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15 Alignment, font styles, and horizontal rules

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*This section of the specification discusses some HTML elements and attributes that may be used for visual formatting of elements. Many of them are*[*deprecated*](http://www.w3.org/TR/html401/conform.html#deprecated)*.*

15.1 Formatting

15.1.1 Background color

*Attribute definitions*

**bgcolor =**[***color***](http://www.w3.org/TR/html401/types.html#type-color)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute sets the background color for the document body or table cells.

This attribute sets the background color of the canvas for the document body (the [BODY](http://www.w3.org/TR/html401/struct/global.html#edef-BODY) element) or for tables (the [TABLE](http://www.w3.org/TR/html401/struct/tables.html#edef-TABLE), [TR](http://www.w3.org/TR/html401/struct/tables.html#edef-TR), [TH](http://www.w3.org/TR/html401/struct/tables.html#edef-TH), and [TD](http://www.w3.org/TR/html401/struct/tables.html#edef-TD) elements). Additional attributes for specifying text color can be used with the[BODY](http://www.w3.org/TR/html401/struct/global.html#edef-BODY) element.

This attribute has been [deprecated](http://www.w3.org/TR/html401/conform.html#deprecated) in favor of style sheets for specifying background color information.

15.1.2 Alignment

It is possible to align block elements (tables, images, objects, paragraphs, etc.) on the canvas with the align attribute. Although this attribute may be set for many HTML elements, its range of possible values sometimes differs from element to element. Here we only discuss the meaning of the align attribute for text.

*Attribute definitions*

**align = left|center|right|justify**[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute specifies the horizontal alignment of its element with respect to the surrounding context. Possible values:

* left: text lines are rendered flush left.
* center: text lines are centered.
* right: text lines are rendered flush right.
* justify: text lines are justified to both margins.

The default depends on the base text direction. For left to right text, the default is align=left, while for right to left text, the default is align=right.

DEPRECATED EXAMPLE:  
This example centers a heading on the canvas.

<H1 align="center"> How to Carve Wood </H1>

Using CSS, for example, you could achieve the same effect as follows:

<HEAD>

<TITLE>How to Carve Wood</TITLE>

<STYLE type="text/css">

H1 { text-align: center}

</STYLE>

<BODY>

<H1> How to Carve Wood </H1>

Note that this would center all [H1](http://www.w3.org/TR/html401/struct/global.html#edef-H1) declarations. You could reduce the scope of the style by setting the [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) attribute on the element:

<HEAD>

<TITLE>How to Carve Wood</TITLE>

<STYLE type="text/css">

H1.wood {text-align: center}

</STYLE>

<BODY>

<H1 class="wood"> How to Carve Wood </H1>

DEPRECATED EXAMPLE:  
Similarly, to right align a paragraph on the canvas with HTML's [align](http://www.w3.org/TR/html401/present/graphics.html#adef-align) attribute you could have:

<P align="right">*...Lots of paragraph text...*

which, with CSS, would be:

<HEAD>

<TITLE>How to Carve Wood</TITLE>

<STYLE type="text/css">

P.mypar {text-align: right}

</STYLE>

<BODY>

<P class="mypar">*...Lots of paragraph text...*

DEPRECATED EXAMPLE:  
To right align a series of paragraphs, group them with the [DIV](http://www.w3.org/TR/html401/struct/global.html#edef-DIV) element:

<DIV align="right">

<P>*...text in first paragraph...*

<P>*...text in second paragraph...*

<P>*...text in third paragraph...*

</DIV>

With CSS, the text-align property is inherited from the parent element, you can therefore use:

<HEAD>

<TITLE>How to Carve Wood</TITLE>

<STYLE type="text/css">

DIV.mypars {text-align: right}

</STYLE>

<BODY>

<DIV class="mypars">

<P>*...text in first paragraph...*

<P>*...text in second paragraph...*

<P>*...text in third paragraph...*

</DIV>

To center the entire document with CSS:

<HEAD>

<TITLE>How to Carve Wood</TITLE>

<STYLE type="text/css">

BODY {text-align: center}

</STYLE>

<BODY>

*...the body is centered...*

</BODY>

The CENTER element is exactly equivalent to specifying the [DIV](http://www.w3.org/TR/html401/struct/global.html#edef-DIV) element with the [align](http://www.w3.org/TR/html401/present/graphics.html#adef-align) attribute set to "center". **The**[**CENTER**](http://www.w3.org/TR/html401/present/graphics.html#edef-CENTER)**element is**[**deprecated**](http://www.w3.org/TR/html401/conform.html#deprecated)**.**

15.1.3 Floating objects

Images and objects may appear directly "in-line" or may be floated to one side of the page, temporarily altering the margins of text that may flow on either side of the object.

**Float an object**

The [align](http://www.w3.org/TR/html401/present/graphics.html#adef-align) attribute for objects, images, tables, frames, etc., causes the object to float to the left or right margin. Floating objects generally begin a new line. This attribute takes the following values:

* left: Floats the object to the current left margin. Subsequent text flows along the image's right side.
* right: Floats the object to the current right margin. Subsequent text flows along the image's left side.

DEPRECATED EXAMPLE:  
The following example shows how to float an [IMG](http://www.w3.org/TR/html401/struct/objects.html#edef-IMG) element to the current left margin of the canvas.

<IMG align="left" src="http://foo.com/animage.gif" alt="my boat">

Some alignment attributes also permit the "center" value, which does not cause floating, but centers the object within the current margins. However, for [P](http://www.w3.org/TR/html401/struct/text.html#edef-P) and [DIV](http://www.w3.org/TR/html401/struct/global.html#edef-DIV), the value "center" causes the contents of the element to be centered.

**Float text around an object**

Another attribute, defined for the [BR](http://www.w3.org/TR/html401/struct/text.html#edef-BR) element, controls text flow around floating objects.

*Attribute definitions*

**clear = none|left|right|all**[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) Specifies where the next line should appear in a visual browser after the line break caused by this element. This attribute takes into account floating objects (images, tables, etc.). Possible values:

* none: The next line will begin normally. This is the default value.
* left: The next line will begin at nearest line below any floating objects on the left-hand margin.
* right: The next line will begin at nearest line below any floating objects on the right-hand margin.
* all: The next line will begin at nearest line below any floating objects on either margin.

Consider the following visual scenario, where text flows to the right of an image until a line is broken by a [BR](http://www.w3.org/TR/html401/struct/text.html#edef-BR):

\*\*\*\*\*\*\*\*\* -------

| | -------

| image | --<BR>

| |

\*\*\*\*\*\*\*\*\*

If the [clear](http://www.w3.org/TR/html401/present/graphics.html#adef-clear) attribute is set to none, the line following [BR](http://www.w3.org/TR/html401/struct/text.html#edef-BR) will begin immediately below it at the right margin of the image:

\*\*\*\*\*\*\*\*\* -------

| | -------

| image | --<BR>

| | ------

\*\*\*\*\*\*\*\*\*

DEPRECATED EXAMPLE:  
If the [clear](http://www.w3.org/TR/html401/present/graphics.html#adef-clear) attribute is set to left or all, the next line will appear as follows:

\*\*\*\*\*\*\*\*\* -------

| | -------

| image | --<BR clear="left">

| |

\*\*\*\*\*\*\*\*\*

-----------------

Using style sheets, you could specify that all line breaks should behave this way for objects (images, tables, etc.) floating against the left margin. With CSS, you could achieve this as follows:

<STYLE type="text/css">

BR { clear: left }

</STYLE>

To specify this behavior for a specific instance of the [BR](http://www.w3.org/TR/html401/struct/text.html#edef-BR) element, you could combine style information and the [id](http://www.w3.org/TR/html401/struct/global.html#adef-id) attribute:

<HEAD>

*...*

<STYLE type="text/css">

BR#mybr { clear: left }

</STYLE>

</HEAD>

<BODY>

<P>...

\*\*\*\*\*\*\*\*\* -------

| | -------

| table | --<BR id="mybr">

| |

\*\*\*\*\*\*\*\*\*

-----------------

...

</BODY>

15.2 Fonts

*The following HTML elements specify font information. Although they are not all*[*deprecated*](http://www.w3.org/TR/html401/conform.html#deprecated)*, their use is discouraged in favor of style sheets.*

15.2.1 Font style elements: the TT, I, B, BIG, SMALL, STRIKE, S, and U elements

<!ENTITY % fontstyle

"[TT](http://www.w3.org/TR/html401/present/graphics.html#edef-TT) | [I](http://www.w3.org/TR/html401/present/graphics.html#edef-I) | [B](http://www.w3.org/TR/html401/present/graphics.html#edef-B) | [BIG](http://www.w3.org/TR/html401/present/graphics.html#edef-BIG) | [SMALL](http://www.w3.org/TR/html401/present/graphics.html#edef-SMALL)">

<!ELEMENT ([%fontstyle;](http://www.w3.org/TR/html401/sgml/dtd.html#fontstyle)|[%phrase;](http://www.w3.org/TR/html401/sgml/dtd.html#phrase)) - - ([%inline;](http://www.w3.org/TR/html401/sgml/dtd.html#inline))\*>

<!ATTLIST ([%fontstyle;](http://www.w3.org/TR/html401/sgml/dtd.html#fontstyle)|[%phrase;](http://www.w3.org/TR/html401/sgml/dtd.html#phrase))

[%attrs;](http://www.w3.org/TR/html401/sgml/dtd.html#attrs) -- [%coreattrs](http://www.w3.org/TR/html401/sgml/dtd.html#coreattrs), [%i18n](http://www.w3.org/TR/html401/sgml/dtd.html#i18n), [%events](http://www.w3.org/TR/html401/sgml/dtd.html#events) --

>

*Start tag:****required****, End tag:****required***

*Attributes defined elsewhere*

* [id](http://www.w3.org/TR/html401/struct/global.html#adef-id), [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) ([document-wide identifiers](http://www.w3.org/TR/html401/struct/global.html#id-and-class))
* [lang](http://www.w3.org/TR/html401/struct/dirlang.html#adef-lang) ([language information](http://www.w3.org/TR/html401/struct/dirlang.html#language-info)), [dir](http://www.w3.org/TR/html401/struct/dirlang.html#adef-dir) ([text direction](http://www.w3.org/TR/html401/struct/dirlang.html#bidirection))
* [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) ([element title](http://www.w3.org/TR/html401/struct/global.html#title))
* [style](http://www.w3.org/TR/html401/present/styles.html#adef-style) ([inline style information](http://www.w3.org/TR/html401/present/styles.html#style-element))
* [onclick](http://www.w3.org/TR/html401/interact/scripts.html#adef-onclick), [ondblclick](http://www.w3.org/TR/html401/interact/scripts.html#adef-ondblclick), [onmousedown](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmousedown), [onmouseup](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmouseup), [onmouseover](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmouseover), [onmousemove](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmousemove), [onmouseout](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmouseout), [onkeypress](http://www.w3.org/TR/html401/interact/scripts.html#adef-onkeypress), [onkeydown](http://www.w3.org/TR/html401/interact/scripts.html#adef-onkeydown) [onkeyup](http://www.w3.org/TR/html401/interact/scripts.html#adef-onkeyup) ([intrinsic events](http://www.w3.org/TR/html401/interact/scripts.html#events))

Rendering of font style elements depends on the user agent. The following is an informative description only.

**TT:** Renders as teletype or monospaced text.

**I:** Renders as italic text style.

**B:** Renders as bold text style.

**BIG:** Renders text in a "large" font.

**SMALL:** Renders text in a "small" font.

**STRIKE** and **S:** [**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) Render strike-through style text.

**U:** [**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) Renders underlined text.

The following sentence shows several types of text:

<P><b>bold</b>,

<i>italic</i>, <b><i>bold italic</i></b>, <tt>teletype text</tt>, and

<big>big</big> and <small>small</small> text.

These words might be rendered as follows:

An example of rendering of various font styles

It is possible to achieve a much richer variety of font effects using style sheets. To specify blue, italic text in a paragraph with CSS:

<HEAD>

<STYLE type="text/css">

P#mypar {font-style: italic; color: blue}

</STYLE>

</HEAD>

<P id="mypar">*...Lots of blue italic text...*

Font style elements must be properly nested. Rendering of nested font style elements depends on the user agent.

15.2.2 Font modifier elements: FONT and BASEFONT

[**FONT**](http://www.w3.org/TR/html401/present/graphics.html#edef-FONT)**and**[**BASEFONT**](http://www.w3.org/TR/html401/present/graphics.html#edef-BASEFONT)**are**[**deprecated**](http://www.w3.org/TR/html401/conform.html#deprecated)**.**

See the [Transitional DTD](http://www.w3.org/TR/html401/sgml/loosedtd.html#basefont) for the formal definition.

*Attribute definitions*

**size****=**[***cdata***](http://www.w3.org/TR/html401/types.html#type-cdata)[**[CN]**](http://www.w3.org/TR/html401/types.html#case-neutral)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute sets the size of the font. Possible values:

* An integer between 1 and 7. This sets the font to some fixed size, whose rendering depends on the user agent. Not all user agents may render all seven sizes.
* A relative increase in font size. The value "+1" means one size larger. The value "-3" means three sizes smaller. All sizes belong to the scale of 1 to 7.

**color =**[***color***](http://www.w3.org/TR/html401/types.html#type-color)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute sets the text color.

**face =**[***cdata***](http://www.w3.org/TR/html401/types.html#type-cdata)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute defines a comma-separated list of font names the user agent should search for in order of preference.

*Attributes defined elsewhere*

* [id](http://www.w3.org/TR/html401/struct/global.html#adef-id), [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) ([document-wide identifiers](http://www.w3.org/TR/html401/struct/global.html#id-and-class))
* [lang](http://www.w3.org/TR/html401/struct/dirlang.html#adef-lang) ([language information](http://www.w3.org/TR/html401/struct/dirlang.html#language-info)), [dir](http://www.w3.org/TR/html401/struct/dirlang.html#adef-dir) ([text direction](http://www.w3.org/TR/html401/struct/dirlang.html#bidirection))
* [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) ([element title](http://www.w3.org/TR/html401/struct/global.html#title))
* [style](http://www.w3.org/TR/html401/present/styles.html#adef-style) ([inline style information](http://www.w3.org/TR/html401/present/styles.html#style-element))

The [FONT](http://www.w3.org/TR/html401/present/graphics.html#edef-FONT) element changes the font size and color for text in its contents.

The [BASEFONT](http://www.w3.org/TR/html401/present/graphics.html#edef-BASEFONT) element sets the base font size (using the size attribute). Font size changes achieved with [FONT](http://www.w3.org/TR/html401/present/graphics.html#edef-FONT) are relative to the base font size set by [BASEFONT](http://www.w3.org/TR/html401/present/graphics.html#edef-BASEFONT). If [BASEFONT](http://www.w3.org/TR/html401/present/graphics.html#edef-BASEFONT) is not used, the default base font size is 3.

DEPRECATED EXAMPLE:  
The following example will show the difference between the seven font sizes available with [FONT](http://www.w3.org/TR/html401/present/graphics.html#edef-FONT):

<P><font size=1>size=1</font>

<font size=2>size=2</font>

<font size=3>size=3</font>

<font size=4>size=4</font>

<font size=5>size=5</font>

<font size=6>size=6</font>

<font size=7>size=7</font>

This might be rendered as:

Example of rendering of various font sizes

The following shows an example of the effect of relative font sizes using a base font size of 3:

Example of rendering of various font sizes with a basefont

The base font size does not apply to headings, except where these are modified using the [FONT](http://www.w3.org/TR/html401/present/graphics.html#edef-FONT) element with a relative font size change.

15.3 Rules: the HR element

<!ELEMENT [HR](http://www.w3.org/TR/html401/present/graphics.html#edef-HR) - O EMPTY -- horizontal rule -->

<!ATTLIST HR

[%attrs;](http://www.w3.org/TR/html401/sgml/dtd.html#attrs) -- [%coreattrs](http://www.w3.org/TR/html401/sgml/dtd.html#coreattrs), [%i18n](http://www.w3.org/TR/html401/sgml/dtd.html#i18n), [%events](http://www.w3.org/TR/html401/sgml/dtd.html#events) --

>

*Start tag:****required****, End tag:****forbidden***

*Attribute definitions*

**align = left|center|right**[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute specifies the horizontal alignment of the rule with respect to the surrounding context. Possible values:

* left: the rule is rendered flush left.
* center: the rule is centered.
* right: the rule is rendered flush right.

The default is align=center.

**noshade**[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) When set, this boolean attribute requests that the user agent render the rule in a solid color rather than as the traditional two-color "groove".

**size =**[***pixels***](http://www.w3.org/TR/html401/types.html#type-pixels)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute specifies the height of the rule. The default value for this attribute depends on the user agent.

**width =**[***length***](http://www.w3.org/TR/html401/types.html#type-length)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

[**Deprecated.**](http://www.w3.org/TR/html401/conform.html#deprecated) This attribute specifies the width of the rule. The default width is 100%, i.e., the rule extends across the entire canvas.

*Attributes defined elsewhere*

* [id](http://www.w3.org/TR/html401/struct/global.html#adef-id), [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) ([document-wide identifiers](http://www.w3.org/TR/html401/struct/global.html#id-and-class))
* [lang](http://www.w3.org/TR/html401/struct/dirlang.html#adef-lang) ([language information](http://www.w3.org/TR/html401/struct/dirlang.html#language-info)), [dir](http://www.w3.org/TR/html401/struct/dirlang.html#adef-dir) ([text direction](http://www.w3.org/TR/html401/struct/dirlang.html#bidirection))
* [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) ([element title](http://www.w3.org/TR/html401/struct/global.html#title))
* [style](http://www.w3.org/TR/html401/present/styles.html#adef-style) ([inline style information](http://www.w3.org/TR/html401/present/styles.html#style-element))
* [onclick](http://www.w3.org/TR/html401/interact/scripts.html#adef-onclick), [ondblclick](http://www.w3.org/TR/html401/interact/scripts.html#adef-ondblclick), [onmousedown](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmousedown), [onmouseup](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmouseup), [onmouseover](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmouseover), [onmousemove](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmousemove), [onmouseout](http://www.w3.org/TR/html401/interact/scripts.html#adef-onmouseout), [onkeypress](http://www.w3.org/TR/html401/interact/scripts.html#adef-onkeypress), [onkeydown](http://www.w3.org/TR/html401/interact/scripts.html#adef-onkeydown), [onkeyup](http://www.w3.org/TR/html401/interact/scripts.html#adef-onkeyup) ([intrinsic events](http://www.w3.org/TR/html401/interact/scripts.html#events))

The [HR](http://www.w3.org/TR/html401/present/graphics.html#edef-HR) element causes a horizontal rule to be rendered by visual user agents.

The amount of vertical space inserted between a rule and the content that surrounds it depends on the user agent.

DEPRECATED EXAMPLE:  
This example centers the rules, sizing them to half the available width between the margins. The top rule has the default thickness while the bottom two are set to 5 pixels. The bottom rule should be rendered in a solid color without shading:

<HR width="50%" align="center">

<HR size="5" width="50%" align="center">

<HR noshade size="5" width="50%" align="center">

These rules might be rendered as follows:

Example of rendering of various horizontal rules

[previous](http://www.w3.org/TR/html401/present/styles.html)   [next](http://www.w3.org/TR/html401/present/frames.html)   [contents](http://www.w3.org/TR/html401/cover.html#minitoc)   [elements](http://www.w3.org/TR/html401/index/elements.html)   [attributes](http://www.w3.org/TR/html401/index/attributes.html)   [index](http://www.w3.org/TR/html401/index/list.html)

[previous](http://www.w3.org/TR/html401/struct/objects.html)   [next](http://www.w3.org/TR/html401/present/graphics.html)   [contents](http://www.w3.org/TR/html401/cover.html#minitoc)   [elements](http://www.w3.org/TR/html401/index/elements.html)   [attributes](http://www.w3.org/TR/html401/index/attributes.html)   [index](http://www.w3.org/TR/html401/index/list.html)

14 Style Sheets

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14.1 Introduction to style sheets

Style sheets represent a major breakthrough for Web page designers, expanding their ability to improve the appearance of their pages. In the scientific environments in which the Web was conceived, people are more concerned with the content of their documents than the presentation. As people from wider walks of life discovered the Web, the limitations of HTML became a source of continuing frustration and authors were forced to sidestep HTML's stylistic limitations. While the intentions have been good -- to improve the presentation of Web pages -- the techniques for doing so have had unfortunate side effects. These techniques work for some of the people, some of the time, but not for all of the people, all of the time. They include:

* Using proprietary HTML extensions
* Converting text into images
* Using images for white space control
* Use of tables for page layout
* Writing a program instead of using HTML

These techniques considerably increase the complexity of Web pages, offer limited flexibility, suffer from interoperability problems, and create hardships for people with disabilities.

Style sheets solve these problems at the same time they supersede the limited range of presentation mechanisms in HTML. Style sheets make it easy to specify the amount of white space between text lines, the amount lines are indented, the colors used for the text and the backgrounds, the font size and style, and a host of other details.

For example, the following short CSS style sheet (stored in the file "special.css"), sets the text color of a paragraph to green and surrounds it with a solid red border:

P.special {

color : green;

border: solid red;

}

Authors may link this style sheet to their source HTML document with the [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) element:

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"

"http://www.w3.org/TR/html4/strict.dtd">

<HTML>

<HEAD>

<LINK href="special.css" rel="stylesheet" type="text/css">

</HEAD>

<BODY>

<P class="special">This paragraph should have special green text.

</BODY>

</HTML>

HTML 4 provides support for the following style sheet features:

**Flexible placement of style information**

Placing style sheets in separate files makes them easy to reuse. Sometimes it's useful to include rendering instructions within the document to which they apply, either grouped at the start of the document, or in attributes of the elements throughout the body of the document. To make it easier to manage style on a site basis, this specification describes how to use HTTP headers to set the style sheets to be applied to a document.

**Independence from specific style sheet languages**

This specification doesn't tie HTML to any particular style sheet language. This allows for a range of such languages to be used, for instance simple ones for the majority of users and much more complex ones for the minority of users with highly specialized needs. The examples included below all use the CSS (Cascading Style Sheets) language [[CSS1]](http://www.w3.org/TR/html401/references.html#ref-CSS1), but other style sheet languages would be possible.

**Cascading**

This is the capability provided by some style sheet languages such as CSS to allow style information from several sources to be blended together. These could be, for instance, corporate style guidelines, styles common to a group of documents, and styles specific to a single document. By storing these separately, style sheets can be reused, simplifying authoring and making more effective use of network caching. The cascade defines an ordered sequence of style sheets where rules in later sheets have greater precedence than earlier ones. Not all style sheet languages support cascading.

**Media dependencies**

HTML allows authors to specify documents in a media-independent way. This allows users to access Web pages using a wide variety of devices and media, e.g., graphical displays for computers running Windows, Macintosh OS, and X11, devices for television sets, specially adapted phones and PDA-based portable devices, speech-based browsers, and braille-based tactile devices.

Style sheets, by contrast, apply to specific media or media groups. A style sheet intended for screen use may be applicable when printing, but is of little use for speech-based browsers. This specification allows you to define the broad categories of media a given style sheet is applicable to. This allows user agents to avoid retrieving inappropriate style sheets. Style sheet languages may include features for describing media dependencies within the same style sheet.

**Alternate styles**

Authors may wish to offer readers several ways to view a document. For instance, a style sheet for rendering compact documents with small fonts, or one that specifies larger fonts for increased legibility. This specification allows authors to specify a preferred style sheet as well as alternates that target specific users or media. User agents should give users the opportunity to select from among alternate style sheets or to switch off style sheets altogether.

**Performance concerns**

Some people have voiced concerns over performance issues for style sheets. For instance, retrieving an external style sheet may delay the full presentation for the user. A similar situation arises if the document head includes a lengthy set of style rules.

The current proposal addresses these issues by allowing authors to include rendering instructions within each HTML element. The rendering information is then always available by the time the user agent wants to render each element.

In many cases, authors will take advantage of a common style sheet for a group of documents. In this case, distributing style rules throughout the document will actually lead to worse performance than using a linked style sheet, since for most documents, the style sheet will already be present in the local cache. The public availability of good style sheets will encourage this effect.

14.2 Adding style to HTML

***Note.****The sample default style sheet for HTML 4 that is included in*[*[CSS2]*](http://www.w3.org/TR/html401/references.html#ref-CSS2)*expresses generally accepted default style information for each element. Authors and implementors alike might find this a useful resource.*

HTML documents may contain style sheet rules directly in them or they may import style sheets.

Any style sheet language may be used with HTML. A simple style sheet language may suffice for the needs of most users, but other languages may be more suited to highly specialized needs. This specification uses the style language "Cascading Style Sheets" ([[CSS1]](http://www.w3.org/TR/html401/references.html#ref-CSS1)), abbreviated CSS, for examples.

The [syntax of style data](http://www.w3.org/TR/html401/types.html#type-style) depends on the style sheet language.

14.2.1 Setting the default style sheet language

Authors must specify the style sheet language of style information associated with an HTML document.

Authors should use the [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) element to set the default style sheet language for a document. For example, to set the default to CSS, authors should put the following declaration in the [HEAD](http://www.w3.org/TR/html401/struct/global.html#edef-HEAD) of their documents:

<META http-equiv="Content-Style-Type" content="text/css">

The default style sheet language may also be set with HTTP headers. The above [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) declaration is equivalent to the HTTP header:

Content-Style-Type: text/css

User agents should determine the default style sheet language for a document according to the following steps (highest to lowest priority):

1. If any [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) declarations specify the "Content-Style-Type", the last one in the character stream determines the default style sheet language.
2. Otherwise, if any HTTP headers specify the "Content-Style-Type", the last one in the character stream determines the default style sheet language.
3. Otherwise, the default style sheet language is "text/css".

Documents that include elements that set the [style](http://www.w3.org/TR/html401/present/styles.html#adef-style) attribute but which don't define a default style sheet language are incorrect. Authoring tools should generate default style sheet language information (typically a[META](http://www.w3.org/TR/html401/struct/global.html#edef-META) declaration) so that user agents do not have to rely on a default of "text/css".

14.2.2 Inline style information

*Attribute definitions*

**style =**[***style***](http://www.w3.org/TR/html401/types.html#type-style)[**[CN]**](http://www.w3.org/TR/html401/types.html#case-neutral)

This attribute specifies style information for the current element.

The [syntax](http://www.w3.org/TR/html401/types.html#type-style) of the value of the [style](http://www.w3.org/TR/html401/present/styles.html#adef-style) attribute is determined by the [default style sheet language](http://www.w3.org/TR/html401/present/styles.html#default-style). For example, for [[CSS2]] inline style, use the declaration block syntax described in section 4.1.8 (without curly brace delimiters).

This CSS example sets color and font size information for the text in a specific paragraph.

<P style="font-size: 12pt; color: fuchsia">Aren't style sheets wonderful?

In CSS, property declarations have the form "name : value" and are separated by a semi-colon.

To specify style information for more than one element, authors should use the STYLE element. For optimal flexibility, authors should define styles in external style sheets.

14.2.3 Header style information: the STYLE element

<!ELEMENT [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) - - [%StyleSheet](http://www.w3.org/TR/html401/sgml/dtd.html#StyleSheet) -- style info -->

<!ATTLIST STYLE

[%i18n;](http://www.w3.org/TR/html401/sgml/dtd.html#i18n) -- [lang](http://www.w3.org/TR/html401/struct/dirlang.html#adef-lang), [dir](http://www.w3.org/TR/html401/struct/dirlang.html#adef-dir), for use with title --

[type](http://www.w3.org/TR/html401/present/styles.html#adef-type-STYLE) [%ContentType;](http://www.w3.org/TR/html401/sgml/dtd.html#ContentType) #REQUIRED -- content type of style language --

[media](http://www.w3.org/TR/html401/present/styles.html#adef-media) [%MediaDesc;](http://www.w3.org/TR/html401/sgml/dtd.html#MediaDesc) #IMPLIED -- designed for use with these media --

[title](http://www.w3.org/TR/html401/struct/global.html#adef-title) [%Text;](http://www.w3.org/TR/html401/sgml/dtd.html#Text) #IMPLIED -- advisory title --

>

*Start tag:****required****, End tag:****required***

*Attribute definitions*

**type =**[***content-type***](http://www.w3.org/TR/html401/types.html#type-content-type)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

This attribute specifies the style sheet language of the element's contents and overrides the default style sheet language. The style sheet language is specified as a content type (e.g., "text/css"). Authors must supply a value for this attribute; there is no default value for this attribute.

**media =**[***media-descriptors***](http://www.w3.org/TR/html401/types.html#type-media-descriptors)[**[CI]**](http://www.w3.org/TR/html401/types.html#case-insensitive)

This attribute specifies the intended destination medium for style information. It may be a single media descriptor or a comma-separated list. The default value for this attribute is "screen".

*Attributes defined elsewhere*

* [lang](http://www.w3.org/TR/html401/struct/dirlang.html#adef-lang) ([language information](http://www.w3.org/TR/html401/struct/dirlang.html#language-info)), [dir](http://www.w3.org/TR/html401/struct/dirlang.html#adef-dir) ([text direction](http://www.w3.org/TR/html401/struct/dirlang.html#bidirection))
* [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) ([element title](http://www.w3.org/TR/html401/struct/global.html#title))

The [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) element allows authors to put style sheet rules in the head of the document. HTML permits any number of [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) elements in the [HEAD](http://www.w3.org/TR/html401/struct/global.html#edef-HEAD) section of a document.

User agents that don't support style sheets, or don't support the specific style sheet language used by a [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) element, must hide the contents of the [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) element. It is an error to render the content as part of the document's text. Some style sheet languages support syntax for [hiding the content](http://www.w3.org/TR/html401/present/styles.html#hiding) from non-conforming user agents.

The [syntax of style data](http://www.w3.org/TR/html401/types.html#type-style) depends on the style sheet language.

Some style sheet implementations may allow a wider variety of rules in the [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) element than in the [style](http://www.w3.org/TR/html401/present/styles.html#adef-style) attribute. For example, with CSS, rules may be declared within a [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) element for:

* All instances of a specific HTML element (e.g., all [P](http://www.w3.org/TR/html401/struct/text.html#edef-P) elements, all [H1](http://www.w3.org/TR/html401/struct/global.html#edef-H1) elements, etc.)
* All instances of an HTML element belonging to a specific class (i.e., whose [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) attribute is set to some value).
* Single instances of an HTML element (i.e., whose [id](http://www.w3.org/TR/html401/struct/global.html#adef-id) attribute is set to some value).

Rules for style rule precedences and inheritance depend on the style sheet language.

The following CSS [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) declaration puts a border around every [H1](http://www.w3.org/TR/html401/struct/global.html#edef-H1) element in the document and centers it on the page.

<HEAD>

<STYLE type="text/css">

H1 {border-width: 1; border: solid; text-align: center}

</STYLE>

</HEAD>

To specify that this style information should only apply to [H1](http://www.w3.org/TR/html401/struct/global.html#edef-H1) elements of a specific class, we modify it as follows:

<HEAD>

<STYLE type="text/css">

H1.myclass {border-width: 1; border: solid; text-align: center}

</STYLE>

</HEAD>

<BODY>

<H1 class="myclass"> This H1 is affected by our style </H1>

<H1> This one is not affected by our style </H1>

</BODY>

Finally, to limit the scope of the style information to a single instance of [H1](http://www.w3.org/TR/html401/struct/global.html#edef-H1), set the [id](http://www.w3.org/TR/html401/struct/global.html#adef-id) attribute:

<HEAD>

<STYLE type="text/css">

#myid {border-width: 1; border: solid; text-align: center}

</STYLE>

</HEAD>

<BODY>

<H1 class="myclass"> This H1 is not affected </H1>

<H1 id="myid"> This H1 is affected by style </H1>

<H1> This H1 is not affected </H1>

</BODY>

Although style information may be set for almost every HTML element, two elements, [DIV](http://www.w3.org/TR/html401/struct/global.html#edef-DIV) and [SPAN](http://www.w3.org/TR/html401/struct/global.html#edef-SPAN), are particularly useful in that they do not impose any presentation semantics (besides [block-level vs. inline](http://www.w3.org/TR/html401/struct/global.html#block-inline)). When combined with style sheets, these elements allow users to extend HTML indefinitely, particularly when used with the [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) and [id](http://www.w3.org/TR/html401/struct/global.html#adef-id) attributes.

In the following example, we use the [SPAN](http://www.w3.org/TR/html401/struct/global.html#edef-SPAN) element to set the font style of the first few words of a paragraph to small caps.

<HEAD>

<STYLE type="text/css">

SPAN.sc-ex { font-variant: small-caps }

</STYLE>

</HEAD>

<BODY>

<P><SPAN class="sc-ex">The first</SPAN> few words of

this paragraph are in small-caps.

</BODY>

In the following example, we use [DIV](http://www.w3.org/TR/html401/struct/global.html#edef-DIV) and the [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) attribute to set the text justification for a series of paragraphs that make up the abstract section of a scientific article. This style information could be reused for other abstract sections by setting the [class](http://www.w3.org/TR/html401/struct/global.html#adef-class) attribute elsewhere in the document.

<HEAD>

<STYLE type="text/css">

DIV.Abstract { text-align: justify }

</STYLE>

</HEAD>

<BODY>

<DIV class="Abstract">

<P>The Chieftain product range is our market winner for

the coming year. This report sets out how to position

Chieftain against competing products.

<P>Chieftain replaces the Commander range, which will

remain on the price list until further notice.

</DIV>

</BODY>

14.2.4 Media types

HTML allows authors to design documents that take advantage of the characteristics of the media where the document is to be rendered (e.g., graphical displays, television screens, handheld devices, speech-based browsers, braille-based tactile devices, etc.). By specifying the [media](http://www.w3.org/TR/html401/present/styles.html#adef-media) attribute, authors allow user agents to load and apply style sheets selectively. Please consult the list of recognized [media descriptors](http://www.w3.org/TR/html401/types.html#type-media-descriptors).

The following sample declarations apply to [H1](http://www.w3.org/TR/html401/struct/global.html#edef-H1) elements. When projected in a business meeting, all instances will be blue. When printed, all instances will be centered.

<HEAD>

<STYLE type="text/css" media="projection">

H1 { color: blue}

</STYLE>

<STYLE type="text/css" media="print">

H1 { text-align: center }

</STYLE>

This example adds sound effects to anchors for use in speech output:

<STYLE type="text/css" media="aural">

A { cue-before: uri(bell.aiff); cue-after: uri(dong.wav)}

</STYLE>

</HEAD>

Media control is particularly interesting when applied to external style sheets since user agents can save time by retrieving from the network only those style sheets that apply to the current device. For instance, speech-based browsers can avoid downloading style sheets designed for visual rendering. See the section on [media-dependent cascades](http://www.w3.org/TR/html401/present/styles.html#media-cascades) for more information.

14.3 External style sheets

Authors may separate style sheets from HTML documents. This offers several benefits:

* Authors and Web site managers may share style sheets across a number of documents (and sites).
* Authors may change the style sheet without requiring modifications to the document.
* User agents may load style sheets selectively (based on media descriptions).

14.3.1 Preferred and alternate style sheets

HTML allows authors to associate any number of external style sheets with a document. The style sheet language defines how multiple external style sheets interact (for example, the CSS "cascade" rules).

Authors may specify a number of mutually exclusive style sheets called *alternate* style sheets. Users may select their favorite among these depending on their preferences. For instance, an author may specify one style sheet designed for small screens and another for users with weak vision (e.g., large fonts). User agents should allow users to select from alternate style sheets.

The author may specify that one of the alternates is a *preferred* style sheet. User agents should apply the author's preferred style sheet unless the user has selected a different alternate.

Authors may group several alternate style sheets (including the author's preferred style sheets) under a single *style name*. When a user selects a named style, the user agent must apply all style sheets with that name. User agents must not apply alternate style sheets with a different style name. The section on [specifying external style sheets](http://www.w3.org/TR/html401/present/styles.html#specifying-external) explains how to name a group of style sheets.

Authors may also specify *persistent* style sheets that user agents must apply in addition to any alternate style sheet.

User agents must respect [media descriptors](http://www.w3.org/TR/html401/types.html#type-media-descriptors) when applying any style sheet.

User agents should also allow users to disable the author's style sheets entirely, in which case the user agent must not apply any persistent or alternate style sheets.

14.3.2 Specifying external style sheets

Authors specify external style sheets with the following attributes of the [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) element:

* Set the value of [href](http://www.w3.org/TR/html401/struct/links.html#adef-href) to the location of the style sheet file. The value of [href](http://www.w3.org/TR/html401/struct/links.html#adef-href) is a [URI](http://www.w3.org/TR/html401/types.html#type-uri).
* Set the value of the [type](http://www.w3.org/TR/html401/struct/links.html#adef-type-A) attribute to indicate the language of the linked (style sheet) resource. This allows the user agent to avoid downloading a style sheet for an unsupported style sheet language.
* Specify that the style sheet is persistent, preferred, or alternate:
  + To make a style sheet persistent, set the [rel](http://www.w3.org/TR/html401/struct/links.html#adef-rel) attribute to "stylesheet" and don't set the [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) attribute.
  + To make a style sheet preferred, set the [rel](http://www.w3.org/TR/html401/struct/links.html#adef-rel) attribute to "stylesheet" and name the style sheet with the [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) attribute.
  + To specify an alternate style sheet, set the [rel](http://www.w3.org/TR/html401/struct/links.html#adef-rel) attribute to "alternate stylesheet" and name the style sheet with the [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) attribute.

User agents should provide a means for users to view and pick from the list of alternate styles. The value of the [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) attribute is recommended as the name of each choice.

In this example, we first specify a persistent style sheet located in the file mystyle.css:

<LINK href="mystyle.css" rel="stylesheet" type="text/css">

Setting the [title](http://www.w3.org/TR/html401/struct/global.html#adef-title) attribute makes this the author's preferred style sheet:

<LINK href="mystyle.css" title="compact" rel="stylesheet" type="text/css">

Adding the keyword "alternate" to the [rel](http://www.w3.org/TR/html401/struct/links.html#adef-rel) attribute makes it an alternate style sheet:

<LINK href="mystyle.css" title="Medium" rel="alternate stylesheet" type="text/css">

For more information on external style sheets, please consult the section on [links and external style sheets.](http://www.w3.org/TR/html401/struct/links.html#linksandss)

Authors may also use the [META](http://www.w3.org/TR/html401/struct/global.html" \l "edef-META) element to set the document's preferred style sheet. For example, to set the preferred style sheet to "compact" (see the preceding example), authors may include the following line in the [HEAD](http://www.w3.org/TR/html401/struct/global.html#edef-HEAD):

<META http-equiv="Default-Style" content="compact">

The preferred style sheet may also be specified with HTTP headers. The above [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) declaration is equivalent to the HTTP header:

Default-Style: "compact"

If two or more [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) declarations or HTTP headers specify the preferred style sheet, the last one takes precedence. HTTP headers are considered to occur earlier than the document [HEAD](http://www.w3.org/TR/html401/struct/global.html#edef-HEAD) for this purpose.

If two or more [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) elements specify a preferred style sheet, the first one takes precedence.

Preferred style sheets specified with [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) or HTTP headers have precedence over those specified with the [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) element.

14.4 Cascading style sheets

*Cascading* style sheet languages such as CSS allow style information from several sources to be blended together. However, not all style sheet languages support cascading. To define a cascade, authors specify a sequence of [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) and/or [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) elements. The style information is cascaded in the order the elements appear in the [HEAD](http://www.w3.org/TR/html401/struct/global.html#edef-HEAD).

***Note.****This specification does not specify how style sheets from different style languages cascade. Authors should avoid mixing style sheet languages.*

In the following example, we specify two alternate style sheets named "compact". If the user selects the "compact" style, the user agent must apply both external style sheets, as well as the persistent "common.css" style sheet. If the user selects the "big print" style, only the alternate style sheet "bigprint.css" and the persistent "common.css" will be applied.

<LINK rel="alternate stylesheet" title="compact" href="small-base.css" type="text/css">

<LINK rel="alternate stylesheet" title="compact" href="small-extras.css" type="text/css">

<LINK rel="alternate stylesheet" title="big print" href="bigprint.css" type="text/css">

<LINK rel="stylesheet" href="common.css" type="text/css">

Here is a cascade example that involves both the [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) and [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) elements.

<LINK rel="stylesheet" href="corporate.css" type="text/css">

<LINK rel="stylesheet" href="techreport.css" type="text/css">

<STYLE type="text/css">

p.special { color: rgb(230, 100, 180) }

</STYLE>

14.4.1 Media-dependent cascades

A cascade may include style sheets applicable to different media. Both [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) and [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) may be used with the [media](http://www.w3.org/TR/html401/present/styles.html#adef-media) attribute. The user agent is then responsible for filtering out those style sheets that do not apply to the current medium.

In the following example, we define a cascade where the "corporate" style sheet is provided in several versions: one suited to printing, one for screen use and one for speech-based browsers (useful, say, when reading email in the car). The "techreport" stylesheet applies to all media. The color rule defined by the [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) element is used for print and screen but not for aural rendering.

<LINK rel="stylesheet" media="aural" href="corporate-aural.css" type="text/css">

<LINK rel="stylesheet" media="screen" href="corporate-screen.css" type="text/css">

<LINK rel="stylesheet" media="print" href="corporate-print.css" type="text/css">

<LINK rel="stylesheet" href="techreport.css" type="text/css">

<STYLE media="screen, print" type="text/css">

p.special { color: rgb(230, 100, 180) }

</STYLE>

14.4.2 Inheritance and cascading

When the user agent wants to render a document, it needs to find values for style properties, e.g. the font family, font style, size, line height, text color and so on. The exact mechanism depends on the style sheet language, but the following description is generally applicable:

The cascading mechanism is used when a number of style rules all apply directly to an element. The mechanism allows the user agent to sort the rules by specificity, to determine which rule to apply. If no rule can be found, the next step depends on whether the style property can be inherited or not. Not all properties can be inherited. For these properties the style sheet language provides default values for use when there are no explicit rules for a particular element.

If the property can be inherited, the user agent examines the immediately enclosing element to see if a rule applies to that. This process continues until an applicable rule is found. This mechanism allows style sheets to be specified compactly. For instance, authors may specify the font family for all elements within the [BODY](http://www.w3.org/TR/html401/struct/global.html#edef-BODY) by a single rule that applies to the [BODY](http://www.w3.org/TR/html401/struct/global.html#edef-BODY) element.

14.5 Hiding style data from user agents

Some style sheet languages support syntax intended to allow authors to hide the content of [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) elements from non-conforming user agents.

This example illustrates for CSS how to comment out the content of [STYLE](http://www.w3.org/TR/html401/present/styles.html#edef-STYLE) elements to ensure that older, non-conforming user agents will not render them as text.

<STYLE type="text/css">

<!--

H1 { color: red }

P { color: blue}

-->

</STYLE>

14.6 Linking to style sheets with HTTP headers

*This section only applies to user agents conforming to versions of HTTP that define a Link header field. Note that HTTP 1.1 as defined by*[*[RFC2616]*](http://www.w3.org/TR/html401/references.html#ref-RFC2616)*does not include a Link header field (refer to section 19.6.3).*

Web server managers may find it convenient to configure a server so that a style sheet will be applied to a group of pages. The HTTP Link header has the same effect as a [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) element with the same attributes and values. Multiple Link headers correspond to multiple [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) elements occurring in the same order. For instance,

Link: <http://www.acme.com/corporate.css>; REL=stylesheet

corresponds to:

<LINK rel="stylesheet" href="http://www.acme.com/corporate.css">

It is possible to specify several alternate styles using multiple Link headers, and then use the [rel](http://www.w3.org/TR/html401/struct/links.html#adef-rel) attribute to determine the default style.

In the following example, "compact" is applied by default since it omits the "alternate" keyword for the [rel](http://www.w3.org/TR/html401/struct/links.html#adef-rel) attribute.

Link: <compact.css>; rel="stylesheet"; title="compact"

Link: <bigprint.css>; rel="alternate stylesheet"; title="big print"

This should also work when HTML documents are sent by email. Some email agents can alter the ordering of [[RFC822]](http://www.w3.org/TR/html401/references.html#ref-RFC822) headers. To protect against this affecting the cascading order for style sheets specified byLink headers, authors can use header concatenation to merge several instances of the same header field. The quote marks are only needed when the attribute values include whitespace. Use SGML entities to reference characters that are otherwise not permitted within HTTP or email headers, or that are likely to be affected by transit through gateways.

[LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) and [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) elements implied by HTTP headers are defined as occurring before any explicit [LINK](http://www.w3.org/TR/html401/struct/links.html#edef-LINK) and [META](http://www.w3.org/TR/html401/struct/global.html#edef-META) elements in the document's [HEAD](http://www.w3.org/TR/html401/struct/global.html#edef-HEAD).

[previous](http://www.w3.org/TR/html401/struct/objects.html)   [next](http://www.w3.org/TR/html401/present/graphics.html)   [contents](http://www.w3.org/TR/html401/cover.html#minitoc)   [elements](http://www.w3.org/TR/html401/index/elements.html)   [attributes](http://www.w3.org/TR/html401/index/attributes.html)   [index](http://www.w3.org/TR/html401/index/list.html)