

HTML Forms

HTML forms are used to pass data to a server.

A form can contain input elements like text fields, checkboxes, radio-buttons, submit buttons and more. A form can also contain select lists, text area, field set, legend, and label elements.

The <form> tag is used to create an HTML form:

```
<form>
.
input elements
.
</form>
```

HTML Forms - The Input Element

The most important form element is the input element.

The input element is used to select user information.

An input element can vary in many ways, depending on the type attribute. An input element can be of type text field, checkbox, password, radio button, submit button, and more.

The most used input types are described below.

Text Fields

<input type="text" /> defines a one-line input field that a user can enter text into:

```
<form>
First name: <input type="text" name="firstname" /><br />
Last name: <input type="text" name="lastname" />
</form>
```

How the HTML code above looks in a browser:

First name:

Last name:

Note: The form itself is not visible. Also note that the default width of a text field is 20 characters.

Password Field

`<input type="password" />` defines a password field:

```
<form>
Password: <input type="password" name="pwd" />
</form>
```

How the HTML code above looks in a browser:

Password:

Note: The characters in a password field are masked (shown as asterisks or circles).

Radio Buttons

`<input type="radio" />` defines a radio button. Radio buttons let a user select ONLY ONE one of a limited number of choices:

```
<form>
<input type="radio" name="sex" value="male" /> Male<br />
<input type="radio" name="sex" value="female" /> Female
</form>
```

How the HTML code above looks in a browser:

☐ Male
☐ Female

Checkboxes

`<input type="checkbox" />` defines a checkbox. Checkboxes let a user select ONE or MORE options of a limited number of choices.

```
<form>
```

```
<input type="checkbox" name="vehicle" value="Bike" /> I have a bike<br />
<input type="checkbox" name="vehicle" value="Car" /> I have a car
</form>
```

How the HTML code above looks in a browser:

- ☐ I have a bike
☐ I have a car
-

Submit Button

`<input type="submit" />` defines a submit button.

A submit button is used to send form data to a server. The data is sent to the page specified in the form's action attribute. The file defined in the action attribute usually does something with the received input:

```
<form name="input" action="html_form_action.asp" method="get">
Username: <input type="text" name="user" />
<input type="submit" value="Submit" />
</form>
```

How the HTML code above looks in a browser:

Username:

If you type some characters in the text field above, and click the "Submit" button, the browser will send your input to a page called "html_form_action.asp". The page will show you the received input.



More Input Examples

[Radio buttons](#)

How to create radio buttons.

[Checkboxes](#)

How to create checkboxes. A user can select or unselect a checkbox.

[Simple drop-down list](#)

How to create a simple drop-down list.

[Drop-down list with a pre-selected value](#)

How to create a drop-down list with a pre-selected value.

[Textarea](#)

How to create a multi-line text input control. In a text-area the user can write an unlimited number of characters.

[Create a button](#)

How to create a button.



Form Examples

[Fieldset around form-data](#)

How to create a border around elements in a form.

```
<html>
```

```
<body>
```

```
<form action="">
```

```
<fieldset>
```

```
<legend>Personal information:</legend>
```

```
Name: <input type="text" size="30" /><br />
```

```
E-mail: <input type="text" size="30" /><br />
```

```
Date of birth: <input type="text" size="10" />
```

```
</fieldset>
```

```
</form>
```

```
</body>
```

```
</html>
```

[Form with text fields and a submit button](#)

How to create a form with two text fields and a submit button.

```
<html>
```

```
<body>
```

```
<form name="input" action="html_form_action.asp" method="get">
```

```
First name: <input type="text" name="FirstName" value="Mickey" /><br />
```

```
Last name: <input type="text" name="LastName" value="Mouse" /><br />
```

```
<input type="submit" value="Submit" />
```

```
</form>
```

```
<p>If you click the "Submit" button, the form-data will be sent to a page called  
"html_form_action.asp".</p>
```

```
</body>
```

```
</html>
```

[Form with checkboxes](#)

How to create a form with two checkboxes and a submit button.

```
<html>
```

```
<body>
```

```
<form name="input" action="html_form_action.asp" method="get">
```

```
<input type="checkbox" name="vehicle" value="Bike" /> I have a bike<br />
```

```
<input type="checkbox" name="vehicle" value="Car" /> I have a car
```

```
<br /><br />
```

```
<input type="submit" value="Submit" />
```

```
</form>
```

```
<p>If you click the "Submit" button, the form-data will be sent to a page called  
"html_form_action.asp".</p>
```

```
</body>
```

```
</html>
```

[Form with radio buttons](#)

How to create a form with two radio buttons, and a submit button.

```
<html>
```

```
<body>
```

```
<form name="input" action="html_form_action.asp" method="get">
```

```
<input type="radio" name="sex" value="male" /> Male<br />
```

```
<input type="radio" name="sex" value="female" /> Female<br />
```

```
<input type="submit" value="Submit" />
```

```
</form>
```

```
<p>If you click the "Submit" button, the form-data will be sent to a page called  
"html_form_action.asp".</p>
```

```
</body>
```

</html>

[Send e-mail from a form](#)

How to send e-mail from a form.

<html>

<body>

<h3>Send e-mail to someone@example.com:</h3>

<form action="mailto:someone@example.com" method="post" enctype="text/plain">

Name:

<input type="text" name="name" value="your name" />

E-mail:

<input type="text" name="mail" value="your email" />

Comment:

<input type="text" name="comment" value="your comment" size="50" />

<input type="submit" value="Send">

<input type="reset" value="Reset">

</form>

</body>

</html>

HTML <select> Tag

Example

Create a select list with four options:

```
<select>
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="mercedes">Mercedes</option>
  <option value="audi">Audi</option>
</select>
```

[Try it yourself »](#)

Definition and Usage

The <select> tag is used to create a select list (drop-down list).

The <option> tags inside the select element define the available options in the list.

Browser Support



The <select> tag is supported in all major browsers.

Differences Between HTML and XHTML

NONE

Tips and Notes

Tip: The select element is a form control and can be used in a form to collect user input.

Optional Attributes

DTD indicates in which [HTML 4.01/XHTML 1.0 DTD](#) the attribute is allowed. S=Strict, T=Transitional, and F=Frameset.

Attribute	Value	Description	DTD
disabled	disabled	Specifies that a drop-down list should be disabled	STF
multiple	multiple	Specifies that multiple options can be selected	STF
name	<i>name</i>	Specifies the name of a drop-down list	STF
size	<i>number</i>	Specifies the number of visible options in a drop-down list	STF

Standard Attributes

The <select> tag supports the following standard attributes:

Attribute	Value	Description	DTD
class	<i>classname</i>	Specifies a classname for an element	STF
dir	rtl ltr	Specifies the text direction for the content in an element	STF
id	<i>id</i>	Specifies a unique id for an element	STF
lang	<i>language_code</i>	Specifies a language code for the content in an element	STF
style	<i>style_definition</i>	Specifies an inline style for an element	STF
tabindex	<i>number</i>	Specifies the tab order of an element	STF

title	<i>text</i>	Specifies extra information about an element	STF
xml:lang	<i>language_code</i>	Specifies a language code for the content in an element, in XHTML documents	STF

More information about [Standard Attributes](#).

Event Attributes

The <select> tag supports the following event attributes:

Attribute	Value	Description	DTD
onblur	<i>script</i>	Script to be run when an element loses focus	STF
onchange	<i>script</i>	Script to be run when an element change	STF
onclick	<i>script</i>	Script to be run on a mouse click	STF
ondblclick	<i>script</i>	Script to be run on a mouse double-click	STF
onfocus	<i>script</i>	Script to be run when an element gets focus	STF
onmousedown	<i>script</i>	Script to be run when mouse button is pressed	STF
onmousemove	<i>script</i>	Script to be run when mouse pointer moves	STF
onmouseout	<i>script</i>	Script to be run when mouse pointer moves out of an element	STF
onmouseover	<i>script</i>	Script to be run when mouse pointer moves over an element	STF
onmouseup	<i>script</i>	Script to be run when mouse button is released	STF
onkeydown	<i>script</i>	Script to be run when a key is pressed	STF
onkeypress	<i>script</i>	Script to be run when a key is pressed and released	STF
Onkeyup	<i>script</i>	Script to be run when a key is released	STF

HTML Form Tags

Tag	Description
<code><form></code>	Defines an HTML form for user input
<code><input /></code>	Defines an input control
<code><textarea></code>	Defines a multi-line text input control
<code><label></code>	Defines a label for an input element
<code><fieldset></code>	Defines a border around elements in a form
<code><legend></code>	Defines a caption for a fieldset element
<code><select></code>	Defines a select list (drop-down list)
<code><optgroup></code>	Defines a group of related options in a select list
<code><option></code>	Defines an option in a select list
<code><button></code>	Defines a push button

HTML `<option>` Tag

Example

A drop-down list with four options:

```
<select>
  <option>Volvo</option>
  <option>Saab</option>
  <option>Mercedes</option>
  <option>Audi</option>
</select>
```

HTML `<textarea>` Tag

Example

A simple text area:

```
<textarea rows="2" cols="20">
```

At W3Schools you will find all the Web-building tutorials you need, from basic HTML to advanced XML, SQL, ASP, and PHP.

```
</textarea>
```

[Try it yourself »](#)

Definition and Usage

The <textarea> tag defines a multi-line text input control.

A text area can hold an unlimited number of characters, and the text renders in a fixed-width font (usually Courier).

The size of a textarea can be specified by the cols and rows attributes, or even better; through CSS' height and width properties.

Browser Support



The <textarea> tag is supported in all major browsers.

Differences Between HTML and XHTML

NONE

Required Attributes

DTD indicates in which [HTML 4.01/XHTML 1.0 DTD](#) the attribute is allowed. S=Strict, T=Transitional, and F=Frameset.

Attribute	Value	Description	DTD
cols	<i>number</i>	Specifies the visible width of a text-area	STF
rows	<i>number</i>	Specifies the visible number of rows in a text-area	STF

Optional Attributes

Attribute	Value	Description	DTD
disabled	disabled	Specifies that a text-area should be disabled	STF
name	<i>name_of_textarea</i>	Specifies the name for a text-area	STF
readonly	readonly	Specifies that a text-area should be read-only	STF

Standard Attributes

The <textarea> tag supports the following standard attributes:

Attribute	Value	Description	DTD
accesskey	<i>character</i>	Specifies a keyboard shortcut to access an element	STF
class	<i>classname</i>	Specifies a classname for an element	STF
dir	rtl ltr	Specifies the text direction for the content in an element	STF
id	<i>id</i>	Specifies a unique id for an element	STF
lang	<i>language_code</i>	Specifies a language code for the content in an element	STF
style	<i>style_definition</i>	Specifies an inline style for an element	STF
tabindex	<i>number</i>	Specifies the tab order of an element	STF
title	<i>text</i>	Specifies extra information about an element	STF
xml:lang	<i>language_code</i>	Specifies a language code for the content in an element, in XHTML documents	STF

More information about [Standard Attributes](#).

Event Attributes

The <textarea> tag supports the following event attributes:

Attribute	Value	Description	DTD
onblur	<i>script</i>	Script to be run when an element loses focus	STF
onchange	<i>script</i>	Script to be run when an element change	STF
onclick	<i>script</i>	Script to be run on a mouse click	STF
ondblclick	<i>script</i>	Script to be run on a mouse double-click	STF
onfocus	<i>script</i>	Script to be run when an element gets focus	STF
onmousedown	<i>script</i>	Script to be run when mouse button is pressed	STF
onmousemove	<i>script</i>	Script to be run when mouse pointer moves	STF
onmouseout	<i>script</i>	Script to be run when mouse pointer moves out of an element	STF
onmouseover	<i>script</i>	Script to be run when mouse pointer moves over an element	STF
onmouseup	<i>script</i>	Script to be run when mouse button is released	STF
onkeydown	<i>script</i>	Script to be run when a key is pressed	STF
onkeypress	<i>script</i>	Script to be run when a key is pressed and released	STF
onkeyup	<i>script</i>	Script to be run when a key is released	STF
onselect	<i>script</i>	Script to be run when an element is selected	STF

More information about [Event Attributes](#).

Your browser does not support inline frames or is currently configured not to display inline frames.

HTML Frames

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HTML <label> Tag

Example

An simple HTML form with two input fields and related labels :

```
<form>
  <label for="male">Male</label>
  <input type="radio" name="sex" id="male" />
  <br />
  <label for="female">Female</label>
  <input type="radio" name="sex" id="female" />
</form>
```

[Try it yourself »](#)

Definition and Usage

The <label> tag defines a label for an input element.

The label element does not render as anything special for the user. However, it provides a usability improvement for mouse users, because if the user clicks on the text within the label element, it toggles the control.

The for attribute of the <label> tag should be equal to the id attribute of the related element to bind them together.

Browser Support



The <label> tag is supported in all major browsers.

Note: Not supported in Safari 2 or earlier versions.

Differences Between HTML and XHTML

NONE

Optional Attributes

DTD indicates in which [HTML 4.01/XHTML 1.0 DTD](#) the attribute is allowed. S=Strict, T=Transitional, and F=Frameset.

Attribute	Value	Description	DTD
for	<i>element_id</i>	Specifies which form element a label is bound to	STF

Standard Attributes

The <label> tag supports the following standard attributes:

Attribute	Value	Description	DTD
accesskey	<i>character</i>	Specifies a keyboard shortcut to access an element	STF
class	<i>classname</i>	Specifies a classname for an element	STF
dir	rtl ltr	Specifies the text direction for the content in an element	STF
id	<i>id</i>	Specifies a unique id for an element	STF
lang	<i>language_code</i>	Specifies a language code for the content in an element	STF

style	<i>style_definition</i>	Specifies an inline style for an element	STF
title	<i>text</i>	Specifies extra information about an element	STF
xml:lang	<i>language_code</i>	Specifies a language code for the content in an element, in XHTML documents	STF

More information about [Standard Attributes](#).

Event Attributes

The <label> tag supports the following event attributes:

Attribute	Value	Description	DTD
onblur	<i>script</i>	Script to be run when an element loses focus	STF
onclick	<i>script</i>	Script to be run on a mouse click	STF
ondblclick	<i>script</i>	Script to be run on a mouse double-click	STF
onfocus	<i>script</i>	Script to be run when an element gets focus	STF
onmousedown	<i>script</i>	Script to be run when mouse button is pressed	STF
onmousemove	<i>script</i>	Script to be run when mouse pointer moves	STF
onmouseout	<i>script</i>	Script to be run when mouse pointer moves out of an element	STF
onmouseover	<i>script</i>	Script to be run when mouse pointer moves over an element	STF
onmouseup	<i>script</i>	Script to be run when mouse button is released	STF
onkeydown	<i>script</i>	Script to be run when a key is pressed	STF
onkeypress	<i>script</i>	Script to be run when a key is pressed and released	STF
onkeyup	<i>script</i>	Script to be run when a key is released	STF

With frames, several Web pages can be displayed in the same browser window.

ATTENTION. Do not expect frames to be supported in future versions of HTML.

HTML <optgroup> Tag

Example

Group together related options with <optgroup> tags:

```
<select>
  <optgroup label="Swedish Cars">
    <option value="volvo">Volvo</option>
    <option value="saab">Saab</option>
  </optgroup>
  <optgroup label="German Cars">
    <option value="mercedes">Mercedes</option>
    <option value="audi">Audi</option>
  </optgroup>
</select>
```

[Try it yourself »](#)

Definition and Usage

The <optgroup> tag is used to group together related options in a select list.

If you have a long list of options, groups of related options are easier to handle for the user.

Browser Support



The <optgroup> tag is supported in all major browsers.

Differences Between HTML and XHTML

NONE

Required Attributes

DTD indicates in which [HTML 4.01/XHTML 1.0 DTD](#) the attribute is allowed. S=Strict, T=Transitional, and F=Frameset.

Attribute	Value	Description	DTD
label	text	Specifies a description for a group of options	STF

Optional Attributes

Attribute	Value	Description	DTD
disabled	disabled	Specifies that an option group should be disabled	STF

Standard Attributes

The <optgroup> tag supports the following standard attributes:

Attribute	Value	Description	DTD
class	<i>classname</i>	Specifies a classname for an element	STF
dir	rtl ltr	Specifies the text direction for the content in an element	STF
id	<i>id</i>	Specifies a unique id for an element	STF
lang	<i>language_code</i>	Specifies a language code for the content in an element	STF
style	<i>style_definition</i>	Specifies an inline style for an element	STF
title	text	Specifies extra information about an element	STF

xml:lang	<i>language_code</i>	Specifies a language code for the content in an element, in XHTML documents	STF

More information about [Standard Attributes](#).

Event Attributes

The <optgroup> tag supports the following event attributes:

Attribute	Value	Description	DTD
onclick	<i>script</i>	Script to be run on a mouse click	STF
ondblclick	<i>script</i>	Script to be run on a mouse double-click	STF
onmousedown	<i>script</i>	Script to be run when mouse button is pressed	STF
onmousemove	<i>script</i>	Script to be run when mouse pointer moves	STF
onmouseout	<i>script</i>	Script to be run when mouse pointer moves out of an element	STF
onmouseover	<i>script</i>	Script to be run when mouse pointer moves over an element	STF
onmouseup	<i>script</i>	Script to be run when mouse button is released	STF
onkeydown	<i>script</i>	Script to be run when a key is pressed	STF
onkeypress	<i>script</i>	Script to be run when a key is pressed and released	STF
onkeyup	<i>script</i>	Script to be run when a key is released	STF

Try-It-Yourself Examples



[Vertical frameset](#)

How to make a vertical frameset with three different documents.

[Horizontal frameset](#)

How to make a horizontal frameset with three different documents.

(You can find more examples at the bottom of this page)

HTML Frames

With frames, you can display more than one HTML document in the same browser window. Each HTML document is called a frame, and each frame is independent of the others.

The disadvantages of using frames are:

- Frames are not expected to be supported in future versions of HTML
 - Frames are difficult to use. (Printing the entire page is difficult).
 - The web developer must keep track of more HTML documents
-

The HTML frameset Element

The frameset element holds one or more frame elements. Each frame element can hold a separate document.

The frameset element states HOW MANY columns or rows there will be in the frameset, and HOW MUCH percentage/pixels of space will occupy each of them.

The HTML frame Element

The <frame> tag defines one particular window (frame) within a frameset.

In the example below we have a frameset with two columns.

The first column is set to 25% of the width of the browser window. The second column is set to 75% of the width of the browser window. The document "frame_a.htm" is put into the first column, and the document "frame_b.htm" is put into the second column:

```
<frameset cols="25%,75%">
```

```
<frame src="frame_a.htm" />
<frame src="frame_b.htm" />
</frameset>
```

Note: The frameset column size can also be set in pixels (cols="200,500"), and one of the columns can be set to use the remaining space, with an asterisk (cols="25%,*").

Basic Notes - Useful Tips

Tip: If a frame has visible borders, the user can resize it by dragging the border. To prevent a user from doing this, you can add noresize="noresize" to the <frame> tag.

Note: Add the <noframes> tag for browsers that do not support frames.

Important: You cannot use the <body></body> tags together with the <frameset></frameset> tags! However, if you add a <noframes> tag containing some text for browsers that do not support frames, you will have to enclose the text in <body></body> tags! See how it is done in the first example below.



More Examples

[How to use the <noframes> tag](#)

How to use the <noframes> tag (for browsers that do not support frames).

```
<html>
```

```
<frameset rows="25%,50%,25%">
```

```
<frame src="frame_a.htm" />
```

```
<frame src="frame_b.htm" />
```

```
<frame src="frame_c.htm" />
```

</frameset>

</html>

2.example

<html>

<frameset cols="25%,50%,25%">

<frame src="frame_a.htm" />

<frame src="frame_b.htm" />

<frame src="frame_c.htm" />

<noframes>

<body>Your browser does not handle frames!</body>

</noframes>

</frameset>

</html>

[Nested framesets](#)

How to create a frameset with three documents, and how to mix them in rows and columns.

```
<html>
```

```
<frameset rows="50%,50%">
```

```
<frame src="frame_a.htm" />
```

```
<frameset cols="25%,75%">
```

```
<frame src="frame_b.htm" />
```

```
<frame src="frame_c.htm" />
```

```
</frameset>
```

```
</frameset>
```

```
</html>
```

[Frameset with noresize="noresize"](#)

How to use the noresize attribute. Move the mouse over the borders between the frames and notice that you cannot move the borders.

```
<html>
```

```
<frameset rows="50%,50%">
```

```
<frame noresize="noresize" src="frame_a.htm" />
```

```
<frame noresize="noresize" src="frame_b.htm" />
```

```
</frameset>
```

```
</html>
```

[Navigation frame](#)

How to make a navigation frame. The navigation frame contains a list of links with the second frame as the target. The file called "tryhtml_contents.htm" contains three links. The source code of the links:

```
<a href="frame_a.htm" target="showframe">Frame a</a><br>
```

```
<a href="frame_b.htm" target="showframe">Frame b</a><br>
```

```
<a href="frame_c.htm" target="showframe">Frame c</a>
```

The second frame will show the linked document.

```
<html>
```

```
<frameset cols="120,*">
```

```
<frame src="tryhtml_contents.htm" />
```

```
<frame src="frame_a.htm" name="showframe" />
```

```
</frameset>
```

```
</html>
```

[Jump to a specified section within a frame](#)

Two frames. One of the frames has a source to a specified section in a file. The specified section is made with in the "link.htm" file.

```
<html>
```

```
<frameset cols="20%,80%">
```

```
<frame src="frame_a.htm" />
```

```
<frame src="link.htm#C10" />
```

```
</frameset>
```

```
</html>
```

[Jump to a specified section with frame navigation](#)

Two frames. The navigation frame (content.htm) to the left contains a list of links with the second frame (link.htm) as a target. The second frame shows the linked document. One of the links in the navigation frame is linked to a specified section in the target file. The HTML code in the file "content.htm" looks like this: Link without Anchor
Link with Anchor.

```
<html>
```

```
<frameset cols="180,*">
```

```
<frame src="content.htm" />
```

```
<frame src="link.htm" name="showframe" />
```

```
</frameset>
```

```
</html>
```

HTML Frame Tags

Tag	Description
<frameset>	Defines a set of frames
<frame />	Defines a sub window (a frame)
<noframes>	Defines a noframe section for browsers that do not handle frames

HTML Iframes

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An iframe is used to display a web page within a web page.

Syntax for adding an iframe:

```
<iframe src="URL"></iframe>
```

The URL points to the location of the separate page.

Iframe - Set Height and Width

The height and width attributes are used to specify the height and width of the iframe.

The attribute values are specified in pixels by default, but they can also be in percent (like "80%").

Example

```
<iframe src="demo_iframe.htm" width="200" height="200"></iframe>
```

[Try it yourself »](#)

Iframe - Remove the Border

The frameborder attribute specifies whether or not to display a border around the iframe.

Set the attribute value to "0" to remove the border:

Example

```
<iframe src="demo_iframe.htm" frameborder="0"></iframe>
```

[Try it yourself »](#)

Use iframe as a Target for a Link

An iframe can be used as the target frame for a link.

The target attribute of a link must refer to the name attribute of the iframe:

Example

```
<iframe src="demo_iframe.htm" name="iframe_a"></iframe>  
<p><a href="http://www.w3schools.com" target="iframe_a">W3Schools.com</a></p>
```

[Try it yourself »](#)

HTML iframe Tag

Tag	Description
<iframe>	Defines an inline sub window (frame)

HTML Colors

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Colors are displayed combining RED, GREEN, and BLUE light.

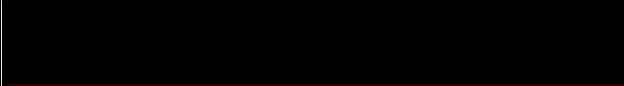
Color Values

HTML colors are defined using a hexadecimal notation (HEX) for the combination of Red, Green, and Blue color values (RGB).

The lowest value that can be given to one of the light sources is 0 (in HEX: 00). The highest value is 255 (in HEX: FF).

HEX values are specified as 3 pairs of two-digit numbers, starting with a # sign.

Color Values

Color	Color HEX	Color RGB
	#000000	rgb(0,0,0)
	#FF0000	rgb(255,0,0)
	#00FF00	rgb(0,255,0)
	#0000FF	rgb(0,0,255)
	#FFFF00	rgb(255,255,0)

	#00FFFF	rgb(0,255,255)
	#FF00FF	rgb(255,0,255)
	#C0C0C0	rgb(192,192,192)
	#FFFFFF	rgb(255,255,255)

[Try it yourself »](#)

16 Million Different Colors

The combination of Red, Green, and Blue values from 0 to 255, gives more than 16 million different colors (256 x 256 x 256).

If you look at the color table below, you will see the result of varying the red light from 0 to 255, while keeping the green and blue light at zero.

To see the full list of color mixes when RED varies from 0 to 255, click on one of the HEX or RGB values below.

Red Light	Color HEX	Color RGB
	#000000	rgb(0,0,0)
	#080000	rgb(8,0,0)
	#100000	rgb(16,0,0)
	#180000	rgb(24,0,0)
	#200000	rgb(32,0,0)
	#280000	rgb(40,0,0)
	#300000	rgb(48,0,0)
	#380000	rgb(56,0,0)

	#400000	rgb(64,0,0)
	#480000	rgb(72,0,0)
	#500000	rgb(80,0,0)
	#580000	rgb(88,0,0)
	#600000	rgb(96,0,0)
	#680000	rgb(104,0,0)
	#700000	rgb(112,0,0)
	#780000	rgb(120,0,0)
	#800000	rgb(128,0,0)
	#880000	rgb(136,0,0)
	#900000	rgb(144,0,0)
	#980000	rgb(152,0,0)
	#A00000	rgb(160,0,0)
	#A80000	rgb(168,0,0)
	#B00000	rgb(176,0,0)
	#B80000	rgb(184,0,0)
	#C00000	rgb(192,0,0)
	#C80000	rgb(200,0,0)
	#D00000	rgb(208,0,0)
	#D80000	rgb(216,0,0)
	#E00000	rgb(224,0,0)
	#E80000	rgb(232,0,0)
	#F00000	rgb(240,0,0)

	#F80000	rgb(248,0,0)
	#FF0000	rgb(255,0,0)

Shades of Gray

Gray colors are created by using an equal amount of power to all of the light sources.

To make it easier for you to select the correct shade, we have created a table of gray shades for you:

Gray Shades	Color HEX	Color RGB
	#000000	rgb(0,0,0)
	#080808	rgb(8,8,8)
	#101010	rgb(16,16,16)
	#181818	rgb(24,24,24)
	#202020	rgb(32,32,32)
	#282828	rgb(40,40,40)
	#303030	rgb(48,48,48)
	#383838	rgb(56,56,56)
	#404040	rgb(64,64,64)
	#484848	rgb(72,72,72)
	#505050	rgb(80,80,80)
	#585858	rgb(88,88,88)
	#606060	rgb(96,96,96)

	#686868	rgb(104,104,104)
	#707070	rgb(112,112,112)
	#787878	rgb(120,120,120)
	#808080	rgb(128,128,128)
	#888888	rgb(136,136,136)
	#909090	rgb(144,144,144)
	#989898	rgb(152,152,152)
	#A0A0A0	rgb(160,160,160)
	#A8A8A8	rgb(168,168,168)
	#B0B0B0	rgb(176,176,176)
	#B8B8B8	rgb(184,184,184)
	#C0C0C0	rgb(192,192,192)
	#C8C8C8	rgb(200,200,200)
	#D0D0D0	rgb(208,208,208)
	#D8D8D8	rgb(216,216,216)
	#E0E0E0	rgb(224,224,224)
	#E8E8E8	rgb(232,232,232)
	#F0F0F0	rgb(240,240,240)
	#F8F8F8	rgb(248,248,248)
	#FFFFFF	rgb(255,255,255)

Web Safe Colors?

Some years ago, when computers supported max 256 different colors, a list of 216 "Web Safe Colors" was suggested as a Web standard, reserving 40 fixed system colors.

The 216 cross-browser color palette was created to ensure that all computers would display the colors correctly when running a 256 color palette.

This is not important today, since most computers can display millions of different colors. Anyway, here is the list:

000000	000033	000066	000099	0000CC	0000FF
003300	003333	003366	003399	0033CC	0033FF
006600	006633	006666	006699	0066CC	0066FF
009900	009933	009966	009999	0099CC	0099FF
00CC00	00CC33	00CC66	00CC99	00CCCC	00CCFF
00FF00	00FF33	00FF66	00FF99	00FFCC	00FFFF
330000	330033	330066	330099	3300CC	3300FF
333300	333333	333366	333399	3333CC	3333FF
336600	336633	336666	336699	3366CC	3366FF
339900	339933	339966	339999	3399CC	3399FF
33CC00	33CC33	33CC66	33CC99	33CCCC	33CCFF
33FF00	33FF33	33FF66	33FF99	33FFCC	33FFFF
660000	660033	660066	660099	6600CC	6600FF
663300	663333	663366	663399	6633CC	6633FF
666600	666633	666666	666699	6666CC	6666FF
669900	669933	669966	669999	6699CC	6699FF
66CC00	66CC33	66CC66	66CC99	66CCCC	66CCFF
66FF00	66FF33	66FF66	66FF99	66FFCC	66FFFF

990000	990033	990066	990099	9900CC	9900FF
993300	993333	993366	993399	9933CC	9933FF
996600	996633	996666	996699	9966CC	9966FF
999900	999933	999966	999999	9999CC	9999FF
99CC00	99CC33	99CC66	99CC99	99CCCC	99CCFF
99FF00	99FF33	99FF66	99FF99	99FFCC	99FFFF
CC0000	CC0033	CC0066	CC0099	CC00CC	CC00FF
CC3300	CC3333	CC3366	CC3399	CC33CC	CC33FF
CC6600	CC6633	CC6666	CC6699	CC66CC	CC66FF
CC9900	CC9933	CC9966	CC9999	CC99CC	CC99FF
CCCC00	CCCC33	CCCC66	CCCC99	CCCCCC	CCCCFF
CCFF00	CCFF33	CCFF66	CCFF99	CCFFCC	CCFFFF
FF0000	FF0033	FF0066	FF0099	FF00CC	FF00FF
FF3300	FF3333	FF3366	FF3399	FF33CC	FF33FF
FF6600	FF6633	FF6666	FF6699	FF66CC	FF66FF
FF9900	FF9933	FF9966	FF9999	FF99CC	FF99FF
FFCC00	FFCC33	FFCC66	FFCC99	FFCCCC	FFCCFF
FFFF00	FFFF33	FFFF66	FFFF99	FFFFCC	FFFFFF

HTML Color Values

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Sorted by Hex Value

[Same list sorted by color name](#)

Color Name	HEX	Color	Shades	Mix
Black	#000000		Shades	Mix
Navy	#000080		Shades	Mix
DarkBlue	#00008B		Shades	Mix
MediumBlue	#0000CD		Shades	Mix
Blue	#0000FF		Shades	Mix
DarkGreen	#006400		Shades	Mix
Green	#008000		Shades	Mix
Teal	#008080		Shades	Mix
DarkCyan	#008B8B		Shades	Mix
DeepSkyBlue	#00BFFF		Shades	Mix
DarkTurquoise	#00CED1		Shades	Mix
MediumSpringGreen	#00FA9A		Shades	Mix
Lime	#00FF00		Shades	Mix
SpringGreen	#00FF7F		Shades	Mix
Aqua	#00FFFF		Shades	Mix
Cyan	#00FFFF		Shades	Mix
MidnightBlue	#191970		Shades	Mix
DodgerBlue	#1E90FF		Shades	Mix
LightSeaGreen	#20B2AA		Shades	Mix
ForestGreen	#228B22		Shades	Mix

SeaGreen	#2E8B57		Shades	Mix
DarkSlateGray	#2F4F4F		Shades	Mix
DarkSlateGrey	#2F4F4F		Shades	Mix
LimeGreen	#32CD32		Shades	Mix
MediumSeaGreen	#3CB371		Shades	Mix
Turquoise	#40E0D0		Shades	Mix
RoyalBlue	#4169E1		Shades	Mix
SteelBlue	#4682B4		Shades	Mix
DarkSlateBlue	#483D8B		Shades	Mix
MediumTurquoise	#48D1CC		Shades	Mix
Indigo	#4B0082		Shades	Mix
DarkOliveGreen	#556B2F		Shades	Mix
CadetBlue	#5F9EA0		Shades	Mix
CornflowerBlue	#6495ED		Shades	Mix
MediumAquaMarine	#66CDAA		Shades	Mix
DimGray	#696969		Shades	Mix
DimGrey	#696969		Shades	Mix
SlateBlue	#6A5ACD		Shades	Mix
OliveDrab	#6B8E23		Shades	Mix
SlateGray	#708090		Shades	Mix
SlateGrey	#708090		Shades	Mix
LightSlateGray	#778899		Shades	Mix

LightSlateGrey	#778899		Shades	Mix
MediumSlateBlue	#7B68EE		Shades	Mix
LawnGreen	#7CFC00		Shades	Mix
Chartreuse	#7FFF00		Shades	Mix
Aquamarine	#7FFFD4		Shades	Mix
Maroon	#800000		Shades	Mix
Purple	#800080		Shades	Mix
Olive	#808000		Shades	Mix
Gray	#808080		Shades	Mix
Grey	#808080		Shades	Mix
SkyBlue	#87CEEB		Shades	Mix
LightSkyBlue	#87CEFA		Shades	Mix
BlueViolet	#8A2BE2		Shades	Mix
DarkRed	#8B0000		Shades	Mix
DarkMagenta	#8B008B		Shades	Mix
SaddleBrown	#8B4513		Shades	Mix
DarkSeaGreen	#8FBC8F		Shades	Mix
LightGreen	#90EE90		Shades	Mix
MediumPurple	#9370D8		Shades	Mix
DarkViolet	#9400D3		Shades	Mix
PaleGreen	#98FB98		Shades	Mix
DarkOrchid	#9932CC		Shades	Mix

YellowGreen	#9ACD32		Shades	Mix
Sienna	#A0522D		Shades	Mix
Brown	#A52A2A		Shades	Mix
DarkGray	#A9A9A9		Shades	Mix
DarkGrey	#A9A9A9		Shades	Mix
LightBlue	#ADD8E6		Shades	Mix
GreenYellow	#ADFF2F		Shades	Mix
PaleTurquoise	#AFEEEE		Shades	Mix
LightSteelBlue	#B0C4DE		Shades	Mix
PowderBlue	#B0E0E6		Shades	Mix
FireBrick	#B22222		Shades	Mix
DarkGoldenRod	#B8860B		Shades	Mix
MediumOrchid	#BA55D3		Shades	Mix
RosyBrown	#BC8F8F		Shades	Mix
DarkKhaki	#BDB76B		Shades	Mix
Silver	#C0C0C0		Shades	Mix
MediumVioletRed	#C71585		Shades	Mix
IndianRed	#CD5C5C		Shades	Mix
Peru	#CD853F		Shades	Mix
Chocolate	#D2691E		Shades	Mix
Tan	#D2B48C		Shades	Mix
LightGray	#D3D3D3		Shades	Mix

LightGrey	#D3D3D3		Shades	Mix
PaleVioletRed	#D87093		Shades	Mix
Thistle	#D8BFD8		Shades	Mix
Orchid	#DA70D6		Shades	Mix
GoldenRod	#DAA520		Shades	Mix
Crimson	#DC143C		Shades	Mix
Gainsboro	#DCDCDC		Shades	Mix
Plum	#DDA0DD		Shades	Mix
BurlyWood	#DEB887		Shades	Mix
LightCyan	#E0FFFF		Shades	Mix
Lavender	#E6E6FA		Shades	Mix
DarkSalmon	#E9967A		Shades	Mix
Violet	#EE82EE		Shades	Mix
PaleGoldenRod	#EEE8AA		Shades	Mix
LightCoral	#F08080		Shades	Mix
Khaki	#F0E68C		Shades	Mix
AliceBlue	#F0F8FF		Shades	Mix
HoneyDew	#F0FFD0		Shades	Mix
Azure	#F0FFFF		Shades	Mix
SandyBrown	#F4A460		Shades	Mix
Wheat	#F5DEB3		Shades	Mix
Beige	#F5F5DC		Shades	Mix

WhiteSmoke	#F5F5F5		Shades	Mix
MintCream	#F5FFFA		Shades	Mix
GhostWhite	#F8F8FF		Shades	Mix
Salmon	#FA8072		Shades	Mix
AntiqueWhite	#FAEBD7		Shades	Mix
Linen	#FAF0E6		Shades	Mix
LightGoldenRodYellow	#FAFAD2		Shades	Mix
OldLace	#FDF5E6		Shades	Mix
Red	#FF0000		Shades	Mix
Fuchsia	#FF00FF		Shades	Mix
Magenta	#FF00FF		Shades	Mix
DeepPink	#FF1493		Shades	Mix
OrangeRed	#FF4500		Shades	Mix
Tomato	#FF6347		Shades	Mix
HotPink	#FF69B4		Shades	Mix
Coral	#FF7F50		Shades	Mix
Darkorange	#FF8C00		Shades	Mix
LightSalmon	#FFA07A		Shades	Mix
Orange	#FFA500		Shades	Mix
LightPink	#FFB6C1		Shades	Mix
Pink	#FFC0CB		Shades	Mix
Gold	#FFD700		Shades	Mix

PeachPuff	#FFDAB9		Shades	Mix
NavajoWhite	#FFDEAD		Shades	Mix
Moccasin	#FFE4B5		Shades	Mix
Bisque	#FFE4C4		Shades	Mix
MistyRose	#FFE4E1		Shades	Mix
BlanchedAlmond	#FFEBCD		Shades	Mix
PapayaWhip	#FFEFD5		Shades	Mix
LavenderBlush	#FFF0F5		Shades	Mix
SeaShell	#FFF5EE		Shades	Mix
Cornsilk	#FFF8DC		Shades	Mix
LemonChiffon	#FFFACD		Shades	Mix
FloralWhite	#FFFAF0		Shades	Mix
Snow	#FFFAFA		Shades	Mix
Yellow	#FFFF00		Shades	Mix
LightYellow	#FFFFE0		Shades	Mix
Ivory	#FFFFF0		Shades	Mix
White	#FFFFFF		Shades	Mix

HTML 4.01 Quick List

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HTML Quick List from W3Schools. Print it, fold it, and put it in your pocket.

HTML Basic Document

```
<html>
<head>
<title>Title of document goes here</title>
</head>

<body>
Visible text goes here...
</body>

</html>
```

Heading Elements

```
<h1>Largest Heading</h1>

<h2> ... </h2>
<h3> ... </h3>
<h4> ... </h4>
<h5> ... </h5>

<h6>Smallest Heading</h6>
```

Text Elements

```
<p>This is a paragraph</p>
<br /> (line break)
<hr /> (horizontal rule)
<pre>This text is preformatted</pre>
```

Logical Styles

```
<em>This text is emphasized</em>
<strong>This text is strong</strong>
<code>This is some computer code</code>
```

Physical Styles

`<b>This text is bold</b>`

`<i>This text is italic</i>`

Links

Ordinary link: `<a href="http://www.example.com/">Link-text goes here</a>`

Image-link: `<a href="http://www.example.com/"></a>`

Mailto link: `<a href="mailto:webmaster@example.com">Send e-mail</a>`

A named anchor:

`<a name="tips">Tips Section</a>`

`<a href="#tips">Jump to the Tips Section</a>`

Unordered list

`<ul>`

`<li>Item</li>`

`<li>Item</li>`

`</ul>`

Ordered list

`<ol>`

`<li>First item</li>`

`<li>Second item</li>`

`</ol>`

Definition list

`<dl>`

`<dt>First term</dt>`

`<dd>Definition</dd>`

`<dt>Next term</dt>`

`<dd>Definition</dd>`

`</dl>`

Tables

`<table border="1">`

`<tr>`

```
<th>Tableheader</th>
<th>Tableheader</th>
</tr>
<tr>
<td>sometext</td>
<td>sometext</td>
</tr>
</table>
```

Frames

```
<frameset cols="25%,75%">
<frame src="page1.htm" />
<frame src="page2.htm" />
</frameset>
```

Forms

```
<form action="http://www.example.com/test.asp" method="post/get">

<input type="text" name="email" size="40" maxlength="50" />
<input type="password" />
<input type="checkbox" checked="checked" />
<input type="radio" checked="checked" />
<input type="submit" value="Send" />
<input type="reset" />
<input type="hidden" />

<select>
<option>Apples</option>
<option selected="selected">Bananas</option>
<option>Cherries</option>
</select>

<textarea name="comment" rows="60" cols="20"></textarea>

</form>
```

Entities

< is the same as <

> is the same as >

© is the same as ©

Other Elements

`<!-- This is a comment -->`

`<blockquote>`
Text quoted from a source.
`</blockquote>`

`<address>`
Written by W3Schools.com`<br />`
`<a href="mailto:us@example.org">`Email us`</a><br />`
Address: Box 564, Disneyland`<br />`
Phone: +12 34 56 78
`</address>`

HTML Meta

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Try-It-Yourself Examples

[Document description](#)

Use the meta element to describe the document.

[Document keywords](#)

Use the meta element to define the keywords of a document.

[Redirect a user](#)

How to redirect a user to a new web address.

The HTML meta Element

Metadata is information about data.

The `<meta>` tag provides metadata about the HTML document. Metadata will not be displayed on the page, but will be machine parsable.

Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata.

The <meta> tag always goes inside the head element.

The metadata can be used by browsers (how to display content or reload page), search engines (keywords), or other web services.

Keywords for Search Engines

Some search engines will use the name and content attributes of the meta element to index your pages.

The following meta element defines a description of a page:

```
<meta name="description" content="Free Web tutorials on HTML, CSS, XML" />
```

The following meta element defines keywords for a page:

```
<meta name="keywords" content="HTML, CSS, XML" />
```

The intention of the name and content attributes is to describe the content of a page.

💡 **Note:** A lot of webmasters have used <meta> tags for spamming, like repeating keywords (or using wrong keywords) for higher ranking. Therefore, most search engines have stopped using <meta> tags to index/rank pages.

HTML Scripts

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JavaScripts make HTML pages more dynamic and interactive.



Try-It-Yourself Examples

[Insert a script](#)

How to insert a script into an HTML document.

[Use of the <noscript> tag](#)

How to handle browsers that do not support scripting, or have scripting disabled.

The HTML script Element

The <script> tag is used to define a client-side script, such as a JavaScript.

The script element either contains scripting statements or it points to an external script file through the src attribute.

The required type attribute specifies the MIME type of the script.

Common uses for JavaScript are image manipulation, form validation, and dynamic changes of content.

The script below writes Hello World! to the HTML output:

Example

```
<script type="text/javascript">
document.write("Hello World!")
</script>
```

[Try it yourself »](#)

 **Tip:** To learn more about JavaScript, visit our [JavaScript tutorial](#)!

The HTML noscript Element

The <noscript> tag is used to provide an alternate content for users that have disabled scripts in their browser or have a browser that doesn't support client-side scripting.

The noscript element can contain all the elements that you can find inside the body element of a normal HTML page.

The content inside the noscript element will only be displayed if scripts are not supported, or are disabled in the user's browser:

Example

```
<script type="text/javascript">
document.write("Hello World!")
</script>
<noscript>Sorry, your browser does not support JavaScript!</noscript>
```

[Try it yourself »](#)

HTML Script Tags

Tag	Description
<script>	Defines a client-side script
<noscript>	Defines an alternate content for users that do not support client-side scripts

HTML Entities

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Reserved characters in HTML must be replaced with character entities.

HTML Entities

Some characters are reserved in HTML.

It is not possible to use the less than (<) or greater than (>) signs in your text, because the browser will mix them with tags.

To actually display reserved characters, we must use character entities in the HTML source code.

A character entity looks like this:

`&entity_name;`

OR

`&#entity_number;`

To display a less than sign we must write: **<** or **<**;

 **Tip:** The advantage of using an entity name, instead of a number, is that the name is easier to remember. However, the disadvantage is that browsers may not support all entity names (the support for entity numbers is very good).

Non-breaking Space

A common character entity used in HTML is the non-breaking space ().

Browsers will always truncate spaces in HTML pages. If you write 10 spaces in your text, the browser will remove 9 of them, before displaying the page. To add spaces to your text, you can use the character entity.

HTML Entities Example

Experiment with HTML character entities: [Try it yourself](#)

HTML Useful Character Entities

Note: Entity names are case sensitive!

Result	Description	Entity Name	Entity Number
	non-breaking space	 	
<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
¢	cent	¢	¢
£	pound	£	£
¥	yen	¥	¥
€	euro	€	€
§	section	§	§
©	copyright	©	©
®	registered trademark	®	®
™	trademark	™	™

For a complete reference of all character entities, visit our [HTML Entities Reference](#).

HTML Uniform Resource Locators

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A URL is another word for a web address.

A URL can be composed of words, such as "w3schools.com", or an Internet Protocol (IP) address: 192.68.20.50. Most people enter the name of the website when surfing, because names are easier to remember than numbers.

URL - Uniform Resource Locator

When you click on a link in an HTML page, an underlying <a> tag points to an address on the world wide web.

A Uniform Resource Locator (URL) is used to address a document (or other data) on the world wide web.

A web address, like this: <http://www.w3schools.com/html/default.asp> follows these syntax rules:

scheme : //host.domain : port/path/filename

Explanation:

- **scheme** - defines the **type** of Internet service. The most common type is **http**
 - **host** - defines the **domain host** (the default host for http is **www**)
 - **domain** - defines the Internet **domain name**, like w3schools.com
 - **:port** - defines the **port number** at the host (the default port number for http is **80**)
 - **path** - defines a **path** at the server (If omitted, the document must be stored at the root directory of the web site)
 - **filename** - defines the name of a document/resource
-

Common URL Schemes

The table below lists some common schemes:

Scheme	Short for....	Which pages will the scheme be used for...
http	HyperText Transfer Protocol	Common web pages starts with http://. Not encrypted
https	Secure HyperText Transfer Protocol	Secure web pages. All information exchanged are encrypted
ftp	File Transfer Protocol	For downloading or uploading files to a website. Useful for domain maintenance
file		A file on your computer

HTML URL Encoding

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URL encoding converts characters into a format that can be transmitted over the Internet.

URL - Uniform Resource Locator

Web browsers request pages from web servers by using a URL.

The URL is the address of a web page, like: **http://www.w3schools.com**.

URL Encoding

URLs can only be sent over the Internet using the [ASCII character-set](#).

Since URLs often contain characters outside the ASCII set, the URL has to be converted into a valid ASCII format.

URL encoding replaces non ASCII characters with a "%" followed by two hexadecimal digits.

URLs cannot contain spaces. URL encoding normally replaces a space with a + sign.

Try It Yourself

If you click the "Submit" button below, the browser will URL encode the input before it is sent to the server. A page at the server will display the received input.

Hello Günter	<input type="submit" value="Submit"/>
---	---------------------------------------

Try some other input and click Submit again.

URL Encoding Examples

Character	URL-encoding
€	%80
£	%A3
©	%A9
®	%AE
À	%C0
Á	%C1
Â	%C2
Ã	%C3
Ä	%C4
Å	%C5

HTML Web Server

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To make your web site visible to the world, you'll have to store it on a web server.

Hosting your own Web site

Hosting your web site on your own server is always an option. Here are some points to consider:

Hardware Expenses

To run a "real" web site, you will have to buy some powerful server hardware. Don't expect that a low cost PC will do the job. You will also need a permanent (24 hours a day) high-speed connection.

Software Expenses

Remember that server-licenses often are higher than client-licenses. Also note that server-licenses might have limits on number of users.

Labor Expenses

Don't expect low labor expenses. You have to install your own hardware and software. You also have to deal with bugs and viruses, and keep your server constantly running in an environment where "everything could happen".

Using an Internet Service Provider

Renting a server from an Internet Service Provider (ISP) is a common option.

Most small companies store their web site on a server provided by an ISP. Here are some advantages:

Connection Speed

Most ISPs have very fast connections to the Internet.

Powerful Hardware

ISPs often have powerful web servers that can be shared by several companies. You can also expect them to have an effective load balancing, and necessary backup servers.

Security and Stability

ISPs are specialists on web hosting. Expect their servers to have more than 99% up time, the latest software patches, and the best virus protection.

Things to Consider with an ISP

24-hour support

Make sure your ISP offers 24-hours support. Don't put yourself in a situation where you cannot fix critical problems without having to wait until the next working day. Toll-free phone could be vital if you don't want to pay for long distance calls.

Daily Backup

Make sure your ISP runs a daily backup routine, otherwise you may lose some valuable data.

Traffic Volume

Study the ISP's traffic volume restrictions. Make sure that you don't have to pay a fortune for unexpected high traffic if your web site becomes popular.

Bandwidth or Content Restrictions

Study the ISP's bandwidth and content restrictions. If you plan to publish pictures or broadcast video or sound, make sure that you can.

E-mail Capabilities

Make sure your ISP supports the e-mail capabilities you need.

Database Access

If you plan to use data from databases on your web site, make sure your ISP supports the database access you need.

HTML / XHTML Standard Event Attributes

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Standard Event Attributes

HTML 4 added the ability to let events trigger actions in a browser, like starting a JavaScript when a user clicks on an element.

To learn more about programming events, please visit our [JavaScript tutorial](#) and our [DHTML tutorial](#).

Below is the standard event attributes that can be inserted into HTML / XHTML elements to define event actions.

<body> and <frameset> Events

The two attributes below can only be used in <body> or <frameset>:

Attribute	Value	Description
onload	<i>script</i>	Script to be run when a document load
onunload	<i>script</i>	Script to be run when a document unload

Form Events

The attributes below can be used in form elements:

Attribute	Value	Description
onblur	<i>script</i>	Script to be run when an element loses focus
onchange	<i>script</i>	Script to be run when an element change
onfocus	<i>script</i>	Script to be run when an element gets focus
onreset	<i>script</i>	Script to be run when a form is reset
onselect	<i>script</i>	Script to be run when an element is selected
onsubmit	<i>script</i>	Script to be run when a form is submitted

Image Events

The attribute below can be used with the img element:

Attribute	Value	Description
onabort	<i>script</i>	Script to be run when loading of an image is interrupted

Keyboard Events

Valid in all elements except base, bdo, br, frame, frameset, head, html, iframe, meta, param, script, style, and title.

Attribute	Value	Description
onkeydown	<i>script</i>	Script to be run when a key is pressed
onkeypress	<i>script</i>	Script to be run when a key is pressed and released
onkeyup	<i>script</i>	Script to be run when a key is released

Mouse Events

Valid in all elements except base, bdo, br, frame, frameset, head, html, iframe, meta, param, script, style, and title.

Attribute	Value	Description
onclick	<i>script</i>	Script to be run on a mouse click
ondblclick	<i>script</i>	Script to be run on a mouse double-click
onmousedown	<i>script</i>	Script to be run when mouse button is pressed
onmousemove	<i>script</i>	Script to be run when mouse pointer moves
onmouseout	<i>script</i>	Script to be run when mouse pointer moves out of an element
onmouseover	<i>script</i>	Script to be run when mouse pointer moves over an element
onmouseup	<i>script</i>	Script to be run when mouse button is released

HTML ASCII Reference

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The ASCII character-set is used to send information between computers on the Internet.

The ASCII Character Set

ASCII stands for the "American Standard Code for Information Interchange". It was designed in the early 60's, as a standard character-set for computers and hardware devices like teleprinters and tapedrives.

ASCII is a 7-bit character set containing 128 characters.

It contains the numbers from 0-9, the uppercase and lowercase English letters from A to Z, and some special characters.

The character-sets used in modern computers, HTML, and Internet are all based on ASCII.

The following table lists the 128 ASCII characters and their equivalent HTML entity codes.

ASCII Printable Characters

ASCII Character	HTML Entity Code	Description
	 	space
!	!	exclamation mark
"	"	quotation mark
#	#	number sign
\$	$	dollar sign
%	%	percent sign
&	&	ampersand
'	'	apostrophe
(	(	left parenthesis
)	)	right parenthesis

*	*	asterisk
+	+	plus sign
,	,	comma
-	-	hyphen
.	.	period
/	/	slash
0	0	digit 0
1	1	digit 1
2	2	digit 2
3	3	digit 3
4	4	digit 4
5	5	digit 5
6	6	digit 6
7	7	digit 7
8	8	digit 8
9	9	digit 9
:	:	colon
;	;	semicolon
<	<	less-than
=	=	equals-to
>	>	greater-than
?	?	question mark

@	@	at sign
A	A	uppercase A
B	B	uppercase B
C	C	uppercase C
D	D	uppercase D
E	E	uppercase E
F	F	uppercase F
G	G	uppercase G
H	H	uppercase H
I	I	uppercase I
J	J	uppercase J
K	K	uppercase K
L	L	uppercase L
M	M	uppercase M
N	N	uppercase N
O	O	uppercase O
P	P	uppercase P
Q	Q	uppercase Q
R	R	uppercase R
S	S	uppercase S
T	T	uppercase T
U	U	uppercase U

V	V	uppercase V
W	W	uppercase W
X	X	uppercase X
Y	Y	uppercase Y
Z	Z	uppercase Z
[	[	left square bracket
\	\	backslash
]	]	right square bracket
^	^	caret
_	_	underscore
`	`	grave accent
a	a	lowercase a
b	b	lowercase b
c	c	lowercase c
d	d	lowercase d
e	e	lowercase e
f	f	lowercase f
g	g	lowercase g
h	h	lowercase h
i	i	lowercase i
j	j	lowercase j
k	k	lowercase k

l	l	lowercase l
m	m	lowercase m
n	n	lowercase n
o	o	lowercase o
p	p	lowercase p
q	q	lowercase q
r	r	lowercase r
s	s	lowercase s
t	t	lowercase t
u	u	lowercase u
v	v	lowercase v
w	w	lowercase w
x	x	lowercase x
y	y	lowercase y
z	z	lowercase z
{	{	left curly brace
	|	vertical bar
}	}	right curly brace
~	~	tilde

ASCII Device Control Characters

The ASCII device control characters were originally designed to control hardware devices.

Control characters have nothing to do inside an HTML document.

ASCII Character	HTML Entity Code	Description
NUL	�	null character
SOH		start of header
STX		start of text
ETX		end of text
EOT		end of transmission
ENQ		enquiry
ACK		acknowledge
BEL		bell (ring)
BS		backspace
HT			horizontal tab
LF	
	line feed
VT		vertical tab
FF		form feed
CR		carriage return
SO		shift out
SI		shift in
DLE		data link escape
DC1		device control 1
DC2		device control 2
DC3		device control 3

DC4		device control 4
NAK		negative acknowledge
SYN		synchronize
ETB		end transmission block
CAN		cancel
EM		end of medium
SUB		substitute
ESC		escape
FS		file separator
GS		group separator
RS		record separator
US		unit separator
DEL		delete (rubout)

HTML Character Sets

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HTML Character Sets

To display an HTML page correctly, the browser must know what character-set to use.

The character-set for the early world wide web was ASCII. ASCII supports the numbers from 0-9, the uppercase and lowercase English alphabet, and some special characters.

[Complete ASCII reference.](#)

Since many countries use characters which are not a part of ASCII, the default character-set for modern browsers is ISO-8859-1.

[Complete ISO-8859-1 reference.](#)

If a web page uses a different character-set than ISO-8859-1, it should be specified in the <meta> tag.

[Try it yourself](#)

ISO Character Sets

It is the International Standards Organization (ISO) that defines the standard character-sets for different alphabets/languages.

The different character-sets being used around the world are listed below:

Character set	Description	Covers
ISO-8859-1	Latin alphabet part 1	North America, Western Europe, Latin America, the Caribbean, Canada, Africa
ISO-8859-2	Latin alphabet part 2	Eastern Europe
ISO-8859-3	Latin alphabet part 3	SE Europe, Esperanto, miscellaneous others
ISO-8859-4	Latin alphabet part 4	Scandinavia/Baltics (and others not in ISO-8859-1)
ISO-8859-5	Latin/Cyrillic part 5	The languages that are using a Cyrillic alphabet such as Bulgarian, Belarusian, Russian and Macedonian
ISO-8859-6	Latin/Arabic part 6	The languages that are using the Arabic alphabet
ISO-8859-7	Latin/Greek part 7	The modern Greek language as well as mathematical symbols derived from the Greek

ISO-8859-8	Latin/Hebrew part 8	The languages that are using the Hebrew alphabet
ISO-8859-9	Latin 5 part 9	The Turkish language. Same as ISO-8859-1 except Turkish characters replace Icelandic ones
ISO-8859-10	Latin 6 Lappish, Nordic, Eskimo	The Nordic languages
ISO-8859-15	Latin 9 (aka Latin 0)	Similar to ISO 8859-1 but replaces some less common symbols with the euro sign and some other missing characters
ISO-2022-JP	Latin/Japanese part 1	The Japanese language
ISO-2022-JP-2	Latin/Japanese part 2	The Japanese language
ISO-2022-KR	Latin/Korean part 1	The Korean language

The Unicode Standard

Because the character-sets listed above are limited in size, and are not compatible in multilingual environments, the Unicode Consortium developed the Unicode Standard.

The Unicode Standard covers all the characters, punctuations, and symbols in the world.

Unicode enables processing, storage and interchange of text data no matter what the platform, no matter what the program, no matter what the language.

The Unicode Consortium

The Unicode Consortium develops the Unicode Standard. Their goal is to replace the existing character-sets with its standard Unicode Transformation Format (UTF).

The Unicode Standard has become a success and is implemented in XML, Java, ECMAScript (JavaScript), LDAP, CORBA 3.0, WML, etc. The Unicode standard is also supported in many operating systems and all modern browsers.

The Unicode Consortium cooperates with the leading standards development organizations, like ISO, W3C, and ECMA.

Unicode can be implemented by different character-sets. The most commonly used encodings are UTF-8 and UTF-16:

Character-set	Description
UTF-8	A character in UTF8 can be from 1 to 4 bytes long. UTF-8 can represent any character in the Unicode standard. UTF-8 is backwards compatible with ASCII. UTF-8 is the preferred encoding for e-mail and web pages
UTF-16	16-bit Unicode Transformation Format is a variable-length character encoding for Unicode, capable of encoding the entire Unicode repertoire. UTF-16 is used in major operating systems and environments, like Microsoft Windows 2000/XP/2003/Vista/CE and the Java and .NET byte code environments

Tip: The first 256 characters of Unicode character-sets correspond to the 256 characters of ISO-8859-1.

Tip: All HTML 4 processors already support UTF-8, and all XHTML and XML processors support UTF-8 and UTF-16!

HTML Language Code Reference

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ISO Language Codes

The HTML lang attribute can be used to declare the language of a Web page or a portion of a Web page. This is meant to assist search engines and browsers.

According to the W3C recommendation you should declare the primary language for each Web page with the lang attribute inside the <html> tag, like this:

```
<html lang="en">
```

```
...
```

```
</html>
```

In XHTML, the language is declared inside the <html> tag as follows:

```
<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en">  
...  
</html>
```

ISO 639-1 Language Codes

ISO 639-1 defines abbreviations for languages. In HTML and XHTML they can be used in the lang and xml:lang attributes.

Language	ISO Code
Abkhazian	ab
Afar	aa
Afrikaans	af
Albanian	sq
Amharic	am
Arabic	ar
Armenian	hy
Assamese	as
Aymara	ay
Azerbaijani	az
Bashkir	ba
Basque	eu
Bengali (Bangla)	bn
Bhutani	dz

Bihari	bh
Bislama	bi
Breton	br
Bulgarian	bg
Burmese	my
Byelorussian (Belarusian)	be
Cambodian	km
Catalan	ca
Cherokee	
Chewa	
Chinese (Simplified)	zh
Chinese (Traditional)	zh
Corsican	co
Croatian	hr
Czech	cs
Danish	da
Divehi	
Dutch	nl
Edo	
English	en
Esperanto	eo
Estonian	et
Faeroese	fo

Farsi	fa
Fiji	fj
Finnish	fi
Flemish	
French	fr
Frisian	fy
Fulfulde	
Galician	gl
Gaelic (Scottish)	gd
Gaelic (Manx)	gv
Georgian	ka
German	de
Greek	el
Greenlandic	kl
Guarani	gn
Gujarati	gu
Hausa	ha
Hawaiian	
Hebrew	he, iw
Hindi	hi
Hungarian	hu
Ibibio	

Icelandic	is
Igbo	
Indonesian	id, in
Interlingua	ia
Interlingue	ie
Inuktitut	iu
Inupiak	ik
Irish	ga
Italian	it
Japanese	ja
Javanese	jv
Kannada	kn
Kanuri	
Kashmiri	ks
Kazakh	kk
Kinyarwanda (Ruanda)	rw
Kirghiz	ky
Kirundi (Rundi)	rn
Konkani	
Korean	ko
Kurdish	ku
Laothian	lo

Latin	la
Latvian (Lettish)	lv
Limburgish (Limburger)	li
Lingala	ln
Lithuanian	lt
Macedonian	mk
Malagasy	mg
Malay	ms
Malayalam	ml
Maltese	mt
Maori	mi
Marathi	mr
Moldavian	mo
Mongolian	mn
Nauru	na
Nepali	ne
Norwegian	no
Occitan	oc
Oriya	or
Oromo (Afan, Galla)	om
Papiamentu	

Pashto (Pushto)	ps
Polish	pl
Portuguese	pt
Punjabi	pa
Quechua	qu
Rhaeto-Romance	rm
Romanian	ro
Russian	ru
Sami (Lappish)	
Samoan	sm
Sangro	sg
Sanskrit	sa
Serbian	sr
Serbo-Croatian	sh
Sesotho	st
Setswana	tn
Shona	sn
Sindhi	sd
Sinhalese	si
Siswati	ss
Slovak	sk
Slovenian	sl

Somali	so
Spanish	es
Sundanese	su
Swahili (Kiswahili)	sw
Swedish	sv
Syriac	
Tagalog	tl
Tajik	tg
Tamazight	
Tamil	ta
Tatar	tt
Telugu	te
Thai	th
Tibetan	bo
Tigrinya	ti
Tonga	to
Tsonga	ts
Turkish	tr
Turkmen	tk
Twi	tw
Uighur	ug
Ukrainian	uk

Urdu	ur
Uzbek	uz
Venda	
Vietnamese	vi
Volapük	vo
Welsh	cy
Wolof	wo
Xhosa	xh
Yi	
Yiddish	yi, ji
Yoruba	yo
Zulu	zu

HTML ISO-8859-1 Reference

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Modern browsers supports several character-sets:

- [ASCII character set](#)
- [Standard ISO character sets](#)
- [Mathematical symbols, Greek letters, and other symbols](#)

ISO-8859-1

ISO-8859-1 is the default character set in most browsers.

The first 128 characters of ISO-8859-1 is the original ASCII character-set (the numbers from 0-9, the uppercase and lowercase English alphabet, and some special characters).

The higher part of ISO-8859-1 (codes from 160-255) contains the characters used in Western European countries and some commonly used special characters.

Entities are used to implement reserved characters or to express characters that cannot easily be entered with the keyboard.

Reserved Characters in HTML

Some characters are reserved in HTML and XHTML. For example, you cannot use the greater than or less than signs within your text because the browser could mistake them for markup.

HTML and XHTML processors must support the five special characters listed in the table below:

Character	Entity Number	Entity Name	Description
"	"	"	quotation mark
'	'	' (does not work in IE)	apostrophe
&	&	&	ampersand
<	<	<	less-than
>	>	>	greater-than

Note: Entity names are case sensitive!

ISO 8859-1 Symbols

Character	Entity Number	Entity Name	Description
	 	 	non-breaking space
¡	¡	¡	inverted exclamation mark

¢	¢	¢	cent
£	£	£	pound
¤	¤	¤	currency
¥	¥	¥	yen
	¦	¦	broken vertical bar
§	§	§	section
¨	¨	¨	spacing diaeresis
©	©	©	copyright
^a	ª	ª	feminine ordinal indicator
«	«	«	angle quotation mark (left)
¬	¬	¬	negation
	­	­	soft hyphen
®	®	®	registered trademark
ˉ	¯	¯	spacing macron
°	°	°	degree
±	±	±	plus-or-minus
²	²	²	superscript 2
³	³	³	superscript 3
´	´	´	spacing acute
μ	µ	µ	micro
¶	¶	¶	paragraph
·	·	·	middle dot

,	¸	¸	spacing cedilla
¹	¹	¹	superscript 1
º	º	º	masculine ordinal indicator
»	»	»	angle quotation mark (right)
¼	¼	¼	fraction 1/4
½	½	½	fraction 1/2
¾	¾	¾	fraction 3/4
¿	¿	¿	inverted question mark
×	×	×	multiplication
÷	÷	÷	division

ISO 8859-1 Characters

Character	Entity Number	Entity Name	Description
À	À	À	capital a, grave accent
Á	Á	Á	capital a, acute accent
Â	Â	Â	capital a, circumflex accent
Ã	Ã	Ã	capital a, tilde
Ä	Ä	Ä	capital a, umlaut mark
Å	Å	Å	capital a, ring
Æ	Æ	Æ	capital ae
Ç	Ç	Ç	capital c, cedilla
È	È	È	capital e, grave accent

É	É	É	capital e, acute accent
Ê	Ê	Ê	capital e, circumflex accent
Ë	Ë	Ë	capital e, umlaut mark
Ì	Ì	Ì	capital i, grave accent
Í	Í	Í	capital i, acute accent
Î	Î	Î	capital i, circumflex accent
Ï	Ï	Ï	capital i, umlaut mark
Ð	Ð	Ð	capital eth, Icelandic
Ñ	Ñ	Ñ	capital n, tilde
Ò	Ò	Ò	capital o, grave accent
Ó	Ó	Ó	capital o, acute accent
Ô	Ô	Ô	capital o, circumflex accent
Õ	Õ	Õ	capital o, tilde
Ö	Ö	Ö	capital o, umlaut mark
Ø	Ø	Ø	capital o, slash
Ù	Ù	Ù	capital u, grave accent
Ú	Ú	Ú	capital u, acute accent
Û	Û	Û	capital u, circumflex accent
Ü	Ü	Ü	capital u, umlaut mark
Ý	Ý	Ý	capital y, acute accent
Þ	Þ	Þ	capital THORN, Icelandic
ß	ß	ß	small sharp s, German
à	à	à	small a, grave accent

á	á	á	small a, acute accent
â	â	â	small a, circumflex accent
ã	ã	ã	small a, tilde
ä	ä	ä	small a, umlaut mark
å	å	å	small a, ring
æ	æ	æ	small æ
ç	ç	ç	small c, cedilla
è	è	è	small e, grave accent
é	é	é	small e, acute accent
ê	ê	ê	small e, circumflex accent
ë	ë	ë	small e, umlaut mark
ì	ì	ì	small i, grave accent
í	í	í	small i, acute accent
î	î	î	small i, circumflex accent
ï	ï	ï	small i, umlaut mark
ð	ð	ð	small eth, Icelandic
ñ	ñ	ñ	small n, tilde
ò	ò	ò	small o, grave accent
ó	ó	ó	small o, acute accent
ô	ô	ô	small o, circumflex accent
ö	õ	õ	small o, tilde
ö	ö	ö	small o, umlaut mark

ø	ø	ø	small o, slash
ù	ù	ù	small u, grave accent
ú	ú	ú	small u, acute accent
û	û	û	small u, circumflex accent
ü	ü	ü	small u, umlaut mark
ý	ý	ý	small y, acute accent
þ	þ	þ	small thorn, Icelandic
ÿ	ÿ	ÿ	small y, umlaut mark

Examples

1.

```
<html>
```

```
<body>
```

The full URL of this document is:

```
<script type="text/javascript">
```

```
document.write(document.URL);
```

```
</script>
```

```
</body>
```

```
</html>
```

2. [Return the number of links in a document](#)

```
<html>
```

```
<body>



<map name="planetmap">

<area shape="rect" coords="0,0,82,126" href="sun.htm" alt="Sun" />

<area shape="circle" coords="90,58,3" href="mercur.htm" alt="Mercury" />

<area shape="circle" coords="124,58,8" href="venus.htm" alt="Venus" />

</map>


<p><a href="/js/">JavaScript Tutorial</a></p>


<p>Number of areas/links:

<script type="text/javascript">

document.write(document.links.length);

</script></p>


</body>

</html>
```

Using Cascading style Sheet

```
<body>
<h1>Buy a television by dragging it to the shopping cart</h1>
<div id="targetDiv"></div>
<div id="television"
style="left:200px; top:100px; width:80px; height:80px;"
onmousedown="handleDown(event);">Television</div>
<div id="target"
style="left:300px; top:300px; width:200px; height:100px;">
Shopping Cart</div>
</body>
```