Emplicar Software Solutions

HTML – Version 1

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About

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Chapter 1: Getting started with HTML

Remarks

HTML (**H**yper**t**ext **M**arkup **L**anguage) is an XML-compliant system of annotating documents with 'tags'. It is used specifically to create content for web pages and web applications, which can then be shared over a network.

Apart from text, the current version of HTML supports many different types of media, including images and videos.

Versions

Version	Specification	Release Date
1.0	N/A	1994-01-01
2.0	RFC 1866	1995-11-24
3.2	W3C: HTML 3.2 Specification	1997-01-14
4.0	W3C: HTML 4.0 Specification	1998-04-24
4.01	W3C: HTML 4.01 Specification	1999-12-24
5	WHATWG: HTML Living Standard	2014-10-28
5.1	W3C: HTML 5.1 Specification	2016-11-01

Examples

Hello World

Introduction

HTML (**H**yper**t**ext **M**arkup **L**anguage) uses a markup system composed of elements which represent specific content. *Markup* means that with HTML you declare *what* is presented to a viewer, not *how* it is presented. Visual representations are defined by Cascading Style Sheets (CSS) and realized by browsers. Still existing elements that allow for such, like e.g. `font`, "are entirely obsolete, and must not be used by authors"[1].

HTML is sometimes called a programming language but it has no logic, so is a **markup language**. HTML tags provide semantic meaning and machine-readability to the content in the page.

An element usually consists of an opening tag (<element_name>), a closing tag (</element_name>), which contain the element's name surrounded by angle brackets, and the content in between: <element_name>...content...</element_name>

There are some HTML elements that don't have a closing tag or any contents. These are called void elements. Void elements include <img>, <meta>, <link> and <input>.

Element names can be thought of as descriptive keywords for the content they contain, such as video, audio, table, footer.

A HTML page may consist of potentially hundreds of elements which are then read by a web browser, interpreted and rendered into human readable or audible content on the screen.

For this document it is important to note the difference between elements and tags:

Elements: video, audio, table, footer

Tags: <video>, <audio>, <table>, <footer>, </html>, </body>

Element insight

Let's break down a tag...

The tag represents a common paragraph.

Elements commonly have an opening tag and a closing tag. The opening tag contains the element's name in angle brackets ( ). The closing tag is identical to the opening tag with the addition of a forward slash (/) between the opening bracket and the element's name ( ).

Content can then go between these two tags: This is a simple paragraph. .

Creating a simple page

The following HTML example creates a simple "Hello World" web page.

HTML files can be created using any text editor. The files must be saved with a .html or .htm[2] extension in order to be recognized as HTML files.

Once created, this file can be opened in any web browser.

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

    <head>
        <meta charset="UTF-8">
        <title>Hello!</title>
    </head>

    <body>
        <h1>Hello World!</h1>
        <p>This is a simple paragraph.</p>
    </body>

</html>
```

Simple page break down

These are the tags used in the example:

Tag	Meaning
`<!DOCTYPE>`	Defines the HTML version used in the document. In this case it is HTML5. See the doctypes topic for more information.
`<html>`	Opens the page. No markup should come after the closing tag (`</html>`). The `lang` attribute declares the primary language of the page using the ISO language codes (`en` for English). See the Content Language topic for more information.
`<head>`	Opens the head section, which does not appear in the main browser window but mainly contains information *about* the HTML document, called *metadata*. It can also contain imports from external stylesheets and scripts. The closing tag is `</head>`.
`<meta>`	Gives the browser some metadata about the document. The `charset` attribute declares the character encoding. Modern HTML documents should always use UTF-8, even though it is not a requirement. In HTML, the `<meta>` tag does not require a closing tag. See the Meta topic for more information.
`<title>`	The title of the page. Text written between this opening and the closing tag (`</title>`) will be displayed on the tab of the page or in the title bar of the browser.
`<body>`	Opens the part of the document displayed to users, i.e. all the visible or audible content of a page. No content should be added after the closing tag `</body>`.
`<h1>`	A level 1 heading for the page.

Tag	Meaning
	See headings for more information.
<p>	Represents a common paragraph of text.

1. ↑ HTML5, 11.2 Non-conforming features
2. ↑ `.htm` is inherited from the legacy DOS three character file extension limit.

Chapter 2: Anchors and Hyperlinks

Introduction

Anchor tags are commonly used to link separate webpages, but they can also be used to link between different places in a single document, often within table of contents or even launch external applications. This topic explains the implementation and application of HTML anchor tags in various roles.

Syntax

- `<a href="URL or anchor">Link Text</a>`

Parameters

Parameter	Details
`href`	Specifies the destination address. It can be an absolute or relative URL, or the `name` of an anchor. An absolute URL is the complete URL of a website like http://example.com/. A relative URL points to another directory and/or document inside the same website, e.g. `/about-us/` points to the directory “about-us” inside the root directory (`/`). When pointing to another directory without explicitly specifying the document, web servers typically return the document “index.html” inside that directory.
`hreflang`	Specifies the language of the resource linked by the `href` attribute (which must be present with this one). Use language values from BCP 47 for HTML5 and RFC 1766 for HTML 4.
`rel`	Specifies the relationship between the current document and the linked document. For HTML5, the values must be defined in the specification or registered in the Microformats wiki.
`target`	Specifies where to open the link, e.g. in a new tab or window. Possible values are `_blank`, `_self`, `_parent`, `_top`, and `framename` (deprecated). Forcing such behaviour is not recommended since it violates the control of the user over a website.
`title`	Specifies extra information about a link. The information is most often shown as a tooltip text when the cursor moves over the link. This attribute is not restricted to links, it can be used on almost all HTML tags.
`download`	Specifies that the target will be downloaded when a user clicks on the hyperlink. The value of the attribute will be the name of the downloaded file. There are no restrictions on allowed values, and the browser will automatically detect the

Parameter	Details
	correct file extension and add it to the file (.img, .pdf, etc.). If the value is omitted, the original filename is used.

Examples

Link to another site

This is the basic use of the `<a>` (anchor element) element:

```
<a href="http://example.com/">Link to example.com</a>
```

It creates a hyperlink, to the URL `http://example.com/` as specified by the `href` (hypertext reference) attribute, with the anchor text "Link to example.com". It would look something like the following:

> Link to example.com

To denote that this link leads to an external website, you can use the `external` link type:

```
<a href="http://example.com/" rel="external">example site</a>
```

You can link to a site that uses a protocol other than HTTP. For example, to link to an FTP site, you can do,

```
<a href="ftp://example.com/">This could be a link to a FTP site</a>
```

In this case, the difference is that this anchor tag is requesting that the user's browser connect to `example.com` using the File Transfer Protocol (FTP) rather than the Hypertext Transfer Protocol (HTTP).

This could be a link to a FTP site

Open link in new tab/window

```
<a href="example.com" target="_blank">Text Here</a>
```

The `target` attribute specifies where to open the link. By setting it to `_blank`, you tell the browser to open it in a new tab or window (per user preference).

> **SECURITY VULNERABILITY WARNING!**
>
> Using `target="_blank"` gives the opening site partial access to the `window.opener` object via JavaScript, which allows that page to then access and change the `window.opener.location` of *your* page and potentially redirect users to malware or

phishing sites.

Whenever using this for pages you do not control, add `rel="noopener"` to your link to prevent the `window.opener` object from being sent with the request.

Currently, Firefox does not support `noopener`, so you will need to use `rel="noopener noreferrer"` for maximum effect.

Link to an anchor

Anchors can be used to jump to specific tags on an HTML page. The `<a>` tag can point to any element that has an `id` attribute. To learn more about IDs, visit the documentation about Classes and IDs. Anchors are mostly used to jump to a subsection of a page and are used in conjunction with header tags.

Suppose you've created a page (`page1.html`) on many topics:

```
<h2>First topic</h2>
<p>Content about the first topic</p>
<h2>Second topic</h2>
<p>Content about the second topic</p>
```

Once you have several sections, you may want to create a Table of Contents at the top of the page with quick-links (or bookmarks) to specific sections.

If you gave an `id` attribute to your topics, you could then link to them

```
<h2 id="Topic1">First topic</h2>
<p>Content about the first topic</p>
<h2 id="Topic2">Second topic</h2>
<p>Content about the second topic</p>
```

Now you can use the anchor in your table of contents:

```
<h1>Table of Contents</h1>
    <a href='#Topic1'>Click to jump to the First Topic</a>
    <a href='#Topic2'>Click to jump to the Second Topic</a>
```

These anchors are also attached to the web page they're on (`page1.html`). So you can link across the site from one page to the other by referencing the page *and* anchor name.

```
 Remember, you can always <a href="page1.html#Topic1">look back in the First Topic</a> for supporting information.
```

Link that runs JavaScript

Simply use the `javascript:` protocol to run the text as JavaScript instead of opening it as a normal link:

```
<a href="javascript:myFunction();">Run Code</a>
```

You can also achieve the same thing using the `onclick` attribute:

```
<a href="#" onclick="myFunction(); return false;">Run Code</a>
```

The `return false;` is necessary to prevent your page from scrolling to the top when the link to `#` is clicked. Make sure to include all code you'd like to run before it, as returning will stop execution of further code.

Also noteworthy, you can include an exclamation mark `!` after the hashtag in order to prevent the page from scrolling to the top. This works because any invalid slug will cause the link to not scroll *anywhere* on the page, because it couldn't locate the element it references (an element with `id="!"`). You could also just use any invalid slug (such as `#scrollsNowhere`) to achieve the same effect. In this case, `return false;` is not required:

```
<a href="#!" onclick="myFunction();">Run Code</a>
```

> **Should you be using any of this?**
>
> The answer is almost certainly ***no***. Running JavaScript inline with the element like this is fairly bad practice. Consider using pure JavaScript solutions that look for the element in the page and bind a function to it instead. Listening for an event
>
> Also consider whether this element is really a *button* instead of a *link*. If so, you should use `<button>`.

Link to a page on the same site

You can use a relative path to link to pages on the same website.

```
<a href="/example">Text Here</a>
```

The above example would go to the file `example` at the root directory (`/`) of the server.

If this link was on http://example.com, the following two links would bring the user to the same location

```
<a href="/page">Text Here</a>
<a href="http://example.com/page">Text Here</a>
```

Both of the above would go to the `page` file at the root directory of `example.com`.

Link that runs email client

Basic usage

If the value of the `href`-attribute begins with `mailto:` it will try to open an email client on click:

```
<a href="mailto:example@example.com">Send email</a>
```

This will put the email address `example@example.com` as the recipient for the newly created email.

Cc and Bcc

You can also add addresses for cc- or bcc-recipients using the following syntax:

```
<a href="mailto:example@example.com?cc=john@example.com&bcc=jane@example.com">Send email</a>
```

Subject and body text

You can populate the subject and body for the new email as well:

```
<a href="mailto:example@example.com?subject=Example+subject&body=Message+text">Send email</a>
```

Those values must be URL encoded.

Clicking on a link with `mailto:` will try to open the default email client specified by your operating system or it will ask you to choose what client you want to use. Not all options specified after the recipient's address are supported in all email clients.

Link that dials a number

If the value of the `href`-attribute begins with `tel:`, your device will dial the number when you click it. This works on mobile devices or on computers/tablets running software – like Skype or FaceTime – that can make phone calls.

```
<a href="tel:11234567890">Call us</a>
```

Most devices and programs will prompt the user in some way to confirm the number they are about to dial.

Read Anchors and Hyperlinks online: https://riptutorial.com/html/topic/254/anchors-and-hyperlinks

Chapter 4: Canvas

Parameters

Attribute	Description
height	Specifies the canvas height
width	Specifies the canvas width

Remarks

- This tag is not compatible with versions of Internet Explorer less than 9. Check caniuse.com for browser compatibility.
- `canvas` is only a container for graphics, and the actual drawing of graphics is done by JavaScript.

Examples

Basic Example

The `canvas` element was introduced in HTML5 for drawing graphics.

```
<canvas id="myCanvas">
   Cannot display graphic. Canvas is not supported by your browser (IE<9)
</canvas>
```

The above will create a transparent HTML`<canvas>` element of 300×150 px in size.

You can use the **canvas** element to draw amazing stuff like shapes, graphs, manipulate images, create engaging games etc. with **JavaScript**.
The `canvas`'s 2D *drawable layer* surface Object is referred to as `CanvasRenderingContext2D`; or from a `HTMLCanvasElement` using the `.getContext("2d")` method:

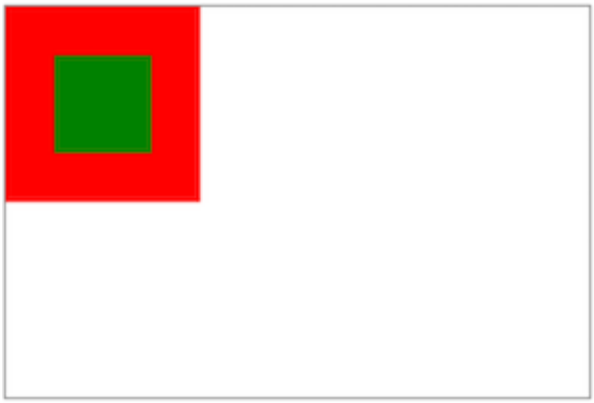
```
var ctx = document.getElementById("myCanvas").getContext("2d");
// now we can refer to the canvas's 2D layer context using `ctx`

ctx.fillStyle = "#f00";
ctx.fillRect(0, 0, ctx.canvas.width, ctx.canvas.height); // x, y, width, height

ctx.fillStyle = "#000";
ctx.fillText("My red canvas with some black text", 24, 32); // text, x, y
```

jsFiddle example

Drawing two rectangles on a

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8" />
    <title>Draw two rectangles on the canvas</title>
    <style>
      canvas{
          border:1px solid gray;
      }
    </style>
    <script async>
      window.onload = init; // call init() once the window is completely loaded
      function init(){
        // #1 - get reference to <canvas> element
        var canvas = document.querySelector('canvas');

        // #2 - get reference to the drawing context and drawing API
        var ctx = canvas.getContext('2d');

        // #3 - all fill operations are now in red
        ctx.fillStyle = 'red';

        // #4 - fill a 100x100 rectangle at x=0,y=0
        ctx.fillRect(0,0,100,100);

        // #5 - all fill operations are now in green
        ctx.fillStyle = 'green';

        // #6 - fill a 50x50 rectangle at x=25,y=25
        ctx.fillRect(25,25,50,50);

      }
      </script>
</head>
<body>
  <canvas width=300 height=200>Your browser does not support canvas.</canvas>
</body>
</html>
```

This example looks like this:



Read Canvas online: https://riptutorial.com/html/topic/1162/canvas

Chapter 5: Character Entities

Examples

Common Special Characters

Some character may be reserved for HTML and cannot be used directly as it may obstruct the actual HTML codes. For example, trying to display the left and right angle brackets (<>) in the source code may cause unexpected results in the output. Similarly, white spaces as written in the source code may not display as expected in the output HTML. Some, like ☎, are not available in the ASCII character set.

For this purpose, character entities are created. These are of the form `&entity_name;` or `&entity_number;`. The following are some of the available HTML entities.

Character	Description	Entity Name	Entity Number
" "	non-breaking space		
"<"	less than	<	<
">"	greater than	>	>
"&"	ampersand	&	&
"—"	em dash	—	—
"–"	en dash	–	–
"©"	copyright	©	©
"®"	registered trademark	®	®
"™"	trademark	™	™
"☎"	phone	☎	☎

Thus, to write

© 2016 Stack Exchange Inc.

the following HTML code is used:

```
<b>&copy; 2016 Stack Exchange Inc.</b>
```

Character Entities in HTML

Many symbols and special characters are required while developing a web page in html, but as we know that sometimes the use of characters directly may interfere with the actual html code which have certain characters reserved and also certain characters being not available on keyboard. Thus, to avoid the conflict and at same time to be able to use different symbols in our code w3 org provides us with 'Character Entities'.

Character Entities are predefined with 'Entity Name' - &entity_name; and 'Entity Number' - &entity_number; so we need to use either of the two for the required symbol to be rendered on our page.

The list of few Character Entities can be found at https://dev.w3.org/html5/html-author/charref

A simple example with the use of character entity for 'magnifying glass' :

```
<input type="text" placeholder="  &#128269; Search"/>
```

which renders as

Read Character Entities online: https://riptutorial.com/html/topic/5229/character-entities

Chapter 6: Classes and IDs

Introduction

Classes and IDs make referencing HTML elements from scripts and stylesheets easier. The class attribute can be used on one or more tags and is used by CSS for styling. IDs however are intended to refer to a single element, meaning the same ID should never be used twice. IDs are generally used with JavaScript and internal document links, and are discouraged in CSS. This topic contains helpful explanations and examples regarding proper usage of class and ID attributes in HTML.

Syntax

- class="class1 class2 class3"
- id="uniqueid"

Parameters

Parameter	Details
class	Indicates the Class of the element (non-unique)
id	Indicates the ID of the element (unique in the same context)

Remarks

- Both `class` and `id` are global attributes, and may therefore be assigned to any HTML element.
- Class names must begin with a letter (A-Z or a-z) and can be followed by letters, digits , hyphens and underscores.
- In `HTML5`, the class and id attributes can be used on any element. In HTML 4.0.1, they were off-limits to the `<base>`, `<head>`, `<html>`, `<meta>`, `<param>`, `<script>`, `<style>` and `<title>` tags.
- An element can have one or more classes. Classes are separated by spaces and cannot contain spaces themselves.
- An element can have only one ID and it must be unique within its context (i.e. a webpage). IDs also cannot contain spaces themselves.

Examples

Giving an element a class

Classes are identifiers for the elements that they are assigned to. Use the `class` attribute to assign a class to an element.

```
<div class="example-class"></div>
```

To assign multiple classes to an element, separate the class names with spaces.

```
<div class="class1 class2"></div>
```

Using classes in CSS

Classes can be used for styling certain elements without changing all elements of that kind. For example, these two `span` elements can have completely different stylings:

```
<span></span>
<span class="special"></span>
```

Classes of the same name can be given to any number of elements on a page and they will all receive the styling associated with that class. This will always be true unless you specify the element within the CSS.

For example, we have two elements, both with the class `highlight`:

```
<div class="highlight">Lorem ipsum</div>
<span class="highlight">Lorem ipsum</span>
```

If our CSS is as below, then the color green will be applied to the text within both elements:

```
.highlight { color: green; }
```

However, if we only want to target `div`'s with the class `highlight` then we can add specificity like below:

```
div.highlight { color: green; }
```

Nevertheless, when styling with CSS, it is generally recommended that only classes (e.g. `.highlight`) be used rather than elements with classes (e.g. `div.highlight`).

As with any other selector, classes can can be nested:

```
.main .highlight { color: red; } /* Descendant combinator */
.footer > .highlight { color: blue; } /* Child combinator */
```

You can also chain the class selector to only select elements that have a combination of several classes. For example, if this is our HTML:

```
<div class="special left menu">This text will be pink</div>
```

And we want to colour this specific piece of text pink, we can do the following in our CSS:

```
.special.left.menu { color: pink; }
```

Giving an element an ID

The ID attribute of an element is an identifier which must be unique in the whole document. Its purpose is to uniquely identify the element when linking (using an anchor), scripting, or styling (with CSS).

```
<div id="example-id"></div>
```

You should not have two elements with the same ID in the same document, even if the attributes are attached to two different kinds of elements. For example, the following code is incorrect:

```
<div id="example-id"></div>
<span id="example-id"></span>
```

Browsers will do their best to render this code, but unexpected behavior may occur when styling with CSS or adding functionality with JavaScript.

To reference elements by their ID in CSS, prefix the ID with `#`.

```
#example-id { color: green; }
```

To jump to an element with an ID on a given page, append `#` with the element name in the URL.

```
http://example.com/about#example-id
```

This feature is supported in most browsers and does not require additional JavaScript or CSS to work.

Problems related to duplicated IDs

Having more than one element with the same ID is a hard to troubleshoot problem. The HTML parser will usually try to render the page in any case. Usually no error occurs. But the pace could end up in a mis-behaving web page.

In this example:

```
<div id="aDiv">a</div>
<div id="aDiv">b</div>
```

CSS selectors still work

```
#aDiv {
    color: red;
}
```

But JavaScript fails to handle both elements:

```
var html = document.getElementById("aDiv").innerHTML;
```

In this case`html` variable bears only the first `div` content `("a")`.

Acceptable Values

For an ID

5

The only restrictions on the value of an `id` are:

1. it must be unique in the document
2. it must not contain any space characters
3. it must contain at least one character

So the value can be all digits, just one digit, just punctuation characters, include special characters, whatever. Just no whitespace.

So these are valid:

```
<div id="container"> ... </div>
<div id="999"> ... </div>
<div id="#%LV-||"> ... </div>
<div id="____V"> ... </div>
<div id="□□"> ... </div>
<div id="❤"> … </div>
<div id="{}"> … </div>
<div id="©"> … </div>
<div id="♤₩¤☆€˜¥"> ... </div>
```

This is invalid:

```
<div id=" "> ... </div>
```

This is also invalid, when included in the same document:

```
<div id="results"> ... </div>
<div id="results"> ... </div>
```

4.01

An `id` value must begin with a letter, which can then be followed only by:

- letters (A-Z/a-z)
- digits (0-9)
- hyphens ("-")
- underscores ("_")
- colons (":")
- periods (".")

Referring to the first group of examples in the HTML5 section above, only one is valid:

```
<div id="container"> ... </div>
```

These are also valid:

```
<div id="sampletext"> ... </div>
<div id="sample-text"> ... </div>
<div id="sample_text"> ... </div>
<div id="sample:text"> ... </div>
<div id="sample.text"> ... </div>
```

Again, if it doesn't start with a letter (uppercase or lowercase), it's not valid.

For a Class

The rules for classes are essentially the same as for an `id`. The difference is that `class` values *do not* need to be unique in the document.

Referring to the examples above, although this is not valid in the same document:

```
<div id="results"> ... </div>
<div id="results"> ... </div>
```

This is perfectly okay:

```
<div class="results"> ... </div>
<div class="results"> ... </div>
```

Important Note: How ID and Class values are treated outside of HTML

Keep in mind that the rules and examples above apply within the context of HTML.

Using numbers, punctuation or special characters in the value of an `id` or a `class` may cause trouble in other contexts, such as CSS, JavaScript and regular expressions.

For example, although the following `id` is valid in HTML5:

```
<div id="9lions"> ... </div>
```

... it is invalid in CSS:

4.1.3 Characters and case

In CSS, *identifiers* (including element names, classes, and IDs in selectors) can

> contain only the characters [a-zA-Z0-9] and ISO 10646 characters U+00A0 and higher, plus the hyphen (-) and the underscore (_); ***they cannot start with a digit, two hyphens, or a hyphen followed by a digit***. (emphasis added)

In most cases you may be able to escape characters in contexts where they have restrictions or special meaning.

W3C References

- 3.2.5.1 The `id` attribute
- 3.2.5.7 The `class` attribute
- 6.2 SGML basic types

Read Classes and IDs online: https://riptutorial.com/html/topic/586/classes-and-ids

Chapter 7: Comments

Introduction

Similar to other programming, markup, and markdown languages, comments in HTML provide other developers with development specific information without affecting the user interface. Unlike other languages however, HTML comments can be used to specify HTML elements for Internet Explorer only. This topic explains how to write HTML comments, and their functional applications.

Syntax

- `<!-- Comment text -->`

Remarks

Anything starting with `<!--` and ending with `-->` is a comment. Comments cannot contain two adjacent dashes (`--`), and must end with exactly two dashes (i.e. `--->` is not correct).

Comments are not visible on a web page and cannot be styled with CSS. They can be used by the page's developer to make notes within the HTML, or to hide certain content during development.

For dynamic or interactive pages, hiding and showing content is done with JavaScript and CSS rather than with HTML comments.

JavaScript can be used to get the content of HTML comment nodes and these nodes can be dynamically created, added and removed from the document but this will not affect how the page is displayed.

Since HTML comments are part of the page's source code, they are downloaded to the browser along with the rest of the page. The source code can typically be viewed using the web browser's menu option to "View Source" or "View Page Source."

Examples

Creating comments

HTML comments can be used to leave notes to yourself or other developers about a specific point in code. They can be initiated with `<!--` and concluded with `-->`, like so:

```
<!-- I'm an HTML comment! -->
```

They can be incorporated inline within other content:

```
<h1>This part will be displayed <!-- while this will not be displayed -->.</h1>
```

They can also span multiple lines to provide more information:

```
<!-- This is a multiline HTML comment.
  Whatever is in here will not be rendered by the browser.You
  can "comment out" entire sections of HTML code.
-->
```

However, they **cannot** appear within another HTML tag, like this:

```
<h1 <!-- testAttribute="something" -->>This will not work</h1>
```

This produces invalid HTML as the entire `<h1 <!-- testAttribute="something" -->` block would be considered a single start tag `h1` with some other invalid information contained within it, followed by a single `>` closing bracket that does nothing.

For compatibility with tools that try to parse HTML as XML or SGML, the body of your comment should not contain two dashes `--`.

Conditional comments for Internet Explorer

Conditional comments can be used to customize code for different versions of Microsoft Internet Explorer. For example, different HTML classes, script tags, or stylesheets can be provided. Conditional comments are supported in Internet Explorer versions 5 through 9. Older and newer Internet Explorer versions, and all non-IE browsers, are considered "downlevel" and treat conditional comments as ordinary HTML comments.

Downlevel-hidden

Downlevel-hidden comments work by encapsulating the entire content within what appears to be a normal HTML comment. Only IE 5 through 9 will still read it as a conditional comment, and they will hide or display the content accordingly. In other browsers the content will be hidden.

```
<!--[if IE]>
  Revealed in IE 5 through 9. Commented out and hidden in all other browsers.
<![endif]-->

<!--[if lt IE 8]>
  Revealed only in specified versions of IE 5-9 (here, IE less than 8).
<![endif]-->

<!--[if !IE]>
  Revealed in no browsers. Equivalent to a regular HTML comment.
<![endif]-->

<!--
  For purposes of comparison, this is a regular HTML comment.
-->
```

Downlevel-revealed

These are slightly different than downlevel-hidden comments: only the conditional comment itself

is contained within the normal comment syntax. Browsers which do not support conditional comments will simply ignore them and display the rest of the content between them.

```
<!--[if IE]>-->
  The HTML inside this comment is revealed in IE 5-9, and in all other browsers.
<!--<![endif]-->

<!--[if IE 9]>-->
  This is revealed in specified versions of IE 5-9, and in all other browsers.
<!--<![endif]-->

<!--[if !IE]>-->
  This is not revealed in IE 5-9. It's still revealed in other browsers.
<!--<![endif]-->
```

Commenting out whitespace between inline elements

Inline display elements, usually such as `span` or `a`, will include up to one white-space character before and after them in the document. In order to avoid very long lines in the markup (that are hard to read) and unintentional white-space (which affects formatting), the white-space can be commented out.

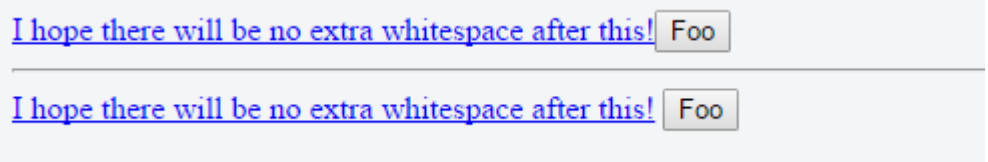
```
<!-- Use an HTML comment to nullify the newline character below: -->
<a href="#">I hope there will be no extra whitespace after this!</a><!--
--><button>Foo</button>
```

Try it without a comment between the inline elements, and there will be one space between them. Sometimes picking up the space character is desired.

Example code:

```
<!-- Use an HTML comment to nullify the newline character below: -->
<a href="#">I hope there will be no extra whitespace after this!</a><!--
--><button>Foo</button>
<hr>
<!-- Without it, you can notice a small formatting difference: -->
<a href="#">I hope there will be no extra whitespace after this!</a>
<button>Foo</button>
```

Output:



Read Comments online: https://riptutorial.com/html/topic/468/comments

Chapter 8: Content Languages

Syntax

- `<element lang="language_code">` <!-- Language code has to be in the format [ISO 639-1](https://en.wikipedia.org/wiki/ISO_639-1) -->

Remarks

The value of the `lang` attribute must be a valid **BCP 47 language tag** or the **empty string** (if the language is unknown).

The BCP 47 language tags are listed in the IANA Language Subtag Registry.

Accessibility

The relevant WCAG 2.0 Success Criteria are:

- 3.1.1 Language of Page
- 3.1.2 Language of Parts

The related WCAG 2.0 Techniques are:

- H57: Using language attributes on the html element
- H58: Using language attributes to identify changes in the human language

Examples

Element Language

The `lang` attribute is used to specify the language of element content and attribute text values:

```
<p lang="en">The content of this element is in English.</p>
```

```
<p lang="en" title="The value of this attribute is also in English.">The content of this
element is in English.</p>
```

The language declaration gets inherited:

```
<div lang="en">
  <p>This element contains English content.</p>
  <p title="This attribute, too.">Same with this element.</p>
</div>
```

Elements with Multiple Languages

You can "overwrite" a language declaration:

```
<p lang="en">This English sentence contains the German word <span lang="de">Hallo</span>.</p>
```

Handling Attributes with Different Languages

You can "overwrite" a parent element's language declaration by introducing any element apart from `applet`, `base`, `basefont`, `br`, `frame`, `frameset`, `hr`, `iframe`, `meta`, `param`, `script` (of HTML 4.0) with an own `lang` attribute:

```
<p lang="en" title="An English paragraph">
    <span lang="de" title="A German sentence">Hallo Welt!</span>
</p>
```

Base Document Language

It's a good practice to declare the primary language of the document in the `html` element:

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

If no other `lang` attribute is specified in the document, it means that *everything* (i.e., element content and attribute text values) is in that language.

If the document contains parts in other languages, these parts should get their own `lang` attributes to "overwrite" the language declaration.

Regional URLs

It is possible to add the attribute `hreflang` to the elements `<a>` and `<area>` that create hyperlinks. Such it specifies the language of the linked resource. The language defined must be a valid BCP 47[1] language tag.

```
<p>
    <a href="example.org" hreflang="en">example.org</a> is one of IANA's example domains.
</p>
```

---

1. ↑ IETF Network Working Group: RFC 5646 *Tags for Identifying Languages*, IETF, September 2009

Read Content Languages online: https://riptutorial.com/html/topic/737/content-languages

Chapter 9: Data Attributes

Syntax

- `<element data-custom-name="somevalue">`

Parameters

Value	Description
somevalue	Specifies the value of the attribute (as a string)

Examples

Data Attribute Use

HTML5 `data-*` attributes provide a convenient way to store data in HTML elements. The stored data can be read or modified using JavaScript

```
<div data-submitted="yes" class="user_profile">
  ... some content ...
</div>
```

- Data attribute structure is `data-*`, i.e. the name of the data attribute comes after the `data-` part. Using this name, the attribute can be accessed.
- Data in string format (including `json`) can be stored using `data-*` attribute.

Older browsers support

Data attributes were introduced in HTML5 which is supported by all modern browsers, but older browsers before HTML5 don't recognize the data attributes.

However, in HTML specifications, attributes that are not recognized by the browser must be left alone and the browser will simply ignore them when rendering the page.

Web developers have utilized this fact to create non-standard attributes which are any attributes not part of the HTML specifications. For example, the `value` attribute in the line bellow is considered a non-standard attribute because the specifications for the `<img>` tag don't have a `value` attribute and it is not a global attribute:

```
<img src="sample.jpg" value="test" />
```

This means that although data attributes are not supported in older browsers, they still work and you can set and retrieve them using the same generic JavaScript `setAttribute` and `getAttribute`

methods, but you cannot use the new `dataset` property which is only supported in modern browsers.

Read Data Attributes online: https://riptutorial.com/html/topic/1182/data-attributes

Chapter 10: Div Element

Introduction

The div element in HTML is a container element that encapsulates other elements and can be used to group and separate parts of a webpage. A div by itself does not inherently represent anything but is a powerful tool in web design. This topic covers the purpose and applications of the div element.

Syntax

- `<div>example div</div>`

Examples

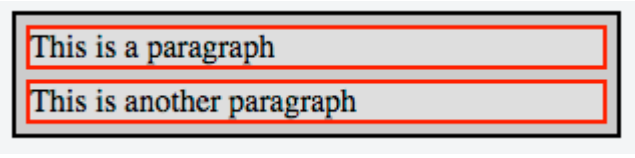
Nesting

It is a common practice to place multiple `<div>` inside another `<div>`. This is usually referred to as "nesting" elements and allows for further dividing elements into subsections or aid developers with CSS styling.

The `<div class="outer-div">` is used to group together two `<div class="inner-div">` elements; each containing a `<p>` element.

```
<div class="outer-div">
  <div class="inner-div">
    <p>This is a paragraph</p>
  </div>
  <div class="inner-div">
    <p>This is another paragraph</p>
  </div>
</div>
```

This will yield the following result (CSS styles applied for clarity):



Nesting inline and block elements While nesting elements you should keep in mind, that there are inline and block elements. while block elements "add a line break in the background", what means, other nested elements are shown in the next line automatically, inline elements can be positioned next to each other by default

Avoid deep `<div>` nesting

A deep and oftenly used nested container layouts shows a bad coding style.

Rounded corners or some similar functions often create such an HTML code. For most of the last generation browsers there are CSS3 counterparts. Try to use as little as possible HTML elements to increase the content to tag ratio and reduce page load, resulting in a better ranking in search engines.

`div` section Element should be not nested deeper than 6 layers.

Basic usage

The `<div>` element usually has no specific semantic meaning by itself, simply representing a division, and is typically used for grouping and encapsulating other elements within an HTML document and separating those from other groups of content. As such, each `<div>` is best described by its contents.

```
<div>
  <p>Hello! This is a paragraph.</p>
</div>
```

The `div` element is typically a block-level element, meaning that it separates a block of an HTML document and occupying the maximum width of the page. Browsers typically have the following default CSS rule:

```
div {
  display: block;
}
```

> It's strongly encouraged by the **The World Wide Web Consortium (W3C)** to view the div element as an element of last resort, for when no other element is suitable. The use of more appropriate elements instead of the div element leads to better accessibility for readers and easier maintainability for authors.

For example, a blog post would be marked up using `<article>`, a chapter using `<section>`, a page's navigation aids using `<nav>`, and a group of form controls using `<fieldset>`.

div elements can be useful for stylistic purposes or to wrap multiple paragraphs within a section that are all to be annotated in a similar way.

Read Div Element online: https://riptutorial.com/html/topic/1468/div-element

Chapter 11: Doctypes

Introduction

Doctypes - short for 'document type' - help browsers to understand the version of HTML the document is written in for better interpretability. Doctype declarations are not HTML tags and belong at the very top of a document. This topic explains the structure and declaration of various doctypes in HTML.

Syntax

- <!DOCTYPE [version-specific string]>

Remarks

The `<!DOCTYPE>` declaration is not an HTML tag. It is used for specifying which version of HTML the document is using. This is referred to as the document type declaration (DTD).

The `<!DOCTYPE>` declaration is NOT case sensitive. To check if the HTML of your Web pages is valid, go to W3C's validation service.

- Some old versions of IE don't support some HTML tags unless a proper doctype is available.
- It's *vital* that a doctype is declared as to make sure the browser doesn't use quirks mode. More info on MDN.

Examples

Adding the Doctype

The `<!DOCTYPE>` declaration should always be included at the top of the HTML document, before the `<html>` tag.

5

See HTML 5 Doctype for details on the HTML 5 Doctype.

```
<!DOCTYPE html>
```

4.01

See HTML 4.01 Doctypes for details on how these types differ from each other.

Strict

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
```

Transitional

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

Frameset

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
```

HTML 4.01 Doctypes

The HTML 4.01 specification provides several different types of doctypes that allow different types of elements to be specified within the document.

HTML 4.01 Strict

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
```

Includes all HTML elements and attributes, but **does not include presentational or deprecated elements** and **framesets are not allowed**.

HTML 4.01 Transitional

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

Includes all HTML elements and attributes and presentational and deprecated elements, but **framesets are not allowed**.

HTML 4.01 Frameset

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
```

Includes all HTML elements and attributes, presentational and deprecated elements. Framesets are allowed.

HTML 5 Doctype

HTML5 is not based on SGML, and therefore does not require a reference to a DTD.

HTML 5 Doctype declaration:

```
<!DOCTYPE html>
```

Case Insensitivity

Per the W3.org HTML 5 DOCTYPE Spec:

> A DOCTYPE must consist of the following components, in this order:
>
> 1. A string that is an ASCII **case-insensitive** match for the string "<!DOCTYPE".

therefore the following DOCTYPEs are also valid:

```
<!doctype html>
<!dOCtyPe html>
<!DocTYpe html>
```

This SO article discusses the topic extensively: Uppercase or lowercase doctype?

Old Doctypes

HTML 3.2

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
```

HTML 3.2 is well supported by most browsers in use. However, HTML 3.2 has limited support for style sheets and no support for HTML 4 features such as frames and internationalization.

HTML 2.0

```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
```

HTML 2.0 is widely supported by browsers but lacks support for tables, frames, and internationalization, as well as many commonly used presentation elements and attributes.

Read Doctypes online: https://riptutorial.com/html/topic/806/doctypes

Chapter 12: Embed

Parameters

Parameters	Details
`src`	Address of the resource
`type`	Type of embedded resource
`width`	Horizontal dimension
`height`	Vertical dimension

Examples

Basic usage

The `embed` tag is new in HTML5. This element provides an integration point for an external (typically non-HTML) application or interactive content.

```
<embed src="myflash.swf">
```

Defining the MIME type

The MIME type must be defined using the `type` attribute.

```
<embed type="video/mp4" src="video.mp4" width="640" height="480">
```

Read Embed online: https://riptutorial.com/html/topic/8123/embed

Chapter 13: Forms

Introduction

In order to group input elements and submit data, HTML uses a form element to encapsulate input and submission elements. These forms handle sending the data in the specified method to a page handled by a server or handler. This topic explains and demonstrates the usage of HTML forms in collecting and submitting input data.

Syntax

- `<form method="post|get" action="somePage.php" target="_blank|_self|_parent|_top|framename">`

Parameters

Attribute	Description
`accept-charset`	Specifies the character encodings that are to be used for the form submission.
`action`	Specifies where to send the form-data when a form is submitted.
`autocomplete`	Specifies whether a form should have autocomplete on or off.
`enctype`	Specifies how the form-data should be encoded when submitting it to the server (only for method="post").
`method`	Specifies the HTTP method to use when sending form-data (POST or GET).
`name`	Specifies the name of a form.
`novalidate`	Specifies that the form should not be validated when submitted.
`target`	Specifies where to display the response that is received after submitting the form.

Remarks

The `<form>` element represents a section that contains form-associated elements (e.g. `<button>` `<fieldset>` `<input>` `<label>` `<output>` `<select>` `<textarea>`) that submits information to a server. Both starting (`<form>`) and ending (`</form>`) tags are required.

Examples

The Action Attribute

The action attribute defines the action to be performed when the form is submitted, which usually leads to a script that collects the information submitted and works with it. if you leave it blank, it will send it to the same file

```
<form action="action.php">
```

The Method Attribute

The method attribute is used to define the HTTP method of the form which is either GET or POST.

```
<form action="action.php" method="get">
<form action="action.php" method="post">
```

The GET method is mostly used to *get* data, for example to receive a post by its ID or name, or to submit a search query. The GET method will append the form data to the URL specified in the action attribute.

```
www.example.com/action.php?firstname=Mickey&lastname=Mouse
```

The POST method is used when submitting data to a script. The POST method does not append the form data to the action URL but sends using the request body.

To submit the data from the form correctly, a name attribute name must be specified.
As an example let's send the value of the field and set its name to *lastname*:

```
<input type="text" name="lastname" value="Mouse">
```

More attributes

```
<form action="action.php" method="post" target="_blank" accept-charset="UTF-8"
enctype="application/x-www-form-urlencoded" autocomplete="off" novalidate>

<!-- form elements -->

</form>
```

Target attribute in form tag

The target attribute specifies a name or a keyword that indicates where to display the response that is received after submitting the form.

The target attribute defines a name of, or keyword for, a browsing context (e.g. tab, window, or

inline frame).

From Tag with a target attribute:

```
<form target="_blank">
```

Attribute Values

Value	Description
_blank	The response is displayed in a new window or tab
_self	The response is displayed in the same frame (this is default)
_parent	The response is displayed in the parent frame
_top	The response is displayed in the full body of the window
framename	The response is displayed in a named iframe

> Note: The target attribute was ***deprecated*** in **HTML 4.01**. The target attribute is ***supported*** in ***HTML5***.
>
> Frames and framesets are not supported in ***HTML5***, so the ***_parent, _top and framename values are now mostly used with iframes***.

Uploading Files

Images and files can be uploaded/submitted to server by setting `enctype` attribute of `form` tag to `multipart/form-data`. `enctype` specifies how form data would be encoded while submitting to the server.

Example

```
<form method="post" enctype="multipart/form-data" action="upload.php">
    <input type="file" name="pic" />
    <input type="submit" value="Upload" />
</form>
```

Grouping a few input fields

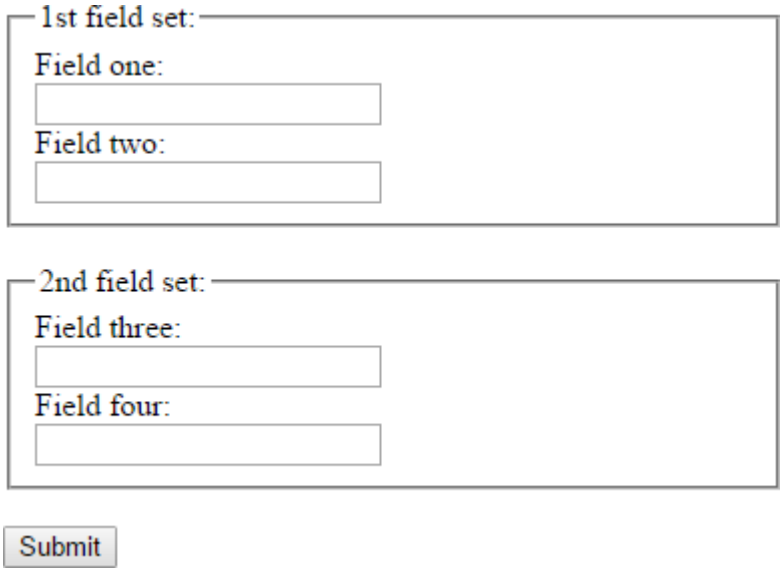
While designing a form, you might like to group a few input fields into a group to help organise the form layout. This can be done by using the tag . Here is an example for using it.

For each fieldset, you can set a legend for the set using the tag LEGEND TEXT

Example

```
<form>
  <fieldset>
     <legend>1st field set:</legend>
     Field one:<br>
     <input type="text"><br>
     Field two:<br>
     <input type="text"><br>
  </fieldset><br>
  <fieldset>
     <legend>2nd field set:</legend>
     Field three:<br>
     <input type="text"><br>
     Field four:<br>
     <input type="text"><br>
  </fieldset><br>
  <input type="submit" value="Submit">
</form>
```

Result



Browser Support

Chrome, IE, Edge, FireFox, Safari and Opera's latest versions also supports the tag

Read Forms online: https://riptutorial.com/html/topic/1160/forms

Chapter 14: Global Attributes

Parameters

Attribute	Description
`class`	Defines one or more class names for an element. See Classes and IDs.
`contenteditable`	Sets whether the content of an element can be edited.
`contextmenu`	Defines a context menu shown when a user right-clicks an element.
`dir`	Sets the text direction for text within an element.
`draggable`	Sets whether an element can be dragged.
`hidden`	Hides an element not currently in use on the page.
`id`	Defines a unique identifier for an element. See Classes and IDs.
`lang`	Defines the language of an element's content and its text attribute values. See Content Languages.
`spellcheck`	Sets whether to spell/grammar check the content of an element.
`style`	Defines a set of inline CSS styles for an element.
`tabindex`	Sets the order in which elements on a page are navigated by the tab keyboard shortcut.
`title`	Defines additional information about an element, generally in the form of tooltip text on mouseover.
`translate`	Defines whether to translate the content of an element.

Remarks

Global attributes are simply attributed which can be applied to any element in the entire document.

Examples

Contenteditable Attribute

```
<p contenteditable>This is an editable paragraph.</p>
```

Upon clicking on the paragraph, the content of it can be edited similar to an input text field.

When the `contenteditable` attribute is not set on an element, the element will inherit it from its parent. So all child text of a content editable element will also be editable, but you *can* turn it off for specific text, like so:

```
<p contenteditable>
  This is an editable paragraph.
  <span contenteditable="false">But not this.</span>
</p>
```

Note that an uneditable text element inside an editable element will still have a text cursor as inherited from its parent as well.

Read Global Attributes online: https://riptutorial.com/html/topic/2811/global-attributes

Chapter 15: Headings

Introduction

HTML provides not only plain paragraph tags, but six separate header tags to indicate headings of various sizes and thicknesses. Enumerated as heading 1 through heading 6, heading 1 has the largest and thickest text while heading 6 is the smallest and thinnest, down to the paragraph level. This topic details proper usage of these tags.

Syntax

- <h1>...</h1>
- <h2>...</h2>
- <h3>...</h3>
- <h4>...</h4>
- <h5>...</h5>
- <h6>...</h6>

Remarks

- An `h1`–`h6` element must have both a start tag and an end tag.[1]
- `h1`–`h6` elements are block level elements by default (CSS style: `display: block`).[2]
- `h1`–`h6` elements should not be confused with the section element
- Heading tags (`h1`–`h6`) are not related to the `head` tag.
- Permitted Content: phrasing content
- The different CSS-styles for headings differ usually in `font-size` and `margin`. The following CSS-settings for `h1`–`h6` elements can serve as an orientation (characterized as 'informative' by the W3C)
- Search engine spiders (the code that adds a page to a search engine) automatically pays more attention to higher importance (h1 has most, h2 has less, h3 has even less, ...) headings to discern what a page is about.

Examples

Using Headings

Headings can be used to describe the topic they precede and they are defined with the `<h1>` to `<h6>` tags. Headings support all the global attributes.

- `<h1>` defines the most important heading.

- `<h6>` defines the least important heading.

Defining a heading:

```
<h1>Heading 1</h1>
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6>
```

Correct structure matters

Search engines and other **user agents** usually index page content based on heading elements, for example to create a table of contents, so using the correct structure for headings is important.

In general, an article should have one `h1` element for the main title followed by `h2` subtitles – going down a layer if necessary. If there are `h1` elements on a higher level they shoudn't be used to describe any lower level content.

Example document (extra intendation to illustrate hierarchy):

```
<h1>Main title</h1>
<p>Introduction</p>

    <h2>Reasons</h2>

        <h3>Reason 1</h3>
        <p>Paragraph</p>

        <h3>Reason 2</h3>
        <p>Paragraph</p>

    <h2>In conclusion</h2>
    <p>Paragraph</p>
```

Read Headings online: https://riptutorial.com/html/topic/226/headings

Chapter 17: HTML Event Attributes

Examples

HTML Form Events

Events triggered by actions inside a HTML form (applies to almost all HTML elements, but is most used in form elements):

Attribute	Description
onblur	Fires the moment that the element loses focus
onchange	Fires the moment when the value of the element is changed
oncontextmenu	Script to be run when a context menu is triggered
onfocus	Fires the moment when the element gets focus
oninput	Script to be run when an element gets user input
oninvalid	Script to be run when an element is invalid
onreset	Fires when the Reset button in a form is clicked
onsearch	Fires when the user writes something in a search field (for <input="search">)
onselect	Fires after some text has been selected in an element
onsubmit	Fires when a form is submitted

Keyboard Events

Attribute	Description
onkeydown	Fires when a user is pressing a key
onkeypress	Fires when a user presses a key
onkeyup	Fires when a user releases a key

Read HTML Event Attributes online: https://riptutorial.com/html/topic/10924/html-event-attributes

Chapter 18: IFrames

Parameters

Attribute	Details
`name`	Sets the element's name, to be used with an `a` tag to change the iframe's `src`.
`width`	Sets the element's width in pixels.
`height`	Sets the element's height in pixels.
`src`	Specifies the page that will be displayed in the frame.
`srcdoc`	Specifies the content that will be displayed in the frame, assuming the browser supports it. The content must be valid HTML.
`sandbox`	When set, the contents of the iframe is treated as being from a unique origin and features including scripts, plugins, forms and popups will be disabled. Restrictions can be selectively relaxed by adding a space separated list of values. See the table in Remarks for possible values.
`allowfullscreen`	Whether to allow the iframe's contents to use `requestFullscreen()`

Remarks

An iframe is used to embed another document in the current HTML document.

You CAN use iframes for displaying:

- other HTML pages on the same domain;
- other HTML pages on another domain (see below - Same-origin policy);
- PDF documents (though IE might have some problems, This SO question might help);

You SHOULD use an iframe as a last resort, as it has problems with bookmarking and navigation, and there are always better options other than an iframe. This SO question should help you understand more about the ups and downs of iframes.

Same-origin policy

Some sites cannot be displayed using an iframe, because they enforce a policy called Same-origin policy. This means that the site that the iframe lies on must be on the same domain as the one to be displayed.

This policy also applies to manipulating content that lives inside of an iFrame. If the iFrame is accessing content from a different domain, you will not be able to access or manipulate the content inside of an iFrame.

The iframe element on W3C

`sandbox` attribute

The `sandbox` attribute, when set, adds extra restrictions to the iframe. A space separated list of tokens can be used to relax these restrictions.

Value	Details
`allow-forms`	Allows forms to be submitted.
`allow-pointer-lock`	Enables the JavaScript pointer API.
`allow-popups`	Popups can be created using `window.open` or `<a target="_blank"`
`allow-same-origin`	The iframe document uses its real origin instead of being given a unique one. If used with `allow-scripts` the iframe document can remove all sandboxing if it's from the same origin as the parent document.
`allow-scripts`	Enables scripts. The iframe document and parent document may be able to communicate with each other using the `postMessage()` API. If used with `allow-same-origin` the iframe document can remove all sandboxing if it's from the same origin as the parent document.
`allow-top-navigation`	Allows the iframe's content to change the location of the top level document.

Examples

Basics of an Inline Frame

The term "IFrame" means Inline Frame. It can be used to include another page in your page. This will yield a small frame which shows the exact contents of the `base.html`.

```
<iframe src="base.html"></iframe>
```

Setting the Frame Size

The IFrame can be resized using the `width` and `height` attributes, where the values are represented in pixels (HTML 4.01 allowed percentage values, but HTML 5 only allows values in CSS pixels).

```
<iframe src="base.html" width="800" height="600"></iframe>
```

Using Anchors with IFrames

Normally a change of webpage within an Iframe is initiated from with the Iframe, for example, clicking a link inside the Ifame. However, it is possible to change an IFrame's content from outside the IFrame. You can use an anchor tag whose `href` attribute is set to the desired URL and whose `target` attribute is set to the iframe's `name` attribute.

```
<iframe src="webpage.html" name="myIframe"></iframe>
<a href="different_webpage.html" target="myIframe">Change the Iframe content to
different_webpage.html</a>
```

Using the "srcdoc" Attribute

The `srcdoc` attribute can be used (instead of the `src` attribute) to specify the exact contents of the iframe as a whole HTML document. This will yield an IFrame with the text "IFrames are cool!"

```
<iframe srcdoc="<p>IFrames are cool!</p>"></iframe>
```

If the `srcdoc` attribute isn't supported by the browser, the IFrame will instead fall back to using the `src` attribute, but if both the `src` and `srcdoc` attributes are present and supported by the browser, `srcdoc` takes precedence.

```
<iframe srcdoc="<p>Iframes are cool!</p>" src="base.html"></iframe>
```

In the above example, if the browser does not support the `srcdoc` attribute, it will instead display the contents of the `base.html` page.

Sandboxing

The following embeds an untrusted web page with all restrictions enabled

```
<iframe sandbox src="http://example.com/"></iframe>
```

To allow the page to run scripts and submit forms, add `allow-scripts` and `allow-forms` to the `sandbox` attribute.

```
<iframe sandbox="allow-scripts allow-forms" src="http://example.com/"></iframe>
```

If there is untrusted content (such as user comments) on the same domain as the parent web page, an iframe can be used to disable scripts while still allowing the parent document to interact with it's content using JavaScript.

```
<iframe sandbox="allow-same-origin allow-top-navigation"
src="http://example.com/untrusted/comments/page2">
```

The parent document can add event listeners and resize the IFrame to fit its contents. This, along with `allow-top-navigation`, can make the sandboxed iframe appear to be part of parent document.

This sandbox is not a replacement for sanitizing input but can be used as part of a defense in depth strategy.

Also be aware that this sandbox can be subverted by an attacker convincing a user to visit the iframe's source directly. The Content Security Policy HTTP header can be used to mitigate this attack.

Read IFrames online: https://riptutorial.com/html/topic/499/iframes

Chapter 19: Image Maps

Syntax

- <img usemap="#[map-name]">
- <map name="[map-name]"></map>
- <area>

Parameters

Tag/Attribute	Value
<img>	Below are the image map-specific attributes to use with <img>. Regular <img> attributes apply.
usemap	The name of the map with a hash symbol prepended to it. For example, for a map with name="map", the image should have usemap="#map".
<map>	
name	The name of the map to identify it. To be used with the image's usemap attribute.
<area>	Below are <area>-specific attributes. When href is specified, making the <area> a link, <area> also supports all of the attributes of the anchor tag (<a>) except ping. See them at the MDN docs.
alt	The alternate text to display if images are not supported. This is only necessary if href is also set on the <area>.
coords	The coordinates outlining the selectable area. When shape="polygon", this should be set to a list of "x, y" pairs separated by commas (i.e., shape="polygon" coords="x1, y1, x2, y2, x3, y3, ..."). When shape="rectangle", this should be set to left, top, right, bottom. When shape="circle", this should be set to centerX, centerY, radius.
href	The URL of the hyperlink, if specified. If it is omitted, then the <area> will not represent a hyperlink.
shape	The shape of the <area>. Can be set to default to select the entire image (no coords attribute necessary), circle or circ for a circle, rectangle or rect for a rectangle, and polygon or poly for a polygonal area specified by corner points.

Remarks

- The above parameters list is modified from the MDN docs: `<map>` and `<area>`.
- It is feasible to create an image map's coordinates with for an image with simpler shapes (such as in the introductory example above) with an image editor that shows coordinates (such as GIMP). However, it might be easier in general to use an image map generator, such as this one.

Examples

Introduction to Image Maps

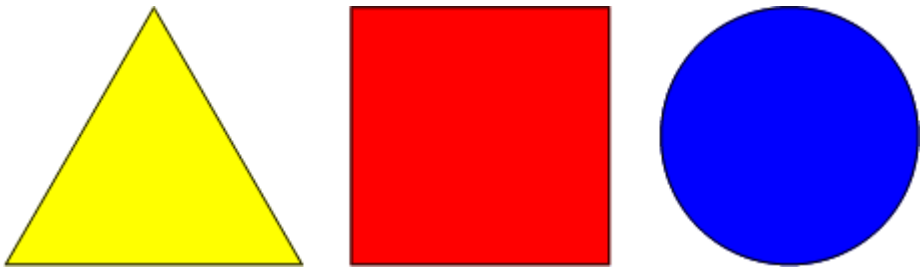
Description

An image maps is an image with clickable areas that usually act as hyperlinks.

The image is defined by the `<img>` tag, and the map is defined by a `<map>` tag with `<area>` tags to denote each clickable area. Use the `usemap` and `name` attributes to bind the image and the map.

Basic Example

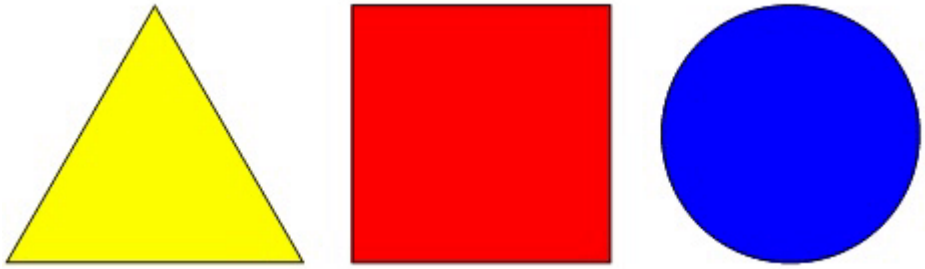
To create an image map so that each of the shapes in the image below are clickable:



The code would be as follows:

```
<img src="http://jaced.com/blogpix/2007/trisquarecircle/002.gif" usemap="#shapes">
<map name="shapes">
    <area shape="polygon" coords="79,6,5,134,153,134">
    <area shape="rectangle" coords="177,6,306,134">
    <area shape="circle" coords="397,71,65">
</map>
```

You should see that the browser recognizes the areas when the cursor becomes a pointer. See a live demo on JSFiddle, or see a demonstration below:



Read Image Maps online: https://riptutorial.com/html/topic/3819/image-maps

Chapter 20: Images

Syntax

- `<img src="" alt="">`

Parameters

Parameters	Details
`src`	Specifies the URL of the image
`srcset`	Images to use in different situations (e.g., high-resolution displays, small monitors, etc)
`sizes`	Image sizes between breakpoints
`crossorigin`	How the element handles crossorigin requests
`usemap`	Name of image map to use
`ismap`	Whether the image is a server-side image map
`alt`	Alternative text that should be displayed if for some reason the image could not be displayed
`width`	Specifies the width of the image (optional)
`height`	Specifies the height of the image (optional)

Examples

Creating an image

To add an image to a page, use the image tag.

Image tags (`img`) do not have closing tags. The two main attributes you give to the `img` tag are `src`, the image source and `alt`, which is alternative text describing the image.

```
<img src="images/hello.png" alt="Hello World">
```

You can also get images from a web URL:

```
<img src="https://i.stack.imgur.com/ALgZi.jpg?s=48&g=1" alt="StackOverflow user Caleb
Kleveter">
```

Note: Images are not technically inserted into an HTML page, images are linked to HTML pages. The `<img>` tag creates a holding space for the referenced image.

It is also possible to embed images directly inside the page using base64:

```
<img src="..." alt="Hello World">
```

Tip: To link an image to another document, simply nest the `<img>` tag inside `<a>` tags.

Image width and height

> **Note:** The **width and height attributes are *not* deprecated on images** and never have been. Their use has been made much stricter though.

The dimensions of an image can be specified using the `width` and `height` attributes of the image tag:

```
<img src="images/200x200-img.png" width="200" height="200" alt="A 200x200 image">
```

By specifying the `width` and `height` of an image, your structure gives the browser a hint as to how the page should be laid out even if you are just specifying the actual image size. If the image dimensions are not specified, the browser will need to recalculate the layout of the page after the image is loaded, which may cause the page to "jump around" while it's loading.

4.1

You can give the image a width and height in either the number of CSS pixels or a percentage of the image's actual dimensions.

These examples are all valid:

```
<img src="images/50x50-img.png" width="50" height="50" alt="A 50x50 image">
<img src="images/50x50-img.png" width="200" height="200" alt="A 200x200 image">
<img src="images/200x200-img.png" width="50" height="50" alt="A 50x50 image">
<img src="images/200x200-img.png" width="50%" height="50%" alt="A 100x100 image">
```

5

The width and height of the image must be specified in CSS pixels; a percentage value is no longer a valid value. As well, if both attributes are specified, they must fit into one of three formulas that maintain aspect ratio. Although valid, you should not use the width and height attributes to stretch an image to a larger size.

These examples are valid:

```
<img src="images/50x50-img.png" width="50" height="50" alt="A 50x50 image">
<img src="images/200x200-img.png" width="50" height="50" alt="A 50x50 image">
<img src="images/50x50-img.png" width="0" height="0" alt="A hidden tracking image">
```

This example is not recommended:

```
<img src="images/50x50-img.png" width="200" height="200" alt="A 200x200 image">
```

These examples are invalid:

```
<img src="images/200x200-img.png" width="50%" height="50%" alt="A 100x100 image">
<img src="images/200x200-img.png" width="1" height="200" alt="A 1x200 image">
```

Choosing alt text

Alt-text is used by screen readers for visually impaired users and by search engines. It's therefore important to write good alt-text for your images.

The text should look correct even if you replace the image with its alt attribute. For example:

```
<!-- Incorrect -->
<img src="anonymous.png" alt="Anonymous user avatar"/> An anonymous user wrote:
<blockquote>Lorem ipsum dolor sed.</blockquote>
<a href="https://google.com/"><img src="edit.png" alt="Edit icon"/></a> /
<a href="https://google.com/"><img src="delete.png" alt="Delete icon"/></a>
```

Without the images, this would look like:

> Anonymous user avatar An anonymous user wrote:
>
> > Lorem ipsum dolor sed.
>
> Edit icon / Delete icon

To correct this:

- Remove the alt-text for the avatar. This image adds information for sighted users (an easily identifiable icon to show that the user is anonymous) but this information is already available in the text.[1]
- Remove the "icon" from the alt-text for the icons. Knowing that this would be an icon if it were there does not help to convey its actual purpose.

```
<!-- Correct -->
<img src="anonymous.png" alt=""/> An anonymous user wrote:
<blockquote>Lorem ipsum dolor sed.</blockquote>
<a href="https://google.com/"><img src="edit.png" alt="Edit"/></a> /
<a href="https://google.com/"><img src="delete.png" alt="Delete"/></a>
```

> An anonymous user wrote:
>
> > Lorem ipsum dolor sed.
>
> Edit / Delete

Footnotes

[1] There is a semantic difference between including an empty alt attribute and excluding it altogether. An empty alt attribute indicates that the image is *not* a key part of the content (as is true in this case - it's just an additive image that is not necessary to understand the rest) and thus may be omitted from rendering. However, the lack of an alt attribute indicates that the image *is* a key part of the content and that there simply is no textual equivalent available for rendering.

Responsive image using the srcset attribute

Using srcset with sizes

```
<img sizes="(min-width: 1200px) 580px,
      (min-width: 640px) 48vw,
      98vw"
    srcset="img/hello-300.jpg 300w,
      img/hello-600.jpg 600w,
      img/hello-900.jpg 900w,
      img/hello-1200.jpg 1200w"
    src="img/hello-900.jpg" alt="hello">
```

`sizes` are like media queries, describing how much space the image takes of the viewport.

- if viewport is larger than 1200px, image is exactly 580px (for example our content is centered in container which is max 1200px wide. Image takes half of it minus margins).
- if viewport is between 640px and 1200px, image takes 48% of viewport (for example image scales with our page and takes half of viewport width minus margins).
- if viewport is any other size , in our case less than 640px, image takes 98% of viewport (for example image scales with our page and takes full width of viewport minus margins). **Media condition must be omitted for last item.**

`srcset` is just telling the browser what images we have available, and what are their sizes.

- `img/hello-300.jpg` is 300px wide,
- `img/hello-600.jpg` is 600px wide,
- `img/hello-900.jpg` is 900px wide,
- `img/hello-1200.jpg` is 1200px wide

`src` is always mandatory image source. In case of using with `srcset`, `src` will serve fallback image in case browser is not supporting `srcset`.

Using srcset without sizes

```
<img src="img/hello-300.jpg" alt="hello"
     srcset="img/hello-300.jpg 1x,
       img/hello-600.jpg 2x,
```

```
        img/hello-1200.jpg 3x">
```

`srcset` provides list of available images, with device-pixel ratio `x` descriptor.

- if device-pixel ratio is 1, use `img/hello-300.jpg`
- if device-pixel ratio is 2, use `img/hello-600.jpg`
- if device-pixel ratio is 3, use `img/hello-1200.jpg`

`src` is always mandatory image source. In case of using with `srcset`, `src` will serve fallback image in case browser is not supporting `srcset`.

Responsive image using picture element

Code

```
<picture>
  <source media="(min-width: 600px)" srcset="large_image.jpg">
  <source media="(min-width: 450px)" srcset="small_image.jpg">
  <img src="default_image.jpg" style="width:auto;">
</picture>
```

Usage

To display different images under different screen width, you must include all images using the source tag in a picture tag as shown in the above example.

Result

- On screens with screen width >600px, it shows large_image.jpg
- On screens with screen width >450px, it shows small_image.jpg
- On screens with other screen width, it shows default_image.jpg

Read Images online: https://riptutorial.com/html/topic/587/images

Chapter 21: Include JavaScript Code in HTML

Syntax

- `<script type="text/javascript"> //some code </script>`
- `<script type="text/javascript" src="URL"></script>`
- `<script type="text/javascript" src="URL" async>//async code</script>`

Parameters

Attribute	Details
`src`	Specifies the path to a JavaScript file. Either a relative or absolute URL.
`type`	Specifies the MIME type. This attribute is required in HTML4, but optional in HTML5.
`async`	Specifies that the script shall be executed asynchronously (only for external scripts). This attribute does not require any value (except of XHTML).
`defer`	Specifies that the script shall be executed when the page has finished parsing (only for external scripts). This attribute does not require any value (except of XHTML).
`charset`	Specifies the character encoding used in an external script file, e.g. UTF-8
`crossorigin`	How the element handles crossorigin requests
`nonce`	Cryptographic nonce used in *Content Security Policy* checks CSP3

Remarks

If the embed JavaScript code (file) is used to manipulate http://stackoverflow.com/documentation/javascript/503/document-object-model-dom Elements, place your `<script></script>` tags right **before the closing `</body>` tag** or use JavaScript methods or libraries (such as jQuery to handle a variety of browsers) that makes sure the DOM is read and ready to be manipulated.

Examples

Linking to an external JavaScript file

```
<script src="example.js"></script>
```

The `src` attribute works like the href attribute on anchors: you can either specify an absolute or relative URL. The example above links to a file inside the same directory of the HTML document. This is typically added inside the `<head>` tags at the top of the html document

Directly including JavaScript code

Instead of linking to an external file, you can also include the JS code as-is in your HTML:

```
<script>
// JavaScript code
</script>
```

Including a JavaScript file executing asynchronously

```
<script type="text/javascript" src="URL" async></script>
```

Handling disabled Javascript

It is possible that the client browser does not support Javascript or have Javascript execution disabled, perhaps due to security reasons. To be able to tell users that a script is supposed to execute in the page, the `<noscript>` tag can be used. The content of `<noscript>` is displayed whenever Javascript is disabled for the current page.

```
<script>
  document.write("Hello, world!");
</script>
<noscript>This browser does not support Javascript.</noscript>
```

Read Include JavaScript Code in HTML online: https://riptutorial.com/html/topic/3719/include-javascript-code-in-html

Chapter 22: Input Control Elements

Introduction

A key component of interactive web systems, input tags are HTML elements designed to take a specific form of input from users. Different types of input elements can regulate the data entered to fit a specified format and provide security to password entry.

Syntax

- `<input type="" name="" value="">`

Parameters

Parameter	Details
class	Indicates the Class of the input
id	Indicates the ID of the input
type	Identifies the type of input control to display. Acceptable values are `hidden`, `text`, `tel`, `url`, `email`, `password`, `date`, `time`, `number`, `range`, `color`, `checkbox`, `radio`, `file`, `submit`, `image`, `reset`, and `button`. Defaults to `text` if not specified, if the value is invalid, or if the browser does not support the type specified.
name	Indicates the name of the input
disabled	Boolean value that indicates the input should be disabled. Disabled controls cannot be edited, are not sent on form submission, and cannot receive focus.
checked	When the value of the type attribute is radio or checkbox, the presence of this Boolean attribute indicates that the control is selected by default; otherwise it is ignored.
multiple	**HTML5** Indicates multiple files or values can be passed (Applies only to `file` and `email` type inputs)
placeholder	**HTML5** A hint to the user of what can be entered in the control . The placeholder text must not contain carriage returns or line-feeds
autocomplete	**HTML5** Indicates whether the value of the control can be automatically completed by the browser.
readonly	Boolean value that indicates the input is not editable. Readonly controls are still sent on form submission, but will not receive focus. **HTML5:** This attribute is ignored when the value of `type` attribute is either set to `hidden`, `range`, `color`,

Parameter	Details
	`checkbox`, `radio`, `file` or `button`.
required	**HTML5** Indicates a value must be present or the element must be checked in order for the form to be submitted
alt	An alternative text for images, in case they are not displayed.
autofocus	The `<input>` element should get the focus when page loads.
value	Specifies the value of `<input>` element.
step	The `step` attribute specifies the legal number intervals. It works with the following input types: `number`, `range`, `date`, `datetime-local`, `month`, `time` and `week`.

Remarks

As with other HTML5 void elements, `<input>` is self-closing and may be written `<input />`. HTML5 does not require this slash.

The following are valid input types in HTML:

- `button`
- `checkbox`
- `file`
- `hidden`
- `image`
- `password`
- `radio`
- `reset`
- `submit`
- `text` (default value)

5

The following are newly introduced input types as a part of HTML 5 standard. Some of these types are not supported by all web browsers. In the case where a type is not supported, the input element will default to the `text` type.

- `color`
- `date`
- `datetime` (Deprecated and Obsolete)
- `datetime-local`
- `email`
- `month`
- `number`
- `range`
- `search`
- `tel`
- `time`
- `url`

- `week`

To check which browsers support which types, you can go to caniuse.com.

Examples

Checkbox and Radio Buttons

Overview

Checkboxes and radio buttons are written with the HTML tag `<input>`, and their behavior is defined in the HTML specification.

The simplest checkbox or radio button is an `<input>` element with a `type` attribute of `checkbox` or `radio`, respectively:

```
<input type="checkbox">
<input type="radio">
```

A single stand-alone checkbox element is used for a single binary option such as a yes-or-no question. Checkboxes are independent, meaning the user may select as many choices as they would like in a group of checkboxes. In other words, checking one checkbox does *not* uncheck the other checkboxes in checkbox group.

Radio buttons usually come in groups (if it's not grouped with another radio button, you probably meant to use a checkbox instead) identified by using the same `name` attribute on all buttons within that group. The selection of radio buttons are *mutually exclusive*, meaning the user may only select one choice from a group of radio buttons. When a radio button is checked, any other radio button with the same `name` that was previously checked becomes unchecked.

Example:

```
<input type="radio" name="color" id="red" value="#F00">
<input type="radio" name="color" id="green" value="#0F0">
<input type="radio" name="color" id="blue" value="#00F">
```

When viewed, radio buttons appear as a circle (unchecked) or a filled circle (checked). Checkboxes appear as a square (unchecked) or a filled square (checked). Depending on the browser and operating system, the square sometimes has rounded corners.

Attributes

checkboxes and radio buttons have a number of attributes to control their behavior:

`value`

Like any other input element, the `value` attribute specifies the string value to associate with the button in the event of form submission. However, checkboxes and radio buttons are special in that when the value is omitted, it defaults to `on` when submitted, rather than sending a blank value. The `value` attribute is not reflected in the button's appearance.

`checked`

The `checked` attribute specifies the initial state of a checkbox or radio button. This is a boolean attribute and may be omitted.

Each of these are valid, equivalent ways to define a checked radio button:

```
<input checked>
<input checked="">
<input checked="checked">
<input checked="ChEcKeD">
```

The absence of the `checked` attribute is the only valid syntax for an unchecked button:

```
<input type="radio">
<input type="checkbox">
```

When resetting a `<form>`, checkboxes and radio buttons revert to the state of their `checked` attribute.

Accessibility

Labels

To give context to the buttons and show users what each button is for, each of them should have a label. This can be done using a `<label>` element to wrap the button. Also, this makes the label clickable, so you select the corresponding button.

Example:

```
<label>
  <input type="radio" name="color" value="#F00">
  Red
</label>
```

or with a `<label>` element with a `for` attribute set to the `id` attribute of the button:

```
<input type="checkbox" name="color" value="#F00" id="red">
<label for="red">Red</label>
```

Button Groups

Since each radio button affects the others in the group, it is common to provide a label or context

for the entire group of radio buttons.

To provide a label for the entire group, the radio buttons should be included in a `<fieldset>` element with a `<legend>` element within it.

Example:

```
<fieldset>
  <legend>Theme color:</legend>
  <p>
    <input type="radio" name="color" id="red" value="#F00">
    <label for="red">Red</label>
  </p>
  <p>
    <input type="radio" name="color" id="green" value="#0F0">
    <label for="green">Green</label>
  </p>
  <p>
    <input type="radio" name="color" id="blue" value="#00F">
    <label for="blue">Blue</label>
  </p>
</fieldset>
```

Checkboxes can also be grouped in a similar fashion, with a fieldset and legend identifying the group of related checkboxes. However, keep in mind that checkboxes should *not* share the same name because they are not mutually exclusive. Doing this will result in the form submitting multiple values for the same key and not all server-side languages handle this in the same way (undefined behavior). Each checkbox should either have a unique name, or use a set of square brackets (`[]`) to indicate that the form should submit an array of values for that key. Which method you choose should depend on how you plan to handle the form data client-side or server-side. You should also keep the legend short, since some combinations of browsers and screen readers read the legend before each input field in the fieldset.

Hidden

```
<input type="hidden" name="inputName" value="inputValue">
```

A hidden input won't be visible to the user, but its value will be sent to the server when the form is submitted nonetheless.

Password

```
<input type="password" name="password">
```

The input element with a type attribute whose value is `password` creates a single-line text field similar to the input `type=text`, except that text is not displayed as the user enters it.

```
<input type="password" name="password" placeholder="Password">
```

Placeholder text is shown in plain text and is overwritten automatically when a user starts typing.

Note: Some browsers and systems modify the default behavior of the password field to also display the most recently typed character for a short duration, like so:

Submit

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

A submit input creates a button which submits the form it is inside when clicked.

You can also use the `<button>` element if you require a submit button that can be more easily styled or contain other elements:

```
<button type="submit">
  <img src="submit-icon.jpg" /> Submit
</button>
```

File

```
<input type="file" name="fileSubmission">
```

File inputs allow users to select a file from their local filesystem for use with the current page. If used in conjunction with a `form` element, they can be used to allow users to upload files to a server (for more info see Uploading Files).

The following example allows users to use the `file` input to select a file from their filesystem and upload that file to a script on the server named `upload_file.php`.

```
<form action="upload_file.php" method="post" enctype="multipart/form-data">
    Select file to upload:
    <input type="file" name="fileSubmission" id="fileSubmission">
    <input type="submit" value="Upload your file" name="submit">
</form>
```

Multiple files

Adding the `multiple` attribute the user will be able to select **more than one** file:

```
<input type="file" name="fileSubmission" id="fileSubmission" multiple>
```

Accept Files

Accept attribute specifies the types of files that user can select. E.g. `.png`, `.gif`, `.jpeg`.

```
<input type="file" name="fileSubmission" accept="image/x-png,image/gif,image/jpeg" />
```

Input Validation

HTML input validation is done automatically by the browser based on special attributes on the input element. It could partially or completely replace JavaScript input validation. This kind of validation can be circumvented by the user via specially crafted HTTP requests, so it does not replace server-side input validation. The validation only occurs when attempting to submit the form, so all restricted inputs must be inside a form in order for validation to occur (unless you're using JavaScript). Keep in mind that inputs which are disabled or read-only will not trigger validation.

Some newer input types (like `email`, `url`, `tel`, `date` and many more) are automatically validated and do not require your own validation constraints.

5

Required

Use the `required` attribute to indicate that a field must be completed in order to pass validation.

```
<input required>
```

Minimum / Maximum Length

Use the `minlength` and `maxlength` attributes to indicate length requirements. Most browsers will prevent the user from typing more than *max* characters into the box, preventing them from making their entry invalid even before they attempt submission.

```
<input minlength="3">
<input maxlength="15">
<input minlength="3" maxlength="15">
```

Specifying a range

Use `min` and `max` attributes to restrict the range of numbers a user can input into an input of type `number` or `range`

```
Marks: <input type="number" size="6" name="marks" min="0" max="100" />
Subject Feedback: <input type="range" size="2" name="feedback" min="1" max="5" />
```

5

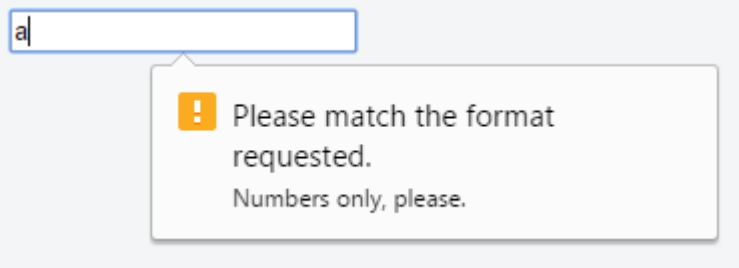
Match a Pattern

For more control, use the `pattern` attribute to specify any regular expression that must be matched in order to pass validation. You can also specify a `title`, which is included in the validation

message if the field doesn't pass.

```
<input pattern="¥d*" title="Numbers only, please.">
```

Here's the message shown in Google Chrome version 51 when attempting to submit the form with an invalid value inside this field:



Not all browsers display a message for invalid patterns, although there is full support among most used modern browsers.

Check the latest support on CanIUse and implement accordingly.

5

Accept File Type

For input fields of type `file`, it is possible to accept only certain types of files, such as videos, images, audios, specific file extensions, or certain media types. For example:

```
<input type="file" accept="image/*" title="Only images are allowed">
```

Multiple values can be specified with a comma, e.g.:

```
<input type="file" accept="image/*,.rar,application/zip">
```

Note: Adding `novalidate` attribute to the `form` element or `formnovalidate` attribute to the submit button, prevents validation on form elements. For example:

```
<form>
    <input type="text" name="name" required>
    <input type="email" name="email" required>
    <input pattern="¥d*" name="number" required>

    <input type="submit" value="Publish"> <!-- form will be validated -->
    <input type="submit" value="Save" formnovalidate> <!-- form will NOT be validated -->
</form>
```

The form has fields that are required for "publishing" the draft but aren’t required for "saving" the draft.

Reset

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

An input of type `reset` creates a button which, when clicked, resets all inputs in the form it is contained in to their default state.

- Text in an input field will be reset to blank or its default value (specified using the `value` attribute).
- Any option(s) in a selection menu will be deselected unless they have the `selected` attribute.
- All checkboxes and radio boxes will be deselected unless they have the `checked` attribute.

Note: A reset button must be inside or attached to (via the `form` attribute) a `<form>` element in order to have any effect. The button will only reset the elements within this form.

Number

5

```
<input type="number" value="0" name="quantity">
```

The Input element with a type attribute whose value is `number` represents a precise control for setting the element's value to a string representing a number.

Please note that this field does not guarantee to have a correct number. It just allows all the symbols which could be used in any real number, for example user will be able to enter value like `e1e-,0.`

Tel

```
<input type="tel" value="+8400000000">
```

The input element with a type attribute whose value is `tel` represents a one-line plain-text edit control for entering a telephone number.

Email

5

The `<input type="email">` is used for input fields that should contain an e-mail address.

```
<form>
  <label>E-mail: <label>
  <input type="email" name="email">
</form>
```

E-mail address can be automatically validated when submitted depending on browser support.

Button

```
<input type="button" value="Button Text">
```

Buttons can be used for triggering actions to occur on the page, without submitting the form. You can also use the `<button>` element if you require a button that can be more easily styled or contain other elements:

```
<button type="button">Button Text</button>
```

Buttons are typically used with an "onclick" event:

```
<input type="button" onclick="alert('hello world!')" value="Click Me">
```

or

```
<button type="button" onclick="alert('hello world!')">Click Me</button>
```

Attributes

`[name]`

The `name` of the button, which is submitted with the form data.

`[type]`

The `type` of the button.

Possible values are:

`submit` : The button submits the form data to the server. This is the default if the attribute is not specified, or if the attribute is dynamically changed to an empty or invalid value.

`reset` : The button resets all the controls to their initial values.

`button` : The button has no default behavior. It can have client-side scripts associated with the element's events, which are triggered when the events occur.

`menu` : The button opens a popup menu defined via its designated element.

`[value]`

The initial value of the button.

5

Extra Attributes for Submit Buttons

Attribute	Description
`form`	Specifies the ID of the form the button belongs to. If none is specified, it will belong to its ancestor form element (if one exists).
`formaction`	Specifies where to send the form-data when the form is submitted using this button.
`formenctype`	Specifies how the form-data should be encoded when submitting it to the server using this button. Can only be used with `formmethod="post"`.
`formmethod`	Specifies the HTTP method to use (POST or GET) when sending form-data using this button.
`formnovalidate`	Specifies that the form-data should not be validated on submission.
`formtarget`	Specifies where to display the response that is received after submitting the form using this button.

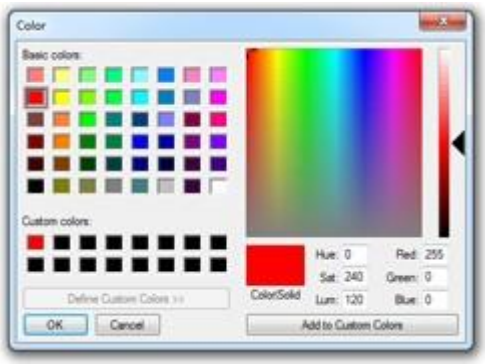
Color

5

```
<input type="color" name="favcolor" value="#ff0000">
```

In supporting browsers, the input element with a type attribute whose value is `color` creates a button-like control, with a color equal to the value of `color` attribute (defaults to black if value is not specified or is an invalid hexadecimal format).

Clicking this button opens the operating system's color widget, which allows user to select a color.



Fallback for browsers which do not support this input type is a regular input `type=text`.

Url

5

```
<input type="url" name="Homepage">
```

This is used for input fields that should contain a URL address.

Depending on browser support, the `url` field can be automatically validated when submitted.

Some smartphones recognize the `url` type, and adds ".com" to the keyboard to match url input.

Date

5

```
<input type="date" />
```

A date picker will pop up on screen for you to choose a date. This is not supported in Firefox or Internet Explorer.

DateTime-Local

5

```
<input type="datetime-local" />
```

Dependent on browser support, a date and time picker will pop up on screen for you to choose a date and time.

Image

```
<input type="image" src="img.png" alt="image_name" height="50px" width="50px"/>
```

An Image. You must use the src attribute to define the source of the image and the alt attribute to define alternative text. You can use the height and width attributes to define the size of the image in pixels.

Range

5

```
<input type="range" min="" max="" step="" />
```

A control for entering a number whose exact value is not important.

Attribute	Description	Default value
min	Minimum value for range	0
max	Maximum value for range	100
step	Amount to increase by on each increment.	1

Month

5

```
<input type="month" />
```

Dependent on browser support, a control will show to pick the month.

Time

5

```
<input type="time" />
```

The `time` input marks this element as accepting a string representing a time. The format is defined in RFC 3339 and should be a partial-time such as

```
19:04:39
08:20:39.04
```

Currently, all versions of Edge, Chrome, Opera, and Chrome for Android support type="time". The newer versions of Android Browser, specifically 4.4 and up support it. Safari for iOS offers partial support, not supporting min, max, and step attributes.

Week

5

```
<input type="week" />
```

Dependent on browser support, a control will show for entering a week-year number and a week number with no time zone.

Text

The most basic input type and the default input if no `type` is specified. This input type defines a single-line text field with line-breaks automatically removed from the input value. All other characters can be entered into this. `<input>` elements are used within a `<form>` element to declare input controls that allow users to input data.

Syntax

```
<input type="text">
```

or (without specifying a `type`, using the default attribute):

```
<input>
```

The default width of a text field input is 20 characters. This can be changed by specifying a value for the `size` attribute like this:

```
<input type="text" size="50">
```

The `size` attribute is distinctly different than setting a width with CSS. Using a width defines a specific value (in number of pixel, percentage of the parent element, etc.) that the input must always be wide. Using the `size` calculates the amount of width to allocate based on the font being used and how wide the characters normally are.

Note: Using the `size` attribute does not inherently limit the number of characters which can be entered into the box, only how wide the box is displayed. For limiting the length, see Input Validation.

An input field only allows one line of text. If you need a multi-line text input for substantial amount of text, use a `<textarea>` element instead.

Search

5

Input type search is used for textual search. It will add magnifier symbol next to space for text on most browsers

```
<input type="search" name="googlesearch">
```

DateTime (Global)

The input element with a type attribute whose value is "**datetime**" represents a control for setting the element's value to a string representing a **global date and time (with timezone information).**

```
<fieldset>
   <p><label>Meeting time: <input type=datetime name="meeting.start"></label>
</fieldset>
```

Permitted attributes:

- global attributes
- name
- disabled

- form
- type
- autocomplete
- autofocus
- list
- min & max
- step (float)
- readonly
- required value

Read Input Control Elements online: https://riptutorial.com/html/topic/277/input-control-elements

Chapter 23: Label Element

Syntax

- `<label>Example <input type="radio" name="r"></label>` // Wrapping a control Element
- `<label for="rad1">Example</label> <input id="rad1" type="radio" name="r">` // Using `for` attribute

Parameters

Attributes	Description
for	Reference to the target ID Element. I.e: `for="surname"`
form	**HTML5**, **[Obsolete]** Reference to the form containing the Target Element. Label elements are expected within a `<form>` Element. If the `form="someFormId"` is provided this allows you to place the Label anywhere in the document.

Examples

Basic Use

Simple form with labels...

```
<form action="/login" method="POST">

    <label for="username">Username:</label>
    <input id="username" type="text" name="username" />

    <label for="pass">Password:</label>
    <input id="pass" type="password" name="pass" />

    <input type="submit" name="submit" />

</form>
```

5

```
<form id="my-form" action="/login" method="POST">

    <input id="username" type="text" name="username" />

    <label for="pass">Password:</label>
    <input id="pass" type="password" name="pass" />

    <input type="submit" name="submit" />

</form>
```

```
<label for="username" form="my-form">Username:</label>
```

About Label

The `<label>` element is used to reference a form action element.
In the scope of **User Interface** it's used to ease the target / selection of elements like Type `radio` or `checkbox`.

`<label>` as wrapper

It can enclose the desired action element

```
<label>
    <input type="checkbox" name="Cats">
    I like Cats!
</label>
```

(Clicking on the text the target `input` will toggle it's state / value)

`<label>` as reference

Using the `for` attribute you don't have to place the control element as descendant of `label` - but the `for` value must match it's ID

```
<input id="cats" type="checkbox" name="Cats">
<label for="cats" >I like Cats!</label>
```

Note
Don't use more than one Control Element within a `<label>` element

Read Label Element online: https://riptutorial.com/html/topic/1704/label-element

Chapter 24: Linking Resources

Introduction

While many scripts, icons, and stylesheets can be written straight into HTML markup, it is best practice and more efficient to include these resources in their own file and link them to your document. This topic covers linking external resources such as stylesheets and scripts into an HTML document.

Syntax

- `<link rel="link-relation" type="mime-type" href="url">`
- `<script src="path-to-script"></script>`

Parameters

Attribute	Details
`charset`	Specifies the character encoding of the linked document
`crossorigin`	Specifies how the element handles cross origin requests
`href`	Specifies the location of the linked document
`hreflang`	Specifies the language of the text in the linked document
`media`	Specifies on what device the linked document will be displayed, often used with selecting stylesheets based on the device in question
`rel`	**Required**. Specifies the relationship between the current document and the linked document
`rev`	Specifies the relationship between the linked document and the current document
`sizes`	Specifies the size of the linked resource. Only when `rel="icon"`
`target`	Specifies where the linked document is to be loaded
`type`	Specifies the media type of the linked document
`integrity`	Specifies a base64 encoded hash (sha256, sha384, or sha512) of the linked resource allowing the browser to verify its legitimacy.

Synchronous

```
<script src="path/to.js"></script>
```

Standard practice is to place JavaScript `<script>` tags just before the closing `</body>` tag. Loading your scripts last allows your site's visuals to show up more quickly and discourages your JavaScript from trying to interact with elements that haven't loaded yet.

Asynchronous

```
<script src="path/to.js" async></script>
```

Another alternative, when the Javascript code being loaded is not necessary for page initialization, it can be loaded asynchronously, speeding up the page load. Using `async` the browser will load the contents of the script in parallel and, once it is fully downloaded, will interrupt the HTML parsing in order to parse the Javascript file.

Deferred

```
<script src="path/to.js" defer></script>
```

Deferred scripts are like async scripts, with the exception that the parsing will only be performed once the HTML is fully parsed. Deferred scripts are guaranteed to be loaded in the order of declaration, same way as synchronous scripts.

Preconnect

The `preconnect` relationship is similar to `dns-prefetch` in that it will resolve the DNS. However, it will also make the TCP handshake, and optional TLS negotiation. This is an experimental feature.

```
<link rel="preconnect" href="URL">
```

DNS-Prefetch

Informs browsers to resolve the DNS for a URL, so that all assets from that URL load faster.

```
<link rel="dns-prefetch" href="URL">
```

Prefetch

Informs the browsers that a given resource should be prefetched so it can be loaded more quickly.

```
<link rel="prefetch" href="URL">
```

DNS-Prefetch resolves only the domain name whereas prefetch downloads/stores the specified resources.

Prerender

Informs browsers to fetch and render the URL in the background, so that they can be delivered to the user instantaneously as the user navigates to that URL. This is an experimental feature.

```
<link rel="prerender" href="URL">
```

Read Linking Resources online: https://riptutorial.com/html/topic/712/linking-resources

Chapter 25: Lists

Introduction

HTML offers three ways for specifying lists: ordered lists, unordered lists, and description lists. Ordered lists use ordinal sequences to indicate the order of list elements, unordered lists use a defined symbol such as a bullet to list elements in no designated order, and description lists use indents to list elements with their children. This topic explains the implementation and combination of these lists in HTML markup.

Syntax

- `<ol> ordered list items </ol>`
- `<ul> unordered list items </ul>`
- `<li> list item (ordered and not) </li>`
- `<dl> description list items </dl>`
- `<dt> description list title </dt>`
- `<dd> description list description </dd>`

Remarks

See Also

You can add a list-style-type CSS property to an `<ul>` tag in order to change what kind of icon is used to mark each list item, for example `<ul style="list-style-type:disc">`. The following list-style-types are permitted:

- "list-style-type:disc" is the default dot.
- "list-style-type:circle" is an unfilled circle.
- "list-style-type:square" is a filled square.
- "list-style-type:none" uses no mark at all.

You can also add a type attribute to an `<ol>` tag in order to change how numbering is done, for example `<ol type="1">`. The following types are permitted:

- type="1" is the default form.
- type="A" uses uppercase letters in alphabetical order
- type="a" uses lowercase letters in alphabetical order
- type="I" uses roman numerals with uppercase lettering
- type="i" uses roman numerals with lowercase lettering

Examples

Unordered List

An unordered list can be created with the `<ul>` tag and each list item can be created with the `<li>` tag as shown by the example below:

```
<ul>
  <li>Item</li>
  <li>Another Item</li>
  <li>Yet Another Item</li>
</ul>
```

This will produce a bulleted list (which is the default style):

- Item
- Another Item
- Yet Another Item

> You should use `ul` to display a list of items, where the order of the items is not important. If changing the order of the items makes the list incorrect, you should use `<ol>`.

Ordered List

An ordered list can be created with the `<ol>` tag and each list item can be created with the `<li>` tag as in the example below:

```
<ol>
  <li>Item</li>
  <li>Another Item</li>
  <li>Yet Another Item</li>
</ol>
```

This will produce a numbered list (which is the default style):

1. Item
2. Another Item
3. Yet Another Item

Manually changing the numbers

There are a couple of ways you can play with which numbers appear on the list items in an ordered list. The first way is to set a starting number, using the `start` attribute. The list will start at this defined number, and continue incrementing by one as usual.

```
<ol start="3">
  <li>Item</li>
  <li>Some Other Item</li>
  <li>Yet Another Item</li>
</ol>
```

This will produce a numbered list (which is the default style):

3. Item
4. Some Other Item
5. Yet Another Item

You can also explicitly set a certain list item to a specific number. Further list items after one with a specified value will continue incrementing by one from that list item's value, ignoring where the parent list was at.

```
<li value="7"></li>
```

It is also worth noting that, by using the `value` attribute directly on a list item, you can override an ordered list's existing numbering system by restarting the numbering at a lower value. So if the parent list was already up to value 7, and encountered a list item at value 4, then that list item would still display as 4 and continue counting from that point again.

```
<ol start="5">
  <li>Item</li>
  <li>Some Other Item</li>
  <li value="4">A Reset Item</li>
  <li>Another Item</li>
  <li>Yet Another Item</li>
</ol>
```

So the example above will produce a list that follows the numbering pattern of 5, 6, 4, 5, 6 - starting again at a number lower than the previous and duplicating the number 6 in the list.

Note: The `start` and `value` attributes only accept a number - even if the ordered list is set to display as Roman numerals or letters.

5

You can reverse the numbering by adding `reversed` in your `ol` element:

```
<ol reversed>
  <li>Item</li>
  <li>Some Other Item</li>
  <li value="4">A Reset Item</li>
  <li>Another Item</li>
  <li>Yet Another Item</li>
</ol>
```

Reverse numbering is helpful if you're continually adding to a list, such as with new podcast episodes or presentations, and you want the most recent items to appear first.

Changing the type of numeral

You can easily change the type of numeral shown in the list item marker by using the `type` attribute

```
<ol type="1|a|A|i|I">
```

Type	Description	Examples
1	Default value - Decimal numbers	1,2,3,4
a	Alphabetically ordered (lowercase)	a,b,c,d
A	Alphabetically ordered (uppercase)	A,B,C,D
i	Roman Numerals (lowercase)	i,ii,iii,iv
I	Roman Numerals (uppercase)	I,II,III,IV

> You should use `ol` to display a list of items, where the items have been intentionally ordered and order should be emphasized. If changing the order of the items does NOT make the list incorrect, you should use `<ul>`.

Description List

A description list (or *definition list*, as it was called before HTML5) can be created with the `dl` element. It consists of name-value groups, where the name is given in the `dt` element, and the value is given in the `dd` element.

```
<dl>
  <dt>name 1</dt>
  <dd>value for 1</dd>
  <dt>name 2</dt>
  <dd>value for 2</dd>
</dl>
```

Live demo

A name-value group can have more than one name and/or more than one value (which represent alternatives):

```
<dl>

  <dt>name 1</dt>
  <dt>name 2</dt>
  <dd>value for 1 and 2</dd>

  <dt>name 3</dt>
  <dd>value for 3</dd>
  <dd>value for 3</dd>

</dl>
```

Live demo

Nested lists

You can nest lists to represent sub-items of a list item.

```
<ul>
  <li>item 1</li>
  <li>item 2
    <ul>
      <li>sub-item 2.1</li>
      <li>sub-item 2.2</li>
    </ul>
  </li>
  <li>item 3</li>
</ul>
```

- item 1
- item 2
  - sub-item 2.1
  - sub-item 2.2
- item 3

The nested list has to be a child of the `li` element.

You can nest different types of list, too:

```
<ol>
    <li>Hello, list!</li>
    <li>
        <ul>
            <li>Hello, nested list!</li>
        </ul>
    </li>
</ol>
```

Read Lists online: https://riptutorial.com/html/topic/393/lists

Chapter 26: Marking up computer code

Syntax

- <pre>Formatted text</pre>
- <code>Inline Code</code>

Remarks

The code element should be used for any kind of "string that a computer would recognize" (HTML5), for example:

- source code
- terms from markup/programming languages (element names, function names, etc.)
- file names

Related elements

For variables, the var element can be used.

For computer output, the samp element can be used.

For user input, the kbd element can be used.

Examples

Inline with

If a sentence contains computer code (for example, the name of an HTML element), use the code element to mark it up:

```
<p>The <code>a</code> element creates a hyperlink.</p>
```

Block with

```
 and
```

If the formatting (white space, new lines, indentation) of the code matters, use the pre element in combination with the code element:

```
<pre>
    <code>
    x = 42
    if x == 42:
        print "x is …           … 42"
    </code>
</pre>
```

You still have to escape characters with special meaning in HTML (like < with <), so for *displaying* a block of HTML code (This is a paragraph.), it could look like this:

```
<pre>
    <code>
    &amp;lt;p>This is a paragraph.&amp;lt;/p>
    </code>
</pre>
```

Read Marking up computer code online: https://riptutorial.com/html/topic/1836/marking-up-computer-code

Chapter 27: Marking-up Quotes

Remarks

cite and blockquote elements should not be used for the purpose of representing a conversation, transcripts of conversations, dialogues in scripts, records of instant messages and other situations in which different players take turns in the speech.

Examples

Inline with «»

The **q element** can be used for a quote that is part of a sentence:

```
<p>She wrote <q>The answer is 42.</q> and everyone agreed.</p>
```

Quotation marks

4.01

Quotation marks should not be added. User agents should (in HTML 4.01) resp. must (in HTML 4.0) render them automatically.

5

Quotation marks must not be added. User agents will render them automatically.

Source URL (cite attribute)

The **cite attribute** can be used to reference the URL of the quoted source:

```
<p>She wrote <q cite="http://example.com/blog/hello-world">The answer is 42.</q> and everyone agreed.</p>
```

Note that browsers typically don't show this URL, so if the source is relevant, you should add a hyperlink (a element) in addition.

Block with

The **blockquote element** can be used for a (block-level) quote:

```
<blockquote>
  <p>The answer is 42.</p>
</blockquote>
```

Source URL (cite attribute)

The **cite attribute** can be used to reference the URL of the quoted source:

```
<blockquote cite="http://example.com/blog/hello-world">
  <p>The answer is 42.</p>
</blockquote>
```

Note that browsers typically don't show this URL, so if the source is relevant, you should add a hyperlink (a element) in addition (see the section *Citation/Attribution* about where to place this link).

Citation/Attribution

4.01

The citation/attribution should not be part of the blockquote element:

```
<blockquote cite="http://example.com/blog/hello-world">
  <p>The answer is 42.</p>
</blockquote>
<p>Source: <cite><a href="http://example.com/blog/hello-world" rel="external">Hello
World</a></cite></p>
```

You can add a div element to group the quote and the citation, but it exists no way to associate them semantically.

The **cite element** can be used for the reference of the quoted source (but not for the author name).

5

The citation/attribution (e.g., the hyperlink giving the source URL) can be inside the blockquote, but in that case it must be within a cite element (for in-text attributions) or a footer element:

```
<blockquote cite="http://example.com/blog/hello-world">
  <p>The answer is 42.</p>
  <footer>
    <p>Source: <cite><a href="http://example.com/blog/hello-world" rel="external">Hello
World</a></cite></p>
  </footer>
</blockquote>
```

The **cite element** can be used for the reference of the quoted source, or for the name of the quote's author.

Read Marking-up Quotes online: https://riptutorial.com/html/topic/2943/marking-up-quotes

Parameters

Attribute	Details
width	Sets the element's width in pixels.
height	Sets the element's height in pixels.
<source>	Defines resources of the audio or video files
track	Defines the text track for media elements
controls	Displays controls
autoplay	Automatically start playing the media
loop	Plays the media in a repeated cycle
muted	Plays the media without sound
poster	Assigns an image to display until a video is loaded

Remarks

Support in browsers

Feature	Chrome	Firefox (Gecko)	Internet Explorer	Opera	Safari
Basic support	3.0	3.5 (1.9.1)	9.0	10.50	3.1
<audio>: PCM in WAVE	(Yes)	3.5 (1.9.1)	No support	10.50	3.1
<audio>: Vorbis in WebM	(Yes)	4.0 (2.0)	No support	10.60	3.1
<audio>: Streaming Vorbis/Opus in WebM via MSE	?	36.0	?	?	?
<audio>: Vorbis in Ogg	(Yes)	3.5 (1.9.1)	No support	10.50	No support
<audio>: MP3	(Yes)	(Yes)	9.0	(Yes)	3.1
<audio>: MP3 in MP4	?	?	?	?	(Yes)
<audio>: AAC in MP4	(Yes)	(Yes)	9.0	(Yes)	3.1
<audio>: Opus in Ogg	27.0	15.0 (15.0)	?	?	?
<video>: VP8 and Vorbis in WebM	6.0	4.0 (2.0)	9.0	10.60	3.1

Feature	Chrome	Firefox (Gecko)	Internet Explorer	Opera	Safari
<video>: VP9 and Opus in WebM	29.0	28.0 (28.0)	?	(Yes)	?
<video>: Streaming WebM via MSE	?	42.0 (42.0)	?	?	?
<video>: Theora and Vorbis in Ogg	(Yes)	3.5 (1.9.1)	No support	10.50	No support
<video>: H.264 and MP3 in MP4	(Yes)	(Yes)	9.0	(Yes)	(Yes)
<video>: H.264 and AAC in MP4	(Yes)	(Yes)	9.0	(Yes)	3.1
any other format	No support	No support	No support	No support	3.1

Examples

Using `` and `` element to display audio/video content

Use the HTML or <audio> element to embed video/audio content in a document. The video/audio element contains one or more video/audio sources. To specify a source, use either the src attribute or the <source> element; the browser will choose the most suitable one.

Audio tag example:

```
<!-- Simple video example -->
<video src="videofile.webm" autoplay poster="posterimage.jpg">
  Sorry, your browser doesn't support embedded videos,
  but don't worry, you can <a href="videofile.webm">download it</a>
  and watch it with your favorite video player!
</video>

<!-- Video with subtitles -->
<video src="foo.webm">
  <track kind="subtitles" src="foo.en.vtt" srclang="en" label="English">
  <track kind="subtitles" src="foo.sv.vtt" srclang="sv" label="Svenska">
</video>
<!-- Simple video example -->
<video width="480" controls poster="https://archive.org/download/WebmVp8Vorbis/webmvp8.gif" >
  <source src="https://archive.org/download/WebmVp8Vorbis/webmvp8.webm" type="video/webm">
  <source src="https://archive.org/download/WebmVp8Vorbis/webmvp8_512kb.mp4" type="video/mp4">
  <source src="https://archive.org/download/WebmVp8Vorbis/webmvp8.ogv" type="video/ogg">
  Your browser doesn't support HTML5 video tag.
</video>
```

Audio tag example:

```
<!-- Simple audio playback -->
<audio src="http://developer.mozilla.org/@api/deki/files/2926/=AudioTest_(1).ogg" autoplay>
  Your browser does not support the <code>audio</code> element.
</audio>

<!-- Audio playback with captions -->
<audio src="foo.ogg">
  <track kind="captions" src="foo.en.vtt" srclang="en" label="English">
  <track kind="captions" src="foo.sv.vtt" srclang="sv" label="Svenska">
</audio>
```

Audio

HTML5 provides a new standard for embedding an audio file on a web page.

You can embed an audio file to a page using the <audio> element:

```
<audio controls>
  <source src="file.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
```

Video

You can embed also a video to a webpage using the <video> element:

```
<video width="500" height="700" controls>
  <source src="video.mp4" type="video/mp4">
Your browser does not support the video tag.
</video>
```

Video header or background

Adding a video that will autoplay on a loop and has no controls or sound. Perfect for a video header or background.

```
<video width="1280" height="720" autoplay muted loop poster="video.jpg" id="videobg">
  <source src="video.mp4" type="video/mp4">
  <source src="video.webm" type="video/webm">
  <source src="video.ogg" type="video/ogg">
</video>
```

This CSS provides a fallback if the video cannot be loaded. Note that is it recomended to use the first frame of the video as the poster video.jpg.

```
#videobg {
  background: url(video.jpg) no-repeat;
  background-size: cover;
}
```

Read Media Elements online: https://riptutorial.com/html/topic/2111/media-elements

Chapter 29: Meta Information

Introduction

Meta tags in HTML documents provide useful information about the document including a description, keywords, author, dates of modifications and around 90 other fields. This topic covers the usage and purpose of these tags.

Syntax

- <meta name="metadata name" content="value">
- <meta http-equiv="pragma directive" content="value">
- <meta charset="encoding label">

Remarks

The meta tag is an HTML tag used to set the metadata of the HTML document. Meta tags need to go in the head element. A page may have any number of meta tags.

The meta tag keywords is not typically used by robots. Most search engines determine what keywords fit with the content on the web pages. That being said, nothing says you should no longer include the keywords meta tag.

The meta data of a page is mostly used by the browser (like the scaling of a document) and web crawling spiders used by search engines (Google, Yahoo!, Bing).

The spec gives a number of standardized metadata names for use with <meta name> and standardized metadata pragma directives for use with <meta http-equiv>. However, many services across the internet (web crawlers, authoring tools, social sharing services, etc.) use the <meta name> form as a generic extension point for metadata. Some of these are listed on the spec's wiki page.

Examples

Character Encoding

The charset attribute specifies the character encoding for the HTML document and needs to be a valid character encoding (examples include windows-1252, ISO-8859-2, Shift_JIS, and UTF-8). UTF-8 (Unicode) is the most widely used and should be used for any new project.

5

```
<meta charset="UTF-8">
```

```
<meta charset="ISO-8859-1">
```

All browsers have always recognized the <meta charset> form, but if you for some reason need your page to be valid HTML 4.01, you can use the following instead:

```
<meta http-equiv="content-type" content="text/html; charset=UTF-8">
```

```
<meta http-equiv="content-type" content="text/html; charset=ISO-8859-1">
```

See also the Encoding Standard, to view all available character encoding labels that browsers recognize.

Automatic Refresh

To refresh the page every five seconds, add this meta element in the head element:

```
<meta http-equiv="refresh" content="5">
```

CAUTION! While this is a valid command, it is recommended that you do not use it because of its negative effects on user experience. Refreshing the page too often can cause it to become unresponsive, and often scrolls to the top of the page. If some information on the page needs to be updated continuously, there are much better ways to do that by only refreshing a portion of a page.

Mobile Layout Control

Common mobile-optimized sites use the <meta name="viewport"> tag like this:

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

The viewport element gives the browser instructions on how to control the page's dimensions and scaling based on the device you are using.

In the above example, content="width=device-width means that the browser will render the width of the page at the width of its own screen. So if that screen is 480px wide, the browser window will be 480px wide. initial-scale=1 depicts that the initial zoom (which is 1 in this case, means it does not zoom).

Below are the attributes this tag supports:

Attribute	Description
width	The width of the virtual viewport of the device. Values[1]: device-width or the actual width in pixels, like 480
height	The height of the virtual viewport of the device. Values[2]: device-height or the actual width in pixels, like 600
initial-scale	The initial zoom when the page is loaded. 1.0 does not zoom.
minimum-scale	The minimum amount the visitor can zoom on the page. 1.0 does not zoom.
maximum-scale	The maximum amount the visitor can zoom on the page. 1.0 does not zoom.
user-scalable	Allows the device to zoom in and out. Values are yes or no. If set to no, the user is not able to zoom in the webpage. The default is yes. Browser settings can ignore this rule.

Notes:

[1] The width property can be either specified in *pixels* (width=600) or by *device-width* (width=device-width) which represents the physical width of the device's screen.

[2] Similarly, the height property can be either specified in pixels (height=600) or by device-height (height=device-height) which represents the physical height of the device's screen.

Page Information

application-name

Giving the name of the Web application that the page represents.

```
<meta name="application-name" content="OpenStreetMap">
```

If it's not a Web application, the application-name meta tag must not be used.

author

Set the author of the page:

```
<meta name="author" content="Your Name">
```

Only one name can be given.

description

Set the description of the page:

```
<meta name="description" content="Page Description">
```

The description meta tag can be used by various search engines while indexing your web page for searching purpose. Usually, the description contained within the meta tag is the short summary that shows up under the page/website's main title in the search engine results. Google usually uses only the first 20-25 words of your description.

generator

```
<meta name="generator" content="HTML Generator 1.42">
```

Identifies one of the software packages used to generate the document. Only to be used for pages where the markup is automatically generated.

keywords

Set keywords for search engines (comma-separated):

```
<meta name="keywords" content="Keyword1, Keyword2">
```

The keywords meta tag is sometimes used by search engines to know the search query which is relevant to your web page.
As a rule of thumb, it is probably a good idea to not add too many words, as most search engines that use this meta tag for indexing will only index the first ~20 words. Make sure that you put the most important keywords first.

Robots

The robots attribute, supported by several major search engines, controls whether search engine spiders are allowed to index a page or not and whether they should follow links from a page or not.

```
<meta name="robots" content="noindex">
```

This example instructs all search engines to not show the page in search results. Other allowed values are:

Value/Directive	Meaning
all	**Default.** Equivalent to index, follow. See note below.
noindex	Do not index the page at all.

Value/Directive	Meaning
nofollow	Do not follow the links on this page
follow	The links on the page can be followed. See note below.
none	Equivalent to noindex, nofollow.
noarchive	Do not make a cached version of this page available in search results.
nocache	Synonym of noarchive used by some bots such as Bing.
nosnippet	Do not show a snippet of this page in search results.
noodp	Do not use metadata of this page from the Open Directory project for titles or snippets in search results.
notranslate	Do not offer translations of this page in search results.
noimageindex	Do not index images on this page.
unavailable_after [RFC-850 date/time]	Do not show this page in search results after the specified date/time. The date/time must be specified in the RFC 850 format.

Note: Explicitly defining index and/or follow, while valid values, is not necessary as pretty much all search engines will assume they are allowed to do so if not explicitly prevented from doing so. Similar to how the robots.txt file operates, search engines generally only look for things they are *not allowed* to do. Only stating things a search engine isn't allowed to do also prevents accidentally stating opposites (such as index, ..., noindex) which not all search engines will treat in the same way.

Phone Number Recognition

Mobile platforms like iOS automatically recognize phone numbers and turn them into tel: links. While the feature is very practical, the system sometimes detects ISBN codes and other numbers as telephone numbers.

For mobile Safari and some other WebKit-based mobile browsers to turn off automatic phone number recognition and formatting, you need this meta tag:

```
<meta name="format-detection" content="telephone=no">
```

Social Media

Open Graph is a standard for metadata that extends the normal information contained within a site's head markup. This enables websites such as Facebook to display deeper and richer information about a website in a structured format. This information is then automatically displayed when users share links to websites containing OG metadata on Facebook.

Facebook / Open Graph

```
<meta property="fb:app_id" content="123456789">
<meta property="og:url" content="https://example.com/page.html">
<meta property="og:type" content="website">
<meta property="og:title" content="Content Title">
<meta property="og:image" content="https://example.com/image.jpg">
<meta property="og:description" content="Description Here">
<meta property="og:site_name" content="Site Name">
```

```
<meta property="og:locale" content="en_US">
<meta property="article:author" content="">
<!-- Facebook: https://developers.facebook.com/docs/sharing/webmasters#markup -->
<!-- Open Graph: http://ogp.me/ -->
```

- Facebook Open Graph Markup
- Open Graph protocol

Facebook / Instant Articles

```
<meta charset="utf-8">
<meta property="op:markup_version" content="v1.0">

<!-- The URL of the web version of your article -->
<link rel="canonical" href="http://example.com/article.html">

<!-- The style to be used for this article -->
<meta property="fb:article_style" content="myarticlestyle">
```

- Facebook Instant Articles: Creating Articles
- Instant Articles: Format Reference

Twitter uses its own markup for metadata. This metadata is used as information to control how tweets are displayed when they contain a link to the site.

Twitter

```
<meta name="twitter:card" content="summary">
<meta name="twitter:site" content="@site_account">
<meta name="twitter:creator" content="@individual_account">
<meta name="twitter:url" content="https://example.com/page.html">
<meta name="twitter:title" content="Content Title">
<meta name="twitter:description" content="Content description less than 200 characters">
<meta name="twitter:image" content="https://example.com/image.jpg">
```

- Twitter Cards: Getting Started Guide
- Twitter Card Validator

Google+ / Schema.org

```
<link href="https://plus.google.com/+YourPage" rel="publisher">
<meta itemprop="name" content="Content Title">
<meta itemprop="description" content="Content description less than 200 characters">
<meta itemprop="image" content="https://example.com/image.jpg">
```

Automatic redirect

Sometimes your webpage needs a automatic redirect.

For example, to redirect to example.com after 5 seconds:

```
<meta http-equiv="refresh" content="5;url=https://www.example.com/" />
```

This is line will send you to the designated website (in this case example.com after 5 seconds.

If you need to change the time delay before a redirect, simply changing the number right before your ;url= will alter the time delay.

Web App

You can set up your web app or website to have an application shortcut icon added to a device's homescreen, and have the app launch in full-screen "app mode" using Chrome for Android's "Add to homescreen" menu item.

Below meta tag(s) will open web app in full-screen mode (without address bar).

Android Chrome

```
<meta name="mobile-web-app-capable" content="yes">
```

IOS

```
<meta name="apple-mobile-web-app-capable" content="yes">
```

You can also set color for status bar and address bar in meta tag.

```
<meta name="theme-color" content="black">
```

Android Chrome

IOS

```
<meta name="apple-mobile-web-app-status-bar-style" content="black">
```

Read Meta Information online: https://riptutorial.com/html/topic/1264/meta-information

Chapter 30: Navigation Bars

Examples

Basic Navigation Bar

Navigation bars are essentially a list of links, so the ul and li elements are used to encase navigation links.

```
<ul>
  <li><a href="#">Home</a></li>
  <li><a href="#">About</a></li>
  <li><a href="#">Contact</a></li>
</ul>
```

HTML5 Navigation Bar

To make a navigation bar using the HTML5 nav element, encase the links within the nav tag.

```
<nav>
  <a href="#">Home</a>
  <a href="#">About</a>
  <a href="#">Contact</a>
</nav>
```

Read Navigation Bars online: https://riptutorial.com/html/topic/10725/navigation-bars

Chapter 31: Output Element

Parameters

Attribute	Description
Global	Attributes that are available to any HTML5 element. For comprehensive documentation of these attributes see: MDN Global Attributes
name	A string representing the name of an output. As a form element, output can be referenced by it's name using the `document.forms` property. This attribute is also used for collecting values on a form submit.
for	A space separated list of form element ids (e.g. `<inputs id="inp1"> for value is "inp1"`) that the output is meant to display calculations for.
form	A string representing the `<form>` that is associated to the output. If the output is actually outside the `<form>`, this attribute will ensure that the output still belongs to the `<form>` and subject to collections and submits of said `<form>`.

Examples

Output Element Using For and Form Attributes

The following demo features an <output> element's use of the [for] and [form] attributes. Keep in mind, <output> **needs JavaScript** in order to function. Inline JavaScript is commonly used in forms as this example demonstrates. Although the <input> elements are type="number", their values are not numbers, they are text. So if you require the values to be calculated, you must convert each value into a number using methods such as: parseInt(), parseFloat(), Number(), etc.

Live Demo

```
    <!--form1 will collect the values of in1 and in2 on 'input' event.-->
    <!--out1 value will be the sum of in1 and in2 values.-->

<form id="form1" name="form1" oninput="out1.value = parseInt(in1.value, 10) +
parseInt(in2.value, 10)">

  <fieldset>

    <legend>Output Example</legend>

      <input type="number" id="in1" name="in1" value="0">
    <br/>
    +
    <input type="number" id="in2" name="in2" value="0">

  </fieldset>

</form>

<!--[for] attribute enables out1 to display calculations for in1 and in2.-->
<!--[form] attribute designates form1 as the form owner of out1 even if it isn't a
descendant.-->
```

```
<output name="out1" for="in1 in2" form="form1">0</output>
```

Output Element with Attributes

```
<output name="out1" form="form1" for="inp1 inp2"></output>
```

Read Output Element online: https://riptutorial.com/html/topic/723/output-element

Chapter 32: Paragraphs

Introduction

Paragraphs are the most basic HTML element. This topic explains and demonstrates the usage of the paragraph element in HTML.

Parameters

Column	Column
<p>	Defines a paragraph
 	Inserts a single line break
<pre>	Defines pre-formatted text

Examples

HTML Paragraphs

The HTML <p> element defines a **paragraph**:

```
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
```

Display-

You cannot be sure how HTML will be displayed.

Large or small screens, and resized windows will create different results.

With HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code.

The browser will remove any extra spaces and extra lines when the page is displayed:

```
    <p>This is          another     paragraph, extra spaces   will be   removed  by
browsers</p>
```

Read Paragraphs online: https://riptutorial.com/html/topic/7997/paragraphs

Chapter 33: Progress Element

Parameters

Parameter	Value
max	How much work the task requires in total
value	How much of the work has been accomplished already
position	This attribute returns the current position of the <progress> element
labels	This attribute returns a list of <progress> element labels (if any)

Remarks

The <progress> element is not supported in versions of Internet Explorer less than 10

The <progress> element is the wrong element to be used for something that is just a gauge, rather than the task progress. For example, showing the usage of disk space by using the <progress> element is inappropriate. Instead, the <meter> element is available for this type of use cases.

Examples

Progress

The <progress> element is new in HTML5 and is used to represent the progress of a task

```
<progress value="22" max="100"></progress>
```

This creates a bar filled 22%

Changing the color of a progress bar

Progress bars can be styled with the progress[value] selector.

This example gives a progress bar a width of 250px and a height of 20px

```
progress[value] {
  width: 250px;
  height: 20px;
}
```

Progress bars can be especially difficult to style.

Chrome / Safari / Opera

These browsers use the -webkit-appearance selector to style the progress tag. To override this, we can reset the appearance.

```
progress[value] {
  -webkit-appearance: none;
  appearance: none;
```

```
}
```

Now, we can style the container itself

```
progress[value]::-webkit-progress-bar {
  background-color: "green";
}
```

Firefox

Firefox styles the progress bar a little differently. We have to use these styles

```
progress[value] {
  -moz-appearance: none;
  appearance: none;
  border: none;                 /* Firefox also renders a border */
}
```

Internet Explorer

Internet Explorer 10+ supports the progress element. However, it does not support the background-color property. You'll need to use the color property instead.

```
progress[value]  {
  -webkit-appearance: none;
     -moz-appearance: none;
          appearance: none;

  border: none;                         /* Remove border from Firefox */

  width: 250px;
  height: 20px;

  color: blue;
}
```

HTML Fallback

For browsers that do not support the progress element, you can use this as a workaround.

```
<progress max="100" value="20">
    <div class="progress-bar">
        <span style="width: 20%;">Progress: 20%</span>
    </div>
</progress>
```

Browsers that support the progress tag will ignore the div nested inside. Legacy browsers which cannot identify the progress tag will render the div instead.

Read Progress Element online: https://riptutorial.com/html/topic/5055/progress-element

Chapter 34: Sectioning Elements

Remarks

The HTML5 standards does not list the main element as a sectioning element.

Examples

Article Element

The <article> element contains **self-contained content** like articles, blog posts, user comments or an interactive widget that could be distributed outside the context of the page, for example by RSS.

- When article elements are nested, the contents of the inner article node should be related to the outer article element.

A blog (section) with multiple posts (article), and comments (article) might look something like this.

```
<section>
    <!-- Each individual blog post is an <article> -->
    <article>
        <header>
            <h1>Blog Post</h1>
            <time datetime="2016-03-13">13th March 2016</time>
        </header>

        <p>The article element represents a self contained article or document.</p>
        <p>The section element represents a grouping of content.</p>

        <section>
            <h2>Comments <small>relating to "Blog Post"</small></h2>

            <!-- Related comment is also a self-contained article -->
            <article id="user-comment-1">
                <p>Excellent!</p>
                <footer><p>...</p><time>...</time></footer>
            </article>
        </section>
    </article>

    <!-- ./repeat: <article> -->

</section>

<!-- Content unrelated to the blog or posts should be outside the section. -->
<footer>
    <p>This content should be unrelated to the blog.</p>
</footer>
```

Avoid unnecessary usage

When the main content of the page (excluding headers, footers, navigation bars, etc.) is simply one group of elements. You can omit the <article> in favour of the <main> element.

```
<article>
    <p>This doesn't make sense, this article has no real `context`.</p>
```

```
</article>
```

Instead, replace the article with a <main> element to indicate this is the main content for this page.

```
<main>
    <p>I'm the main content, I don't need to belong to an article.</p>
</main>
```

If you use another element, ensure you specify the <main> ARIA role for correct interpretation and rendering across multiple devices and non HTML5 browsers.

```
<section role="main">
    <p>This section is the main content of this page.</p>
</section>
```

Notes:

- <main> element descendants are not allowed within a <article>

Click here to read the official HTML5 Specification for the <article> element

Main Element

The <main> element contains the **main content** for your web page. This content is unique to the individual page, and should not appear elsewhere on the site. Repeating content like headers, footers, navigation, logos, etc., is placed outside the element.

- The <main> element should only ever be used at most **once** on a single page.
- The <main> element must not be included as a descendant of an article, aside, footer, header or nav element.

In the following example, we're displaying a **single blog post** (and related information like references and comments).

```
<body>
    <header>
        <nav>...</nav>
    </header>

    <main>
        <h1>Individual Blog Post</h1>
        <p>An introduction for the post.</p>

        <article>
            <h2>References</h2>
            <p>...</p>
        </article>

        <article>
            <h2>Comments</h2> ...
        </article>
    </main>

    <footer>...</footer>
</body>
```

- The blog post is contained within the <main> element to indicate this is the main content for this page (and therefore, unique across the website).

- The <header> and <footer> tags are *siblings* to the <main> element.

Notes:

The HTML5 specification recognizes the <main> element as a **grouping** element, and not a *sectioning* element.

- ARIA role attributes: main *(default)*, presentation

Adding a role="main" ARIA role attribute to **other elements** intended to be used as main content is advised to aid user agents that don't support HTML5 and also to provide more context for those that do.

The <main> element by default has the main role, and so does not need to be provided.

Click here to read the official HTML5 Specification for the <main> element

Nav Element

The <nav> element is primarily intended to be used for sections that contain **main navigation blocks** for the website, this can include links to other parts of the web page *(e.g. anchors for a table of contents)* or other pages entirely.

Inline items

The following will display an inline set of hyperlinks.

```
<nav>
    <a href="https://google.com">Google</a>
    <a href="https://www.yahoo.com">Yahoo!</a>
    <a href="https://www.bing.com">Bing</a>
</nav>
```

Use list items when needed

If the content represents a list of items, use a list item to show this and enhance the user experience.

Note the role="navigation", *more on this below.*

```
<nav role="navigation">
    <ul>
        <li><a href="https://google.com">Google</a></li>
        <li><a href="https://www.yahoo.com">Yahoo!</a></li>
        <li><a href="https://www.bing.com">Bing</a></li>
    </ul>
</nav>
```

Avoid unnecessary usage

<footer> elements may have a list of links to other parts of the site (FAQ, T&C, etc.). The footer element alone is sufficient in this case, you don't *need* to further wrap your links with a <nav> element in the <footer>.

```
<!-- the <nav> is not required in the <footer> -->
<footer>
    <nav>
        <a href="#">...</a>
    </nav>
```

```
</footer>

<!-- The footer alone is sufficient -->
<footer>
    <a href="#">...</a>
</footer>
```

Notes:

- <main> element descendants are not allowed within a <nav>

Adding a role="navigation" ARIA role to the <nav> element is advised to aid user agents that don't support HTML5 and also to provide more context for those that do.

```
<nav role="navigation"><!-- ... --></nav>
```

Screen Readers: *(software that allows blind or visually impaired users to navigate the site)*

User agents like screen readers will interpret the <nav> element differently depending on their requirements.

- It could give the <nav> element a higher priority when rendering the page
- It could delay the rendering of the element
- It could adapt the page in a specific way to tailor for the user's needs
  example: make the text links within the <nav> elements larger for someone who's visually impaired.

Click here to read the official HTML5 Specification for the <nav> element

Section Element

The <section> element represents a generic section to thematically group content. Every section, typically, should be able to be identified with a heading element as a child of the section.

- You can use the <section> element within an <article> and vice-versa.
- Every section should have a *theme* (a heading element identifying this region)
- Don't use the <section> element as a general styling 'container'.
  If you need a container to apply styling, use a instead.

In the following example, we're displaying a **single blog post** with multiple chapters each chapter is a section *(a set of thematically grouped content, which can be identified by the heading elements in each section)*.

```
<article>
    <header>
        <h2>Blog Post</h2>
    </header>
    <p>An introduction for the post.</p>
    <section>
        <h3>Chapter 1</h3>
        <p>...</p>
    </section>
    <section>
        <h3>Chapter 2</h3>
        <p>...</p>
    </section>
    <section>
        <h3>Comments</h3> ...
    </section>
</article>
```

> **Notes:**
>
> Developers should use the **article** element when it makes sense to syndicate the contents of the element.

Click here to read the official HTML5 Specification for the <main> element

Header Element

The <header> element represents introductory content for its nearest ancestor sectioning content or sectioning root element. A <header> typically contains a group of introductory or navigational aids.

> **Note:** The header element is not sectioning content; it doesn't introduce a new section.

Examples:

```
<header>
  <p>Welcome to...</p>
  <h1>Voidwars!</h1>
</header>
```

In this example, the <article> has a <header>.

```
<article>
  <header>
    <h1>Flexbox: The definitive guide</h1>
  </header>
  <p>The guide about Flexbox was supposed to be here, but it turned out Wes wasn't a Flexbox expert either.</p>
</article>
```

W3C Proposed Recommendation

Footer Element

The <footer> element contains the footer part of the page.

Here is an example for <footer> element that contain p paragraph tag.

```
<footer>
    <p>All rights reserved</p>
</footer>
```

Read Sectioning Elements online: https://riptutorial.com/html/topic/311/sectioning-elements

Syntax

- <select name=""></select>
- <datalist id=""></datalist>
- <optgroup label="Option Group"></optgroup>
- <option value="">Option</option>

Examples

Select Menu

The <select> element generates a drop-down menu from which the user can choose an option.

```
<select name="">
  <option value="1">One</option>
  <option value="2">Two</option>
  <option value="3">Three</option>
  <option value="4">Four</option>
</select>
```

Changing the Size

You can change the size of the selection menu with the size attribute. A size of 0 or 1 displays the standard drop-down style menu. A size greater than 1 will convert the drop-down into a box displaying that many lines, with one option per line and a scrollbar in order to scroll through the available options.

```
<select name="" size="4"></select>
```

Multi-option Selection Menus

By default, users can only select a single option. Adding the multiple attribute allows users to select multiple options at once and submit all selected options with the form. Using the multiple attribute automatically converts the drop-down menu into a box as if it had a size defined. The default size when this occurs is determined by the specific browser you are using, and it is not possible to change it back to a drop-down style menu while allowing multiple selections.

```
<select name="" multiple></select>
```

When using the multiple attribute, there is a difference between using 0 and 1 for the size, whereas no difference exists when not using the attribute. Using 0 will cause the browser to behave in whatever default manner it is programmed to do. Using 1 will explicitly set the size of the resulting box to only one row high.

Option Groups

You can neatly group your options within a selection menu in order to provide a more structured layout in a long list of options by using the <optgroup> element.

The syntax is very basic, by simply using the element with a label attribute to identify the title for the group, and containing zero or more options that should be within that group.

```
<select name="">
  <option value="milk">Milk</option>
```

```
  <optgroup label="Fruits">
    <option value="banana">Bananas</option>
    <option value="strawberry">Strawberries</option>
  </optgroup>
  <optgroup label="Vegetables" disabled>
    <option value="carrot">Carrots</option>
    <option value="zucchini">Zucchini</option>
  </optgroup>
</select>
```

When using option groups, not all options need to be contained within a group. As well, disabling an option group will disable all options within the group, and it is not possible to manually re-enable a single option within a disabled group.

Options

The options inside a selection menu are what the user will be selection. The normal syntax for an option is as follows:

```
<option>Some Option</option>
```

However, it's important to note that the text inside the <option> element itself is not always used, and essentially becomes the default value for attributes which are not specified.

The attributes which control the actual appearance and function of the option are value and label. The label represents the text which will be displayed in the drop-down menu (what you're looking at and will click on to select it). The value represents the text which will be sent along with form submission. If either of these values is omitted, it uses the text inside the element as the value instead. So the example we gave above could be "expanded" to this:

```
<option label="Some Option" value="Some Option">
```

Note the omission of the inside text and end tag, which are not required to actually construct an option inside the menu. If they were included, the inside text would be ignored because both attributes are already specified and the text is not needed. However, you probably won't see a lot of people writing them this way. The most common way it's written is with a value that will be sent to the server, along with the inside text which eventually becomes the label attribute, like so:

```
<option value="option1">Some Option</option>
```

Selecting an option by default

You can also specify a certain option to be selected in the menu by default by attaching the selected attribute to it. By default, if no option is specified as selected in the menu, the first option in the menu will be selected when rendered. If more than one option has the selected attribute attached, then the last option present in the menu with the attribute will be the one selected by default.

```
<option value="option1" selected>Some option</option>
```

If you're using the attribute in a multi-option selection menu, then all the options with the attribute will be selected by default, and none will be selected if no options have the attribute.

```
<select multiple>
  <option value="option1" selected>Some option</option>
  <option value="option2" selected>Some option</option>
```

```
</select>
```

Datalist

The <datalist> tag specifies a list of pre-defined options for an <input> element. It provide an "autocomplete" feature on <input> elements. Users will see a drop-down list of options as they write.

```
<input list="Languages">

<datalist id="Languages">
  <option value="PHP">
  <option value="Perl">
  <option value="Python">
  <option value="Ruby">
  <option value="C+">
</datalist>
```

Browser Support

Chrome	Edge	Mozilla	Safari	Opera
20.0	10.0	4.0	Not Supported	9.0

Read Selection Menu Controls online: https://riptutorial.com/html/topic/722/selection-menu-controls

Chapter 36: SVG

Introduction

SVG stands for Scalable Vector Graphics. SVG is used to define graphics for the Web

The HTML <svg> element is a container for SVG graphics.

SVG has several methods for drawing paths, boxes, circles, text, and graphic images.

Remarks

SVG is an XML-based language for creating scalable vector images. It can be written directly into an HTML document or embedded from external SVG files. Inline SVG can be restyled and modified using CSS and JavaScript respectively.

Browser support for SVG varies, but can be ascertained here.

For more comprehensive information, see the SVG documentation.

Examples

Embedding external SVG files in HTML

You can use the <img> or <object> elements to embed external SVG elements. Setting the height and width is optional but is highly recommended.

Using the image element

```
<img src="attention.svg" width="50" height="50">
```

Using <img> does not allow you to style the SVG using CSS or manipulate it using JavaScript.

Using the object element

```
<object type="image/svg+xml" data="attention.svg" width="50" height="50">
```

Unlike <img>, <object> directly imports the SVG into the document and therefore it can be manipulated using Javascript and CSS.

Inline SVG

SVG can be written directly into a HTML document. Inline SVG can be styled and manipulated using CSS and JavaScript.

```
<body>
    <svg class="attention" xmlns="http://www.w3.org/2000/svg"
xmlns:xlink="http://www.w3.org/1999/xlink" viewBox="0 0 1000 1000" >
        <path id="attention" d="m571,767l0,-106q0,-8,-5,-13t-12,-5l-108,0q-7,0,-12,5t-
5,13l0,106q0,8,5,13t12,6l108,0q7,0,12,-6t5,-13Zm-1,-208l10,-257q0,-6,-5,-10q-7,-6,-14,-6l-
122,0q-7,0,-14,6q-5,4,-5,12l9,255q0,5,6,9t13,3l103,0q8,0,13,-3t6,-9Zm-7,-522l428,786q20,35,-
1,70q-10,17,-26,26t-35,10l-858,0q-18,0,-35,-10t-26,-26q-21,-35,-1,-70l429,-786q9,-17,26,-
27t36,-10t36,10t27,27Z" />
    </svg>
</body>
```

The above inline SVG can then be styled using the corresponding CSS class:

```
.attention {
    fill: red;
    width: 50px;
    height: 50px;
}
```

The result looks like this:

Embedding SVG using CSS

You can add external SVG files using the background-image property, just as you would do with any other image.

HTML:

```
<div class="attention"></div>
```

CSS:

```
.attention {
    background-image: url(attention.svg);
    background-size: 100% 100%;
    width: 50px;
    height: 50px;
}
```

You can also embed the image directly into a css file using a data url:

```
background-image:
url(data:image/svg+xml,%3Csvg%20xmlns%3D%22http%3A%2F%2Fwww.w3.org%2F2000%2Fsvg%22%20xmlns%3Axlink%3D%
106q0%2C-8%2C-5%2C-13t-12%2C-5l-108%2C0q-7%2C0%2C-12%2C5t-
5%2C13l0%2C106q0%2C8%2C5%2C13t12%2C6l108%2C0q7%2C0%2C12%2C-6t5%2C-13Zm-1%2C-208l10%2C-
257q0%2C-6%2C-5%2C-10q-7%2C-6%2C-14%2C-6l-122%2C0q-7%2C0%2C-14%2C6q-5%2C4%2C-
5%2C12l9%2C255q0%2C5%2C6%2C9t13%2C3l103%2C0q8%2C0%2C13%2C-3t6%2C-9Zm-7%2C-
522l428%2C786q20%2C35%2C-1%2C70q-10%2C17%2C-26%2C26t-35%2C10l-858%2C0q-18%2C0%2C-35%2C-10t-
26%2C-26q-21%2C-35%2C-1%2C-70l429%2C-786q9%2C-17%2C26%2C-27t36%2C-
10t36%2C10t27%2C27Z%22%20%2F%3E%0D%0A%3C%2Fsvg%3E);
```

Read SVG online: https://riptutorial.com/html/topic/1183/svg

Chapter 37: Tabindex

Parameters

Value	Meaning
negative	element will be focusable, but it should not be reachable via sequential keyboard navigation
0	element will be focusable and reachable through keyboard sequential navigation, but it's relative order is defined by the platform convention
positive	element must be focusable and accessible via sequential keyboard navigation; it's relative order will be defined by the attribute value: the sequential follow the increasing number of the `tabindex`

Remarks

The maximum value for tabindex should not exceed 32767 as per W3C section 17.11.1 Unless specified default value is -1

An element with a value of 0, an invalid value, or no tabindex value should be placed after the elements with a positive index in the sequential order of keyboard navigation.

Examples

Add an element to the tabbing order

```
<div tabindex="0">Some button</div>
```

Note: Try to use a native HTML button or an a tag where appropriate.

Remove an element from the tabbing order

```
<button tabindex="-1">This button will not be reachable by tab</button>
```

The element will be removed from the tabbing order but will still be focusable.

Define a custom tabbing order (not recommended)

```
<div tabindex="2">Second</div>
<div tabindex="1">First</div>
```

Positive values will insert the element at the tabbing order position of its respective value. Elements without preference (i.e. tabindex="0" or native elements such as button and a) will be appended after those with preference.

Positive values are **not recommended** as they disrupt the expected behavior of tabbing and might confuse people who rely on screenreaders. Try to create a natural order by rearranging your DOM structure.

Read Tabindex online: https://riptutorial.com/html/topic/2594/tabindex

Chapter 38: Tables

Introduction

The HTML <table> element allows web authors to display tabular data (such as text, images, links, other tables, etc.) in a two dimensional table with rows and columns of cells.

Syntax

- <table></table>
- <thead></thead>
- <tbody></tbody>
- <tfoot></tfoot>
- <tr></tr>
- <th></th>
- <td></td>

Remarks

The various table elements and their content attributes together define the table model. The <table> element is the container element for table models/tabular data. Tables have rows, columns, and cells given by their descendants. The rows and columns form a grid; a table's cells must completely cover that grid without overlap. The list below describes the various elements in the table model:

- <table> - The container element for table models/tabular data. <table> represents data with more than one dimension in the form of a table.
- <caption> - Table caption or title (Like a figcaption to a figure)
- <col> - A column (a no-content element)
- <colgroup> - A grouping of columns
- <thead> - Table header (only one)
- <tbody> - Table body / content (multiple are okay)
- <tfoot> - Table footer (only one)
- <tr> - Table row
- <th> - Table header cell
- <td> - Table data cell

Semantically, tables are meant for holding tabular data. You can think of it as a way to display and describe data that would make sense in a spreadsheet (columns and rows).

Using tables for layout is not recommended. Instead, use CSS rules for layout and formatting, including display: table.

One notable exception typically displayed in the industry regarding using <table> layout is in regards to HTML email: some email clients, including Outlook, rolled back to older rendering engines after Microsoft lose their monopoly case vs. the EU. In order for Microsoft to make IE not part of the OS, they simply rolled back Outlook's rendering engine to an earlier version of Trident. This rollback simply doesn't support modern web technologies, so using <table> based layouts for HTML email is the only way to ensure cross-browser/platform/client compatibility.

Examples

Simple Table

```
<table>
  <tr>
    <th>Heading 1/Column 1</th>
    <th>Heading 2/Column 2</th>
  </tr>
```

```
  <tr>
    <td>Row 1 Data Column 1</td>
    <td>Row 1 Data Column 2</td>
  </tr>
  <tr>
    <td>Row 2 Data Column 1</td>
    <td>Row 2 Data Column 2</td>
  </tr>
</table>
```

This will render a <table> consisting of three total rows (<tr>): one row of header cells (<th>) and two rows of content cells (<td>). <th> elements are *tabular headers* and <td> elements are *tabular data*. You can put whatever you want inside a <td> or <th>.

Heading 1/Column 1	Heading 2/Column 2
Row 1 Data Column 1	Row 1 Data Column 2
Row 2 Data Column 1	Row 2 Data Column 2

Spanning columns or rows

Table cells can span multiple columns or rows using the colspan and rowspan attributes. These attributes can be applied to <th> and <td> elements.

```
<table>
    <tr>
        <td>row 1 col 1</td>
        <td>row 1 col 2</td>
        <td>row 1 col 3</td>
    </tr>
    <tr>
        <td colspan="3">This second row spans all three columns</td>
    </tr>
    <tr>
        <td rowspan="2">This cell spans two rows</td>
        <td>row 3 col 2</td>
        <td>row 3 col 3</td>
    </tr>
    <tr>
        <td>row 4 col 2</td>
        <td>row 4 col 3</td>
    </tr>

</table>
```

Will result in

<table>
<tr><td>row 1 col 1</td><td>row 1 col 2</td><td>row 1 col 3</td></tr>
<tr><td colspan="3">This second row spans all three columns</td></tr>
<tr><td rowspan="2">This cell spans two rows</td><td>row 3 col 2</td><td>row 3 col 3</td></tr>
<tr><td>row 4 col 2</td><td>row 4 col 3</td></tr>
</table>

Note that you should not design a table where both rows and columns overlap as this is invalid HTML and the result is handled differently by different web browsers.

rowspan = A non-negative integer that specifies the number of rows spanned by a cell. The

default value of this attribute is one (1). A value of zero (0) means that the cell will extend from the current row until the last row of the table (<thead>, <tbody>, or <tfoot>).

colspan = A non-negative integer that specifies the number of columns spanned by the current cell. The default value of this attribute is one (1). A value of zero (0) means that the cell will extend from the current to the last column of the column group <colgroup> in which the cell is defined.

Table with thead, tbody, tfoot, and caption

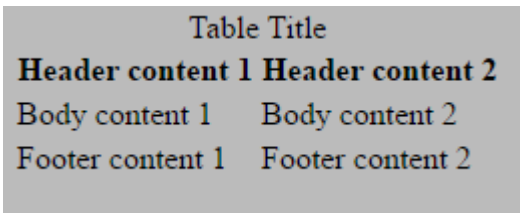
HTML also provides the tables with the <thead>, <tbody>, <tfoot>, and <caption> elements. These additional elements are useful for adding semantic value to your tables and for providing a place for separate CSS styling.

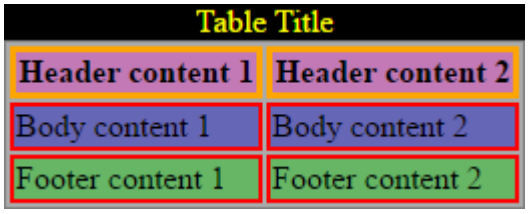
When printing out a table that doesn't fit onto one (paper) page, most browsers repeat the contents of <thead> on every page.

There's a specific order that must be adhered to, and we should be aware that not every element falls into place as one would expect. The following example demonstrates how our 4 elements should be placed.

```
<table>
 <caption>Table Title</caption> <!--| caption is the first child of table |-->
  <thead> <!--======================| thead is after caption |-->
    <tr>
      <th>Header content 1</th>
      <th>Header content 2</th>
    </tr>
  </thead>

  <tbody> <!--======================| tbody is after thead |-->
    <tr>
      <td>Body content 1</td>
      <td>Body content 2</td>
    </tr>
  </tbody>

  <tfoot><!--| tfoot can be placed before or after tbody, but not in a group of tbody. |-->
<!--| Regardless where tfoot is in markup, it's rendered at the bottom. |-->

    <tr>
      <td>Footer content 1</td>
      <td>Footer content 2</td>
    </tr>
  </tfoot>

</table>
```

The following example's results are demonstrated twice--the first table lacks any styles, the second table has a few CSS properties applied: background-color, color, and border*. The styles are provided as a visual guide and is not an essential aspect of the topic at hand.





Element	Styles Applies
<caption>	Yellow text on black background.
<thead>	Bold text on purple background.
<tbody>	Text on blue background.
<tfoot>	Text on green background.
<th>	Orange borders.
<td>	Red borders.

Column Groups

Sometimes you may want to apply styling to a column or group of columns. Or for semantic purposes, you may want to group columns together. To do this, use <colgroup> and <col> elements.

The optional <colgroup> tag allows you to group columns together. <colgroup> elements must be child elements of a <table> and must come after any <caption> elements and before any table content (e.g., <tr>, <thead>, <tbody>, etc.).

```
<table>
    <colgroup span="2"></colgroup>
    <colgroup span="2"></colgroup>
    ...
</table>
```

The optional <col> tag allows you to reference individual columns or a range of columns without applying a logical grouping. <col> elements are optional, but if present, they must be inside a <colgroup> element.

```
<table>
    <colgroup>
        <col id="MySpecialColumn" />
        <col />
    </colgroup>
    <colgroup>
        <col class="CoolColumn" />
        <col class="NeatColumn" span="2" />
    </colgroup>
    ...
</table>
```

The following CSS styles can be applied to <colgroup> and <col> elements:

- border
- background
- width

- visibility
- display (as in display: none)
    - display: none; will actually remove the columns from the display, causing the table to render as if those cells don't exist

For more information, see HTML5 Tabular data.

Heading scope

th elements are very commonly used to indicate headings for table rows and columns, like so:

```
<table>
    <thead>
        <tr>
            <td></td>
            <th>Column Heading 1</th>
            <th>Column Heading 2</th>
        </tr>
    </thead>
    <tbody>
        <tr>
            <th>Row Heading 1</th>
            <td></td>
            <td></td>
        </tr>
        <tr>
            <th>Row Heading 2</th>
            <td></td>
            <td></td>
        </tr>
    </tbody>
</table>
```

This can be improved for accessibility by the use of the scope attribute. The above example would be amended as follows:

```
<table>
    <thead>
        <tr>
            <td></td>
            <th scope="col">Column Heading 1</th>
            <th scope="col">Column Heading 2</th>
        </tr>
    </thead>
    <tbody>
        <tr>
            <th scope="row">Row Heading 1</th>
            <td></td>
            <td></td>
        </tr>
        <tr>
            <th scope="row">Row Heading 1</th>
            <td></td>
            <td></td>
        </tr>
    </tbody>
</table>
```

scope is known as an *enumerated attribute*, meaning that it can have a value from a specific set

of possible values. This set includes:

- col
- row
- colgroup
- rowgroup

References:

- https://developer.mozilla.org/en-US/docs/Web/HTML/Element/th#attr-scope
- https://www.w3.org/TR/WCAG20-TECHS/H63.html

Read Tables online: https://riptutorial.com/html/topic/274/tables

Chapter 39: Text Formatting

Introduction

While most HTML tags are used to create elements, HTML also provides in-text formatting tags to apply specific text-related styles to portions of text. This topic includes examples of HTML text formatting such as highlighting, bolding, underlining, subscript, and stricken text.

Syntax

- <abbr>Abbreviation</abbr>
- Bold Text
- <del>Deleted Text</del>
- Emphasized Text
- Italic Text
- <ins>Inserted Text</ins>
- <mark>Marked (or Highlighted) Text</mark>
- <s>Stricken Text</s>
- Strong Text
- _{Subscript Text}
- ^{Superscript Text}
- <u>Underlined Text</u>

Examples

Bold, Italic, and Underline

Bold Text

To bold text, use the or tags:

```
<strong>Bold Text Here</strong>
```

or

```
<b>Bold Text Here</b>
```

What's the difference? Semantics. is used to indicate that the text is fundamentally or semantically *important* to the surrounding text, while indicates no such importance and simply represents text that should be bolded.

If you were to use a text-to-speech program would not say the word(s) any differently than any of the other words around it - you are simply drawing attention to them without adding any additional importance. By using , though, the same program would want to speak those word(s) with a different tone of voice to convey that the text is important in some way.

Italic Text

To italicize text, use the or tags:

```
<em>Italicized Text Here</em>
```

or

```
<i>Italicized Text Here</i>
```

What's the difference? Semantics. is used to indicate that the text should have extra

emphasis that should be stressed, while <i> simply represents text which should be set off from the normal text around it.

For example, if you wanted to stress the action inside a sentence, one might do so by emphasizing it in italics via : "Would you just *submit* the edit already?"

But if you were identifying a book or newspaper that you would normally italicize stylistically, you would simply use <i>: "I was forced to read *Romeo and Juliet* in high school.

Underlined Text

While the <u> element itself was deprecated in HTMl 4, it was reintroduced with alternate semantic meaning in HTML 5 - to represent an unarticulated, non-textual annotation. You might use such a rendering to indicate misspelled text on the page, or for a Chinese proper name mark.

```
<p>This paragraph contains some <u>mispelled</u> text.</p>
```

Highlighting

The <mark> element is new in HTML5 and is used to mark or highlight text in a document "due to its relevance in another context".[1]

The most common example would be in the results of a search were the user has entered a search query and results are shown highlighting the desired query.

```
<p>Here is some content from an article that contains the <mark>searched query</mark>
that we are looking for. Highlighting the text will make it easier for the user to
find what they are looking for.</p>
```

Output:

Here is some content from an article that contains the searched query that we are looking for. Highlighting he text will make it easier for the user to find what they are looking for.

A common standard formatting is black text on a yellow background, but this can be changed with CSS.

Inserted, Deleted, or Stricken

To mark text as inserted, use the <ins> tag:

```
<ins>New Text</ins>
```

To mark text as deleted, use the <del> tag:

```
<del>Deleted Text</del>
```

To strike through text, use the <s> tag:

```
<s>Struck-through text here</s>
```

Superscript and Subscript

To offset text either upward or downward you can use the tags <sup> and <sub>.

To create superscript:

```
<sup>superscript here</sup>
```

To create subscript:

```
<sub>subscript here</sub>
```

Abbreviation

To mark some expression as an abbreviation, use <abbr> tag:

```
<p>I like to write <abbr title="Hypertext Markup Language">HTML</abbr>!</p>
```

If present, the title attribute is used to present the full description of such abbreviation.

Read Text Formatting online: https://riptutorial.com/html/topic/526/text-formatting

Chapter 40: Using HTML with CSS

Introduction

CSS provides styles to HTML elements on the page. Inline styling involves usage of the style attribute in tags, and is highly discouraged. Internal stylesheets use the <style> tag and are used to declare rules for directed portions of the page. External stylesheets may be used through a <link> tag which takes an external file of CSS and applies the rules to the document. This topic covers usage of all three methods of attachment.

Syntax

- <link rel="stylesheet" type="text/css" href="stylesheet.css">
- <style></style>

Examples

External Stylesheet Use

Use the link attribute in the document's head:

```
<head>
    <link rel="stylesheet" type="text/css" href="stylesheet.css">
</head>
```

You can also use stylesheets provided from websites via a content delivery network, or CDN for short. (for example, Bootstrap):

```
<head>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css"
integrity="sha384-BVYiiSIFeK1dGmJRAkycuHAHRg32OmUcww7on3RYdg4Va+PmSTsz/K68vbdEjh4u"
crossorigin="anonymous">
</head>
```

Generally, you can find CDN support for a framework on its website.

Internal Stylesheet

You can also include CSS elements internally by using the <style> tag:

```
<head>
    <style type="text/css">
        body {
           background-color: gray;
        }
    </style>
</head>
```

Multiple internal stylesheets can be included in a program as well.

```
<head>
    <style type="text/css">
        body {
           background-color: gray;
        }
    </style>
```

```
    <style type="text/css">
        p {
            background-color: blue;
        }
    </style>
</head>
```

Inline Style

You can style a specific element by using the style attribute:

```
<span style="color: red">This text will appear in red.</span>
```

> Note: Try to avoid this -- the point of CSS is to separate content from presentation.

Multiple Stylesheets

It's possible to load multiple stylesheets:

```
<head>
    <link rel="stylesheet" type="text/css" href="general.css">
    <link rel="stylesheet" type="text/css" href="specific.css">
</head>
```

Note that **later files and declarations will override earlier ones**. So if general.css contains:

```
body {
    background-color: red;
}
```

and specific.css contains:

```
body {
    background-color: blue;
}
```

if both are used, the background of the document will be blue.

Read Using HTML with CSS online: https://riptutorial.com/html/topic/4536/using-html-with-css

Chapter 41: Void Elements

Introduction

Not all HTML tags are of the same structure. While most elements require an opening tag, a closing tag, and contents, some elements - known as void elements - only require an opening tag as they themselves do not contain any elements. This topic explains and demonstrates the proper usage of void elements in HTML

Remarks

A void element cannot have any content but may have attributes. Void elements are self-closing, so they must not have a closing tag.

In HTML5, the following elements are void:

- area
- base
- br
- col
- embed
- hr
- img
- input
- keygen
- link
- meta
- param
- source
- track
- wbr

Examples

Void elements

HTML 4.01/XHTML 1.0 Strict includes the following void elements:

- area - clickable, defined area in an image
- base - specifies a base URL from which all links base
- br - line break
- col - column in a table [deprecated]
- hr - horizontal rule (line)
- img - image
- input - field where users enter data
- link - links an external resource to the document
- meta - provides information about the document
- param - defines parameters for plugins

HTML 5 standards include all non-deprecated tags from the previous list and

- command - represents a command users can invoke [obsolete]
- keygen - facilitates public key generation for web certificates [deprecated]
- source - specifies media sources for picture, audio, and video elements

The example below does **not** include void elements:

```
<div>
    <a href="http://stackoverflow.com/">
        <h3>Click here to visit <i>Stack Overflow!</i></h3>
```

```
    </a>
    <button onclick="alert('Hello!');">Say Hello!</button>
    <p>My favorite language is <b>HTML</b>. Here are my others:</p>
    <ol>
        <li>CSS</li>
        <li>JavaScript</li>
        <li>PHP</li>
    </ol>
</div>
```

Notice how every element has an opening tag, a closing tag, and text or other elements inside the opening and closing tags. Void tags however, are shown in the example below:

```
<img src="https://cdn.sstatic.net/Sites/stackoverflow/company/img/logos/so/so-icon.png" />
<br>
<hr>
<input type="number" placeholder="Enter your favorite number">
```

With the exception of the img tag, all of these void elements have only an opening tag. The img tag, unlike any other tag, has a self closing / before the greater than sign of the opening tag. It is best practice to have a space before the slash.

Read Void Elements online: https://riptutorial.com/html/topic/1449/void-elements

Credits

S. No	Chapters	Contributors
1	Getting started with HTML	4444, Abhishek Pandey, aea2002, ahmednawazbutt, Alexander Wigmore, Alexandre N., Amanda Ahn, amflare, Amitay Stern, animuson, Anthony Pham, Boris, bwegs, Callan Heard, ChrisD, CocoaBean, Community, Dave Everitt, Dinidu, dippas, dtyler, duskwuff, Eric Dobbs, Firix, FlyingPiMonster, geek1011, George Bailey, Gerold Broser, H Mirza, H. Pauwelyn, Harish Gyanani, Hemant Kumar, hillary.fraley, Hudson Taylor, ihavemorealts, intboolstring, Isak Combrinck, Jeffrey Lin, JHS, jmmarco, joe_young, John Slegers, Jon Chan, JonasCz, JPB, kelvinelove, Krii, Kurniawantaari, Lahiru Ashan, Lambda Ninja, Léo Martin, Leonidas Menendez, Malcolm, Matt, Matt, MC93, Michael Moriarty, mnoronha, Muntasir, Nishchay, Ortomala Lokni, Persijn, Prateek, Pyloid, Ryan Hilbert, Shannon Young, sideshowbarker, stark, Stelian Matei, Sunny R Gupta, the12, tmg, unor, user3130333, Valor Naram, Willl, Wolfgang, Zaz, zygimantus, Zze
2	Anchors and Hyperlinks	Al.G., animuson, Anselm Urban, Anthony Pham, ban17, DawnPaladin, Emil, FlyingPiMonster, insertusernamehere, J F, JHS, joe_young, Jojodmo, Jones Joseph, Lambda Ninja, Matas Vaitkevicius, Nathan Tuggy, Pranav, Prateek, Raystafarian, Robert Columbia, Squidward, Steyn van Esveld, Thomas Gerot, unor, Wolfgang
3	ARIA	Bhavya Singh, Paul Sweatte, Shannon Young, Travis, unor, user30796
4	Canvas	cone56, Richard Hamilton, Roko C. Buljan, tonethar, Trevor Clarke, user4040648
5	Character Entities	animuson, MervS, stack-learner
6	Classes and IDs	Angelos Chalaris, animuson, brandaemon, Caleb Kleveter, Community, Duh-Wayne-101, Emil, Epodax, Evan, GoatsWearHats, Ingrid Stevens, jhnance, JHS, John Slegers, lexith, Luca Putzu, Michael_B, Natalie, Nhan, Richard Hamilton, Simone Carletti, Thomas Gerot, Timothy, Tyler Zika, unor, Wolfgang, xims
7	Comments	Ani Menon, animuson, Ashwin Ramaswami, bdkopen, ChrisD, Epodax, JHS, jkdev, RamenChef, Robert Grant, Soaring Code, Squazz, Thomas Gerot, Ulrich Schwarz, Wolfgang
8	Content Languages	animuson, FelipeAls, Gerold Broser, Isak Combrinck, Muntasir, Shannon Young, unor
9	Data Attributes	animuson, Community, Faegy, Infuzed guy, James Donnelly, Manish, Nathan Tuggy, Nhan, Racil Hilan, rajarshig, swatchai, unor, Yasir T
10	Div Element	animuson, Araknid, Black Mamba, Chris, Content Solutions, D M, Faust, feeela, Gal Ratzkin, JHS, MySpeed, S.L. Barth, SuperStormer, Thomas Gerot
11	Doctypes	Akshay Anand, Al.G., Angelos Chalaris, Ani Menon, animuson, Chris, Content Solutions, heerfk, mnoronha, pinjasaur, Right leg, Sumner Evans, Thomas Gerot, tmg, unor

12	Embed	Alexandre N.
13	Forms	Ali Almoullim, Ani Menon, animuson, Aown Muhammad, Chris Rutherfurd, Cullub, Gabriel Chi Hong Lee, Greg T, j08691, Kimmax, Luca Iangella, Niek Brouwer, Thomas Gerot
14	Global Attributes	animuson, Becca, unor, Zange-chan
15	Headings	Ani Menon, animuson, dippas, Evan, Infuzed guy, joe_young, MervS, Nathan Arthur, Pseudonym Patel, sasha, Thomas Gerot, unor, V-Kopio
16	HTML 5 Cache	Farhad, TricksfortheWeb, Valor Naram
17	HTML Event Attributes	Paresh Maghodiya
18	IFrames	Adjit, Alexandre N., animuson, ChrisD, dorukayhan, Duh-Wayne-101, Emanuel Vintilă, J F, Ojen, Wojciech Kazior
19	Image Maps	animuson, Lambda Ninja, RamenChef
20	Images	Alex, Alexandre N., andreaem, animuson, Boysenb3rry, Caleb Kleveter, Gabriel Chi Hong Lee, Infuzed guy, ivn, Kake_Fisk, Maximillian Laumeister, Mohd Samir Khan, Mr Lister, Nhan, Shivangi Chaurasia, Stephen Leppik, Wolfgang
21	Include JavaScript Code in HTML	Alexandre N., andreaem, animuson, Anselm Urban, Charles, Marjorie Pickard, MervS, Roko C. Buljan, Sildoreth, SuperStormer
22	Input Control Elements	Abhishek Pandey, Al.G., Alohci, amflare, Amitay Stern, Angelos Chalaris, Ani Menon, animuson, bhansa, Bob, Charlie H, Christophe Strobbe, C□□□□□N□□□□, Community, cone56, Daniel, DawnPaladin, Dipen Shah, Domenic, Druzion, Edvin Tenovimas, Epodax, Franck Dernoncourt, gabe3886, geeksal, H. Pauwelyn, Henrique Barcelos, Huy Nguyen, J F, John Slegers, Kashyap Jha, Lahiru Ashan, Lankymart, Magisch, Marvin, Matas Vaitkevicius, Matt, Maximillian Laumeister, Mike McCaughan, morewry, Mosh Feu, Nathan Arthur, Nil Llisterri, Nishchay, niyasc, NoobCoder, Optimiser, Ortomala Lokni, Pi Programs, Pimgd, Prateek, Prav, Praveen Kumar, Psaniko, QoP, RamenChef, Ranjit Singh, Richard Hamilton, Robert Columbia, Roko C. Buljan, SeinopSys, Sharavnan Kv, Shivangi Chaurasia, SJDS, Squazz, Stephen Leppik, Stewartside, Sunny R Gupta, sv3k, the12, think123, Thomas Gerot, Timon, tmg, Tot Zam, trungk18, Undo, vladdobra, zzzzBov
23	Label Element	Anthony Pham, fredden, Josiah Keller, m_callens, Roko C. Buljan
24	Linking Resources	AA2992, animuson, Anselm Urban, Aravind Suresh, Callan Heard, Chris Rutherfurd, cone56, DawnPaladin, Domenic, feeela, Henrique Barcelos, Infuzed guy, JHS, Lambda Ninja, Matas Vaitkevicius, Nhan, Thomas Gerot, unor, V4karian, vladdobra
25	Lists	animuson, BiscuitBaker, Daniel Käfer, Grace Note, H. Pauwelyn, Jon Ericson, kcpike, Marvin, Matas Vaitkevicius, platy11, Prateek, Pseudonym Patel, Richard Hamilton, Right leg, Sayakiss, Stewartside, Thomas Gerot, tmg, Tom Johnson, unor, Zack
26	Marking up computer code	4444, Naveen Gogineni, Shannon Young, SuperStormer, Tot Zam, unor
27	Marking-up Quotes	Content Solutions, mnoronha, unor

28	Media Elements	feeela, Isak Combrinck, LisaMM, Shiva, Yossi Aharon
29	Meta Information	Abhishek Pandey, Akshit Soota, Alexander Wigmore, Angelos Chalaris, Ani Menon, animuson, Anselm Urban, Bálint, bdkopen, Bookeater, Boris, coliff, Domenic, geek1011, Habel Philip, Hafidz Ilham Aji Permana, Himanshu Vaghela, insertusernamehere, jhoanna, JHS, kelvinelove, m_callens, Matt S, Michael Moriarty, Mr. Alien, Nishchay, Ortomala Lokni, Peter O., Safoor Safdar, Senjuti Mahapatra, Shannon Young, Stas Christiansen, Stephen Leppik, Ted Goas, Thomas Gerot, timmyRS, tmg, unor, VatsalSura, xims
30	Navigation Bars	Community
31	Output Element	J F, Stephen Leppik, zer0One
32	Paragraphs	Abrar Jahin, Thomas Gerot, Valor Naram
33	Progress Element	animuson, Content Solutions, Richard Hamilton
34	Sectioning Elements	Andrew Brooke, Anil, animuson, Hanif Formoly, nalply, Shannon Young, SuperBiasedMan, SuperStormer, Yossi Aharon
35	Selection Menu Controls	Ali Almoullim, amflare, animuson, GentlePurpleRain, Ilyas karim , Mosh Feu, Tot Zam
36	SVG	andreas, Black Mamba, ChrisD, HerrSerker, Patrickdev, Timothy Miller, w5m
37	Tabindex	Content Solutions, Psaniko
38	Tables	albert, Alexandre N., animuson, Cedric Zoppolo, Eduardo Molteni , Grant Palin, J F, j08691, JHS, joe_young, Lambda Ninja, Mottie, Mr Lister, Nijin22, Prateek, PrAtik Lochawala, Praveen Kumar, Sildoreth, svarog, Ted Goas, tehciolo, Thomas Landauer, zer0One
39	Text Formatting	animuson, Ben Rhys-Lewis, Emil, gustavohenke, J F, Matas Vaitkevicius, Peter L., Raystafarian, Stephen Leppik, Thomas Gerot, unor, Wolfgang
40	Using HTML with CSS	animuson, bdkopen, Christian Ternus, Community, Euan Williams, feeela, Jones Joseph, Michael Moriarty, Thomas Gerot, thouusten
41	Void Elements	4444, ChrisD, Thomas Gerot, unor