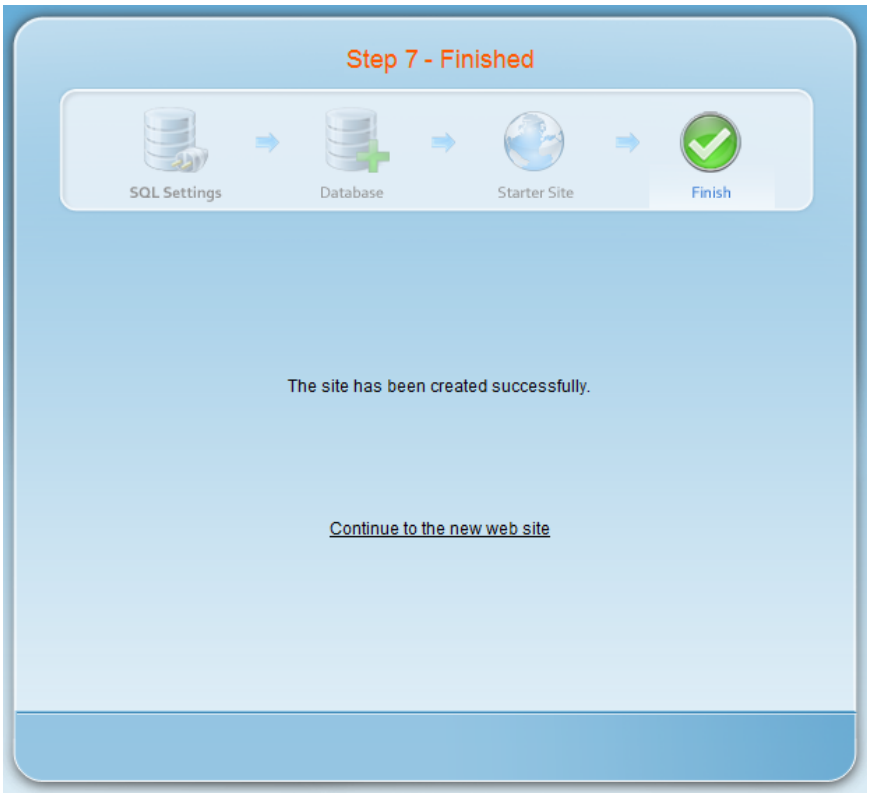

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You will be redirected to the title page of the sample Corporate Site:

Sample website

The Corporate Site website is only an example of a website you can create with Kentico CMS. You have full control over the site structure, design, page layout and functionality as you will see in the following chapters.

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Part

Managing content

3 Managing content

3.1 User interface overview

Click the **Sign in to CMS Desk** link at the top of the website or go to **http://<domain>/<virtualdirectory>/cmsdesk**. You will be asked for a user name and password.

Default user name and password

The default user name is **administrator** with **blank password**.

It's highly recommended that you change the password before you publish the website on the live server.

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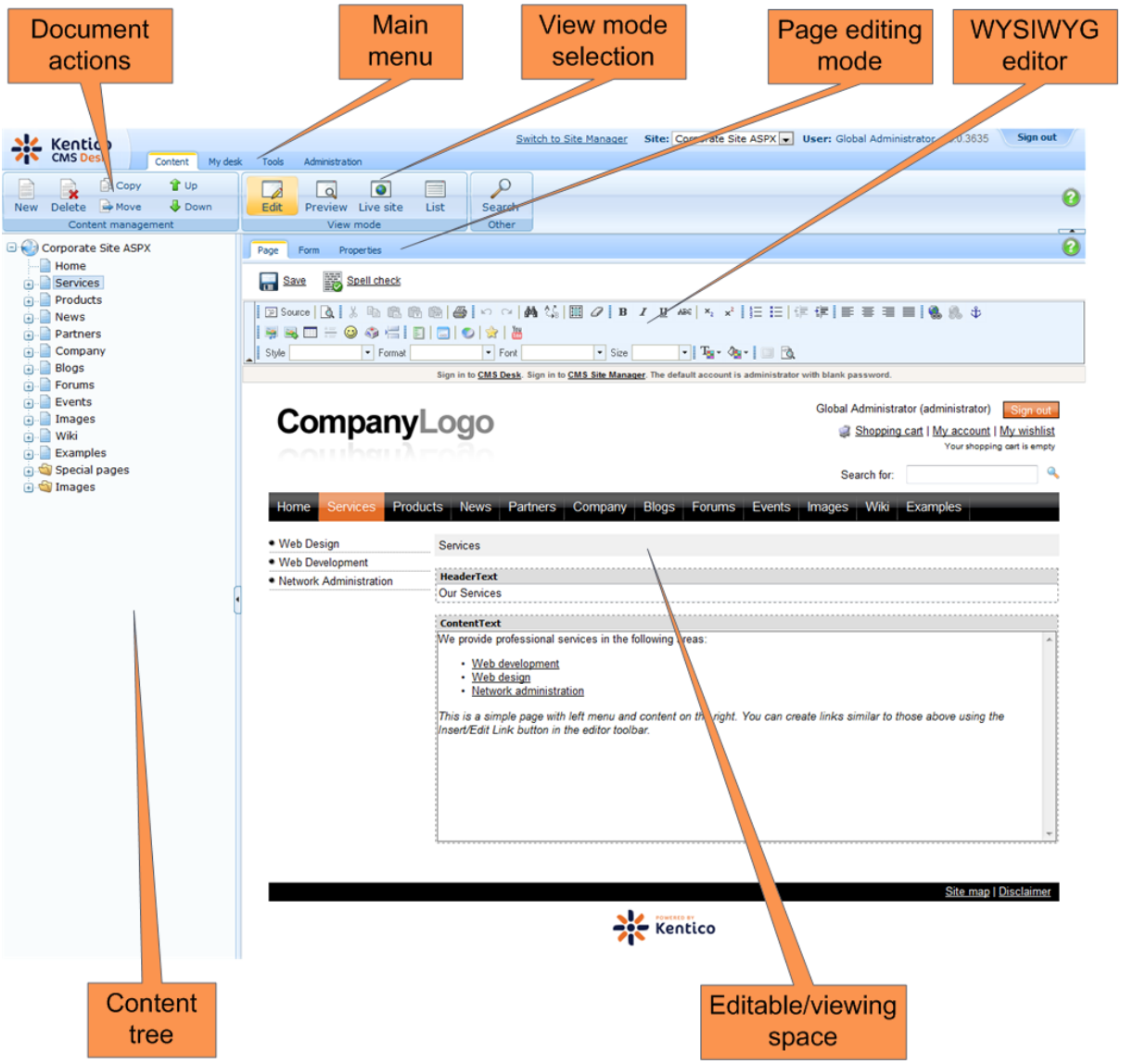
Once you sign in, you will see a splash screen, giving you some basic information. Click the **Continue** button, you will be redirected to the following page:



The user interface consists of the following main sections:

- **Main menu** with Content, My Desk, Tools and Administration sections.
- **Document actions** toolbar with buttons for creating new documents, deleting, copying, moving and sorting documents.
- **View mode** selection that allows you to choose between editing, preview, live view and list view.
- **Content tree** that represents the site map of the website and allows you to organize the structure of documents and choose document that appears on the right side of the screen.
- **Page editing mode** - you can choose to edit page content, design the page template, edit the document fields, product properties or document properties.
- **Editing/viewing space** - here you can view/edit the document selected in the content tree in the mode selected in the view mode toolbar and in the page editing mode toolbar.

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CMS Desk and Site Manager

CMS Desk allows content editors to edit content of a single website. Developers and site administrators who need to manage settings, code and configuration of all websites, can also use the **Site Manager** interface.

The Site Manager interface is accessible either through the **http://<domain>/<virtualdirectory>/KenticoCMS/CMSSiteManager** URL, by clicking the **Switch to Site Manager** link at the top of the CMS Desk user interface or the **Sign into Site Manager** link at the top of the live site. The following figure shows how the database, Site Manager, CMS Desk and websites are related:

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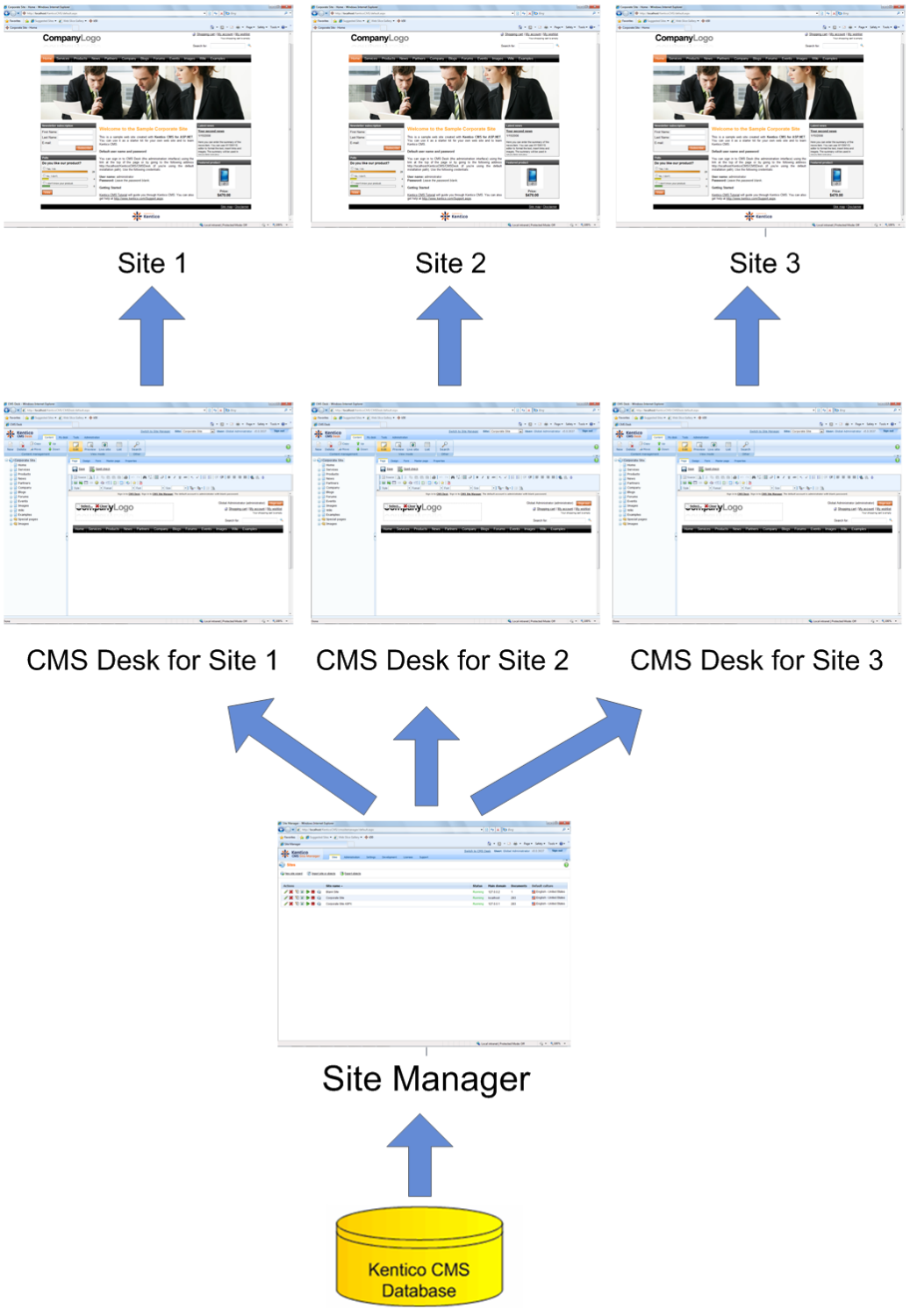

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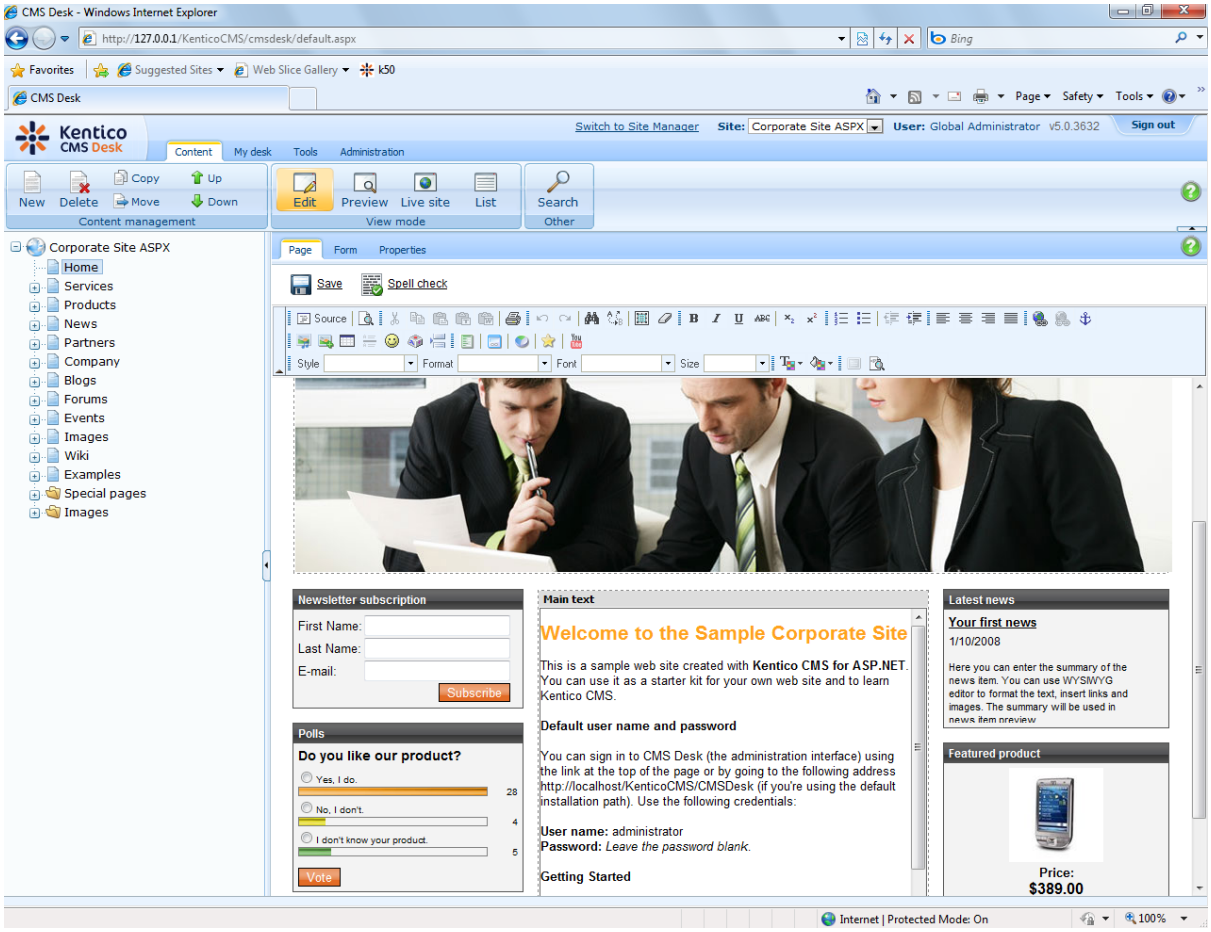
3.2 Editing home page content

Now we will modify the home page content. Click **Home** in the content tree. You will see a page like this on the right side:



The page is now displayed in the editing mode with editable region. Delete all content from the editable region and enter the following text:

> This is my first text.

You can then use the WYSIWYG editor toolbar at the top of the page to change the formatting of the text like this:

This is my **first** text.

Click the **Save** button at the top of the page or press **CTRL+S** to save the changes.

Now click the **Live site** button in the main toolbar. You will see the modified version of the home page as it's displayed to the site visitors.

Preview mode

If you click the **Preview** mode now, it will display the same content as the **Live site** mode. It works as a preview mode only if you set up workflow. Then, you can preview the latest modifications before they are published.

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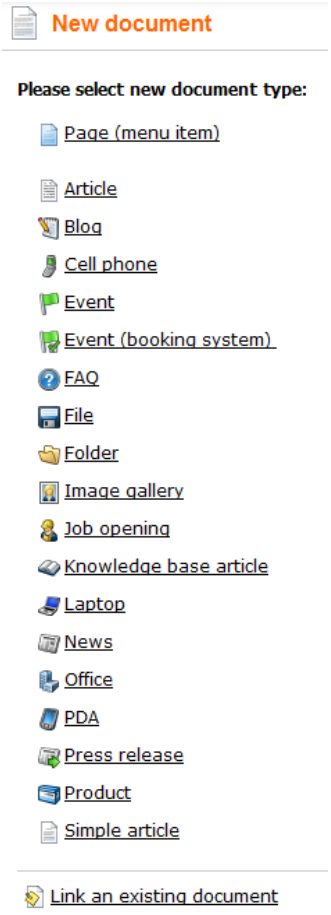
3.3 Creating a new page

Now we will create a new page under the Services section. Click **Edit** in main toolbar to switch back to the editing mode.Click **Services** in the content tree. Click **New** in the main toolbar. You will see the following dialog that allows you to select the type of the document you want to create under the currently selected document:



Click the **Page (menu item)** button. You will be redirected to the new page properties dialog. Enter *System Integration* in the **Page name** field and choose the **CorporateSite ASPX/Services ASPX** template:

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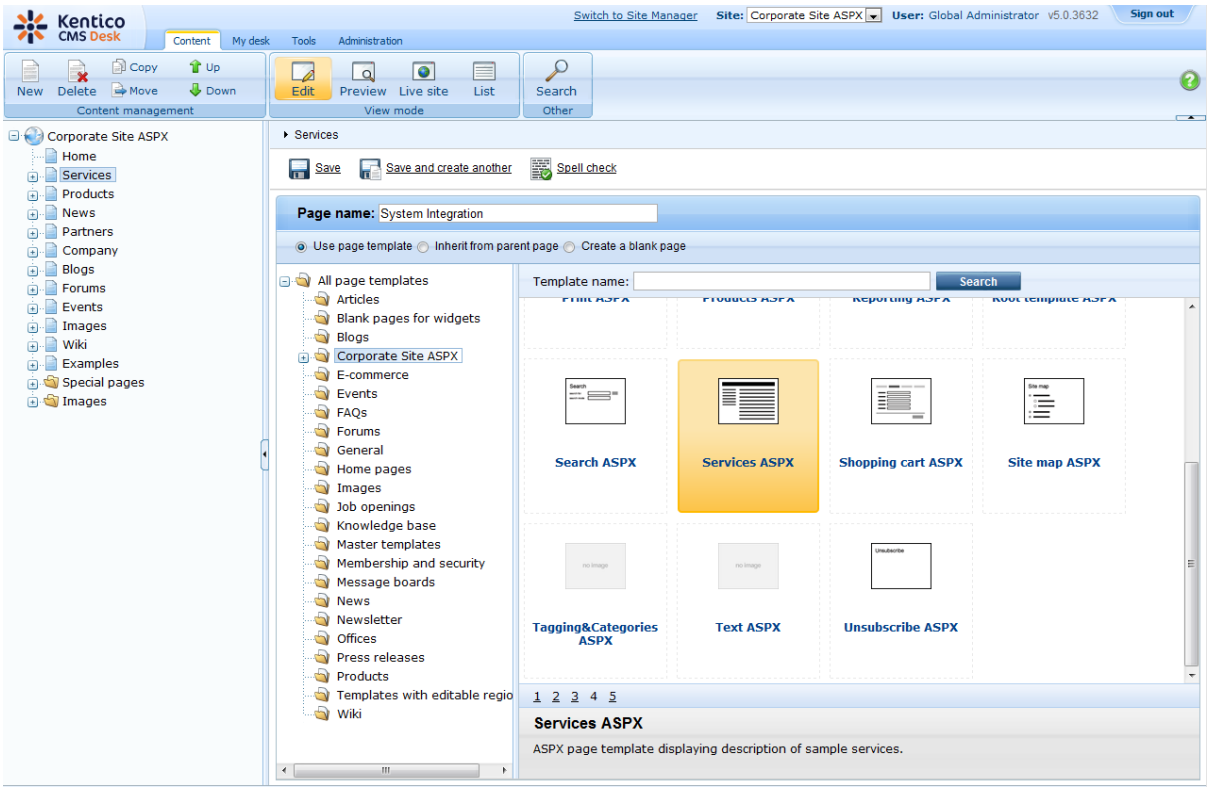

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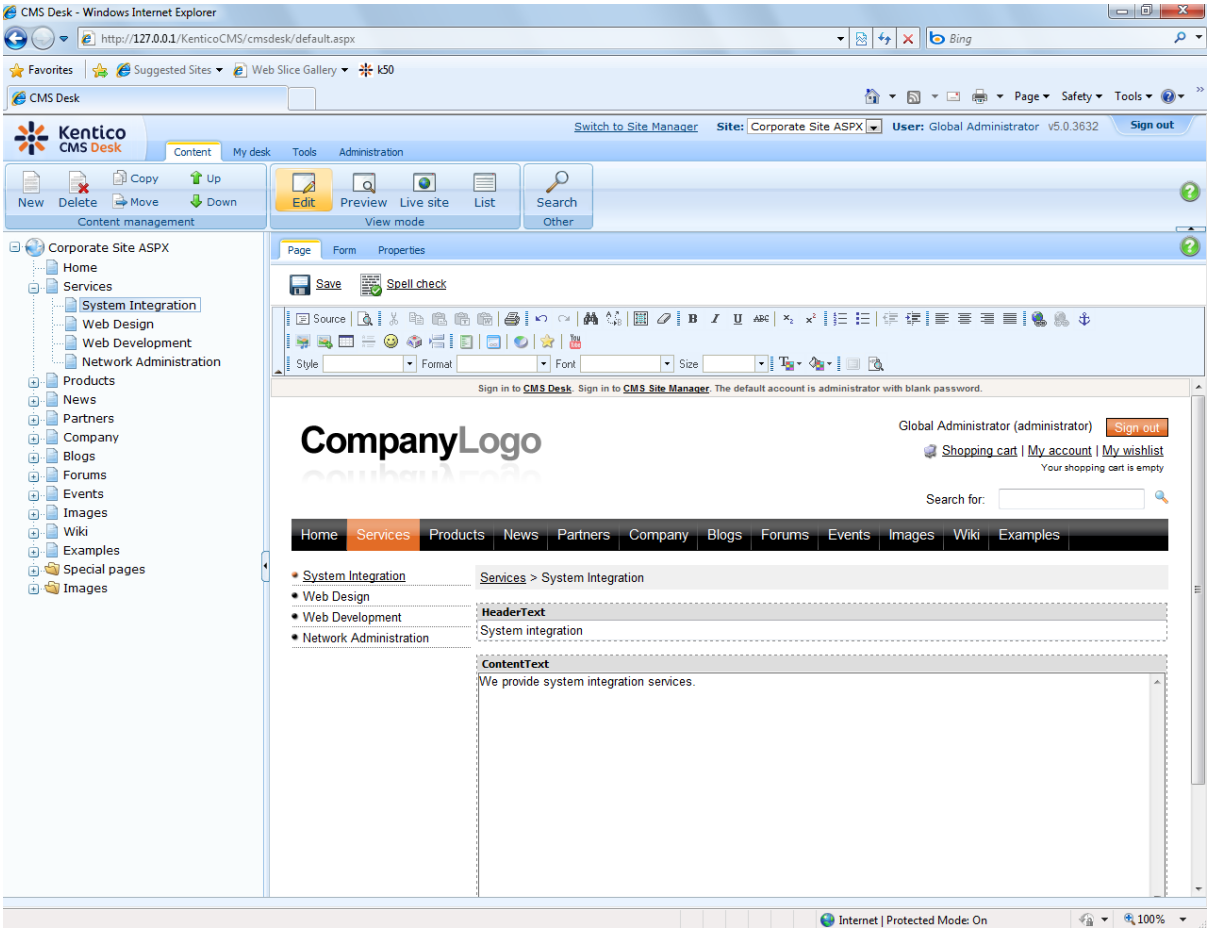
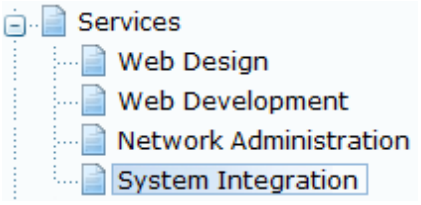
Click **Save** to create the new page. The page is now created in the content tree and you can edit page content on the right. Enter some text in the editable regions and click **Save**.



Now you may want to change the order of the items in the left menu. Click the **Down** button in the main toolbar three times. The *System Integration* item is moved at the bottom of the section:



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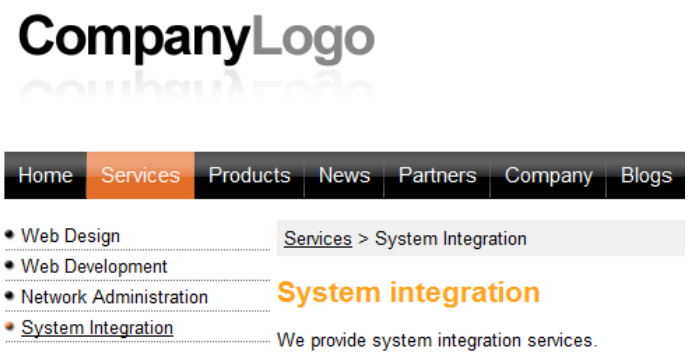
Click **Live site** in the main toolbar. You will see your new page as it is displayed to site visitors. Please note that the **System Integration** item is placed at the end of the left menu as you specified:

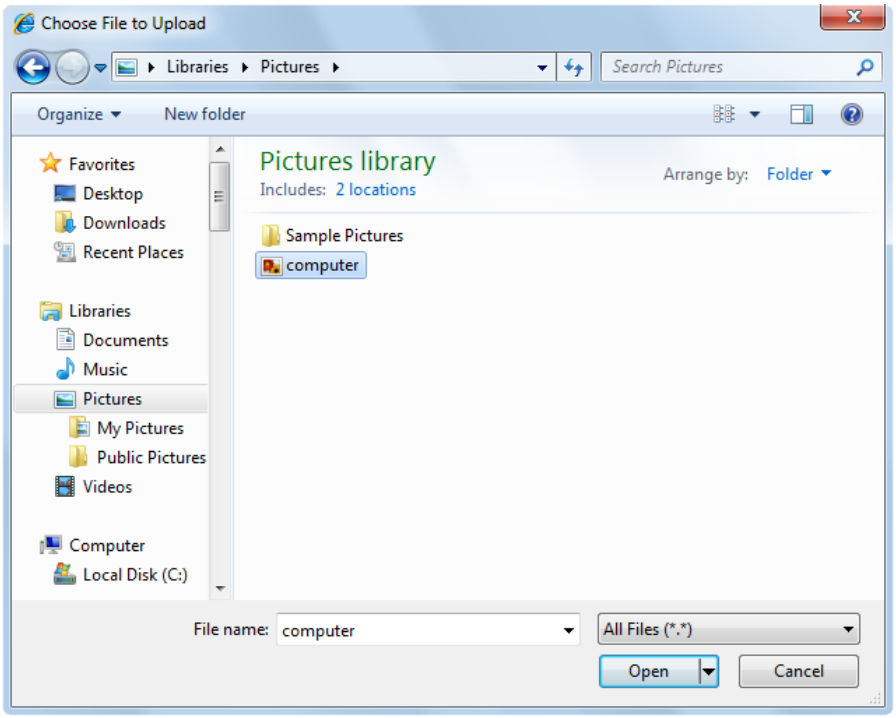


You have learned how to create a new page based on a pre-defined page template.

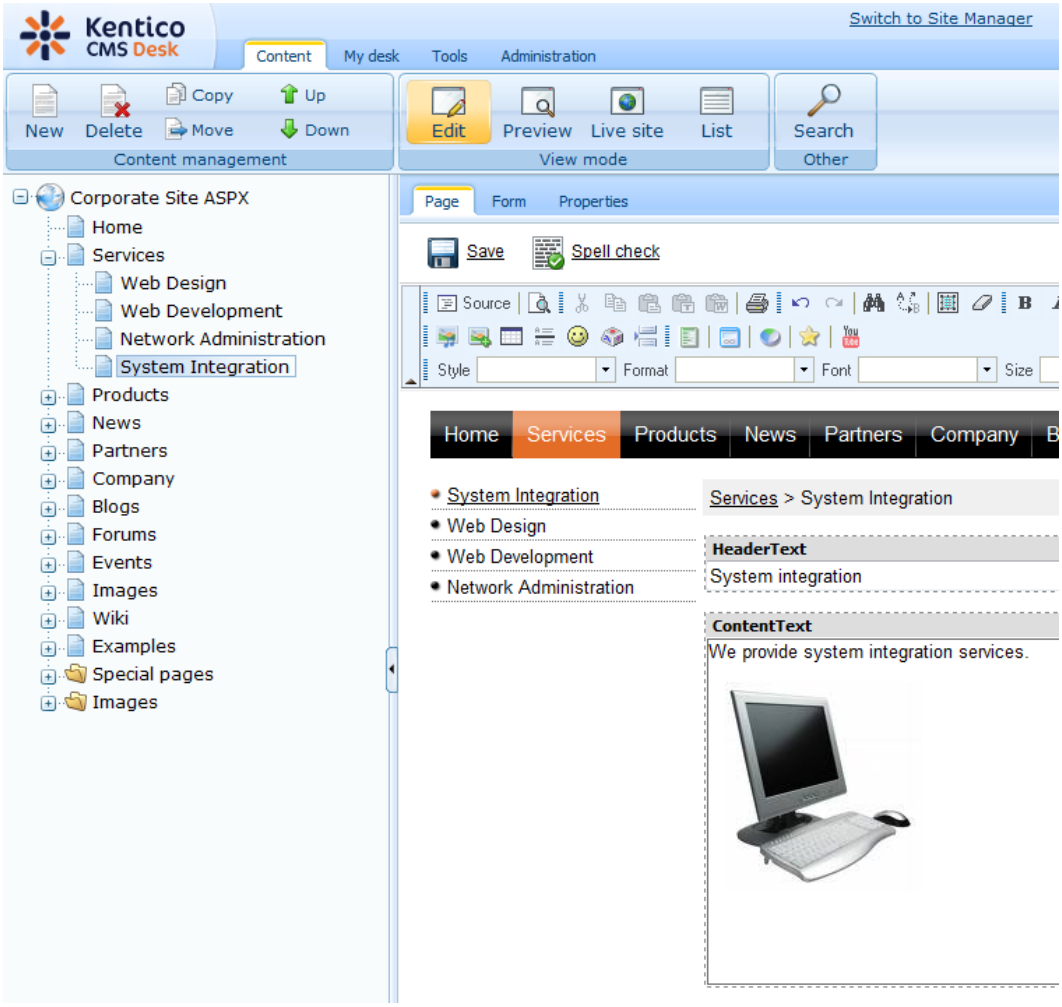
3.4 Inserting an image

Now we will upload and insert a new image to our new page. Click **Services -> System Integration** in the content tree. Switch to the **Edit -> Page** mode.Place the cursor into the main editable region, just below the text, and click the **Quickly insert image** ( ) in the WYSIWYG editor toolbar.

The browser's Choose file dialog opens. Locate some suitable image file and click **Open**.



The image will be pasted to the editable region so that the page looks like this:



Click **Save** to save the changes. Click **Live site** to see the new version of your page.

You have learned how to upload an image and insert it into the text.

Allowing pop-ups for the website

If you are using a pop-up blocker, you may need to allow pop-up windows in your browser so that the Web part properties dialog as well as some other dialogs work correctly. This applies only to the administration interface, so the site visitors are not affected by this.

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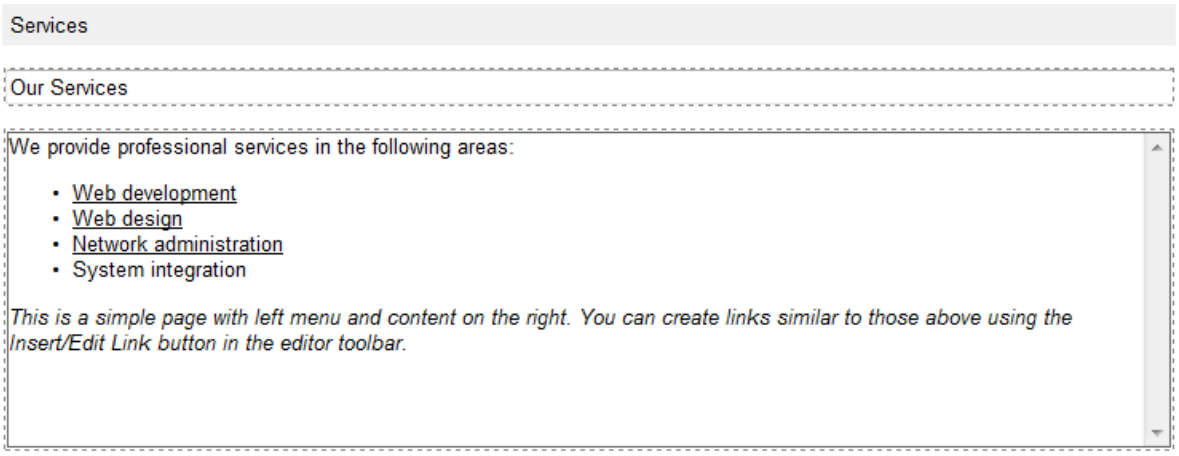
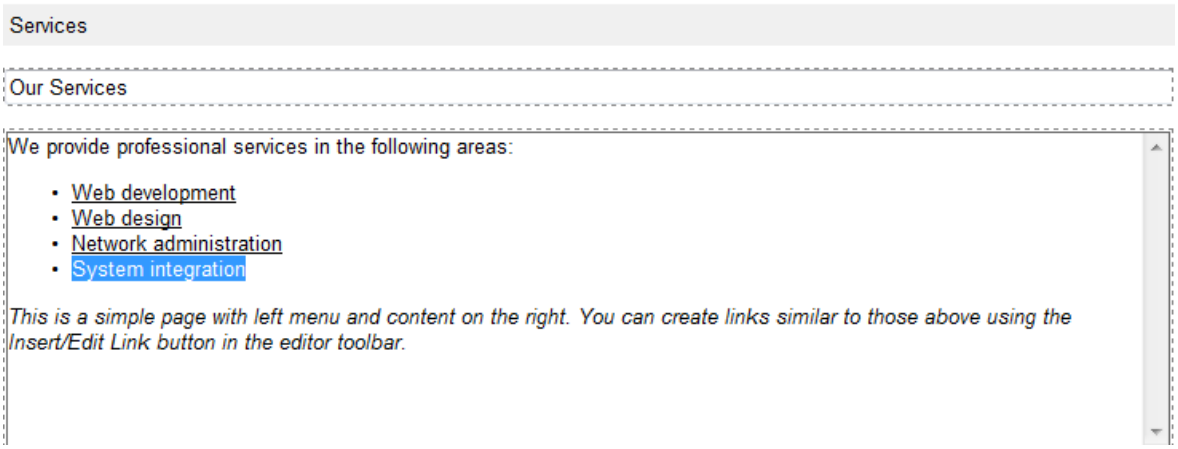
3.5 Creating a link

Now we will create a link between the **Services** page and our **System Integration** page. Click **Services** in the content tree and make sure you have the **Edit -> Page** mode selected.

Add a new item in the bulleted list called **System integration:**



Select the whole line:



And click the **Insert/Edit Link** ( ) button in the WYSIWYG editor toolbar.

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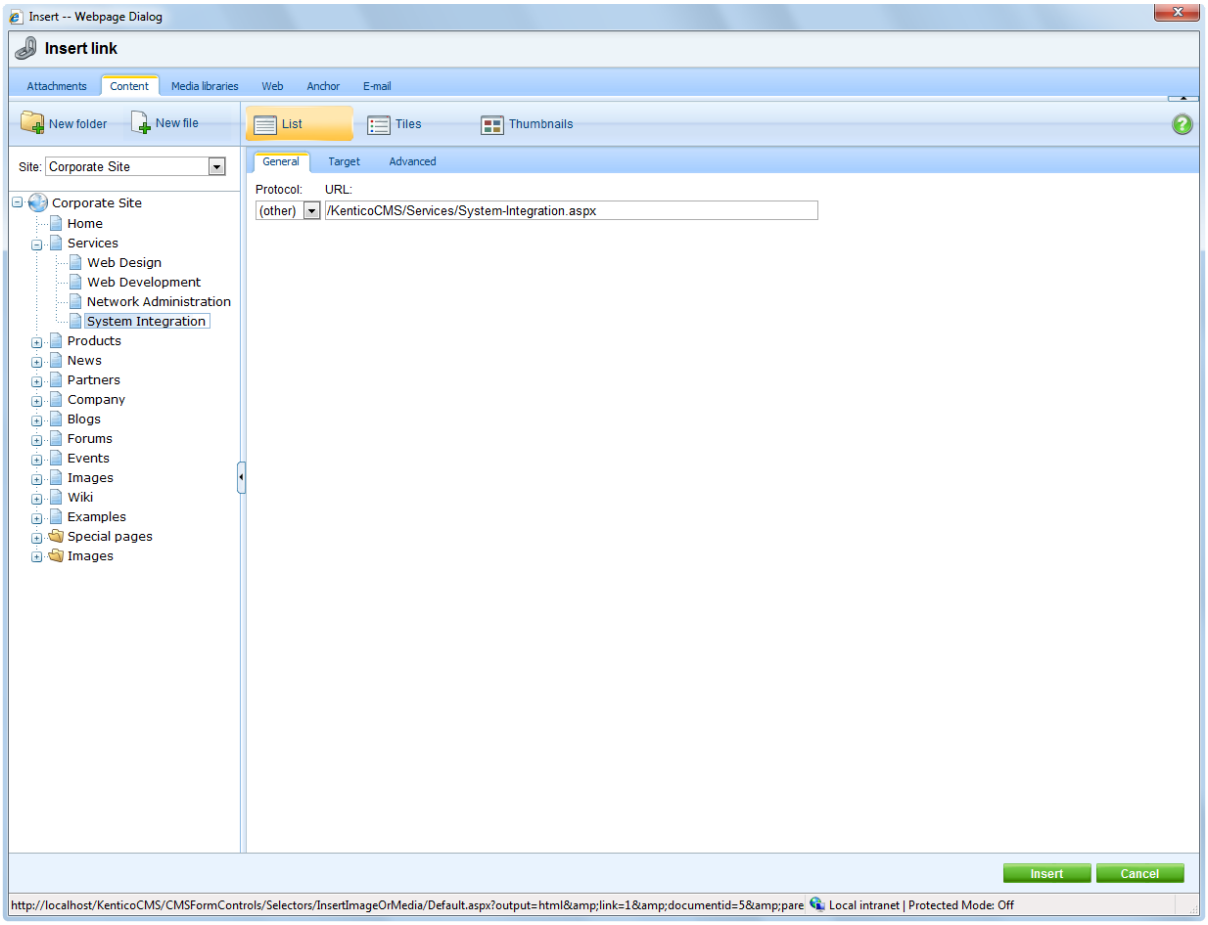
The **Insert link** dialog opens.



Switch to the **Content** tab, select the **Services -> System Integration** page from the content tree and click **Insert**.

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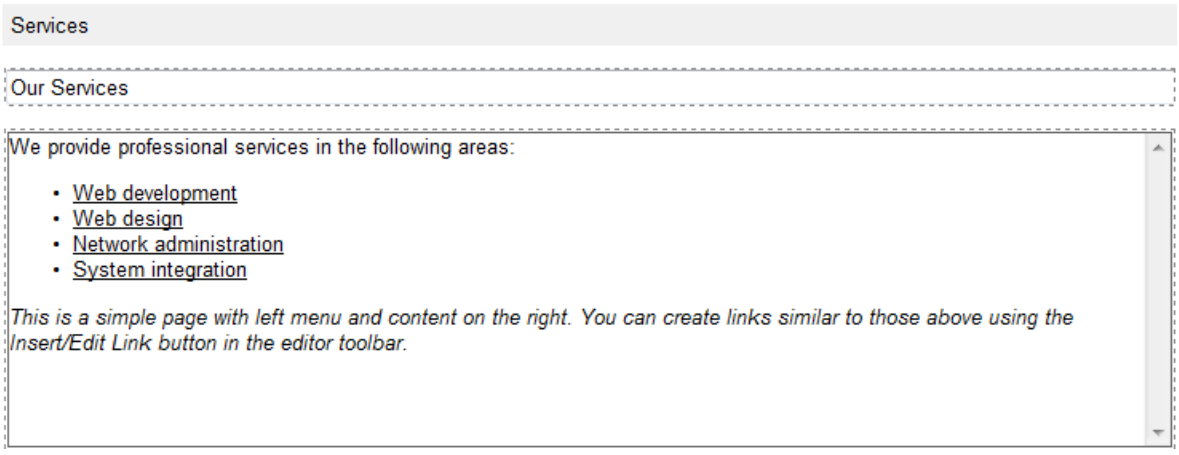
The text is now marked as a link:



Click **Save** and choose the **Live site** mode. When you click the **System integration** link now, you are redirected to the new page.

You have learned how to create a link between pages.

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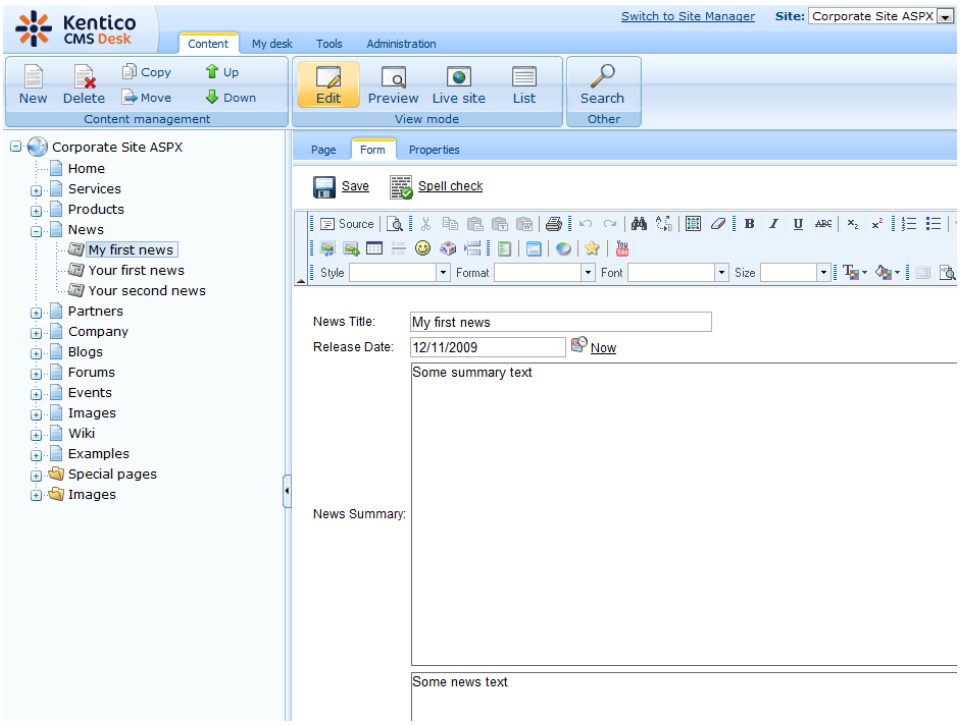
3.6 Creating a news item

Now you will learn how to create a news item. Click **Edit** in the main toolbar. Click **News** in the content tree and click **New**. Choose to create a new document of type **News**. You are redirected to the form that allows you to define news item sections: title, summary, full text and release date. Enter the following text:

- **News title:** My first news
- **Release date:** *click Now*
- **News summary:** Some summary text.
- **News text:** Some news text.

Click **Save** to save the new document.



As you can see, the editing mode is now set to **Form** instead of **Page**. It means you do not edit the editable regions on the page, but you edit the structured data related to the document. The **Form** tab is used for editing the **structured data related to the document**. The document fields are fully customizable for every document type.

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When you click **Live site**, you will see the news item displayed using a pre-defined transformation in both News and News -> My first news page:

You have learned how to add a news item and how to use the editing form for structured documents.

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Page versus Form

There are two faces of document: content stored in editable regions on the page and data stored in form fields. The following table compares both approaches:

	Editable regions on the page	Form
Content structure	Simple content structure, only text content.	Complex content structure, typed data, such as text, date-time, numbers, etc.
Validation	Only basic validation rules for minimum and maximum length.	Complex validation rules, including regular expressions and custom form controls with custom validation code.
Display	The content is displayed in the context of the page as it is displayed in the editing mode.	The content is displayed using XSLT or ASCX transformations using special controls or web parts.
Storage	The content is stored in a single XML document in the document properties.	The content is stored in a separate database table. Each field has its own column. The data can be easily modified using SQL queries or API.
Examples of use.	Home page, contact page. Generally: pages with simply structured or unstructured text-based content. The editable regions are usually used for documents of type **Page (menu item)**.	News, product specification, event details, job opening, etc. Generally: pages with structured content where you need to separate content from design and keep the content in its original data type. The form-based content is usually used for documents of type **News**, **Product, Article,** etc.

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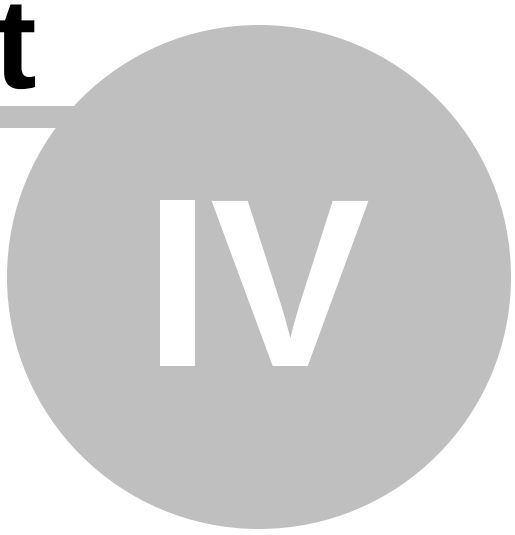
Part



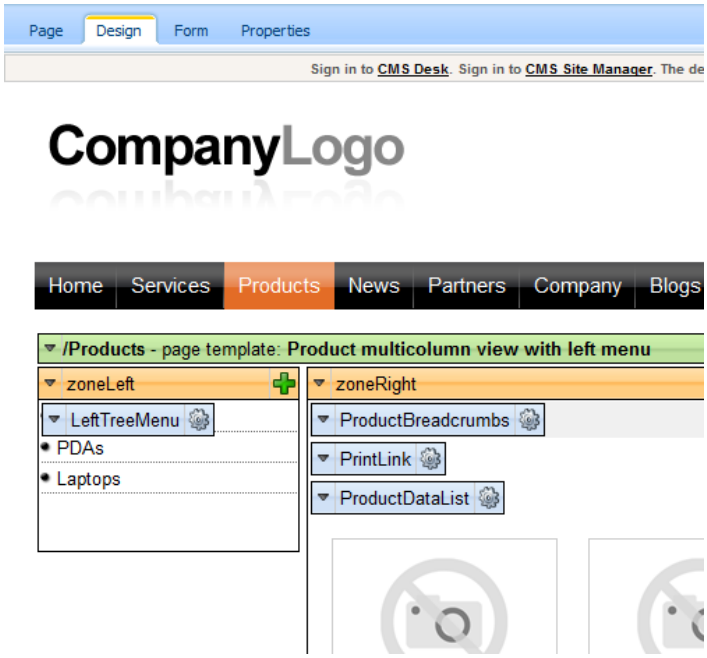
Site Development Overview

4 Site Development Overview

4.1 Site Development Overview

Kentico CMS provides two development models and you can choose which one suits you better:

- **Portal Engine** - this model allows you to build websites using a portal engine. It's the recommended way for most developers since it doesn't require programming and using Visual Studio. You can easily build websites using web parts in the **browser-based** user interface.



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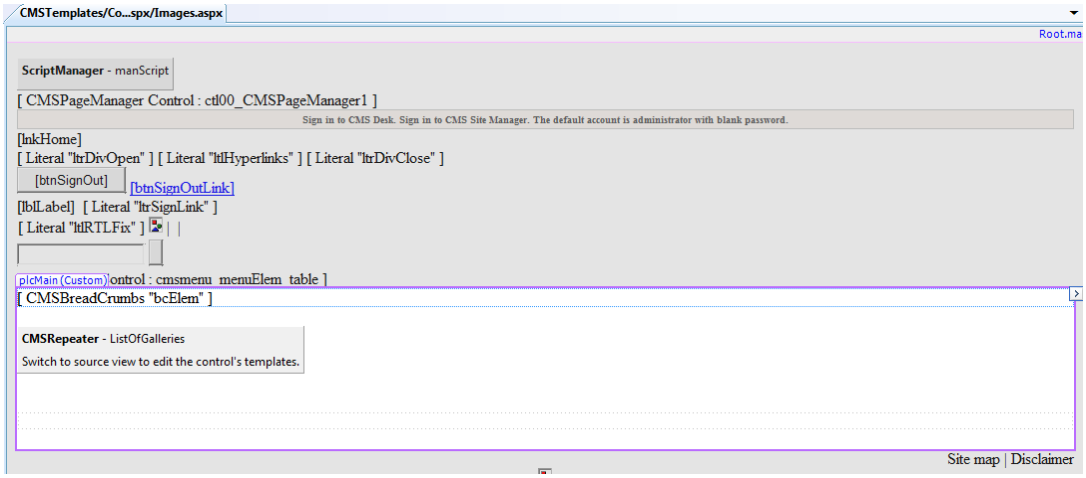
- **ASPX Templates** - this model can be chosen by advanced ASP.NET developers who prefer to create the website using standard ASP.NET architecture and using standard development tools, such as **Visual Studio**. You need to be familiar with ASP.NET development and have at least basic programming knowledge of C# or VB.NET.



Both approaches are fully supported and they provide the same level of flexibility and extensibility. We recommend that you use the portal engine model, but if you are a hard-core .NET developer and do not trust portal engines, you may want to use ASPX templates.

Both models can be combined in a single website and you can e.g. enhance the portal engine website with ASPX templates or even with your own ASPX pages and integrate your own applications.

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The following table compares both portal engine and ASPX templates:

	Portal Engine	ASPX Template
How you work	You build website using the browser-based interface. No programming knowledge is required for common tasks.	You build ASPX page templates that are used to display content from Kentico CMS. At least basic programming knowledge of ASP.NET and either C# or VB.NET is required.
How you assemble pages	You use built-in or custom web parts that you place into customizable page layouts.	You use built-in or custom ASP.NET server controls that are placed on the ASPX pages. These are standard ASPX pages and they are part of the website project that you can open in Visual Studio. You can also place web parts (which are actually standard ASCX user controls) on the page templates if the functionality is not available as a server control.
Master pages and visual inheritance	Sub-pages inherit the content from the parent pages by default (so called "visual inheritance"). The inheritance can be optionally broken if you want to create a page without parent content.	All page templates (.ASPX pages) may use a master page, which is a standard ASP.NET 2.0 master page (.master page). The pages do not inherit content from their parents, they only inherit content from the master page (if it's used).
Custom code integration and extensibility	You can create your own user controls and web parts if you need to integrate a specific functionality. You can add any custom controls and code to the web parts or user controls that you use on your website. You can also use standard ASPX pages within your portal engine-based website.	You build standard ASPX pages with code-behind which means you can use any custom controls and code on the page in Visual Studio.
Advantages	• Easier and faster way of building a website. • ASP.NET programming knowledge is not required for common tasks. • You can build the whole website very quickly, only using the web browser.	• Standard ASP.NET architecture. • You can use your favorite development tools, such as Visual Studio for all changes.
Disadvantages	• Proprietary architecture and development.	• Requires ASP.NET programming knowledge.

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Is Kentico CMS just another portal engine?

Now you may ask what's the difference between Kentico CMS and DotNetNuke or SharePoint.

Well, the main difference is the **flexibility**. Kentico CMS gives you full control over:

- site structure
- site navigation
- page layout
- design
- content structure

Also, it's important to explain that Kentico CMS is a **content management system**, not only a portal engine. It provides features of advanced CMS systems, such as:

- content repository with a logical tree hierarchy of documents
- content/design separation
- custom document types with custom fields
- workflow and versioning
- content locking (check-out, check-in)
- multilingual content
- content preview and content staging
- document-level permissions with permission inheritance
- full-text search in all content
- document management features for uploaded files

Moreover, Kentico CMS comes with many **professional and flexible built-in modules out-of-the-box**, including Newsletters, On-line forms, Forums, E-commerce, Content Staging, Image gallery, Event calendar, Booking system, Blogs, Polls and others

It means you do not need to purchase third-party modules with inconsistent user and programming interface, but you get everything from a single source, with a complete documentation.

The rest of this tutorial explains the ASPX templates approach. If you want to use the ASPX templates, please read the Tutorial for ASPX page templates.

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Part V

Creating pages using ASPX templates

5 Creating pages using ASPX templates

5.1 ASPX page templates

If you are familiar with ASP.NET development in Visual Studio, you may choose to develop websites using standard ASPX page templates. ASPX page templates in Kentico CMS are standard ASP.NET pages that display content from Kentico CMS. They receive the **aliasPath** URL parameter that tells the page template which page should be displayed.

What is a page template?

Every web page is based on some page template. The page template can be specific for a single web page ("ad hoc" page template) or it can be re-used for several pages. The following picture shows an example of two pages that use the same page template:

As you can see both of them use the same header, main menu, sub-menu, content structure and footer - they are based on the same **page template**. In this way, you can create multiple pages using the same design.

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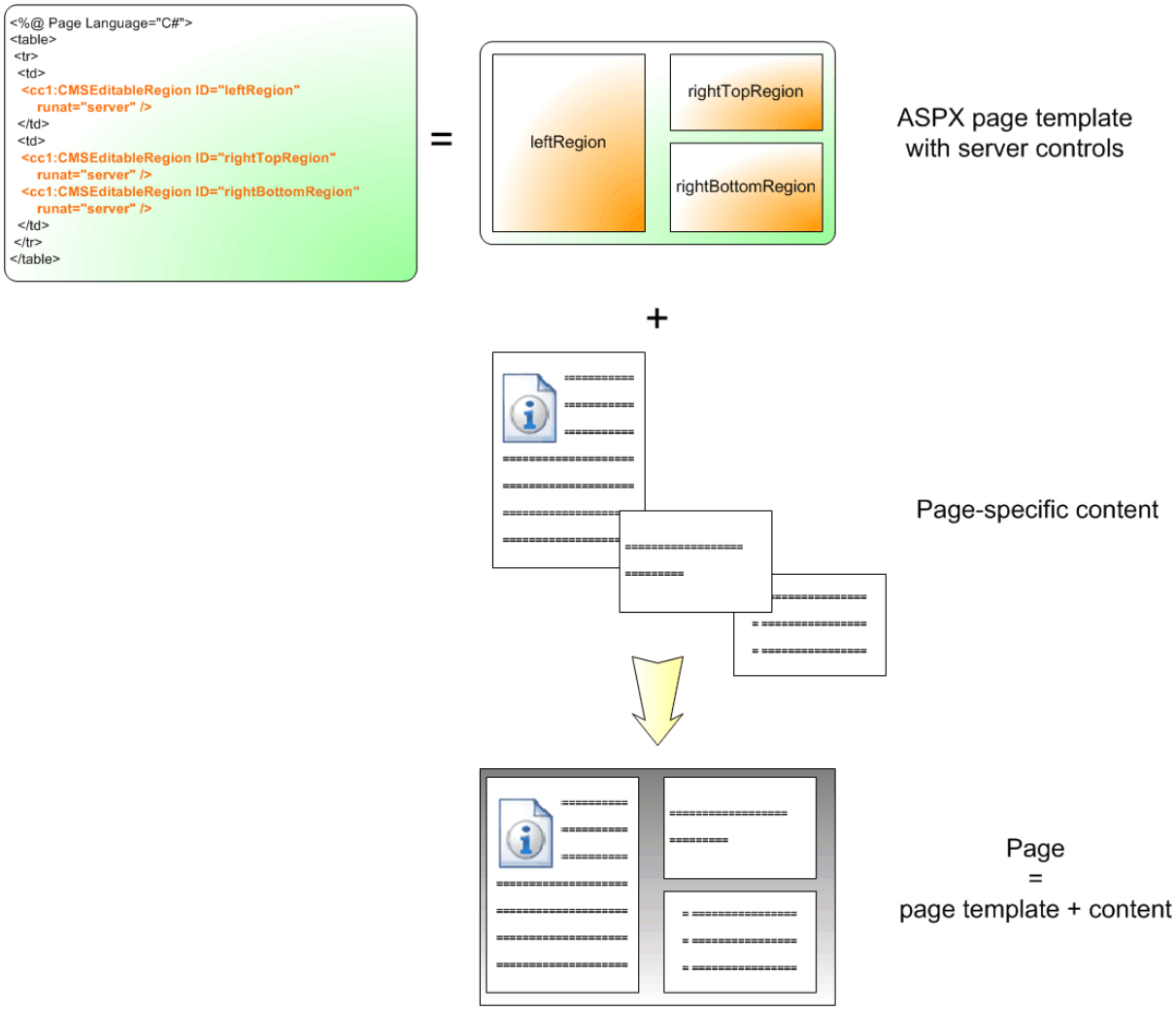
What does the ASPX page template consist of?

The page template is a combination of static HTML code and ASP.NET server controls (or user controls) that render dynamic content. The following figure illustrates how ASPX page template and page content are combined to display



As you can see, the ASPX page template is a standard page that may contain HTML code, CMS server controls and any other server control. You can also use code behind (in both VB.NET and C#) to modify page behavior and add custom functionality.

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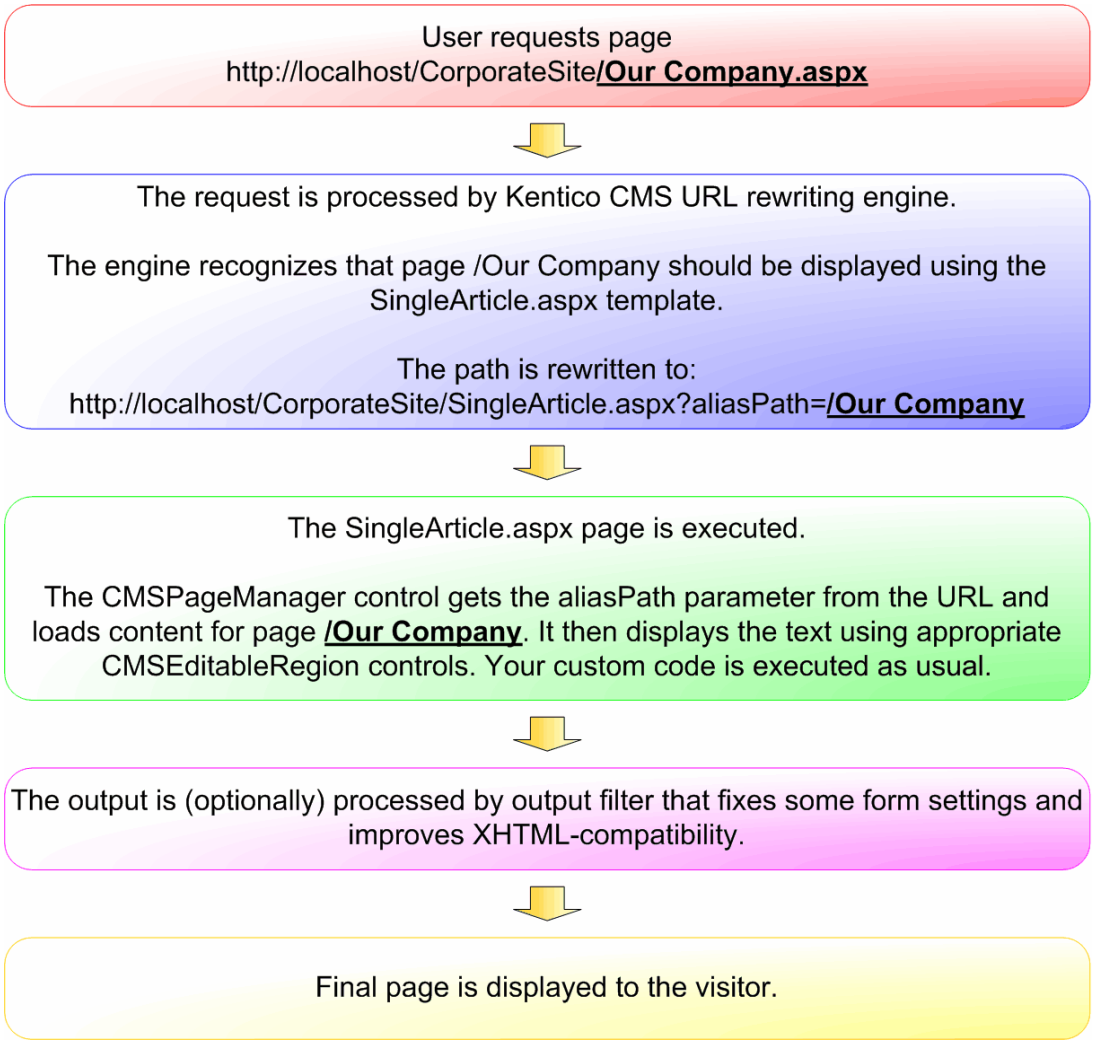
How is the ASPX page template processed?

When a user requests some page, such as /services/web-development.aspx, the system calls the assigned page template with the **aliasPath** parameter that specifies what content (which page) should be displayed using the given template:



The built-in Kentico CMS controls understand the aliasPath parameter in the URL and render the appropriate content automatically.

As you can see, the system uses a standard ASP.NET architecture. If you developed the website without Kentico CMS, you would most likely use URLs like this: **/news.aspx?newsid=127** which is similar to **/news.aspx?aliaspath=/news/november news.aspx** URL used in Kentico CMS.

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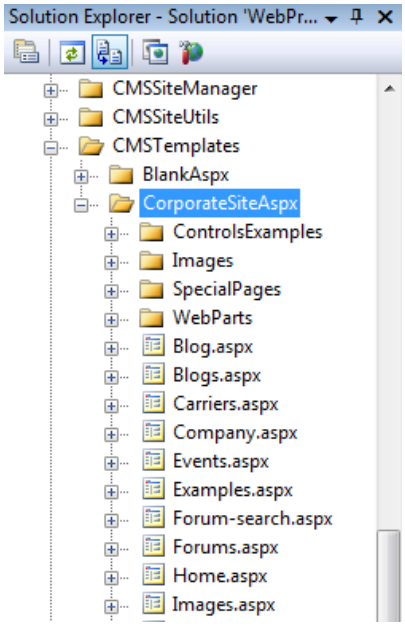
5.2 Creating a simple ASPX page template

Now you will learn how to create a new ASPX page template. We will create a new **Contact** page with two columns that will contain editable regions.

Open the web project in Visual Studio. You can open it either using the WebProject.sln file or using the **File -> Open -> website** menu.

Now right-click the **CMSTemplates -> CorporateSiteASPX** folder in the Solution Explorer and choose **Add new item**:



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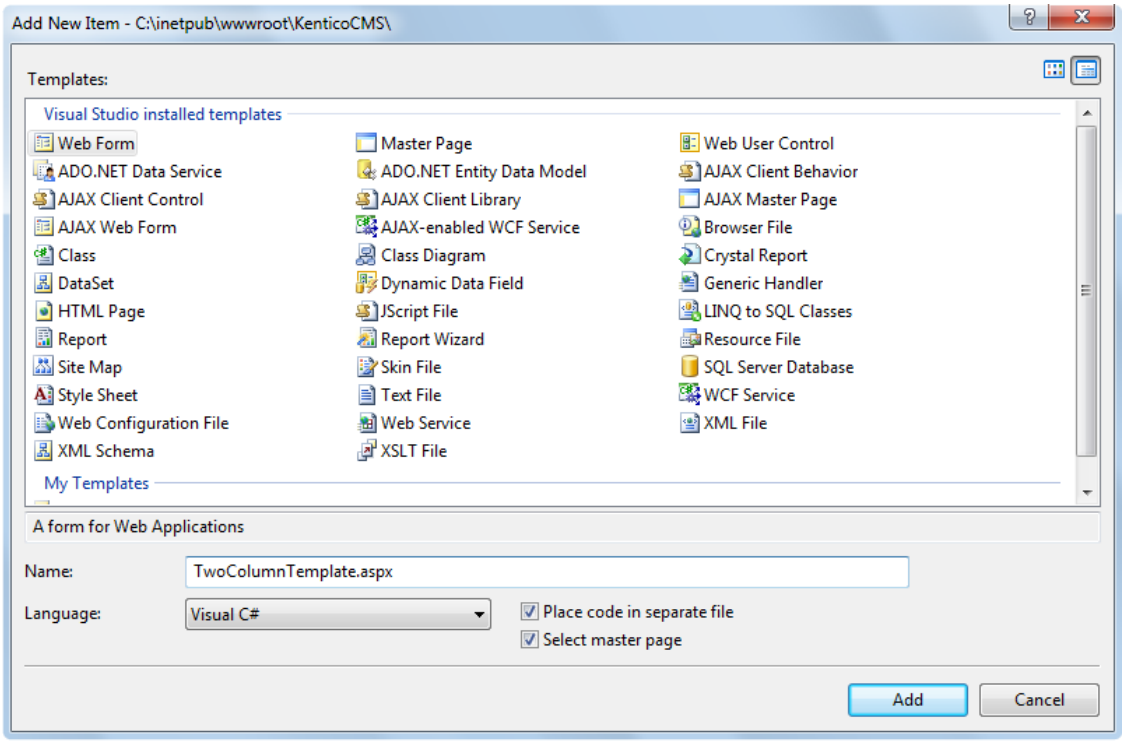
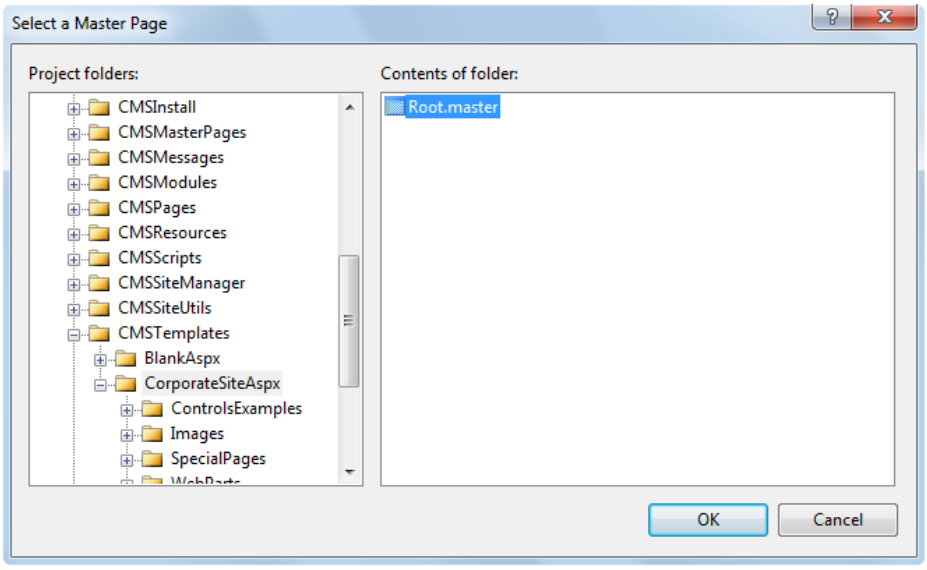
Choose to create a new **web form** and call it **TwoColumnTemplate.aspx**, check the box **Select master page** and click **Add**.



Choose the master page **CMSTemplates/CorporateSiteASPX/root.master** and click **OK**.



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Writing the ASPX code

Add the following code above the <asp:Content> element. It allows you to use Kentico CMS controls in your page:

```
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls" TagPrefix="cc1" %>
```

Add the following code inside the **<asp:Content>** element:

```
<table width="100%">
  <tr>
    <td width="50%">
        <cc1:CMSEditableRegion ID="txtLeft" runat="server" DialogHeight="400"
            RegionType="HtmlEditor" RegionTitle="Left column" />
    </td>
    <td width="50%">
        <cc1:CMSEditableRegion ID="txtText" runat="server" DialogHeight="400"
            RegionType="HtmlEditor" RegionTitle="Right column" />
    </td>
  </tr>
</table>
```

The <asp:Content> control specifies that this content will be loaded into the master page (that is defined in the MainMenu.master file). As you can see, you can use the standard concept of master pages that is available in ASP.NET 2.0.

The <cc1:CMSEditableRegion> control defines an editable region that will be displayed as an HTML editor in the editing mode. On the live site, it ensures displaying of the page content.

Please note: this example uses a table layout. If you prefer CSS layout, you can simply replace the surrounding HTML code with <DIV> elements. As you can see, you have full control over the content.

Now we need to modify the code behind. Switch to code behind and add the following namespace so that the CMSEditableRegion can be recognized:

[C#]

```
using CMS.UIControls;
```

The last step is to modify the class from which our page is inherited. Change the following code:

[C#]

```
public partial class CMSTemplates_CorporateSiteASPX_TwoColumnTemplate : System.
Web.UI.Page
```

to the following:

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[C#]

```
public partial class CMSTemplates_CorporateSiteASPX_TwoColumnTemplate :
TemplatePage
```

so that the page can be used as a page template in Kentico CMS.

Registering the ASPX page as a page template

Now that we have created a new ASPX page, we need to register it in Kentico CMS as a page template, so that it can be used by content editors.

Sign in to **Site Manager** and go to **Development -> Page templates**. Click the **Corporate Site ASPX** folder and click **New template**. Enter the following values:

- **Template display name**: Two column template
- **Template code name**: TwoColumnTemplate

Click **OK**. Now enter the following value in the **File name** field:

~/CMSTemplates/CorporateSiteASPX/twocolumntemplate.aspx

It is the virtual path of our ASPX page.

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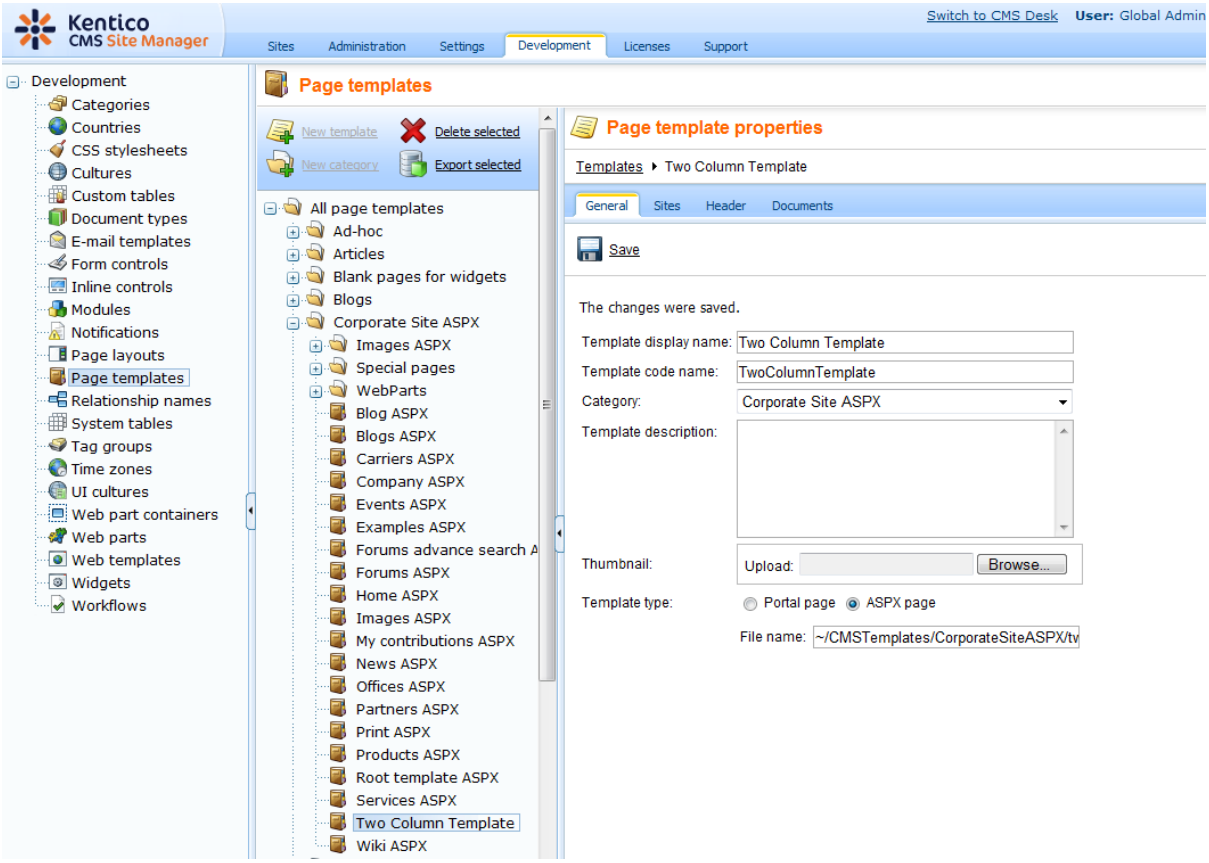
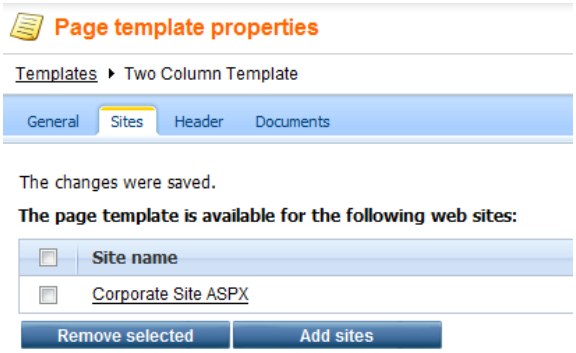


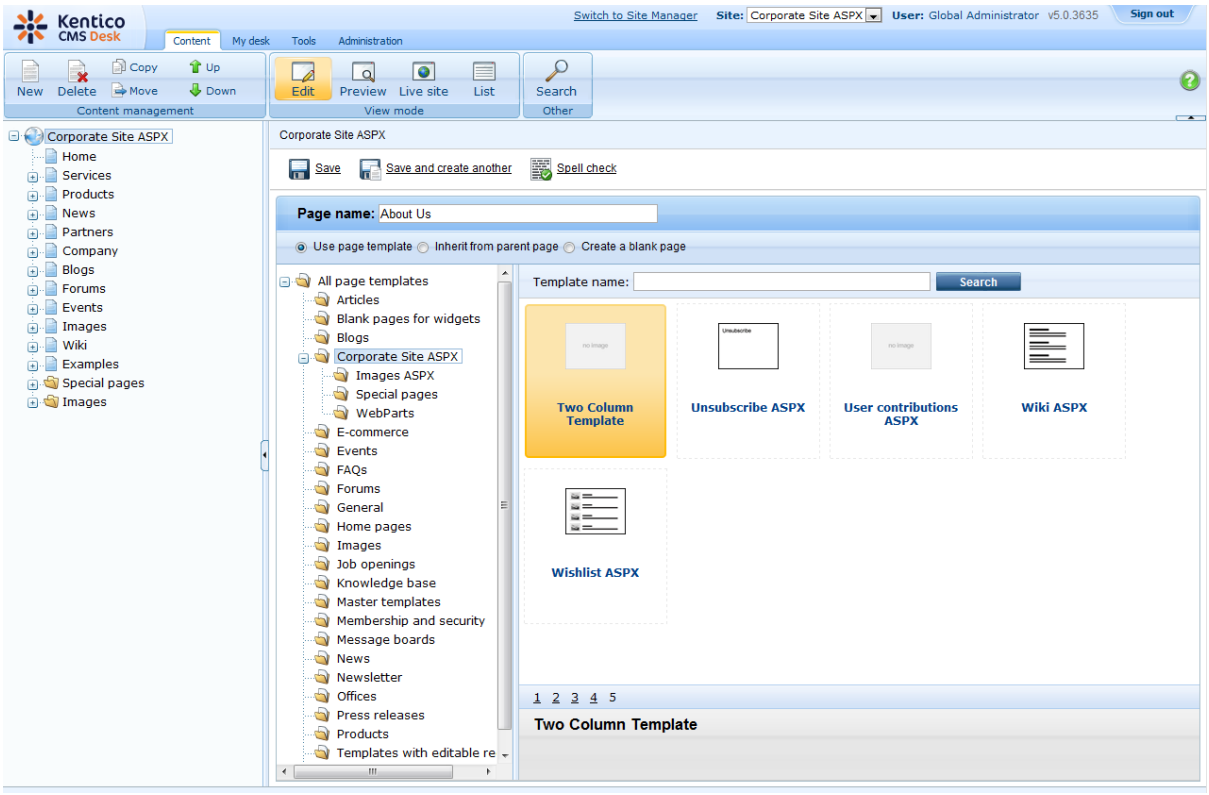
Save the changes.

Now click the **Sites** tab and click the **Add sites** button. Choose your site for the page template to get assigned to it.



Creating an About Us page based on the new page template

Go to **CMS Desk -> Content**. Click the root of the content tree (Corporate Site ASPX) and click **New** in the main menu. Choose to create a new **Page (menu item)**. Enter the page name **About Us** and choose to create a page using the page template **Corporate Site ASPX/Two column template**:



Click **Save** to create the new page.

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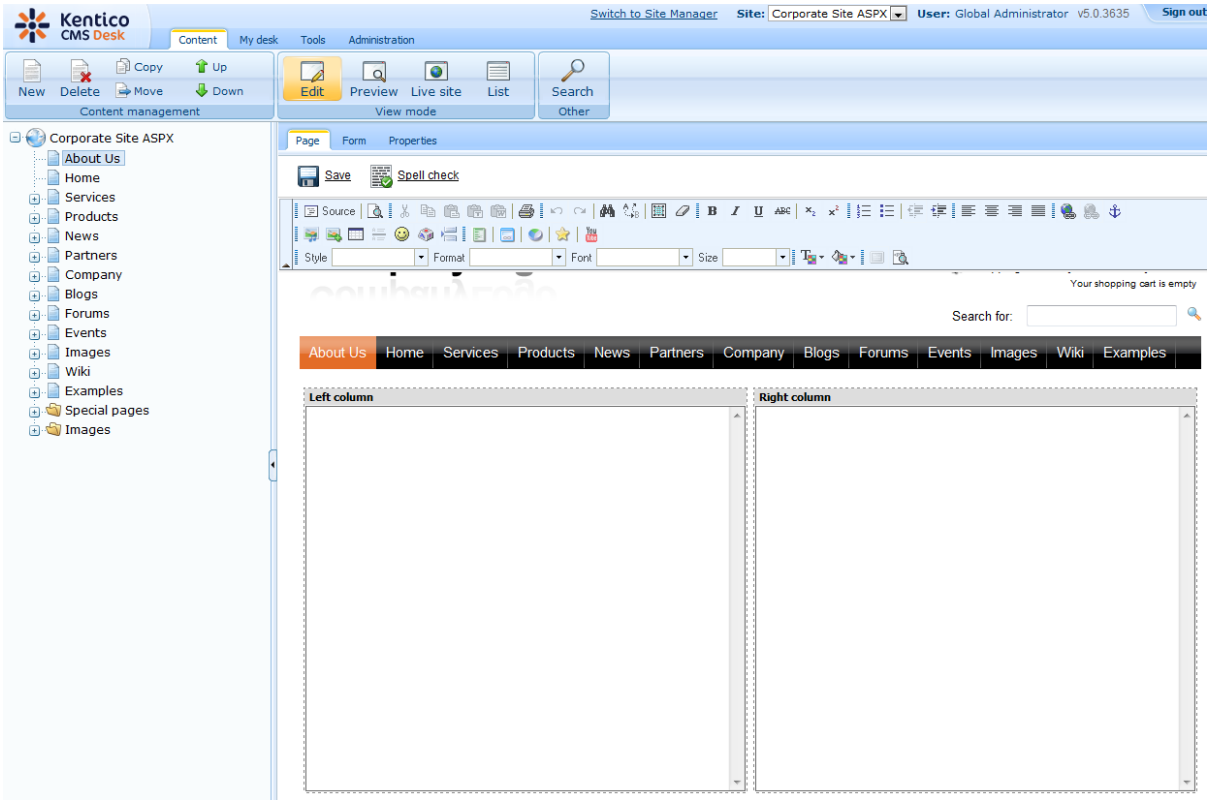
Click **Page** and you will see a page with editable regions like this:



Congratulations, you have just created your first page template based on ASPX page. Now you can enter some text and click **Save** to save the changes.

Please note

If you want to move the About Us page in another position in the menu, you can use the Up and Down arrows in the main toolbar to re-order the menu items.

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5.3 Using the master pages

Kentico CMS allows you to use standard ASP.NET 2.0 master pages together with ASPX page templates. This is a very powerful concept, that allows you to share the same site header and footer with logo, main menu, search box, etc. over all pages without having to create these sections on each page template again and again.

The master pages are defined in files with extension **.master**. You can assign a single master page to each ASPX page. The master page must always contain the **ContentPlaceHolder** control like this:

<asp:ContentPlaceHolder ID="plcMain" runat="server">

The ContentPlaceHolder control specifies where the content of page templates should be loaded. So the master page typically contains the main logo and navigation and the content is displayed by ASPX pages loaded into the master page.

The following code sample defines a very simple master page:

```
<%@ Master Language="C#" AutoEventWireup="true" CodeFile="Root.master.cs"
Inherits="CMSTemplates_CorporateSiteASPX_Root" %>
<%@ Register Assembly="CMS.PortalControls" Namespace="CMS.PortalControls"
TagPrefix="cc2" %>
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls" TagPrefix="cc1" %>
<%=DocType%>
<html xmlns="http://www.w3.org/1999/xhtml">
<head id="Head1" runat="server">
    <asp:literal runat="server" id="ltlTags" enableviewstate="false" />
</head>
<body class="<%=BodyClass%>" <%=BodyParameters%>>

    <form id="form1" runat="server">
     <cc1:CMSPageManager ID="CMSPageManager1" runat="server" />
     <cc1:CMSMenu ID="cmsmenu1" runat="server" CSSPrefix=";Sub" Cursor="Pointer"
          HighlightAllItemsInPath="true"
          Layout="Horizontal"
          Padding="0"
          Spacing="1" />
     <asp:ContentPlaceHolder ID="plcMain" runat="server">
     </asp:ContentPlaceHolder>
  </form>
</body>

</html>
```

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The **CMSPageManager** control ensures loading of the content from the database into the editable regions. The **CMSMenu** control displays a drop-down menu. The **ContentPlaceHolder** control defines where the content of sub-pages should be loaded.

In case that you are planning to use AJAX components on your site, you need to add the **ScriptManager** control after the CMSPageManager control.

```
<asp:ScriptManager ID="manScript" runat="server" />
```

We use CMSMenu and CMSPageManager controls on the page template, so we need to add the **CMS.UIControls** namespace in code behind:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

The master page must be inherited from the TemplateMasterPage, so the class definition must look like this:

[C#]

```
public partial class CMSTemplates_CorporateSiteASPX_Root : TemplateMasterPage
```

[VB.NET]

```
Partial Class CMSTemplates_CorporateSiteASPX_Root
    Inherits TemplateMasterPage
```

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And you also need do put the following code to the master page code-behind class:

[C#]

```
protected override void CreateChildControls()
{
    base.CreateChildControls();

    this.PageManager = this.CMSPageManager1;
}

protected override void OnPreRender(EventArgs e)
{
    base.OnPreRender(e);

    this.ltlTags.Text = this.HeaderTags;
}
```

[VB.NET]

```
Protected Overloads Overrides Sub CreateChildControls()
    MyBase.CreateChildControls()

    Me.PageManager = Me.CMSPageManager1
End Sub

Protected Overloads Overrides Sub OnPreRender(ByVal e As EventArgs)
    MyBase.OnPreRender(e)

    Me.ltlTags.Text = Me.HeaderTags
End Sub
```

You should store master pages in the **CMSTemplates** folder together with page templates, so that they are exported with your website.

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Part VI

Managing styles and design

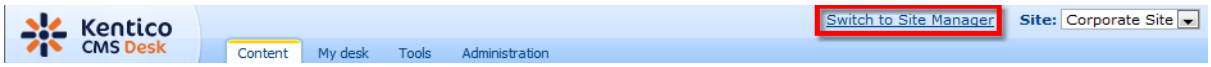
6 Managing styles and design

6.1 CSS styles

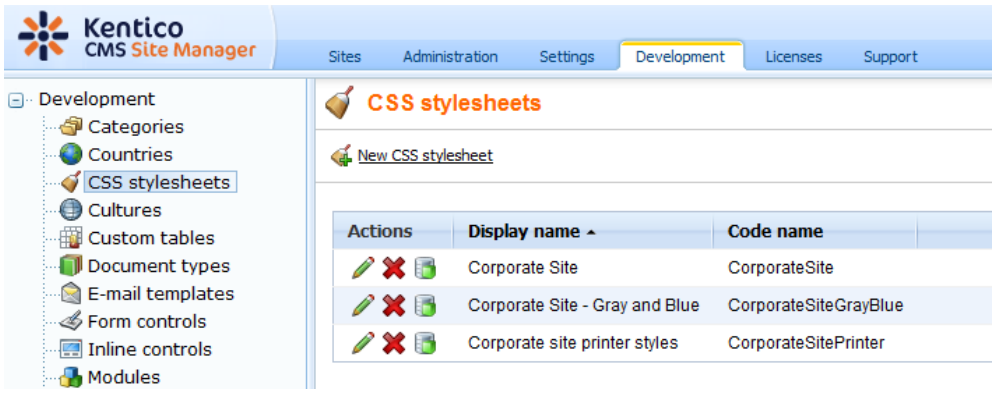
The design of the website relies on standard CSS styles. Each website has its global CSS stylesheet that can be chosen in **Site Manager -> Sites -> ... edit site ... -> General**. Here you can also choose a different CSS stylesheet used by WYSIWYG editors.

Besides, each page can overwrite the global CSS stylesheet by setting its own stylesheet in **CMS Desk -> Content -> ... edit some document ... -> Properties -> General**.

The CSS stylesheets can be managed in Site Manager. When you are in CMS Desk, you can easily switch to Site Manager by clicking the **Switch to Site Manager** link in the header:



Then click **Development** in the **Site Manager** main menu and click **CSS stylesheets** in the left menu:



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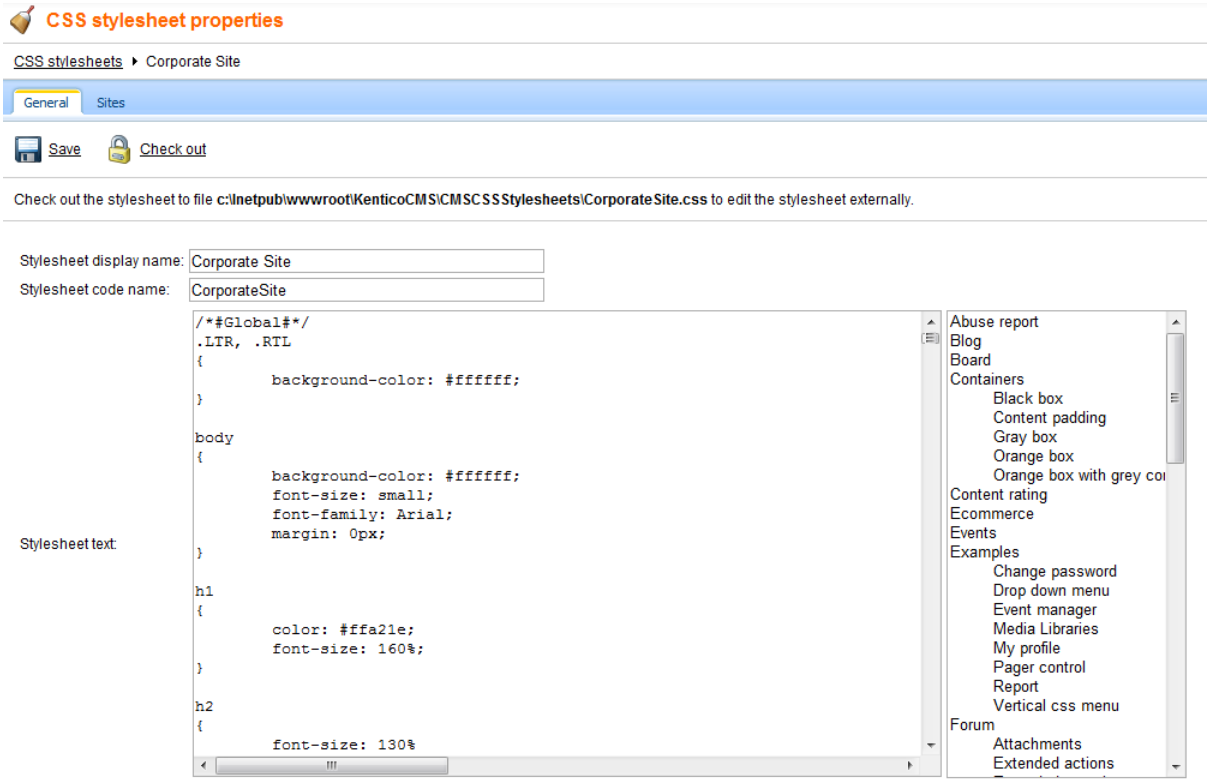
Edit (✎) the **Corporate Site** stylesheet:



Example:

Change the background color of the .LTR, .RTL style to **#fef3b8**, click **OK** to save the changes. Switch back to **CMS Desk** and see the live site. The site background will be yellow.

Please note: you may need to right-click the page and choose Refresh (in Internet Explorer) in order to see the latest version of the style.

.LTR, .RTL and body CSS classes

The .LTR and .RTL CSS classes are assigned to the BODY element for the left-to-right and right-to-left text direction respectively. You can use them to set the styles of the BODY element used on the live site without setting the BODY element in the WYSIWYG editor. It's useful if you need to set a dark background to the website, but use a white background in the WYSIWYG editor text.

The body CSS class is applied to BODY element in both website and WYSIWYG editor.

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Browser-dependant styles

The BODY element CSS class consists of the combination of LTR/RTL style (see the box above) and the browser version. It looks like this:

<body class="LTR IE7" >

This feature allows you to create styles that depend on the browser version. So if you define the styles like this:

```
.IE6 .MyClass
{
  height: 20px ;
}
.Opera .MyClass
{
  height: 18px ;
}
```

the font size will be different for IE6 and Opera.

The class names are:
- IE: IE<major version>
- Opera: Opera
- Firefox: Gecko
- Safari: Safari

6.2 App themes

In some cases, you may leverage the built-in support for ASP.NET themes. You can use them for setting styles of controls that do not have their own CSS class name, such as Datagrid, Calendar or web parts with complex dialogs (logon form, registration form, ...).

The name of the theme folder under **App_Themes** must be same as the code name of the site's CSS stylesheet. So if you use the **Green** stylesheet on your site, your theme must be stored in the **App_Themes\green** sub-folder under your web project.

You need to add your skins to the default.skin file. Here's an example of CMSCalendar / Calendar web part skin:

```
<cms:CMSCalendar SkinID="EventCalendar" Runat="server">
    <NextPrevStyle ForeColor="Red"></NextPrevStyle>
    <WeekendDayStyle BackColor="#E0E0E0"></WeekendDayStyle>
</cms:CMSCalendar>
```

The code above defines the look of the Event calendar control. You can see this control on the Events page in the sample Corporate Site.

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Where should I store website design files?

It's recommended that you store all images or Flash movies that are part of the website design template in folder app_themes/<stylesheet code name>. This ensures that the files are exported together with the website when you are deploying it to some other server.

6.3 Menu design

Now you will learn how to change the design of the main menu. The main menu used in the sample Corporate Site is displayed using the **Drop-down menu** web part which is based on the **CMSMenu** server control.

The menu design depends primarily on the CSS styles. Here's an example of the CSS styles for the drop-down menu:

```
.horizontalmenu{
	background: #000 url(../App_Themes/CorporateSite/Images/topMenuBackground.
gif);
}

.horizontalCMSMenu
{
	height: 34px;
	color: #fff;
	padding: 3px;
	background: #000 url(../App_Themes/CorporateSite/Images/topMenuBackground.
gif);
}

.horizontalsubCMSMenu
{
	background: black;
	color: #fff;
}

.horizontalsubCMSMenu tr
{
	background: black;
}

.horizontalsubCMSMenuItem
{
	white-space: no-wrap;
	display: block;
}

...
```

As you can see these are standard CSS styles. You can modify the styles in the global CSS stylesheet

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of the given site.

The default menu looks like this:

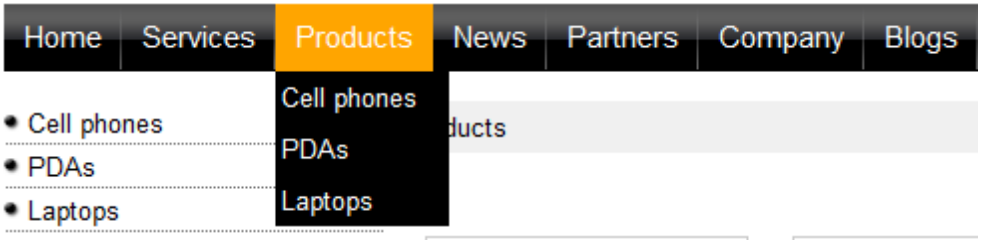
Now we will change the background color of selected menu items to orange. Go to **Site Manager -> Development -> CSS stylesheets** and edit the **Corporate Site** stylesheet. Choose **Top menu styles -> Horizontal** in the right navigation panel. Change the highlighted line:

```
.horizontalCMSMenuItemMouseOver, .horizontalCMSMenuHighlightedMenuItem,
.horizontalCMSMenuHighlightedMenuItemMouseOver,
.horizontalCMSMenuHighlightedMenuItemMouseDown
{
      background: orange;
}
```

Click **OK** to save changes. When go to the live site now, you will see a menu like this:

Defining different styles for different menu levels

When you mouse-over the menu you will see that the sub-menus are displayed in different colors:



The sub-menu styles can be configured using the **CSS prefix** property of the **Drop-down menu** web part or the CSSPrefix property of the CMSMenu control.

In the sample Corporate Site project, the property is set to "horizontal;horizontalsub". It means that the CSS styles for the first level of the menu use styles like horizontalCMSMenuItem, while the sub-menus on the second and further levels are displayed using the CSS styles with prefix horizontalSub, such as horizontalSubCMSMenuItem. In this way, you can define different CSS styles for any level of the menu structure.

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Defining the style of a single menu item

Every document may have its own style that is used when the document is displayed in the menu. We will try to modify the style of the **Home** menu item. Go to **CMS Desk -> Content** and click **Home**. Click **Properties -> Menu**. Here you can define:

- **Menu caption** - the name of the document when it's displayed in the menu.
- **Show in navigation** - indicates if the document should be displayed in the navigation controls
- **Show in site map** - indicates if the document should be displayed in the site map
- **Menu item design** for standard, mouse-overed and highlighted menu item.

Enter the following value into the **Menu item style** value (under the Menu item design section): background-color: red; and click **Save**. Click **Live site**. Click **Services**. The **Home** menu item is now displayed in red:

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Part

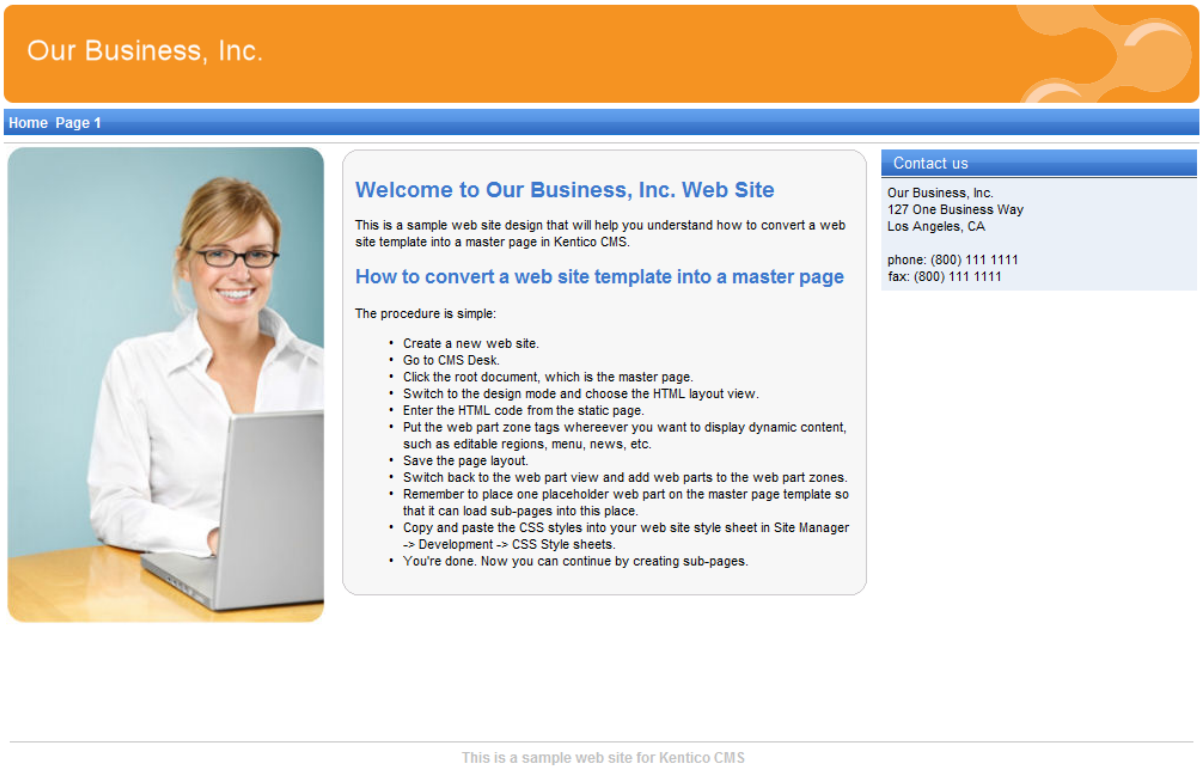
Creating a new site using ASPX templates

7 Creating a new site using ASPX templates

7.1 Overview

This tutorial will guide you through the creation of a simple website using ASPX page templates developed in Visual Studio. You will learn how to define site structure, design, how to create your own pages and page templates.

During this tutorial, we will use a static website template that is similar to what a developer gets from graphic designer. It looks like this:



You can find the static page template in folder C:\Program Files\Kentico CMS\<version>\CodeSamples\SampleWebTemplate. The template consists of the home.htm file, styles folder and app_themes folder with images.

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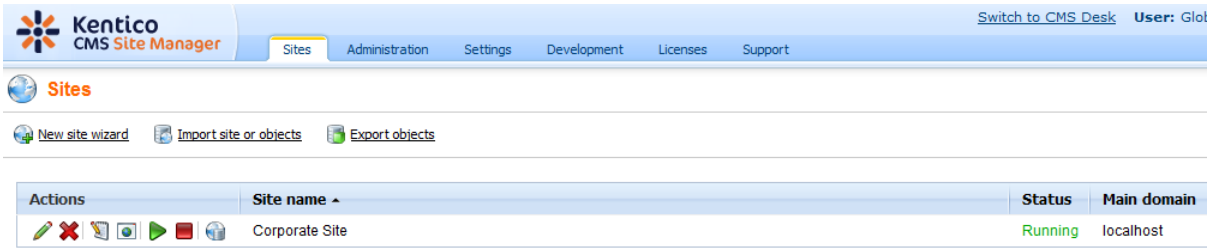
7.2 Creating a new web site using wizard

The following chapters suppose you have previously installed a sample CorporateSite on your computer. We will leave the existing website and add a new website that will run on http://127.0.0.1.

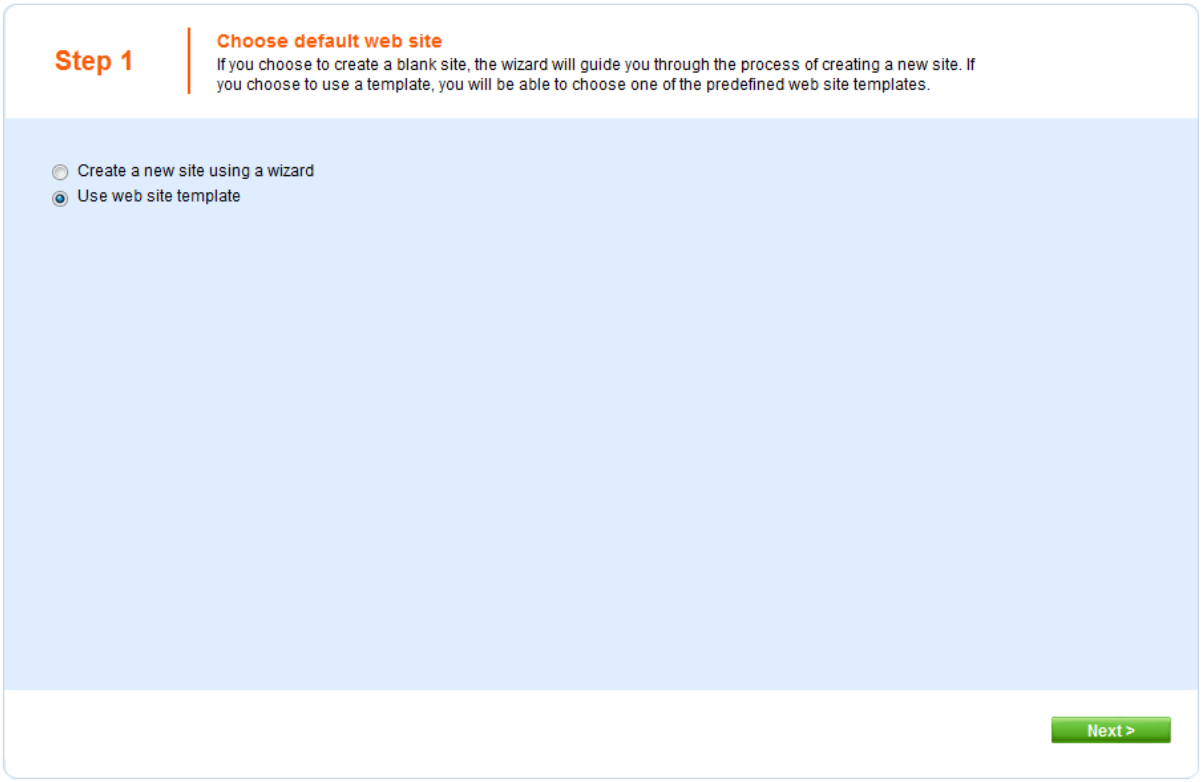
Multiple sites and Visual Studio's built-in web server

If you are using the **built-in web server in Visual Studio instead of IIS**, you need to **stop the CorporateSite** site in the Site Manager -> Sites dialog first and then you can continue. Since the built-in web server doesn't support other domain than localhost, you will use the **localhost domain** again.

Sign in as Administrator to **Site Manager -> Sites**. Click **New site wizard** on the home page.



In the first step, choose to **Use website template**. Click **Next**.



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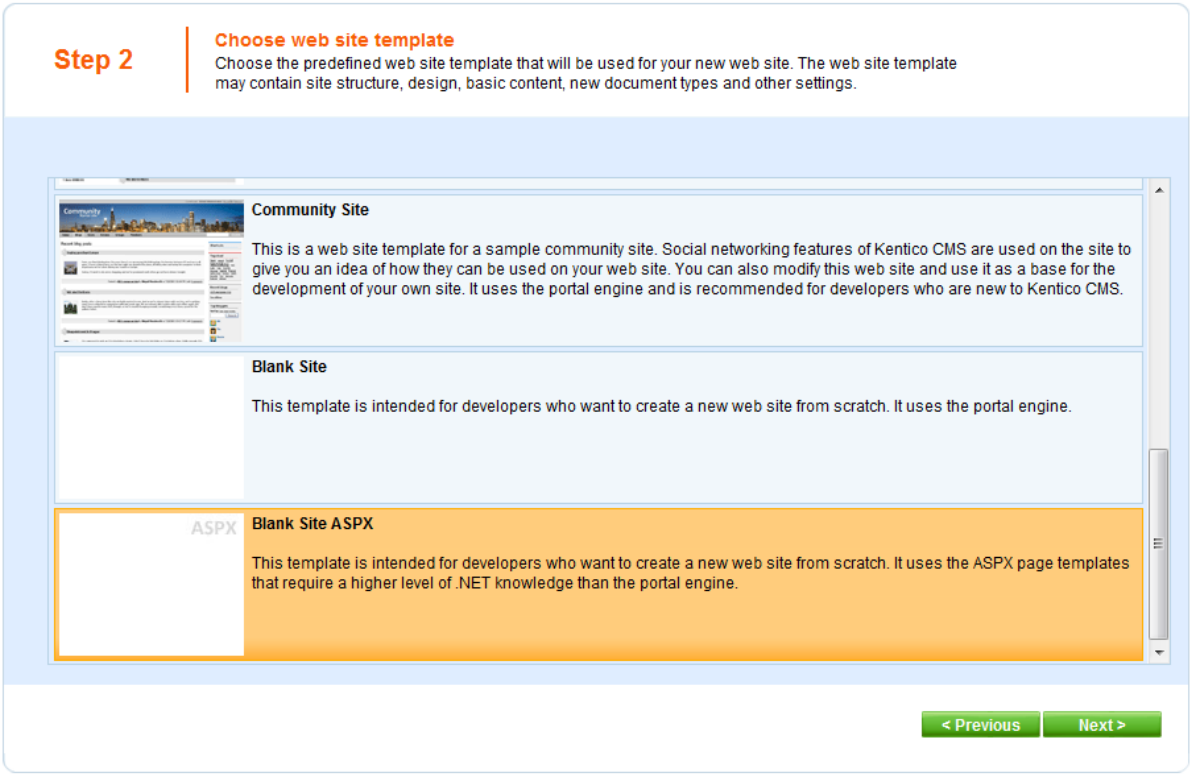
In the second step, choose the **Blank site ASPX** website template: Click **Next**.



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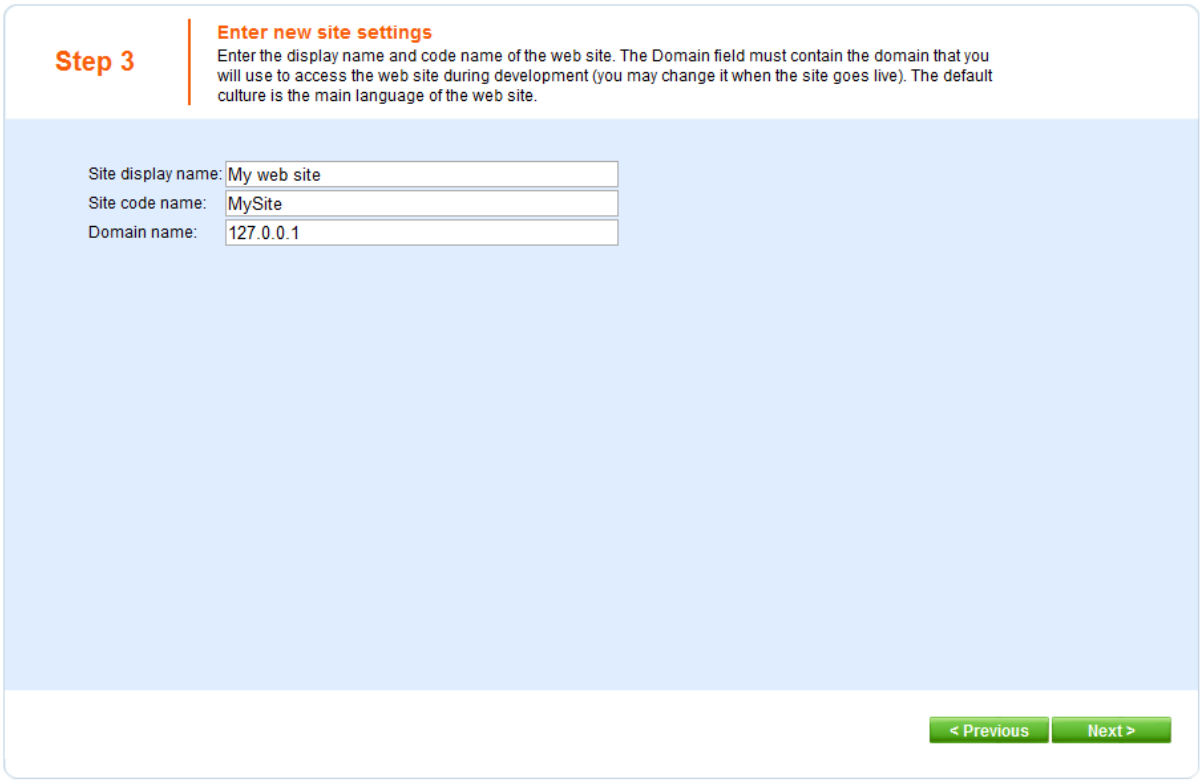
In the third step, enter the following details:

- **Site display name**: *My website*
- **Site code name**: *mysite*
- **Domain**: *127.0.0.1* - if you are using Visual Studio's built-in web server, set the default value to **localhost**

Click **Next**.



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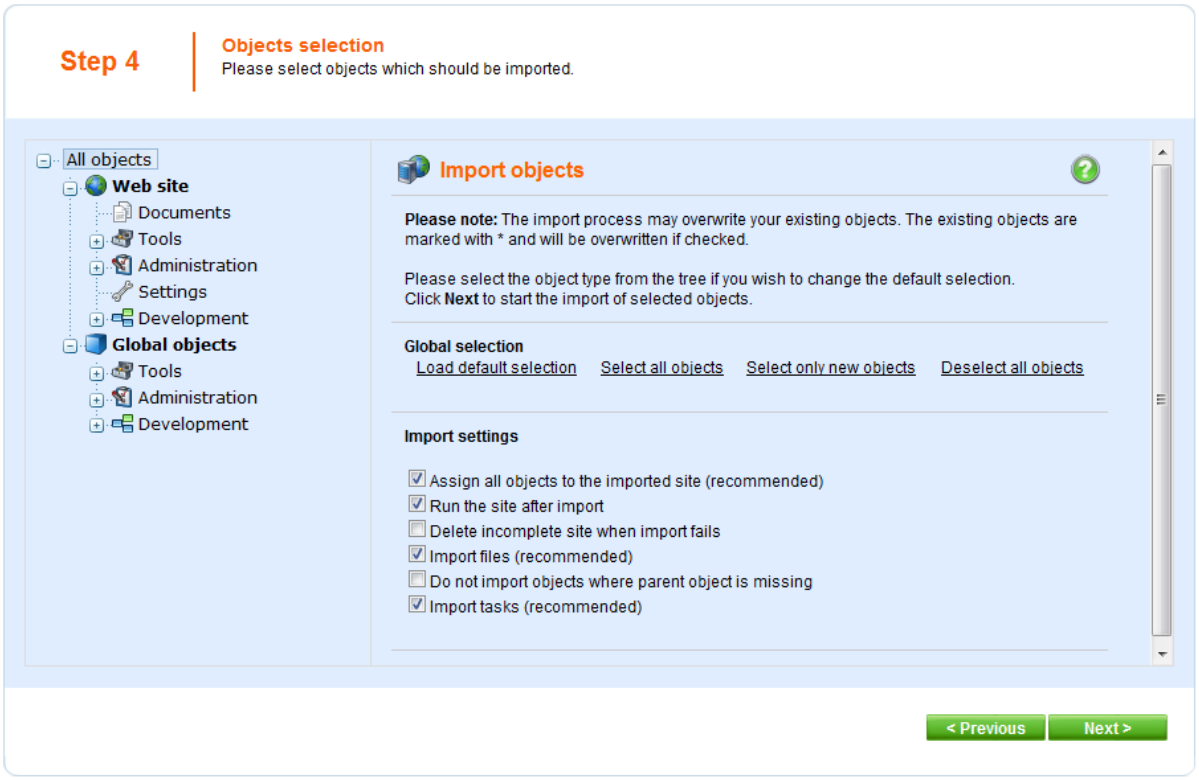
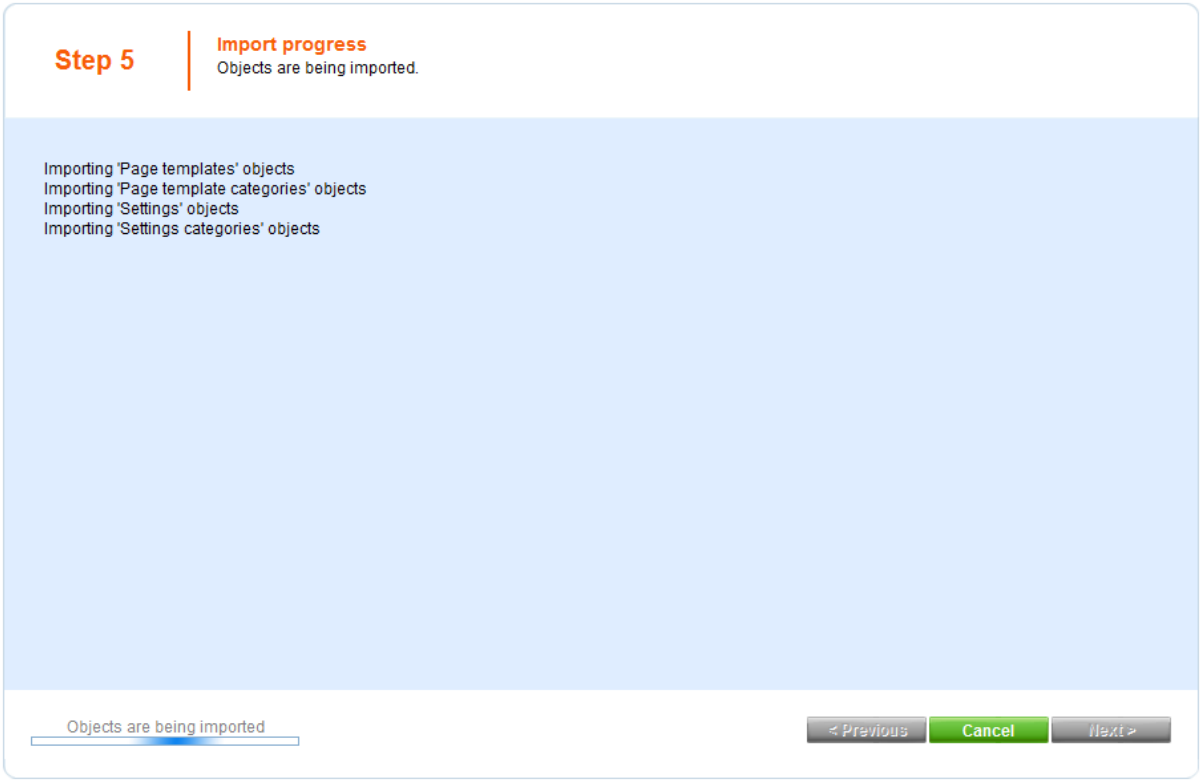
In the fourth step, you are asked to select objects which should be imported to your new site. Do not change anything and click **Next**.



In the fifth step, the progress of objects import is displayed. Click **Next** after **Import has successfully finished** appears.



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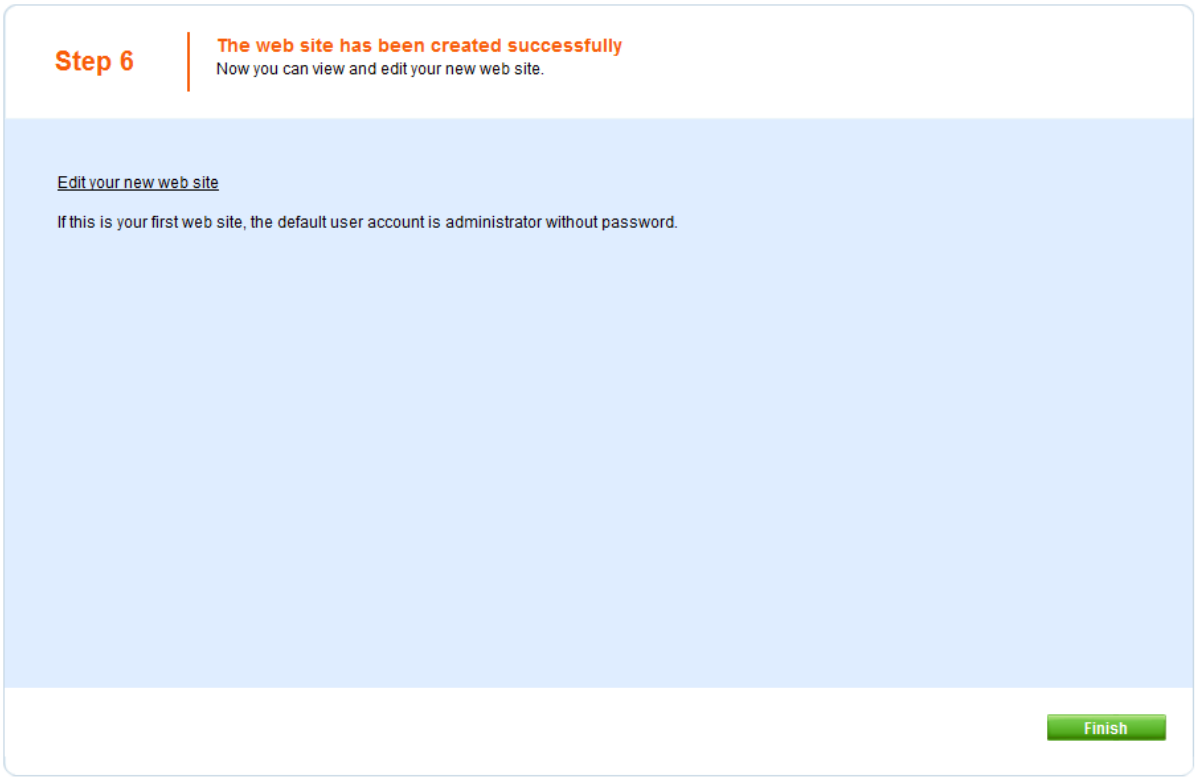
You will see the confirmation message.



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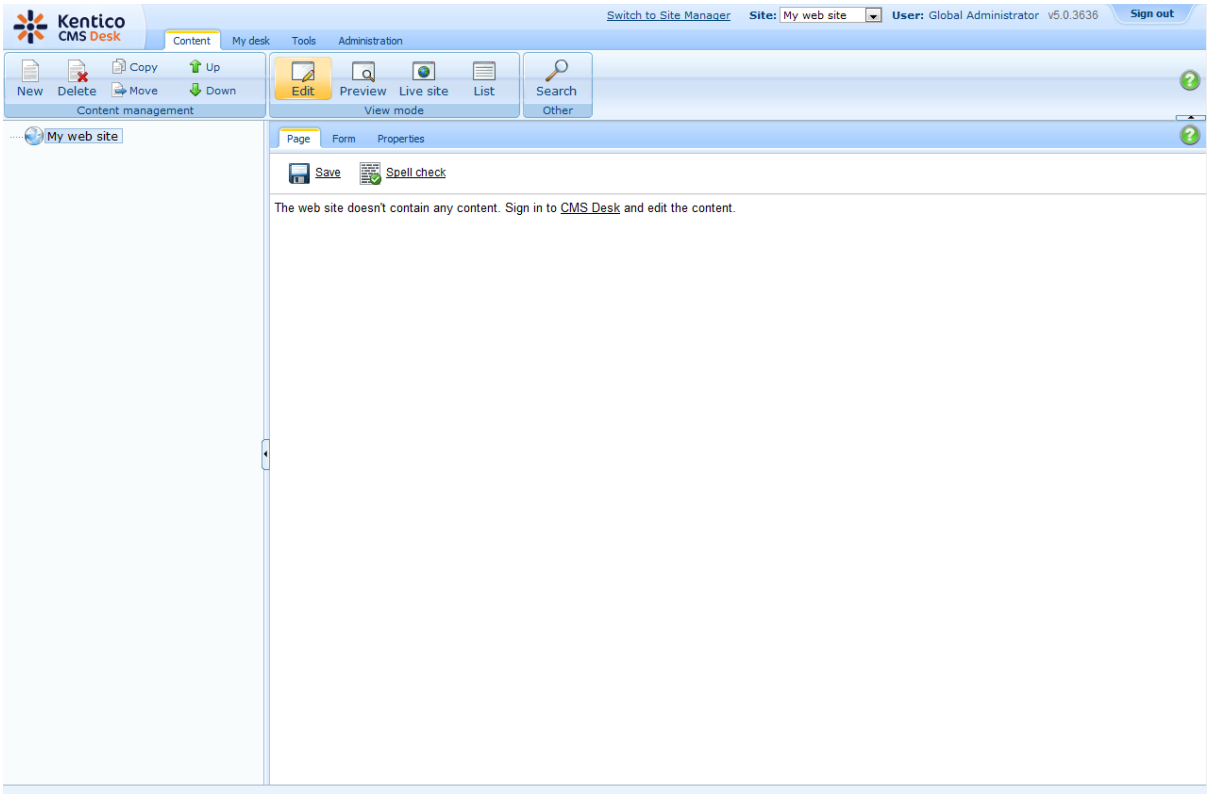
Click the **Edit your new website** link. A new window with Kentico CMS Desk opens at domain 127.0.0.1. You need to sign in again since the authentication is not shared over different domains. After you sign in, you will see your new, empty website:



You have created the base for your new website. In the next chapters, you will learn how to implement the required design.

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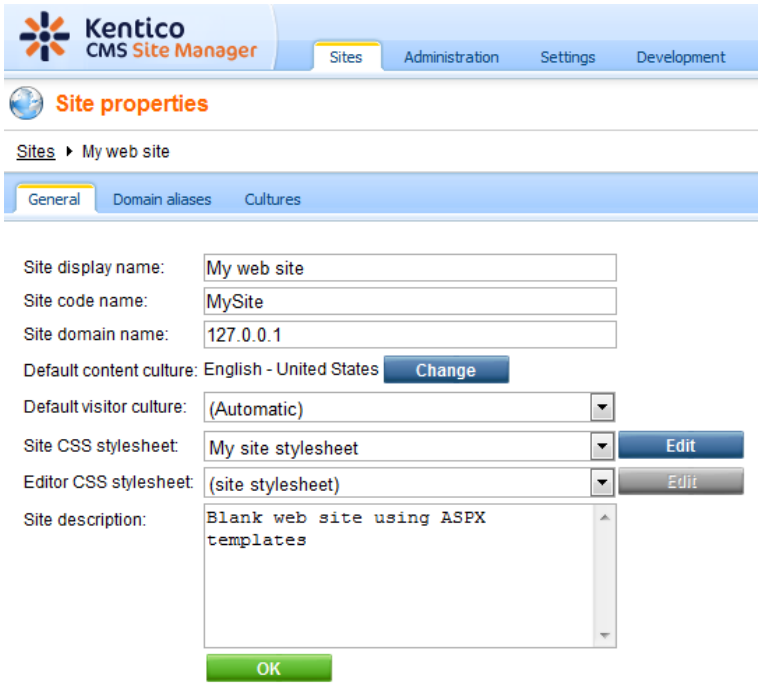
7.3 Creating the CSS stylesheet

Before we start editing our new website, we will prepare the CSS styles and images based on our website template. Go to Site Manager -> Development -> CSS Stylesheets and click **New CSS stylesheet**. Enter the following values:

- Stylesheet display name: **My site stylesheet**
- Stylesheet code name: **MySite**
- Stylesheet text: copy and paste all text from the **SampleWebTemplate\Styles\main.css** file (you will find it in folder C:\Program Files\Kentico CMS\<version>\CodeSamples)

Click **OK**. Switch to the **Sites** tab, click **Add sites** and add the **My website** into the list. It assigns the stylesheet to your website.

Go to **Site Manager -> Sites** and edit properties of **My website**. Select **My site stylesheet** in the Site CSS stylesheet drop-down list and click **OK**. It ensures that the stylesheet is used on all pages of your new website.



Now copy the folder **SampleWebTemplate\app_themes\MySite** to **<web project>\app_themes**. It will ensure that the images are exported as a part of the website if you decide to move the website in future. Please note that the folder under app_themes must have the same name as the code name of the CSS stylesheet - **MySite**.

CSS stylesheet URL and relative paths

We have adjusted the image paths in the CSS stylesheet so that they match the target folders in your new website. In real life, you will need to adjust the paths manually. **The URLs of images in the CSS stylesheets are always relative to the CSS stylesheet.**

The URL of the CSS stylesheet is

<web project>/CMSPages/GetCSS.aspx?stylesheetname=MySite

which means, you need to link to files in the app_themes folder as

../app_themes/mysite/images/imagename.gif.

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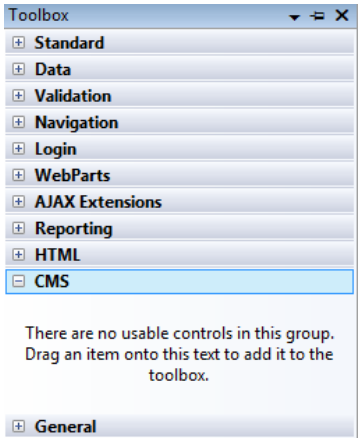
7.4 Opening and configuring the web project

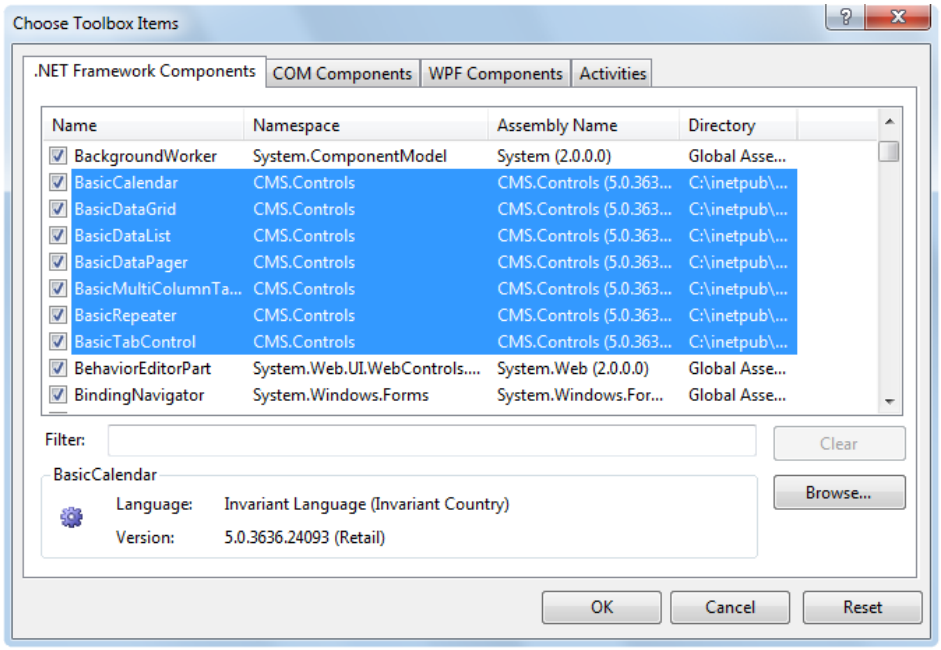
Open the web project in Visual Studio. You can open it either using the **WebProject.sln** file or using the **File -> Open -> website** menu.

Now we need to add Kentico CMS Controls to the Visual Studio Toolbox.

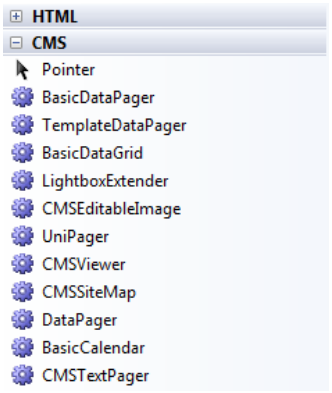
1. Open the website project in Visual Studio and open some ASPX page.
2. Right-click the **Toolbox** and choose **Add tab** from the context menu.
3. Type the name of the new tab (e.g. CMS) and press Enter:



4. Right-click the new tab and choose **Choose items...** from the context menu.
5. In the **Choose Toolbox Items** dialog, click Browse and locate the **CMS.Controls.DLL** library in the **bin** folder under your website. Click **Open** and then click **OK**.



6. **The controls are now added to the Toolbox:**

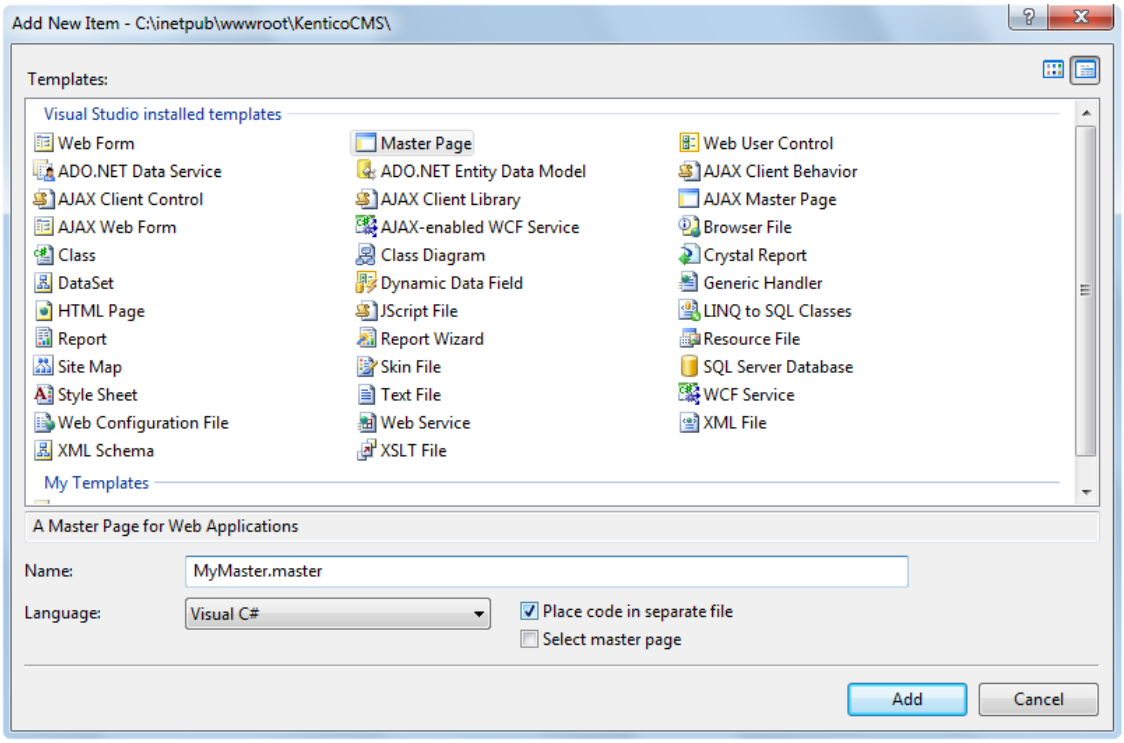


7. Now you can easily drag and drop the controls on your Web forms.

7.5 Master page

Open the web project in Visual Studio and righ-click the **CMSTemplates** folder in the Solution Explorer window and create a new sub-folder **MySite**. Please note that the folder name must be same as the code name of your site.

Right-click the **MySite** folder and choose **Add new item...** Choose to create a new master page and set its name to **MyMaster.master**. If you are a VB developer, you may want to choose Visual Basic in the **Language** drop-down list.



Replace all default ASPX code from the master page (in the Source view) except for the first line with <% @ Master %> directive with the following code:

```
<%@ Register Assembly="CMS.PortalControls" Namespace="CMS.PortalControls"
TagPrefix="cc2" %>
<%@ Register Assembly="CMS.Controls" Namespace="CMS.Controls" TagPrefix="cc1" %>
<%=DocType%>
<html xmlns="http://www.w3.org/1999/xhtml">
<head id="Head1" runat="server">
    <asp:literal runat="server" id="ltlTags" enableviewstate="false" />
</head>
<body class="<%=BodyClass%>" <%=BodyParameters%>>
    <form id="form1" runat="server">
    <cc1:CMSPageManager ID="CMSPageManager1" runat="server" />
    </form>
</body>
</html>
```

The **CMSPageManager** control ensures loading of content from the database into the page.

In case you are planning to use AJAX components on your site, you need to add the **ScriptManager** control after the CMSPageManager control.

```
<asp:ScriptManager ID="manScript" runat="server" />
```

Switch to code behind and add the reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

Change the class definition so that the master page inherits from TemplateMasterPage:

[C#]

```
public partial class CMSTemplates_MySite_MyMaster : TemplateMasterPage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_MyMaster
```

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```
    Inherits TemplateMasterPage
```

Add the following code after the Page_Load method and call both the CreateChildControls and the OnPreRender methods from the Page_Load method:

[C#]

```
protected override void CreateChildControls()
{
    base.CreateChildControls();

    this.PageManager = this.CMSPageManager1;
}

protected override void OnPreRender(EventArgs e)
{
    base.OnPreRender(e);

    this.ltlTags.Text = this.HeaderTags;
}
```

[VB.NET]

```
Protected Overloads Overrides Sub CreateChildControls()
    MyBase.CreateChildControls()

    Me.PageManager = Me.CMSPageManager1
End Sub

Protected Overloads Overrides Sub OnPreRender(ByVal e As EventArgs)
    MyBase.OnPreRender(e)

    Me.ltlTags.Text = Me.HeaderTags
End Sub
```

Now switch to the **Source mode** (HTML mode) copy and paste the HTML code from the sample **home.htm** file (inside <body></body> tags) after the <cc1:CMSPageManager /> control in the master page.

However, we need only the logo, main menu and footer. So we will replace the <!-- main content --> ... <!-- /main content --> section of the HTML code with the following code:

```
<asp:ContentPlaceHolder ID="plcMain" runat="server"></asp:ContentPlaceHolder>
```

This is a standard ASP.NET control that ensures loading of pages into the master page.

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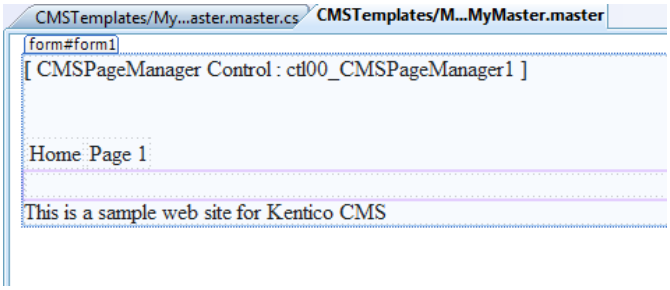
So the added code will look like this:

```
<div class="MainDiv">

<!-- logo -->
<br />
<div class="Logo">
     
</div>

<!-- main menu -->
<div class="MainMenu">
    <table cellspacing="2" cellpadding="2" border="0">
           <tr>
                  <td class="MainCMSMenuHighlightedMenuItem">Home</td>
                  <td class="MainCMSMenuItem">Page 1</td>
              </tr>
       </table>
</div>

<!-- main content -->
<asp:ContentPlaceHolder ID="plcMain" runat="server"></asp:ContentPlaceHolder>
<!-- /main content -->

<!-- footer -->
<div class="Footer">
       This is a sample website for Kentico CMS
</div>

</div>
```

When you switch to the **Design** tab, you should see a page preview like this:



Save the changes.

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Using CSS-based layout instead of tables

If you prefer using CSS-based layout, you can easily change the HTML code here and replace the tables with DIV elements. We use table-based layout by default since it's easier to understand, although we are aware of advantages of the CSS-based layout.

7.6 Main menu

Now we will add a dynamic **drop-down menu** to our master page. The drop-down menu can be implemented either by CMSMenu or CMSListMenu control. The first option is easier to use if you are not familiar with complex CSS styles, so we will use it now.

Please note: If you prefer using a drop-down menu based on the CSS styles and UL/LI elements, you can try to use the CMSListMenu later (you can find more details and examples in Kentico CMS Controls Reference).

Swith to the **Source** mode of the **MyMaster.master** page and drag and drop the **CMSMenu** control inside the element. Remove the original <table> element used for the static menu. The main menu section will look like this:

```
<!-- main menu -->
<div class="MainMenu">
    <cc1:CMSMenu ID="CMSMenu1" runat="server" />
</div>
```

Now switch back to the **Design** tab and set the following properties of the CMSMenu control:

- **Path:** /%
- **Layout:** Horizontal
- **CSSPrefix:** ;sub
- **Cursor:** Pointer

The **Path** property value specifies that the menu should start from the root of the site structure.
The **Layout** property allows you to choose between vertical and horizontal menu.
The **CSSPrefix** property specifies the names of CSS styles for the top menu (standard style names) and for sub-menus (all style names are prefixed with **sub**).
The **Cursor** property specifies the type of cursor when the user mouse-overs the menu.

Save the changes.

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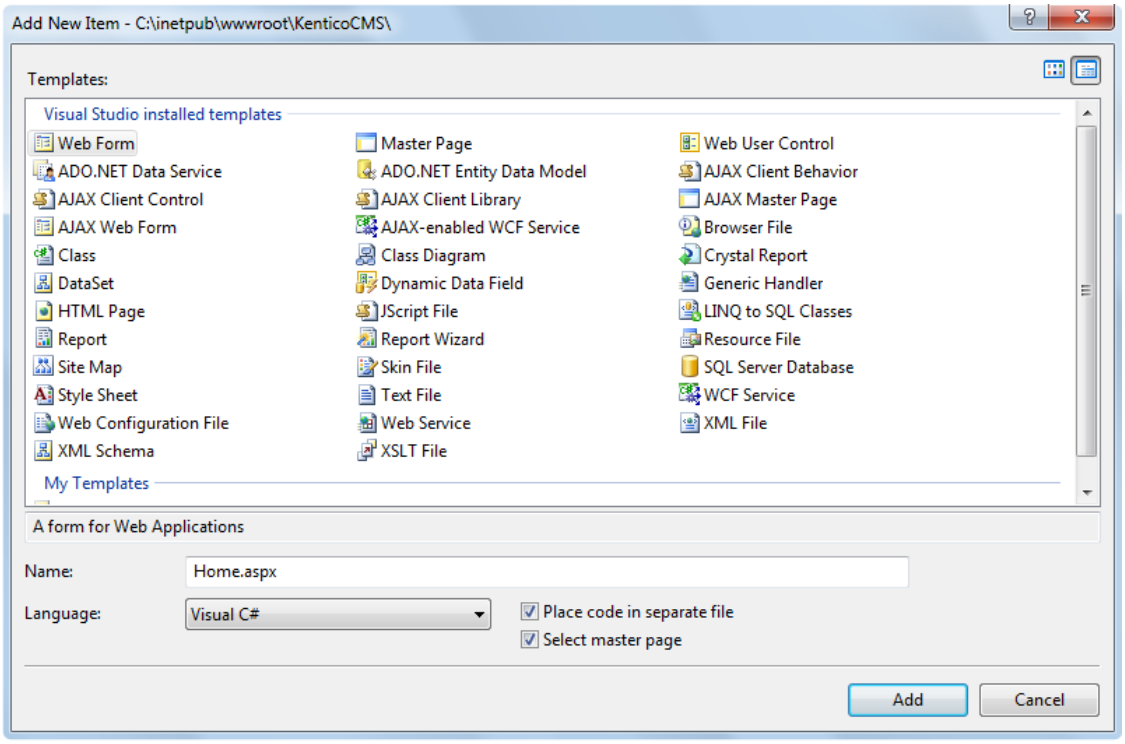
Kentico CMS Controls and Web Parts

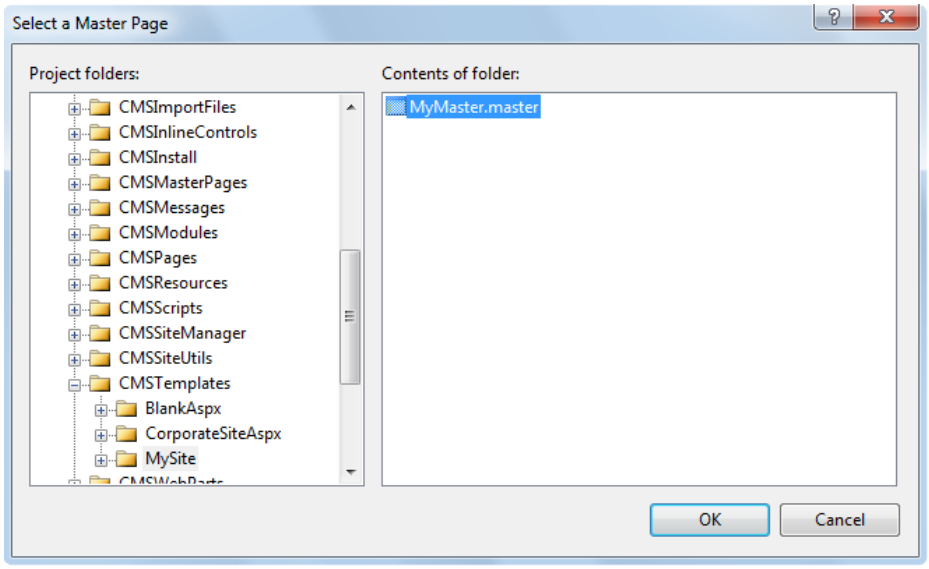
While Kentico CMS is delivered with a set of flexible server controls in the CMS. Controls.dll library, lots of functionality is only available in the web parts that are stored in the **CMSWebParts** folders. These web parts are standard ASCX user controls and they can be used on both portal engine templates and on ASPX pages. You only need to drag and drop the web parts on your ASPX page and set their properties in the Properties window of Visual Studio. All CMS controls have a relevant web part as well.

7.7 Home page

Now we will change the home page template to our website. Right-click the **CMSTemplates/MySite** folder in the **Solution Explorer** and click **Add new item...** Choose to create a new page called **Home.aspx** and check the box **Select master page**:



Click **Add** and choose the **MyMaster.master** page in the **CMSTemplates/MySite** folder in the next dialog:



Copy the whole **<!-- main content -->** section from the **home.htm** file inside the **<asp:Content>** element. Now we will remove the text content with editable regions so that it can be managed by content editors:

- Remove the whole "Welcome to Our Business, Inc. website..." text section.
- Remove the whole "Our Business, Inc. ..." content of the right box.

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The complete code will look like this:

```
<%@ Page Language="C#" MasterPageFile="~/CMSTemplates/MySite/MyMaster.master"
AutoEventWireup="true"
    CodeFile="Home.aspx.cs" Inherits="CMSTemplates_MySite_Home" Title="Untitled
Page" %>
<asp:Content ID="Content1" ContentPlaceHolderID="plcMain" Runat="Server">
<!-- main content -->
  <table style="width:100%;height:500px;border: 0px">
   <tr valign="top">
     <!-- left column -->
     <td style="width:280px" class="HomePageLeftColumn">
     </td>
     <!-- center column -->
     <td style="padding: 3px 5px 0px 5px;width:450px;">
       <!-- center box -->
       <table cellspacing="0" cellpadding="0" border="0" class
="ContainerWithCorners" width="100%">
         <tr class="ContainerWithCornersRow">
           <td class="ContainerWithCornersTopLeft"> </td>
           <td class="ContainerWithCornersTop"> </td>
           <td class="ContainerWithCornersTopRight"> </td>
         </tr>
         <tr>
           <td class="ContainerWithCornersLeft"> </td>
           <td class="ContainerWithCornersContent" valign="top">
           </td>
           <td class="ContainerWithCornersRight"> </td>
         </tr>
         <tr class="ContainerWithCornersRow">
           <td class="ContainerWithCornersBottomLeft"> </td>
           <td class="ContainerWithCornersBottom"></td>
           <td class="ContainerWithCornersBottomRight"> </td>
         </tr>
       </table>
     </td>
     <!-- right column -->
     <td style="padding: 3px 0px 0px 5px;width:270px">
       <!-- text box -->
       <table cellpadding="0" cellspacing="0" style="width: 100%;margin-bottom:
10px;" class="Blue">
         <tr>
           <td class="BoxTitle">Contact us
           </td>
         </tr>
         <tr>
           <td class="BoxArea" style="height: 19px">
           </td>
         </tr>
       </table>
     </td>
   </tr>
</table>
<!-- /main content -->
</asp:Content>
```

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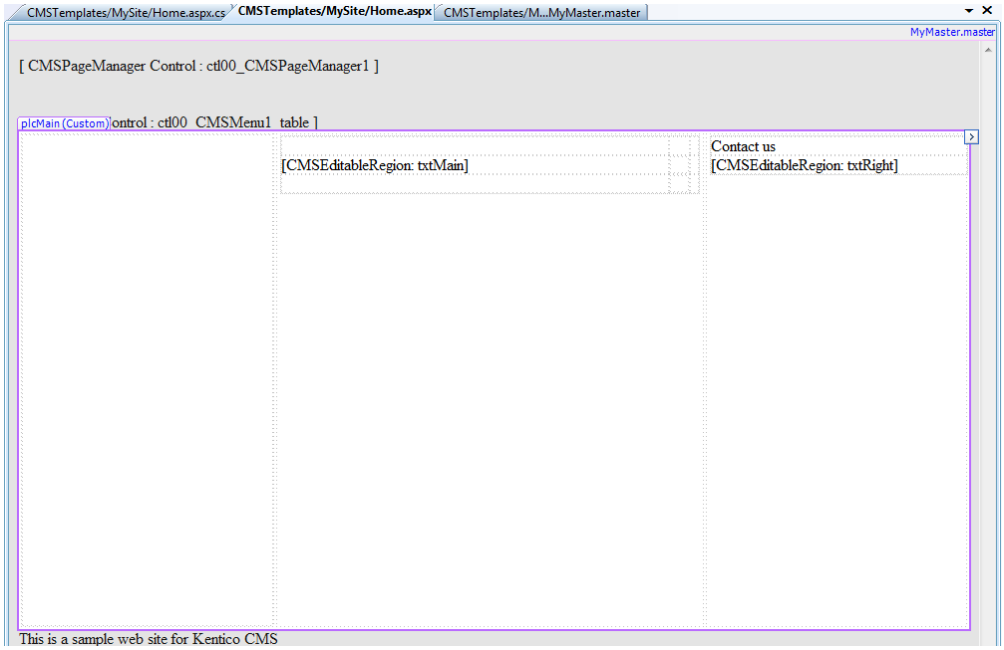
Switch to the **Design** tab and drag and drop two **CMSEditableRegion** controls on the page:

- one into the center cell of the center box
- one into the bottom cell of the right box



Set the following properties of the **CMSEditableRegion** controls:

- **ID:** txtMain
- **DialogHeight:** 300
- **RegionType:** HtmlEditor
- **RegionTitle:** Main content

- **ID:** txtRight
- **DialogHeight:** 280
- **RegionType:** HtmlEditor
- **RegionTitle:** Right content

Switch to the **code behind** and add reference to the **CMS.UIControls** namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

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You also need to change the class definition so that it inherits from the **TemplatePage** class:

[C#]

```
public partial class CMSTemplates_MySite_Home : TemplatePage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_Home
    Inherits TemplatePage
```

Save the changes.

Our master page and page template for the home page are ready. Now we need to register the home page template in Kentico CMS. Open Kentico CMS in a web browser and go to **Site Manager (http://localhost/KenticoCMS/CMSSiteManager) -> Development -> Page templates**.

Click the root and click **New category**. Create a new category with name **My website**.

Click **New template** and enter the following values:

- **Template display name:** Home page
- **Template code name:** HomePage

Click **OK** and set the following values on the **General** tab:

- **Template type:** ASPX page
- **File:** ~/CMSTemplates/MySite/home.aspx

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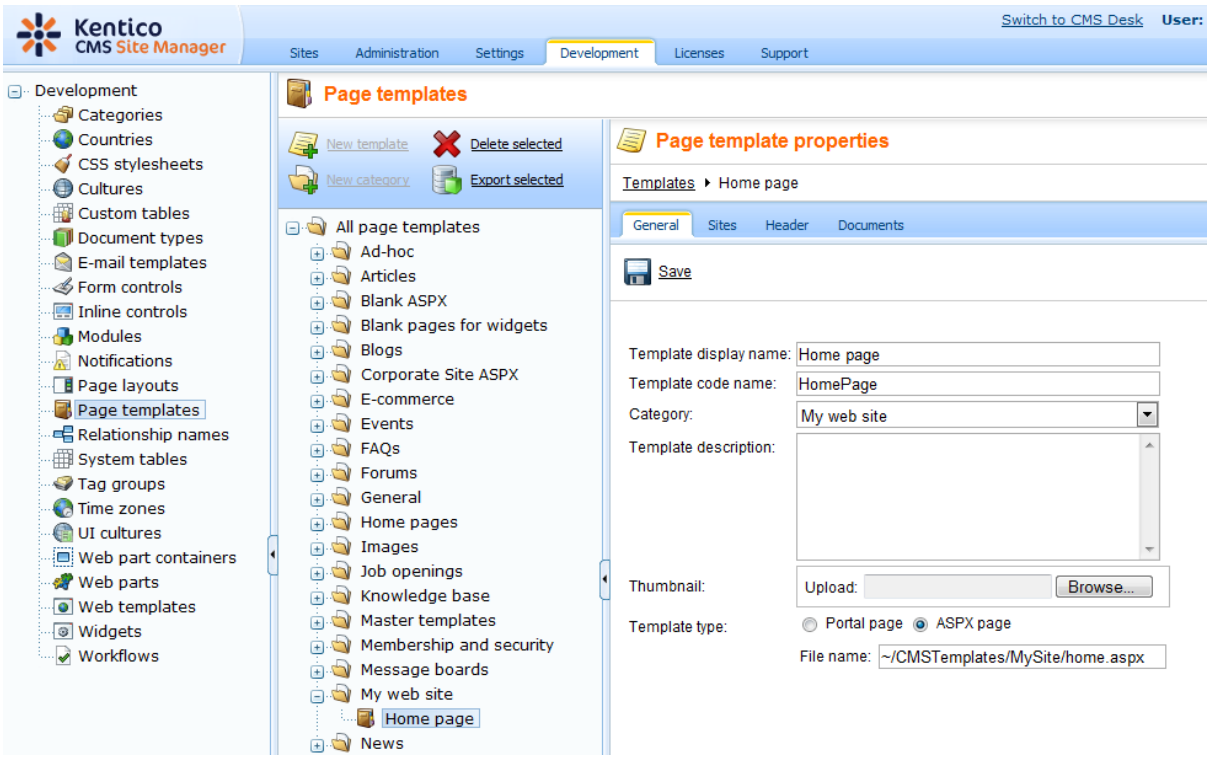

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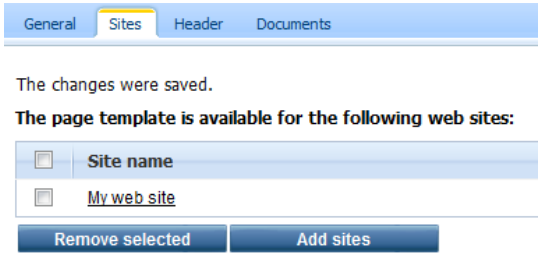
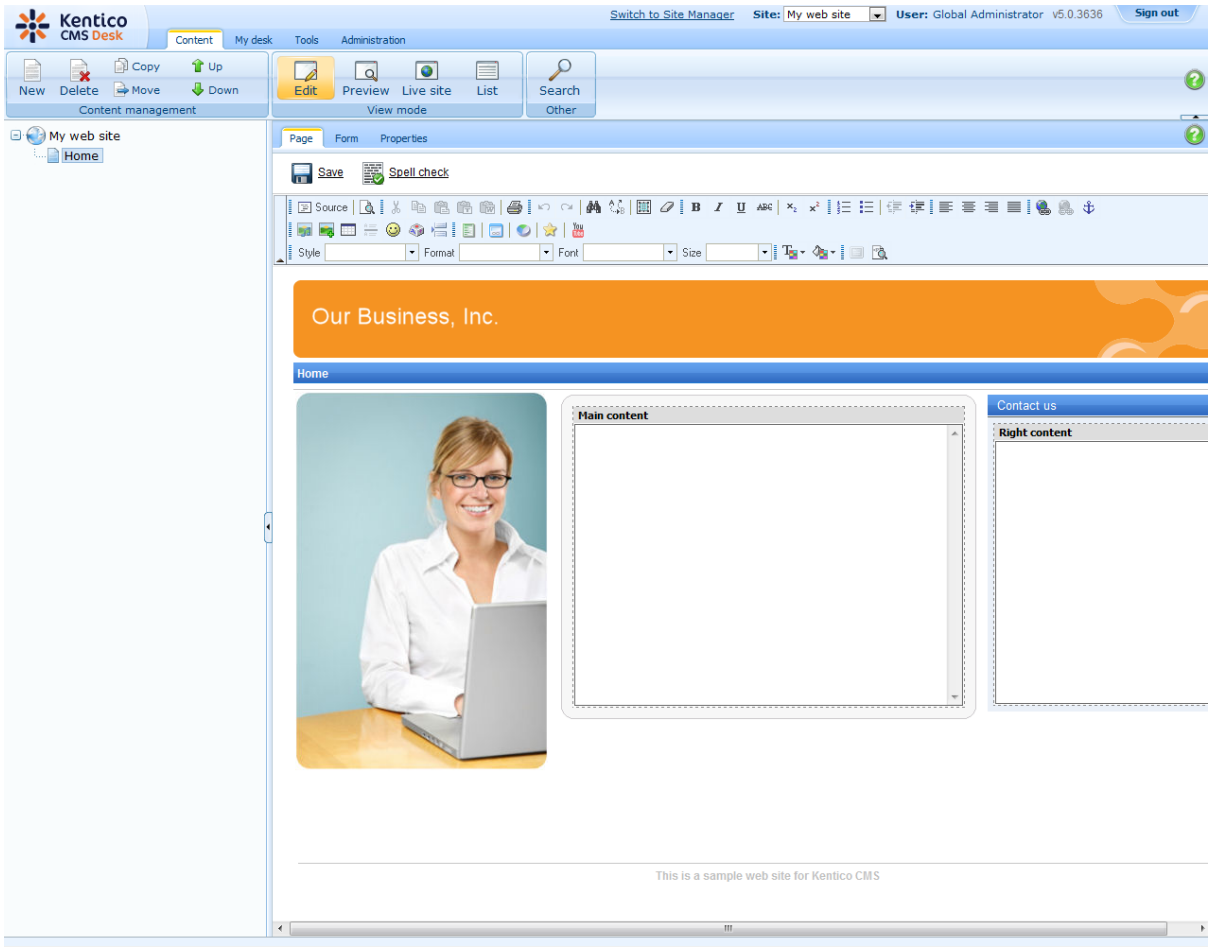
Click **OK** to save and click the **Sites** tab. Assign the new page template to your website and click **OK**.



Go to **CMS Desk -> Content**. Click root and click **New**. Choose to create a new **Page (menu item)** and enter the following values:

- **Page name:** Home
- **Use page template:** My website/Home page

Click **Save** and Click the **Page** tab. Now you can see that the page contains two editable regions.



Enter the following text:

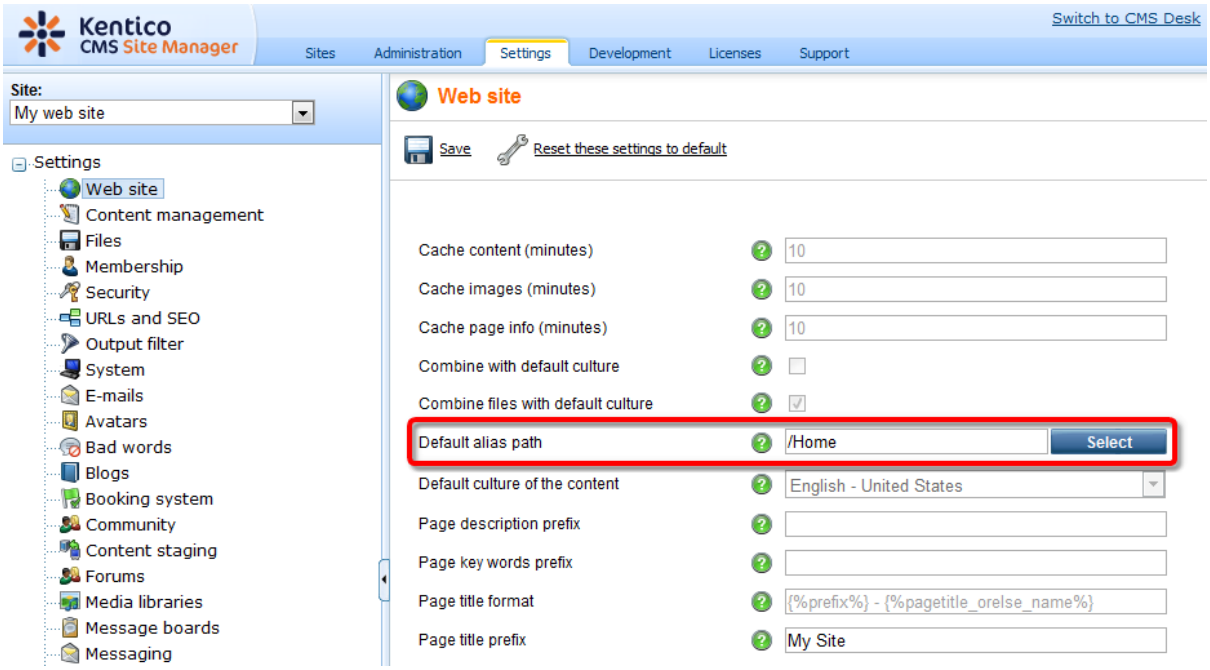
- **Main text:** Here comes the welcome text.

- **Contact text:** Call 800 111 2222

Click **Save**. Click **Live site** and you will see the home page of your new website.

Configuring the website home page

When the site visitor comes to the root of your website (e.g. to *http://www.example.com*), the system needs to know which page should be displayed as a home page. Go to **Site Manager -> Settings**, select **My website**, click **website** and make sure the value **Default alias path** is set to **/Home**, which is the alias path of our new home page.



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7.8 News page

Now we will create the News section of our website. Go to Visual Studio and create a new web form in the **CMSTemplates\MySite** folder, call it NewsPage.aspx, check the **Select master page** box and click **Add**. Choose the MyMaster.master master page and **click OK**.

Switch to the **Design** tab, drag and drop and configure the following controls:

CMSBreadCrumbs
(no properties to be set)

CMSRepeater
- ClassNames: cms.news
- TransformationName: cms.news.preview
- SelectedItemTransformationName: cms.news.default
- ItemSeparator: <hr />

Switch to the HTML mode and add the following HTML code between both controls:

```
<h1>News</h1>
```

When you switch back to the **Design** tab, you should see a page like this:

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Switch to the **code behind** and add reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

You also need to change the class definition so that it inherits from the **TemplatePage** class:

[C#]

```
public partial class CMSTemplates_MySite_NewsPage : TemplatePage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_NewsPage
    Inherits TemplatePage
```

Save all changes.

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Page Template Registration

Go to **Site Manager -> Development -> Page templates**, click the **My website category** and click **New template**. Create a new page template with following details:

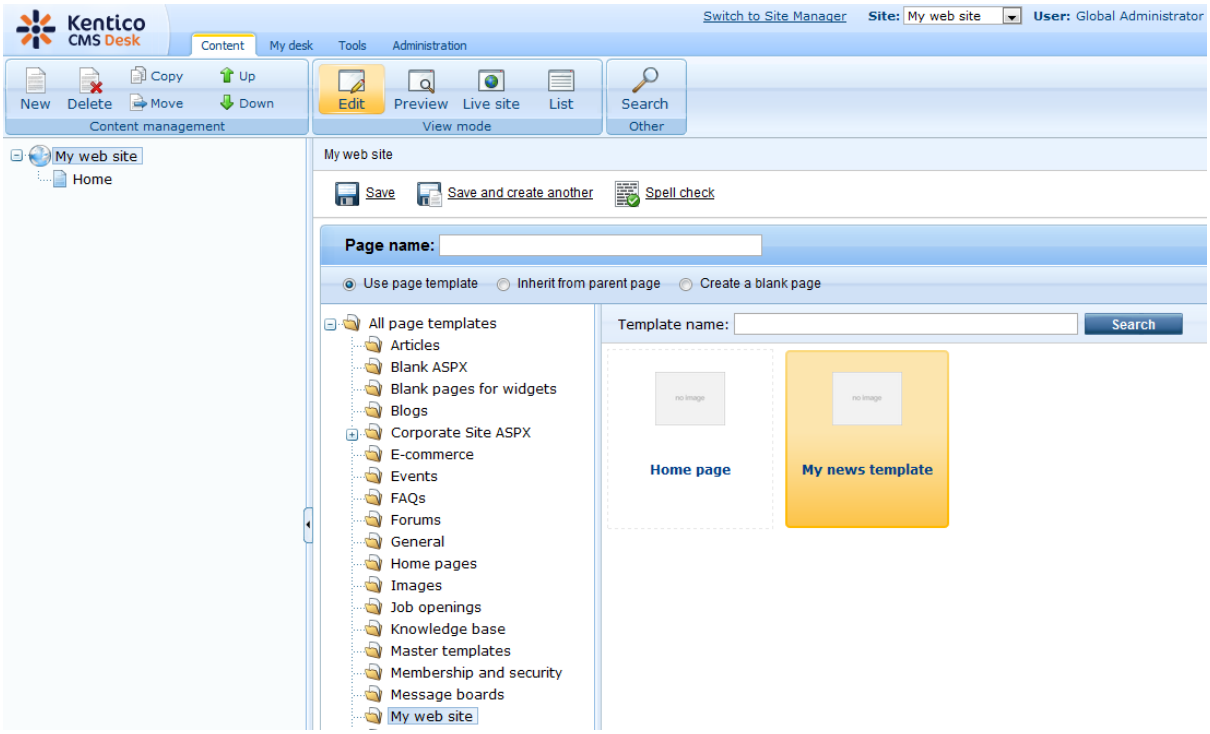
- Template display name: My news template
- Template code name: mynewstemplate

On the detail page, please choose:

- Template type: ASPX
- File name: ~/CMSTemplates/MySite/NewsPage.aspx

Switch to the **Sites** tab and assign the template to **My website**.

Go to **CMS Desk -> Content**, click root and click **New**. Choose to create a new **Page (menu item)** using the **My website/My news template page** template and call the page **News**.



Click **Save**. Click the **News** page and click **New**, choose to create a **news** document and enter the following text:

- News title: News 1
- Release date: click the date-time picker and click **Now** and click **OK**.
- News summary: News 1 summary.
- News text: News 1 text.
- Publish from, to: leave the fields blank.

Click **Save and create another** and enter the following values:

- News title: News 2
- Release date: click the date-time picker and click **Now** and click **OK**.
- News summary: News 2 summary.
- News text: News 2 text.
- Publish from, to: leave the fields blank.

When you click **/News** and **Live site** now, you will see the list of news under the **News** section:

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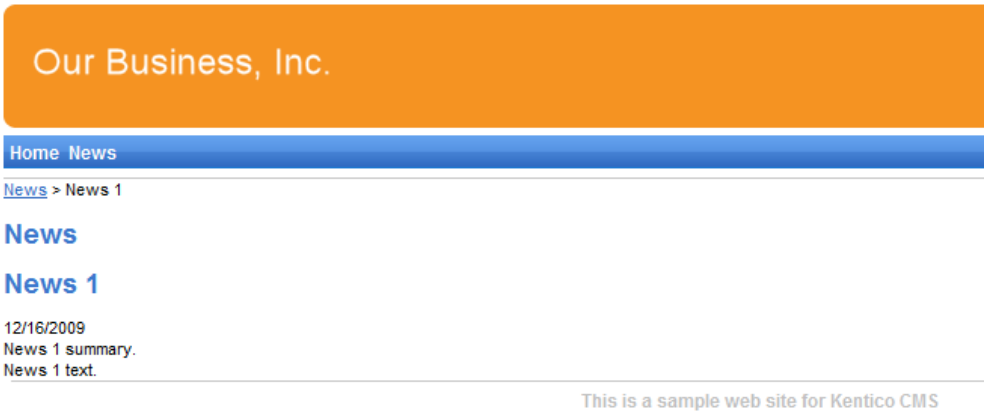
As you can see, the main page **/News** displays the list of the news items that are placed under it. This is an example of how the content is logically structured in Kentico CMS. When you click **/News/News 1** now, you will see the detail view:



The breadcrumbs now show you current path on the website: **News > News 1**. The position is also reflected in the URLs:

- The URL of the News page is **/news.aspx**
- The URL of the News 1 page is **/news/news-1.aspx**

This makes the website more accessible to both people and search engines, such as Google.

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How it works

1. You go to the **/News page**.
2. The **CMSRepeater** control checks if you have selected some particular news item (based on its ClassNames property value).
3. It finds out that you have selected a page document, so it looks for all underlying news documents and displays them as a list using the **cms.news.preview** transformation.

When you click on some particular news item, such as **/News/News 1**, the **NewsRepeater** web part uses the **cms.news.default** transformation instead and displays the detail view.

Path expressions

The Path property in web parts supports following special expressions that allow you select the content dynamically:

/%	All documents on the website.
/news/%	All documents under /News.
/news/news1	News1 document.
./%	All items under the current document.
./logo	Logo document under the current document.
./images/%	All images under the *images* child document.
../contacts/%	All documents under the sibling document *contacts*.
/{0}/%	All documents under the current first level document. Example: if the currently selected document is /news/news1 the expression is evaluated as /news/%

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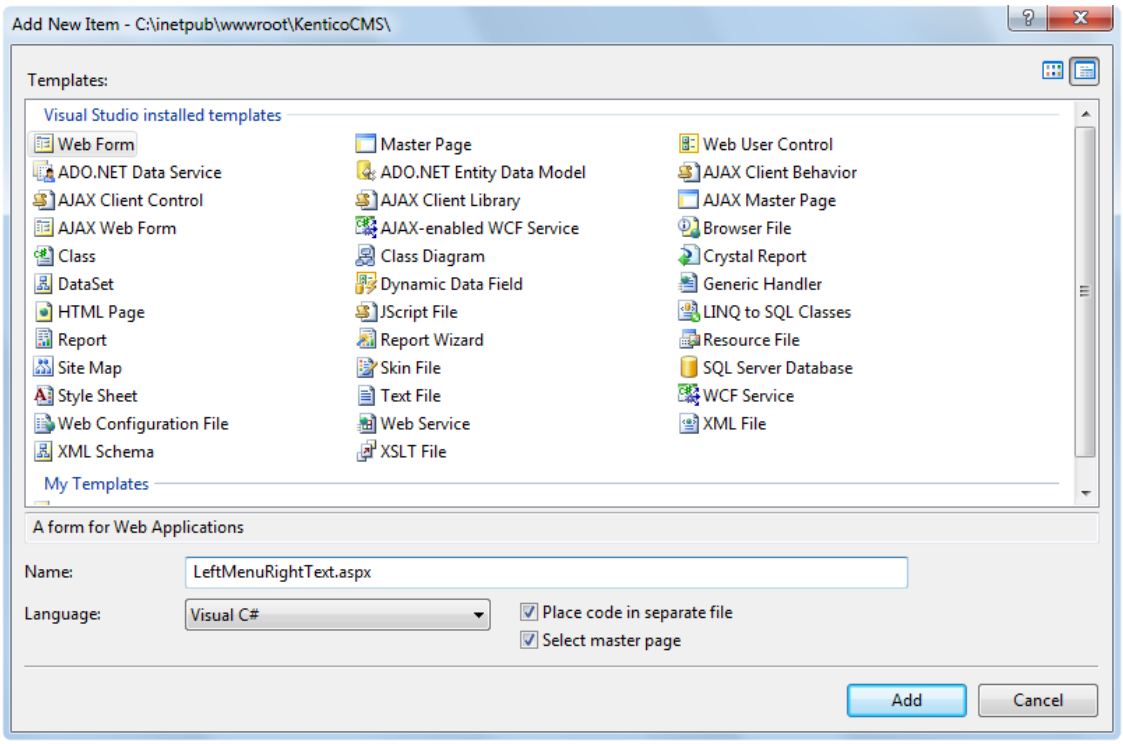
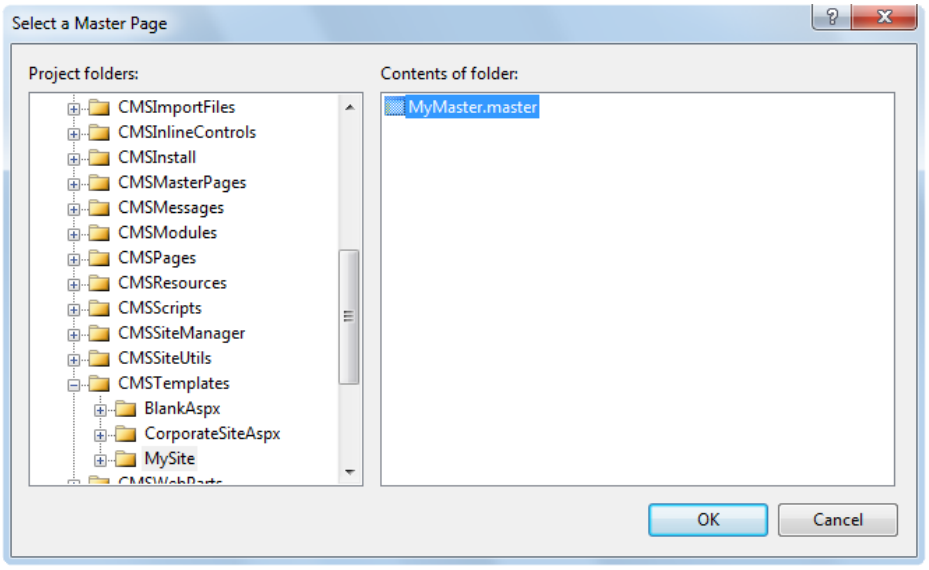
7.9 Services page

Now we will create a new site section for services. This site section will contain a left tree menu and a single editable region.

Go to Visual Studio and choose to create a new ASPX page in folder **CMSTemplates\MySite**. Call the page **LeftMenuRightText.aspx** and check the box **Select master page**:



Choose the **CMSTemplates\MySite\MyMaster.master** page on the next dialog:



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Now enter the following HTML layout code inside the <asp:content> elements of the newly created page:

```
<table width="100%">
    <tr valign="top">
        <td width="20%">

        </td>
        <td width="80%">

        </td>
    </tr>
</table>
```

Switch to the **Design** tab and you will see a preview of the page, including the inherited master page.

Drag and drop the CMSTreeMenu control to the left column and the CMSEditableRegion control to the right column:

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Set the following properties of the controls:

CMSTreeMenu1:
- **Path:** /{0}/% *(this means that the menu starts from the second level)*
- **MenuItemImageURL:** ~/app_themes/mysite/images/bullet.gif
- **MenuItemOpenImageURL:** ~/app_themes/mysite/images/bullet.gif

(the ~ character represents the root of the website and it ensures that the image will be displayed correctly whether you run the websites in the root or in a virtual directory)

CMSEditableRegion1:
- **RegionType:** HTMLEditor
- **Height:** 400
- **RegionTitle:** Main Text

Switch to the **code behind** and add reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

You also need to change the class definition so that it inherits from the **TemplatePage** class:

[C#]

```
public partial class CMSTemplates_MySite_LeftMenuRightText : TemplatePage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_LeftMenuRightText
    Inherits TemplatePage
```

Save all changes.

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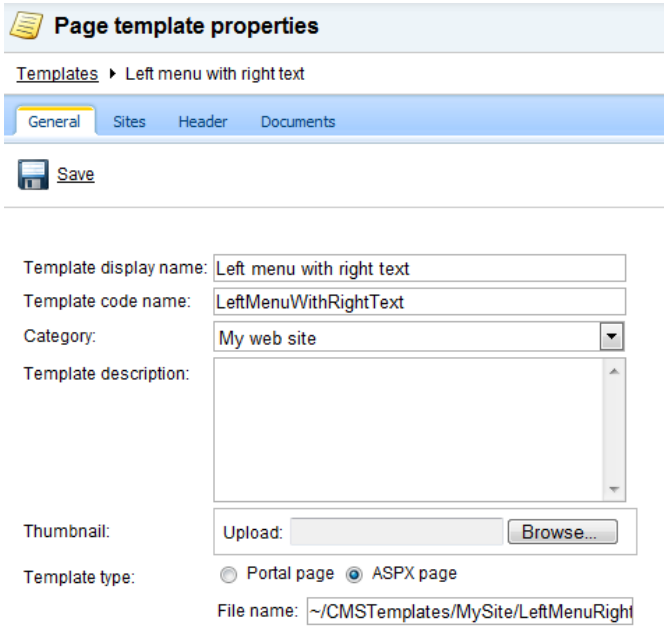
Now we need to register our new page template. Go to **CMS Site Manager -> Development -> Page Templates** and click **My website** and click **New template**. Enter the following values:

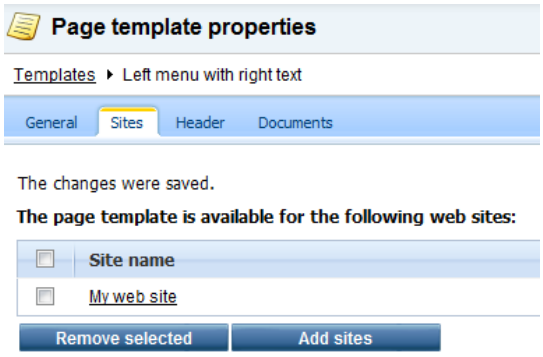
- **Template display name:** Left menu with right text
- **Template code name:** LeftMenuWithRightText

Click **OK**. Enter the following values on the **General** tab:

- **Template type:** ASPX page
- **File name:** ~/CMSTemplates/MySite/LeftMenuRightText.aspx



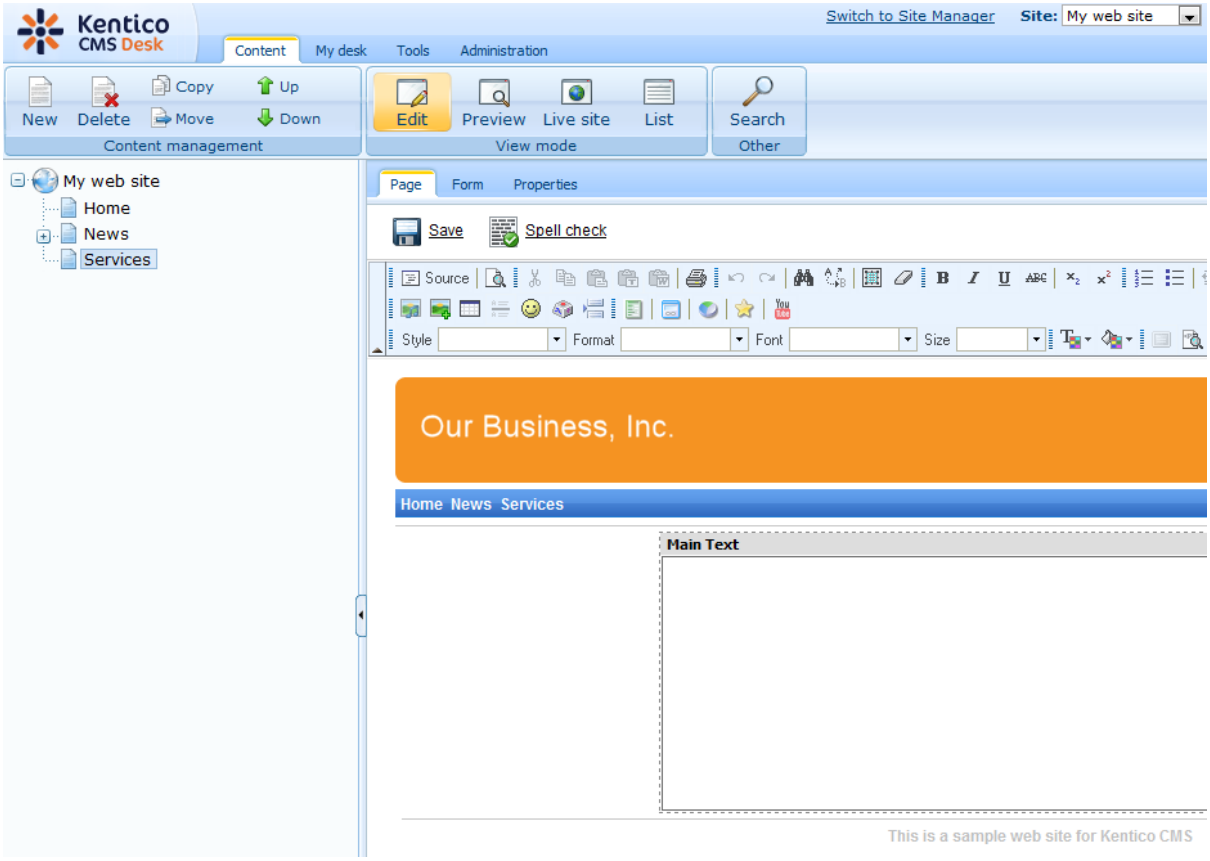
Switch to the **Sites** tab and assign the template to your website:



Now that we created the page template, we can start adding new pages based on this template. Go to **CMS Desk -> Content**, click the **root** and click **New**. Choose to create a new **Page (menu item)** and enter the following values:

- **Page name:** Services
- **Use page template:** My website/Left menu with right text

Click **Save**.
Now you are redirected to the **Page** tab and you can enter some content on the Services page:



Adding sub-pages

Click **New** in the main toolbar and choose to create a new page under the /Services page. Call the page **Service 1** and choose to use page template **My website/Left menu with right text**. Click **Save**. Enter some text into the editable region and click **Save**.

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7.10 Products page

7.10.1 Overview

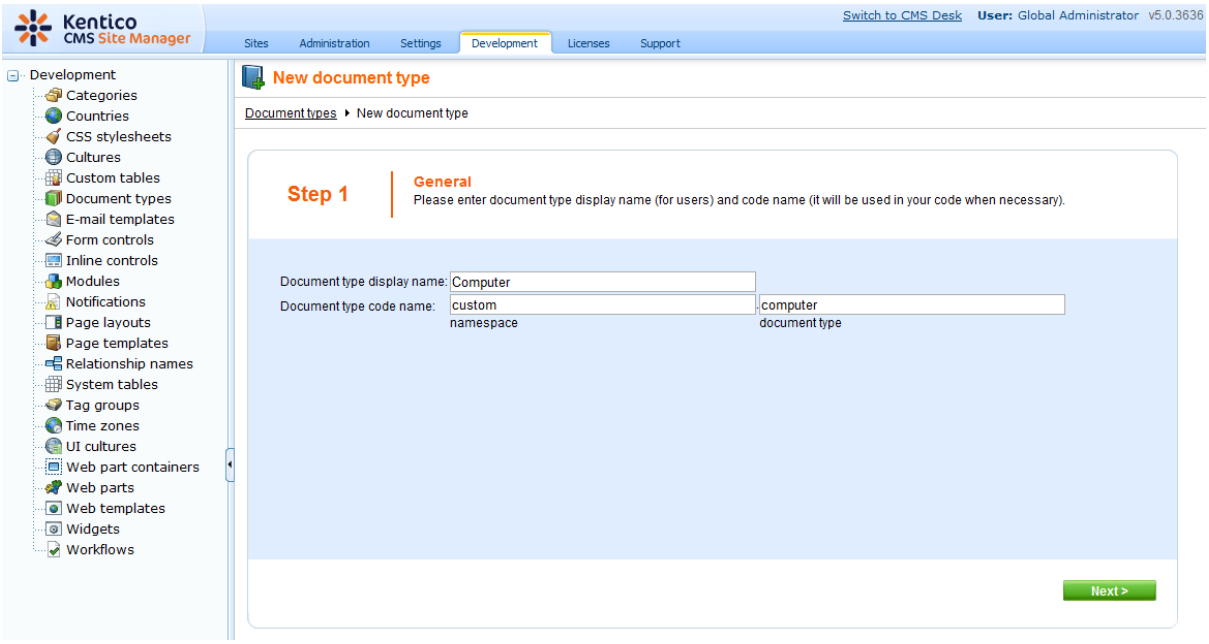
Now we will add a new Products section displaying a list of computers and their technical specification. You will learn how to create a new document type *Computer* and how to display a list of computers on the site. You will also learn how to write transformations.

7.10.2 New document type

Each document in the Kentico CMS repository is of some type, such as news, product, article, etc. Each document type has its own fields. Our document type will describe computer, so it will have a computer name, processor type, RAM size, disk size and a product image field.

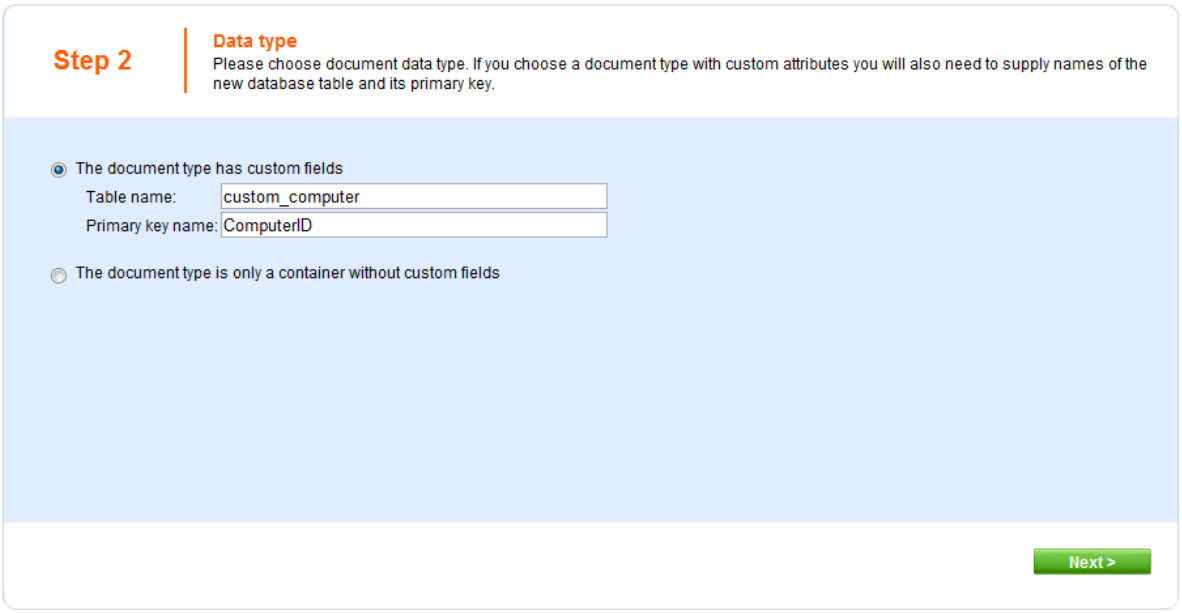
Go to **Site Manager -> Development -> Document types** and click **New document type**. You are redirected to the New document type wizard. In the first step, enter the following values:

- **Document type display name:** Computer *(this name will be displayed to the users)*
- **Document type code name:** custom.computer *(custom is your namespace to distinguish your document types from system types that use the cms namespace, computer is the document type); you will use this value in web part properties later.*



Click **Next**.

In step 2, you need to choose the name of the database table that will be used for storing computer details. You also need to enter the name of the primary key in this table. Leave the default values:



Click **Next**. The wizard has created a new database table for computers. Now you need to define the fields (columns of the table). Click **New attribute** to create a new field. Enter the following values:

- **Attribute name:** ComputerName
- **Attribute type:** Text
- **Attribute size:** 200
- **Field caption:** Computer name
- **Field type:** Text box

Click **OK**. Click **New attribute**. Enter:

- **Attribute name:** ComputerProcessorType
- **Attribute type:** Text
- **Attribute size:** 200
- **Field caption:** Processor type
- **Field type:** Drop-down list, choose to use **Options**
- **Options:** enter the following options, one per line:
  Athlon;Athlon
  Pentium XEON;Pentium XEON
  Pentium Core 2 Duo;Pentium Core 2 Duo

Click **OK**. Click **New attribute**. Enter:

- **Attribute name:** ComputerRamSize
- **Attribute type:** Integer Number
- **Field caption:** RAM (MB)
- **Field type:** Text box

Click **OK**. Click **New attribute**. Enter:

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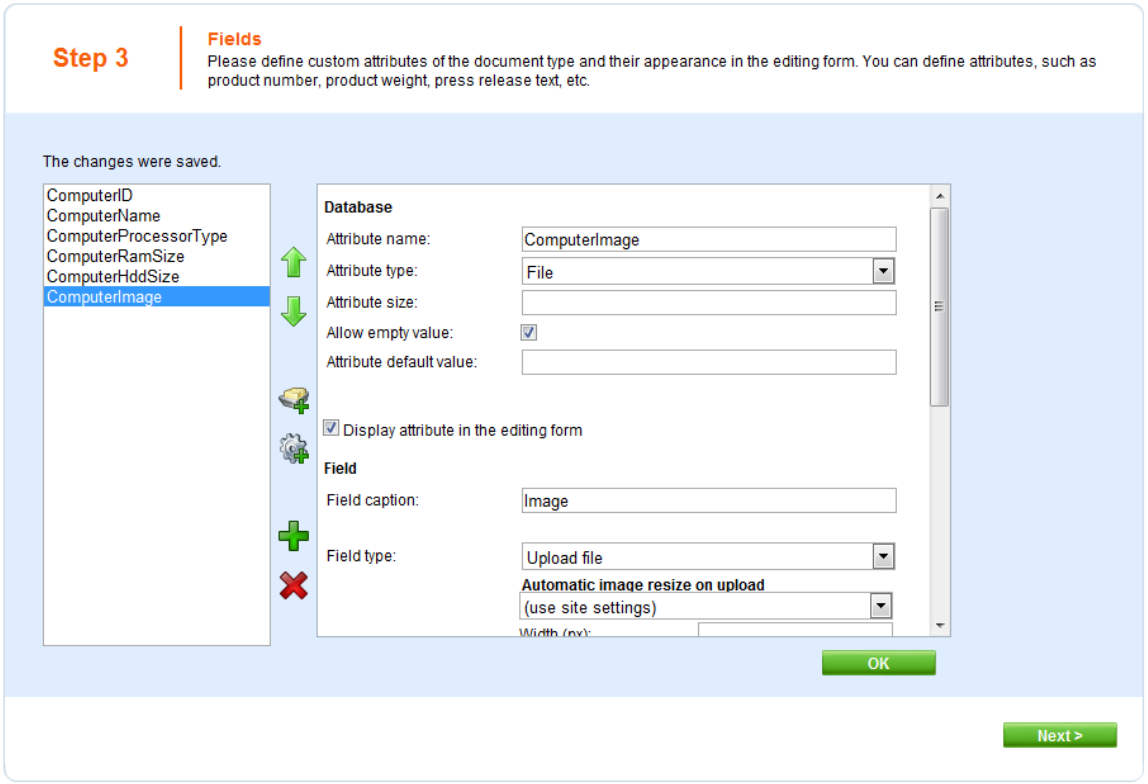
- **Attribute name:** ComputerHddSize
- **Attribute type:** Integer Number
- **Field caption:** HDD (GB)
- **Field type:** Text box

Click **OK**. Click **New attribute**. Enter:

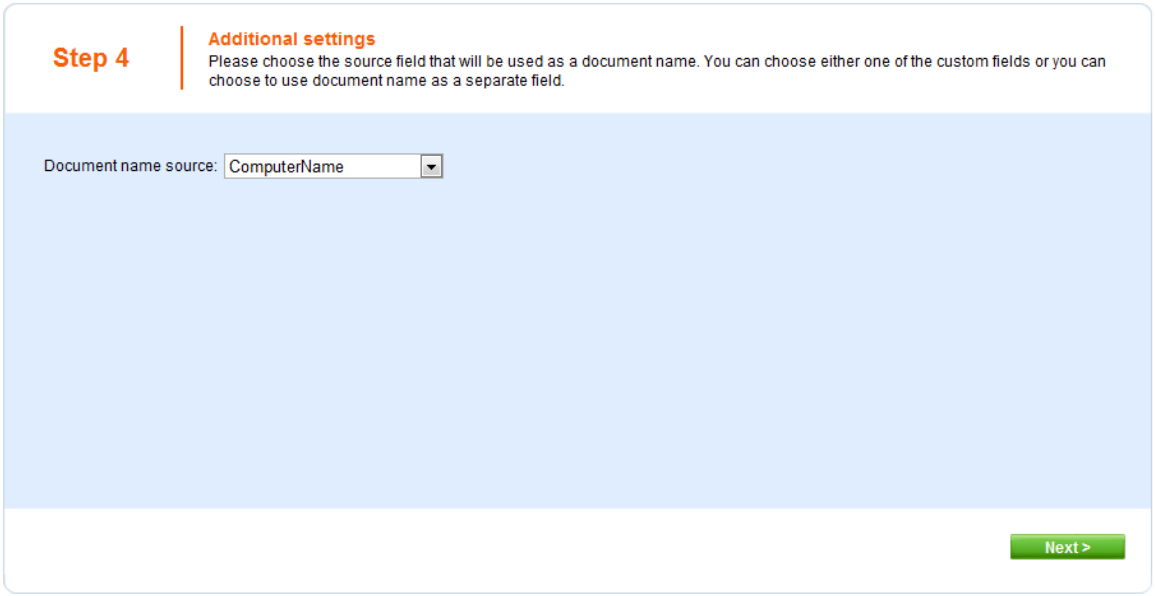
- **Attribute name:** ComputerImage
- **Attribute type:** File
- **Allow empty value:** check the box
- **Field caption:** Image
- **Field type:** Upload file

Click **OK**.

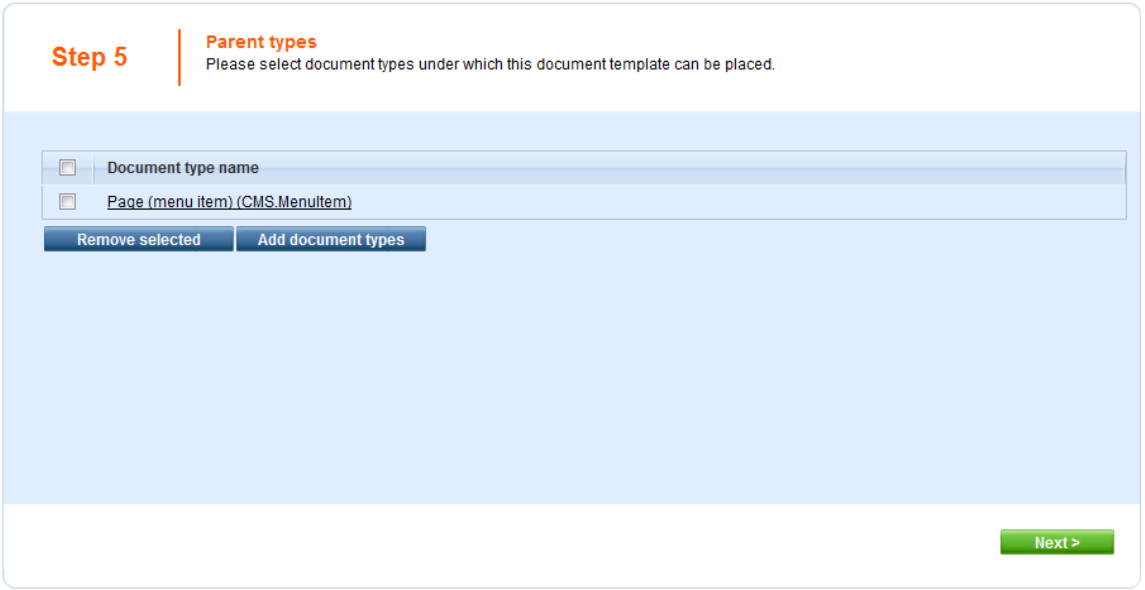


Click **Next**.

Now you need to choose the field that will be used as document name. Choose the **ComputerName** field. It means that when you create a new computer document, its name will be automatically taken from the ComputerName value and this value will appear in site navigation and in CMS Desk content tree.



Click **Next**. In step 5, you need to select the document types under which the computers can be added in the content tree. Check only the **Page (menu item)** value, which means the editors will be able to create computer documents only under some page, not under article or news document in the content tree.



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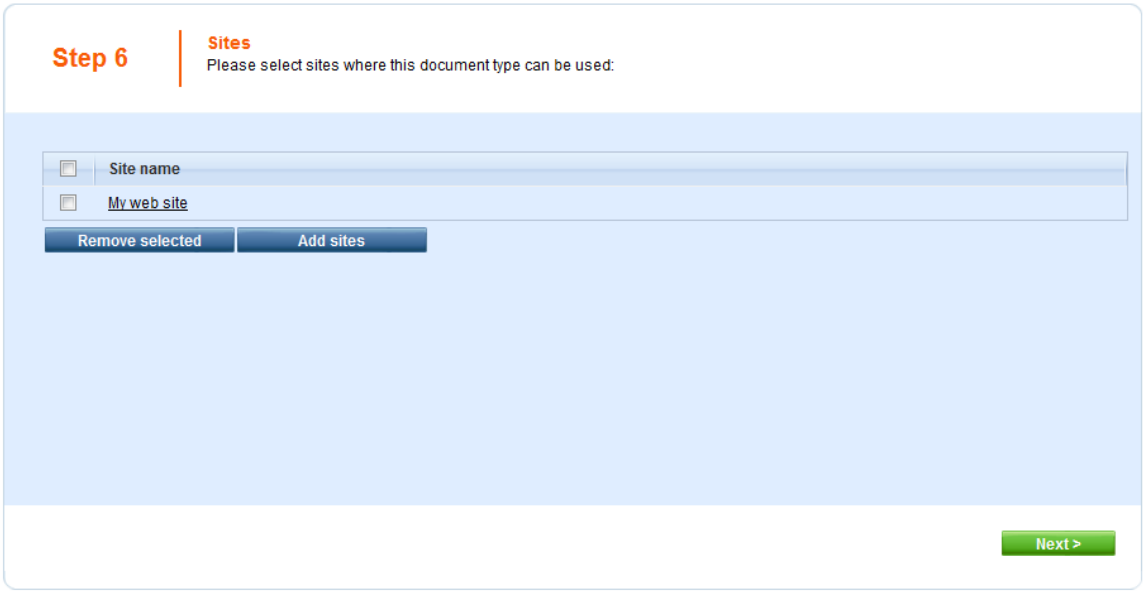
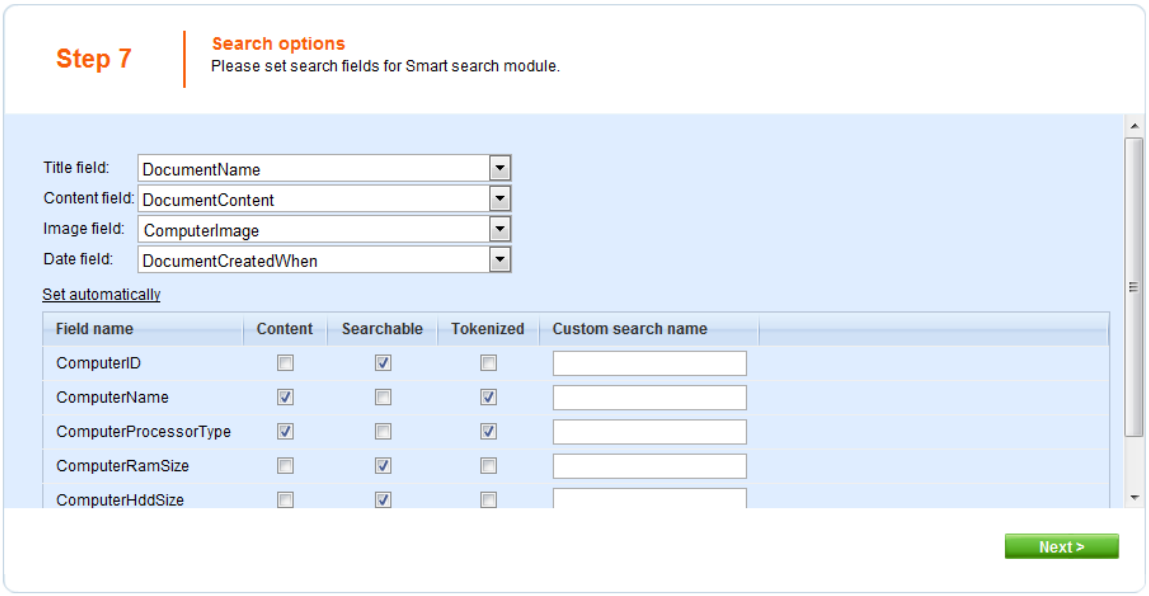
Click **Next**. In step 6, you need to choose which websites will use this document type. Check **My website**.



Click **Next**. In Step 7, you are asked to specify how documents of this type should be indexed for searching and displayed in search results. Select the following values in the drop-downs:

- **Title field**: ComputerName
- **Content field**: DocumentContent
- **Image field**: ComputerImage
- **Date field**: DocumentCreatedWhen

Leave the default values for the rest of the options and click **Next**.



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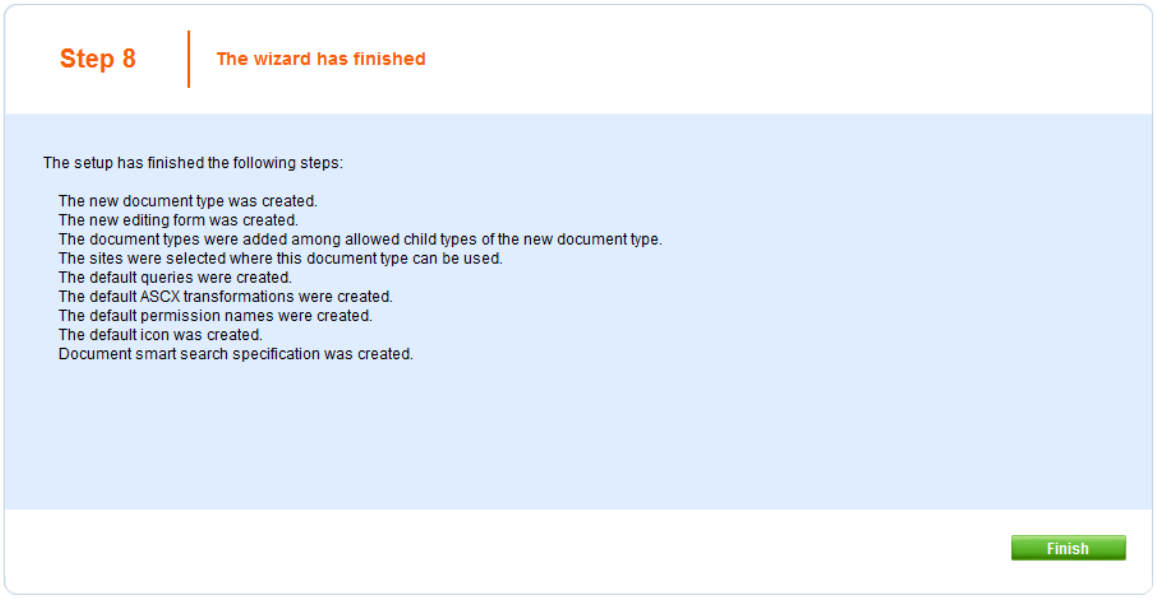
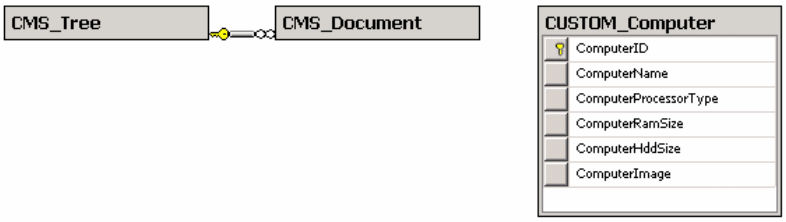
The wizard has finished the configuration of the new document type. It has automatically created not only the database table, but also the SQL queries for SELECT, INSERT, UPDATE, DELETE operations and a default transformation.



You have learned how to define a new document type.

How the content is stored

As you already know, the new document type Computer has its own database table. Each document is stored in three tables: **CMS_TREE** (tree structure), **CMS_Document** (document properties and metadata) and the custom table - in this case **CUSTOM_Computer**:



The system automatically ensures all operations on these tables. The advantage of this storage is that it's very fast and **you can easily write standard SQL SELECT queries to retrieve data** from the repository (i.e. from the Microsoft SQL Server database).

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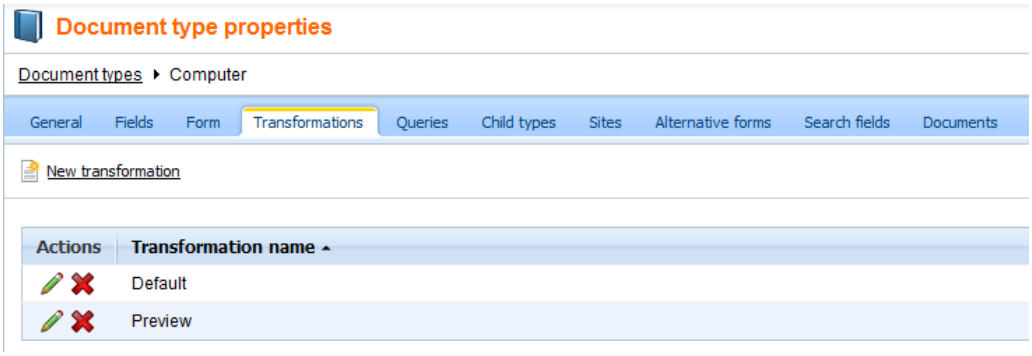
7.10.3 Transformations

Now that we have created a new document type, we need to prepare the transformations that will be used for displaying product details in a list and in a detail view.

In the **Computer** document type properties dialog, click the **Transformations** tab:



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As you can see, the wizard has created some default transformations. We will use them for our detail view. Edit the **Default** transformation, clear the default code and enter the following code:

```
<h1>
    <%# Eval("ComputerName") %>
</h1>
<table>
    <tr>
        <td>
            Processor:
        </td>
        <td>
            <%# Eval("ComputerProcessorType") %>
        </td>
    </tr>
    <tr>
        <td>
            RAM (MB):
        </td>
        <td>
            <%# Eval("ComputerRamSize") %>
        </td>
    </tr>
    <tr>
        <td>
            HDD (GB):
        </td>
        <td>
            <%# Eval("ComputerHddSize") %>
        </td>
    </tr>
    <tr>
        <td>
            Image:
        </td>
        <td>
            <%# GetImage("ComputerImage") %>
        </td>
    </tr>
</table>
```

Click **Save**. As you can see the transformation code is the standard ItemTemplate code that you may already know from ASP.NET 2.0 Repeater and DataList controls. It combines HTML code with ASP.NET commands and data binding expressions. You can use several built-in functions, such as **GetImage** that simplify some tasks. You can find the list of the most important functions directly under the transformation code.

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Now we will create transformation for the list of computers. Go back to the transformation list and edit the **Preview** transformation. Clear the default code and enter the following code:

```
<div  style="text-align:center;border: 1px  solid  #CCCCCC">
<h2>
<a href="<%# GetDocumentUrl() %>"><%# Eval("ComputerName") %></a>
<h2>
<img src="<%# GetFileUrl("ComputerImage") %>?maxsidesize=120" />
</div>
```

Click **OK**.

Please note how the link to the document is created:

```
<a href="<%# GetDocumentUrl() %>"><%# Eval("ComputerName") %></a>
```

It consists of standard HTML tags for links and it inserts the URL and link text dynamically.

Similarly, you can create an image tag with parameter that ensures automatic resize of the longest side to 120 pixels on the server side:

```
<img src="<%# GetFileUrl("ComputerImage") %>?maxsidesize=120" />
```

You have learned how to write transformations for displaying the content of structured documents.

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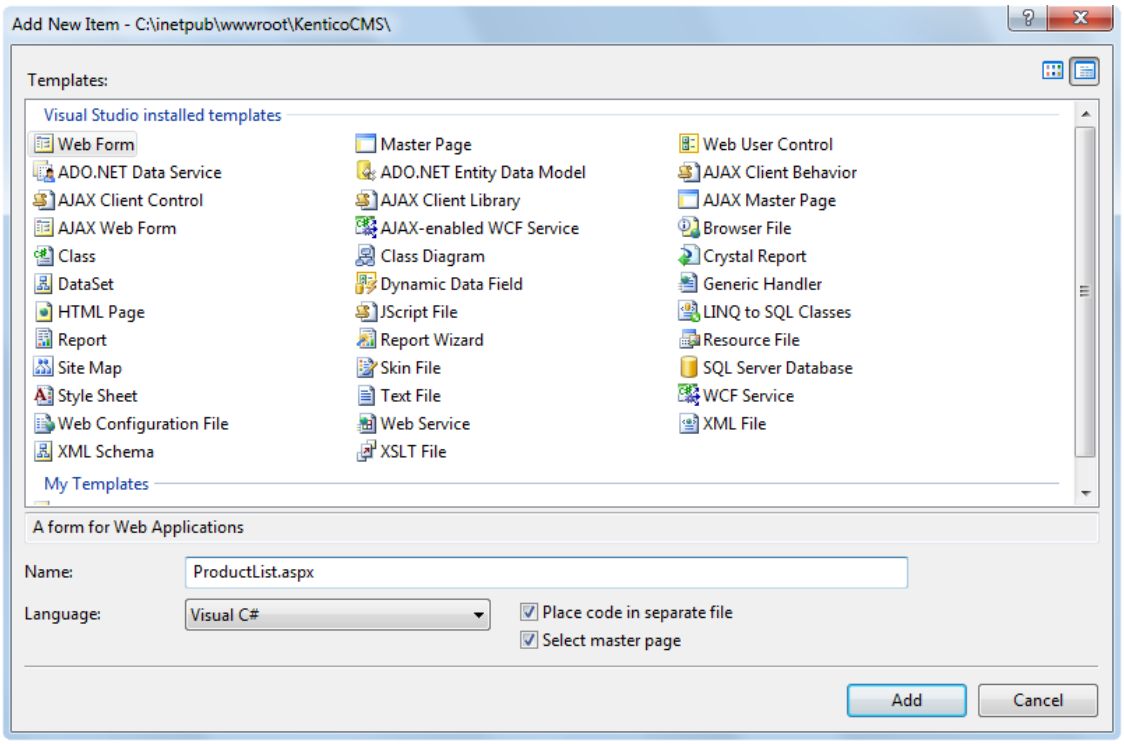
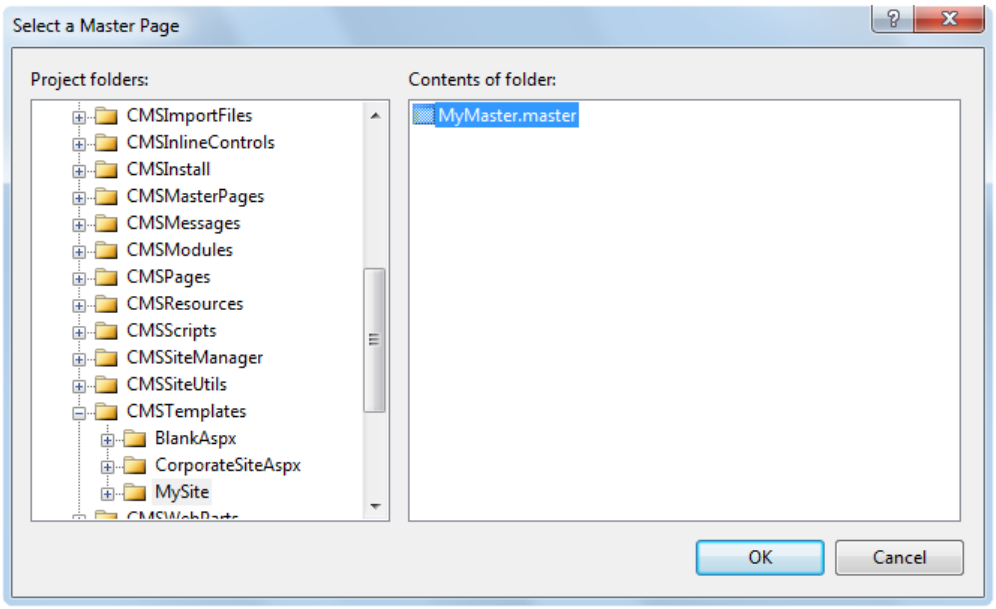
7.10.4 Page template

Now we get to the final step of this chapter: publishing computer specifications on your website. Go to Visual Studio and choose to create a new ASPX page in folder **CMSTemplates\MySite**. Call the page **ProductList.aspx** and check the box **Select master page**:



Choose the **CMSTemplates\MySite\MyMaster.master** page on the next dialog:



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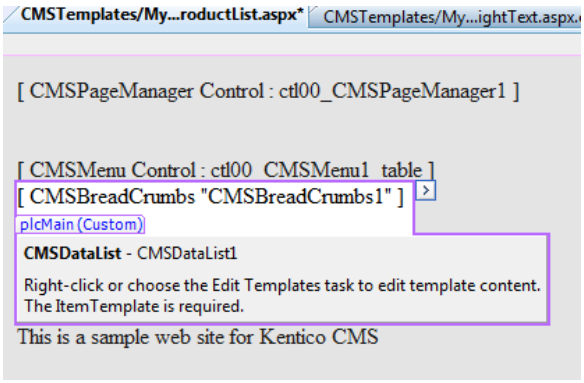
Switch to the **Design** tab and you will see a preview of the page, including the inherited master page. Drag and drop the CMSBreadCrumbs and CMSDataList controls on the page:



Set the following properties of the controls:

CMSDataList

- **ClassNames:** custom.computer (the document types to be displayed)
- **OrderBy:** ComputerName ASC
- **TransformationName:** custom.computer.preview
- **SelectedItemTransformationName:** custom.computer.default
- **RepeatColumns:** 2

Switch to the **code behind** and add reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

You also need to change the class definition so that it inherits from the **TemplatePage** class:

[C#]

```
public partial class CMSTemplates_MySite_ProductList : TemplatePage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_ProductList
    Inherits TemplatePage
```

Save all changes.

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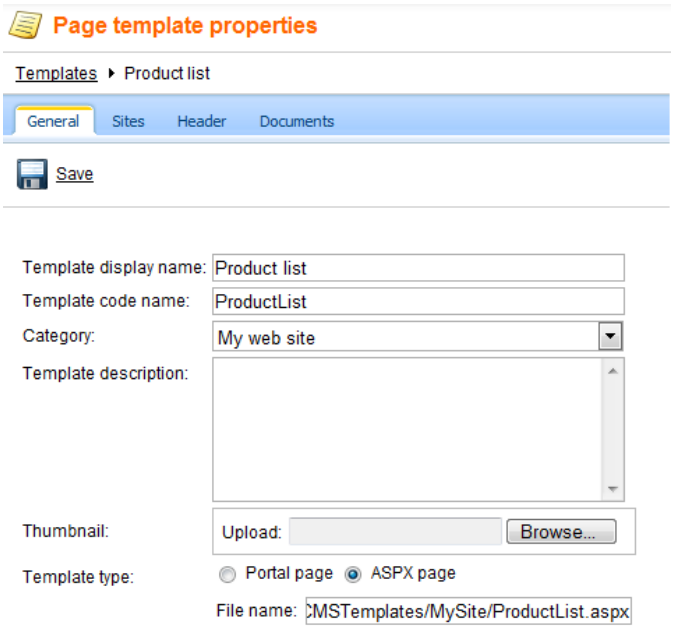
Now we need to register our new page template. Go to CMS Site Manager -> Development -> Page Templates and click **My website** and click **New template**. Enter the following values:

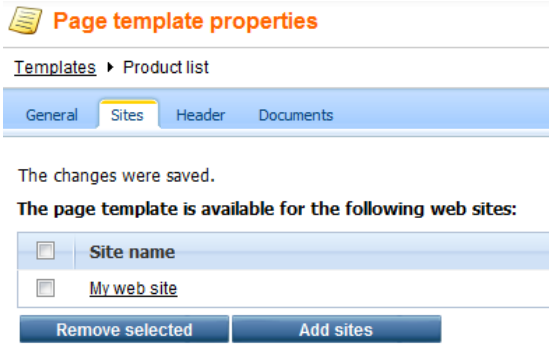
- **Template display name:** Product list
- **Template code name:** ProductList

Click **OK**. Enter the following values on the General tab:

- **Template type:** ASPX page
- **File name:** ~/CMSTemplates/MySite/ProductList.aspx



Switch to the **Sites** tab and assign the template to your website:



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Now that we created the page template, we can start adding new pages based on this template. Go to **CMS Desk -> Content**, click the **root** and click **New**. Choose to create a new **Page (menu item)** and enter the following values:

- **Page name:** Products
- **Use page template:** My website/Product list

Click **Save**.

Now we need to enter some computer details. Click **/Products** in the content tree and click **New**. Choose to create a new computer. Enter the following value:

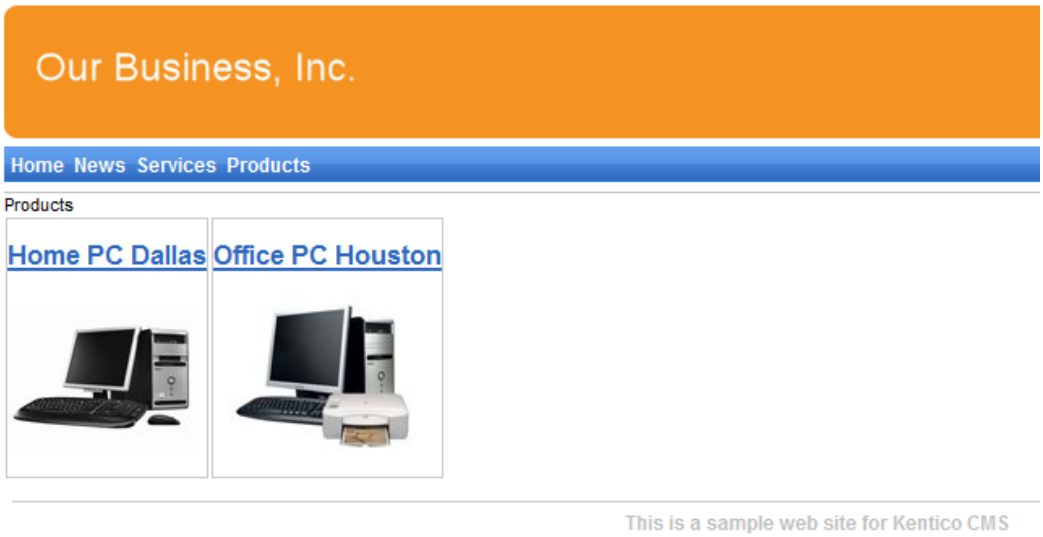
- **Computer name:** Home PC Dallas
- **Processor type:** Athlon
- **RAM (MB):** 512
- **HDD (GB):** 80
- **Image:** upload some image (you can find sample images in folder <Kentico CMS installation>\CodeSamples\SampleWebTemplate\Computer_Images)
- **Publish from/to** - leave the values blank

Click **Save and create another** and enter:

- **Computer name:** Office PC Houston
- **Processor type:** Pentium Core 2 Duo
- **RAM (MB):** 1024
- **HDD (GB):** 120
- **Image:** upload some image (you can find sample images in folder <Kentico CMS installation>\CodeSamples\SampleWebTemplate\Computer_Images)
- **Publish from/to** - leave the values blank

Click **Save**.

Now, when you click **/Products** you will see a page like this:



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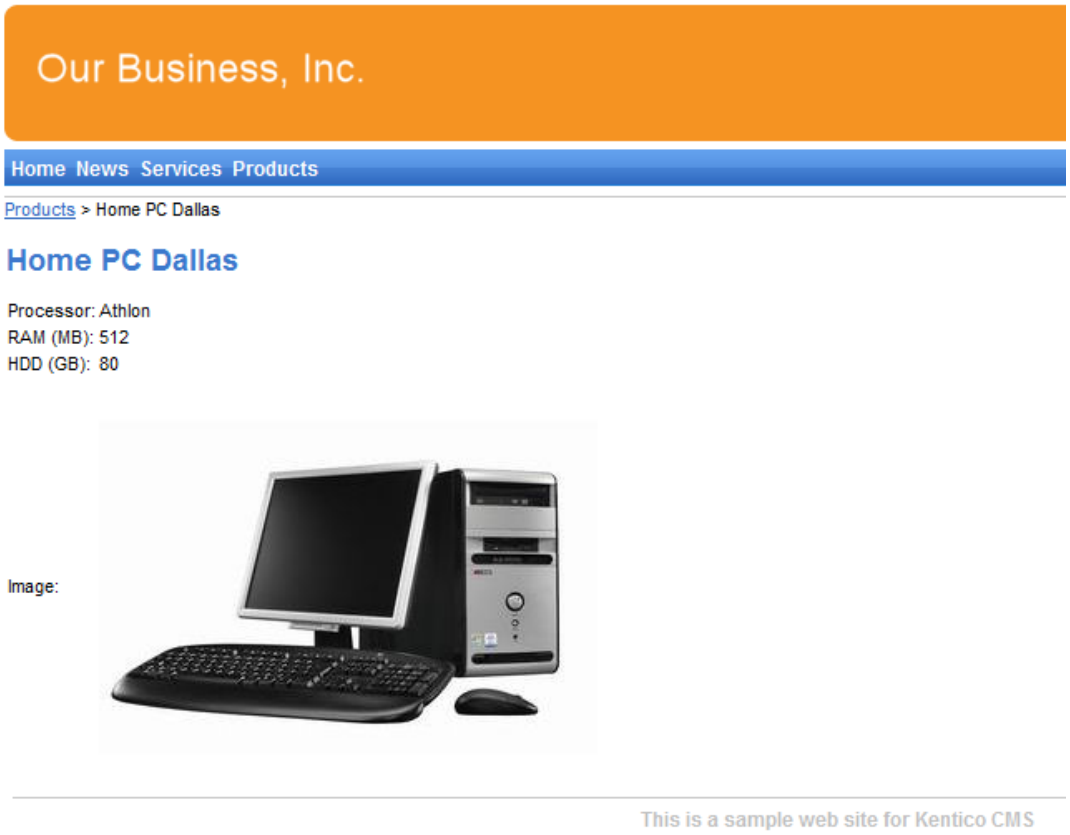
When you click on some link, you will see computer details:



You have learned how to define a new document type and how to publish its documents on the website.

7.11 Search page

Kentico CMS allows you to full-text search all documents in Kentico CMS repository. You can also configure it so that it searches the text inside uploaded documents, such as PDF, DOC or XLS documents. The configuration is described in **Developer's Guide -> Installation and deployment -> Configuration of full-text search in files**. It's not necessary to configure it at this moment since we will use the database search only.

Go to Visual Studio and choose to create a new ASPX page in folder **CMSTemplates\MySite**. Call the page **SearchPage.aspx** and check the box **Select master page**. Choose the **CMSTemplates\MySite\MyMaster.master** page on the next dialog.

Add the following HTML code inside the <asp:content> element:

```
<h1>Search</h1>
```

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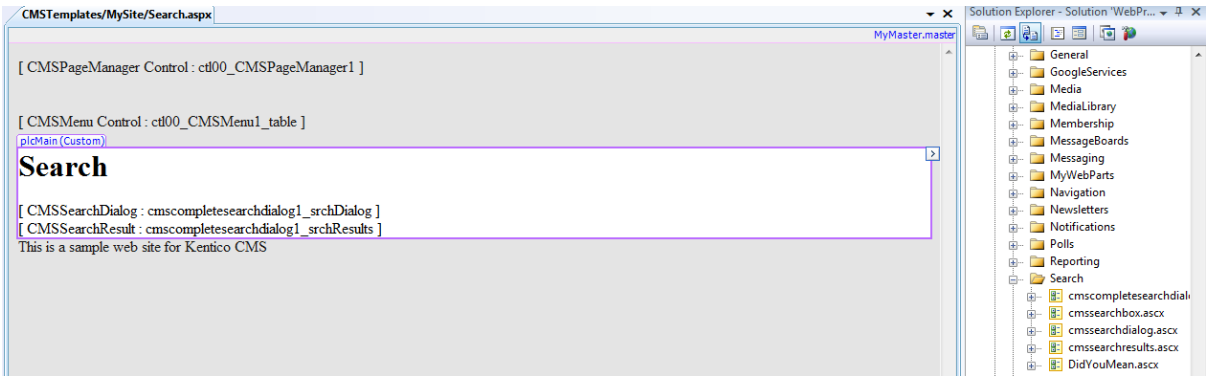
Switch to the **Design** tab and drag and drop the user control **CMSWebParts/search/cmscompletesearchdialog.ascx** under the Search header:



Set its properties:

- **TransformationName:** cms.root.searchresults
- **ShowSearchScope:** false

Switch to the **code behind** and add reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

You also need to change the class definition so that it inherits from the **TemplatePage** class:

[C#]

```
public partial class CMSTemplates_MySite_SearchPage : TemplatePage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_SearchPage
    Inherits TemplatePage
```

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Save the changes. Now we need to register our new page template. Go to **CMS Site Manager -> Development -> Page Templates** and click **My website** and click **New template**. Enter the following values:

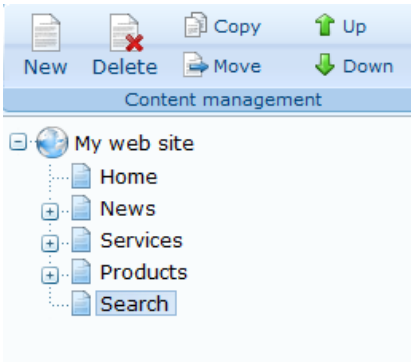
- **Template display name:** Search page
- **Template code name:** searchpage

Click **OK**. Enter the following values on the General tab:
- **Template type:** ASPX page
- **File name:** ~/CMSTemplates/MySite/SearchPage.aspx

Switch to the **Sites** tab and assign the template to **My website** site.

Go to **CMS Desk -> Content**, click the **root** and click **New**. Choose to create a new **Page (menu item)** and enter the following values:
- **Page name:** Search
- **Use page template:** My website/Search page

Click **Save**. Click the **Down** arrow in the main toolbar until you move the **Search** page at the end of the list.



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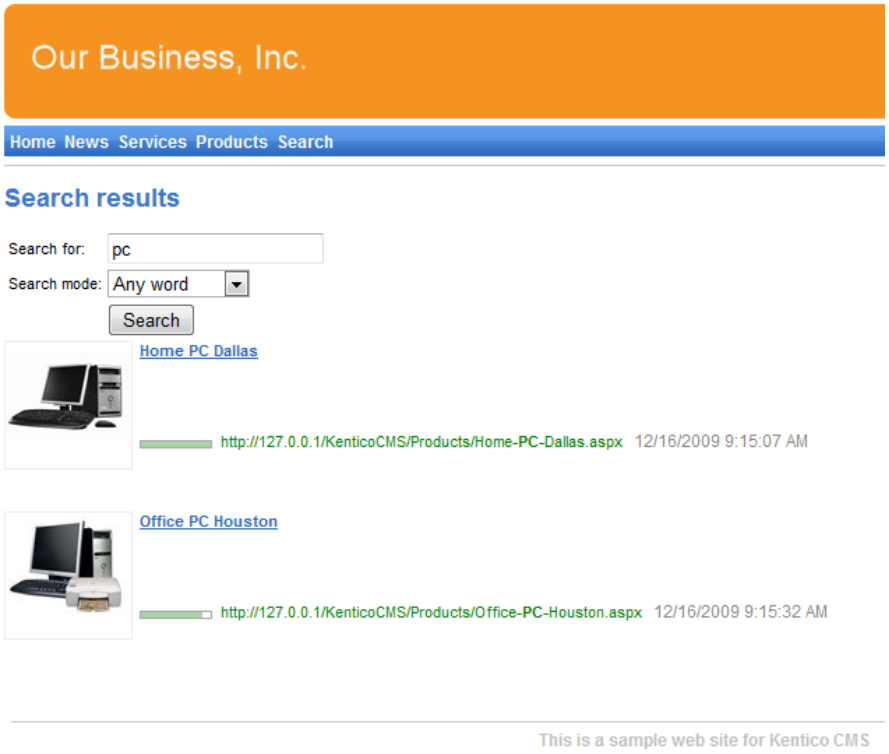
Click the new **/Search** page. You will see the search page. Enter **PC** in the **Search for** box and click **Go**.



When you click some search result, you are redirected to the appropriate document.

Modifying the search results format

If you prefer a different design of the search results, you can modify the format in **Site Manager -> Development -> Document types -> Root -> Transformations -> searchresults** transformation.

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7.12 Secured section for partners

Kentico CMS allows you to create secured site sections that can be accessed only by users who have a valid user name and password. We will create a simple page for partners that can be accessed only by registered users.

Go to **CMS Desk -> Content**, click root and click **New**. Choose to create a new **Page**. Enter page name **Partners** and choose to use the page template **My website/Left menu with right text.** Click **Save**. Click the **Down** arrow in the main toolbar until you move the **Partners** page at the end of the list.

Click **Page** and enter the following text: This is a secured page for partners. Click **Save.**

Click **Properties -> Security**. In the **Access** section of the dialog, click **Yes** and click **OK**. This will ensure that the page can be accessed only by authenticated users.

Now we need to create the logon page. Go to Visual Studio and choose to create a new ASPX page in folder **CMSTemplates\MySite**. Call the page **LogonPage.aspx** and check the box **Select master page**. Choose the **CMSTemplates\MySite\MyMaster.master** page on the next dialog.

Add the following HTML code inside the <asp:content> element:

```
<table border="0" width="100%">
   <tr valign="top">
       <td style="width:50%">
       </td>
       <td style="width:50%">
       </td>
   </tr>
</table>
```

Switch to the **Design** tab and drag and drop the user control **CMSWebParts/Membership/LogonForm.ascx** inside the left column and the **CMSWebParts/Membership/RegistrationForm.ascx** user control into the right column. Set their properties:

LogonForm1
- **AllowPasswordRetrieval:** true
- **SendEmailFrom:** <your e-mail address>

RegistrationForm1
- **AssignRoles:** _notauthenticated_
- **EnableUserAfterRegistration:** true

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Switch to the **code behind** and add reference to the CMS.UIControls namespace:

[C#]

```
using CMS.UIControls;
```

[VB.NET]

```
Imports CMS.UIControls
```

You also need to change the class definition so that it inherits from the **TemplatePage** class:

[C#]

```
public partial class CMSTemplates_MySite_LogonPage : TemplatePage
```

[VB.NET]

```
Partial Class CMSTemplates_MySite_LogonPage
    Inherits TemplatePage
```

Save the changes. Now we need to register the logon page. Go to **Site Manager -> Development -> Page templates**, choose category **My website** and register a new page template with following values:

- **Template display name:** Logon page
- **Template code name:** LogonPage
- **Template type:** ASPX page
- **File name:** ~/CMSTemplates/MySite/logonpage.aspx

Save the changes, switch to the **Sites** tab and assign the template to **My website**. Now go to **CMS Desk -> Content**, click **Root**, click **New** and choose to create a new folder. Call the folder **Special pages**. Create a new page under the **Special pages** folder, call it **Logon** and choose the page template **My website -> Logon page**. Click **Save**.

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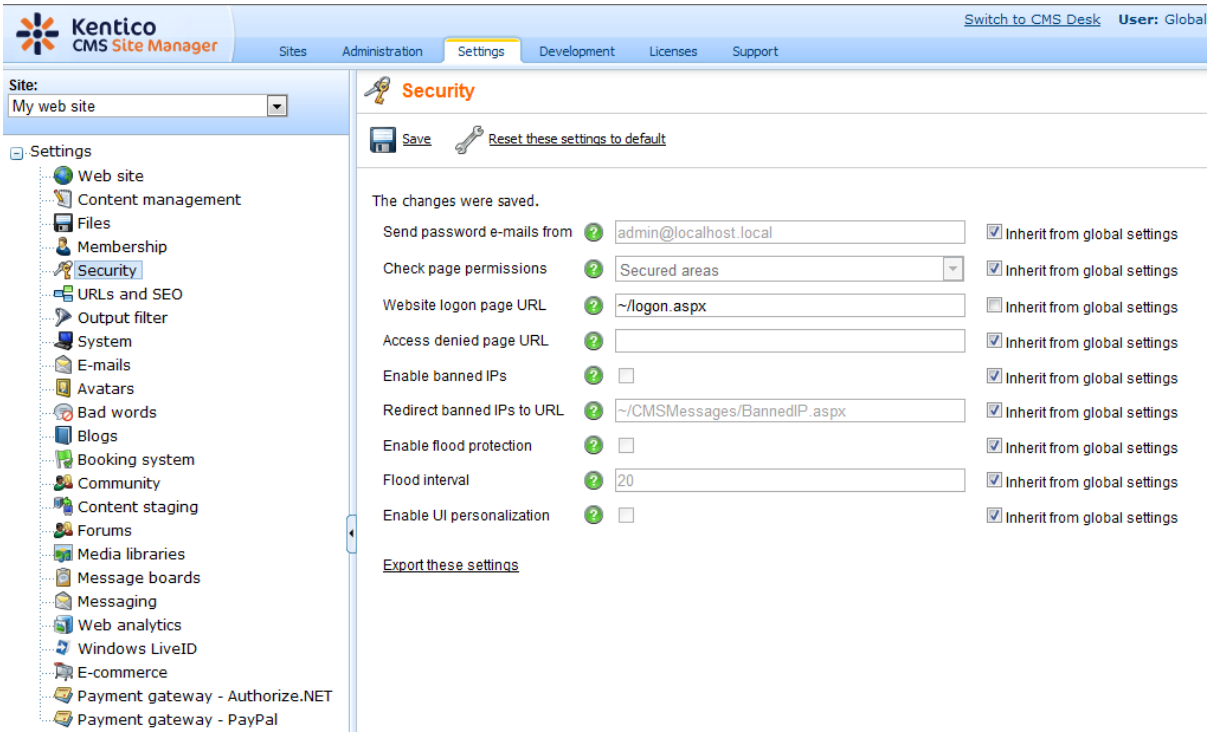
Configuring the logon page

We will need to configure the system so that it uses our new logon page. Go to **Site Manager -> Settings**, choose **My website** in the drop-down list, click **Security** and set the value **Secured areas logon** page to **~/Special-pages/Logon.aspx**, which is the relative URL of our logon page (from the web application root). Click **Save**.



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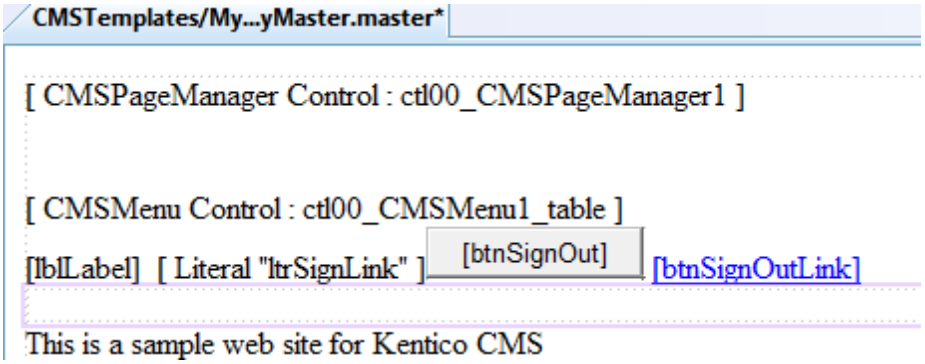
Adding the Sign out button

Now we will add the "current user name" and "sign out" controls to our master page. Open the master page **MyMaster.master** in Design mode in Visual Studio and drag and drop the **CMSWebParts\Membership\CurrentUser.ascx** and **SignOutButton.ascx** controls just under the **CMSMenu** control:



Set the following property values of these controls:

CurrentUser1
- **ShowOnlyWhenAuthenticated:** true
- **CssClass:** CurrentUser

SignOutButton1
- **ShowOnlyWhenAuthenticated:** true

Now go to **Site Manager -> Development -> CSS Stylesheets** and add the following code to the end of the stylesheet used by your site:

```
.CurrentUser
{
color: black;
}
```

Save the changes.

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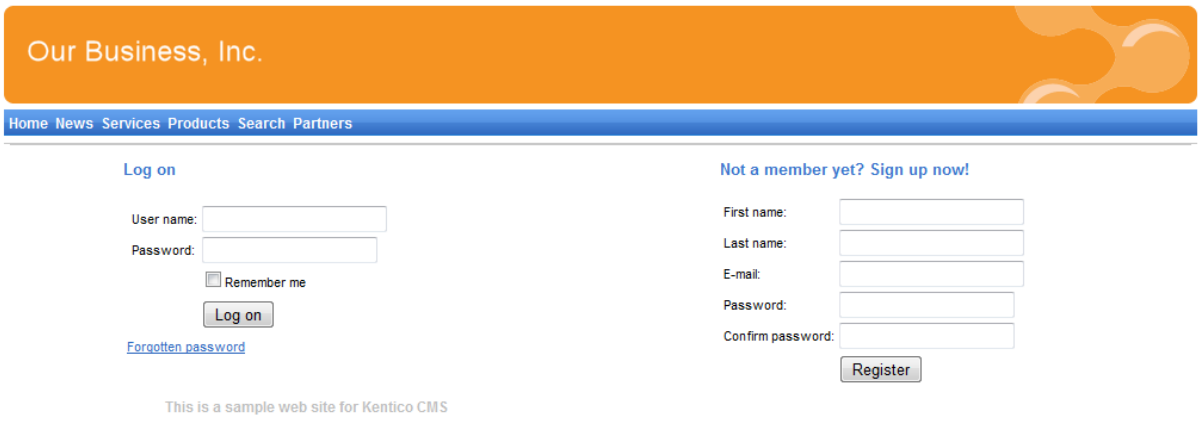
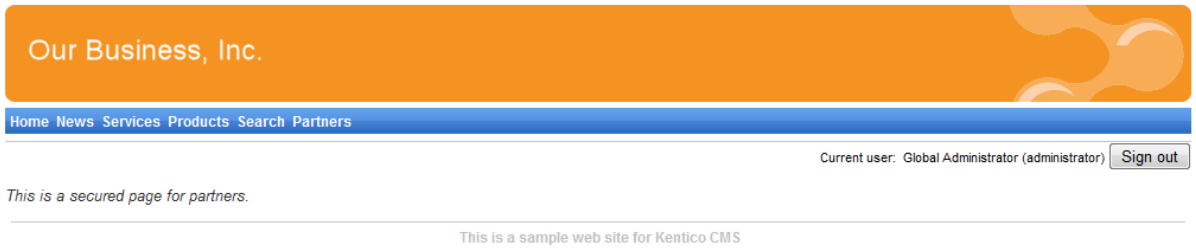
Sign out. Click Partners in the main menu. You are redirected to the logon page:



Now you need either to sign in as administrator or sign up and create a new account. After you sign in successfully, you will see the Partners page content together with the **Sign out** button:



You have learned how to secure part of the website so that it's only accessible for registered users.

Displaying personalized content based on user's permissions

Kentico CMS also allows you to display a personalized content based on user's read permissions. You can e.g. grant gold partners with Read permission for the Gold partners section and then only the gold partners will see the menu item and page content.

You can find more details on personalized content in **Developer's Guide -> Security, permissions and personalization -> Displaying personalized content**.

You have just finished the sample website.

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Part VIII

Further steps

8 Further steps

8.1 Further steps

This is the end of the Kentico CMS Tutorial. If you need any further details, you will find them in Kentico CMS Developer's Guide. It covers also other advanced topics, such as:

- Multi-lingual content
- Multi-site configuration
- Workflow and versioning
- Security administration
- Deployment to the live website
- Newsletters, BizForms and other modules
- Kentico CMS API and extensibility
- and many other features.

If you cannot find some information, please feel free to contact us at http://www.kentico.com/Support.aspx.

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