

HTML



HTML

HyperText Markup Language, commonly referred to as **HTML**, is the standard **markup language** used to create **web pages**.^[1] **Web browsers** can read HTML files and render them into visible or audible web pages. HTML describes the structure of a **website semantically** along with cues for presentation, making it a markup language, rather than a **programming language**.

2014 HTML5 – Proposed Recommendation and Recommendation



HTML history

Version	Year
Tim Berners-Lee invented www	1989
Tim Berners-Lee invented HTML	1991
Dave Raggett drafted HTML+	1993
HTML Working Group defined HTML 2.0	1995
W3C Recommended HTML 3.2	1997
W3C Recommended HTML 4.01	1999
W3C Recommended XHTML 1.0	2000
HTML5 WHATWG First Public Draft	2008
HTML5 WHATWG Living Standard	2012
HTML5 W3C Final Recommendation	2014

Specification maturation

Draft - >

Working Draft - >

Last Call - >

Candidate Recommendation - >

Proposed Recommendation



CODE

```
<html>
```

```
<body>
```

```
<h1>This is the Main Heading</h1>
```

```
<p>This text might be an introduction to the rest of  
the page. And if the page is a long one it might  
be split up into several sub-headings.</p>
```

```
<h2>This is a Sub-Heading</h2>
```

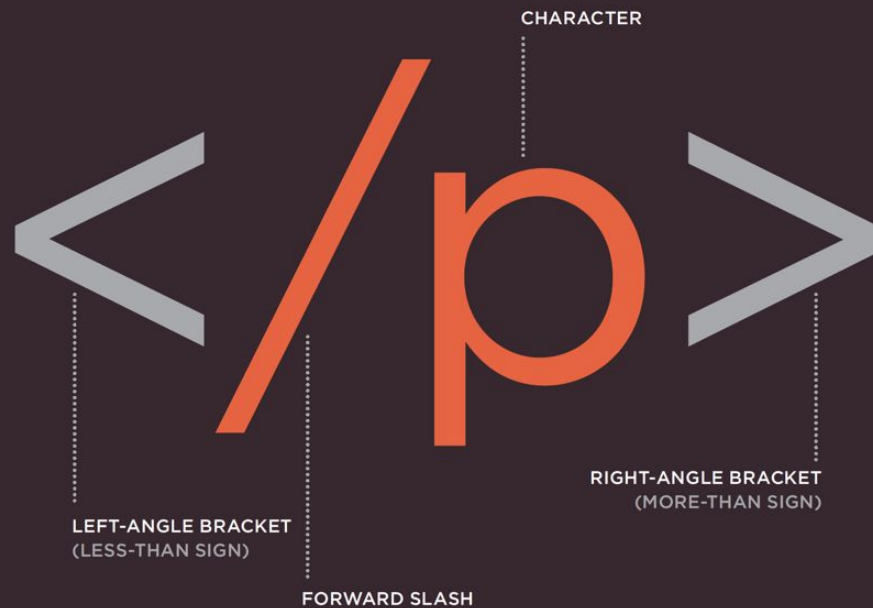
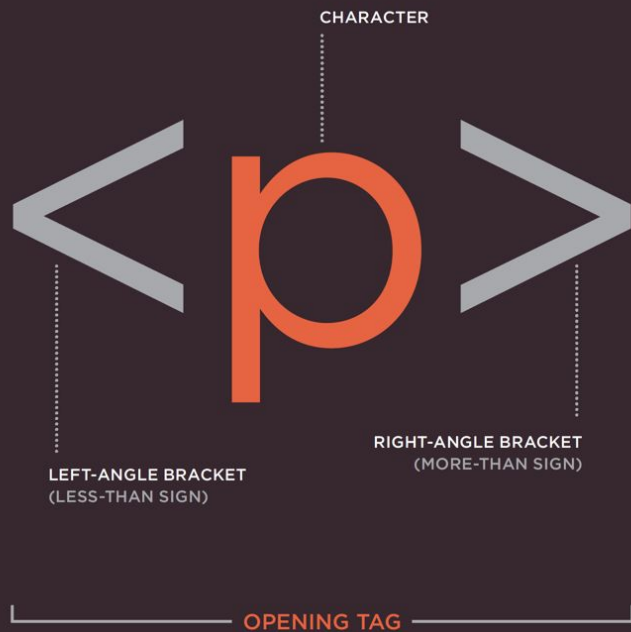
```
<p>Many long articles have sub-headings so to help  
you follow the structure of what is being written.  
There may even be sub-sub-headings (or lower-level  
headings).</p>
```

```
<h2>Another Sub-Heading</h2>
```

```
<p>Here you can see another sub-heading.</p>
```

```
</body>
```

```
</html>
```



Attributes provide additional information about the contents of an element. They appear on the opening tag of the element and are made up of two parts: a **name** and a **value**, separated by an equals sign.

ATTRIBUTE
NAME

<p lang="en-us">Paragraph in English</p>

ATTRIBUTE
VALUE

HTML page example

```
<html>
  <head>
    <meta charset="UTF-8">
    <title>This is the Title of the Page</title>
  </head>
  <body>
    <h1>This is the Body of the Page</h1>
    <p>Anything within the body of a web page is displayed in the
      main browser window.</p>
  </body>
</html>
```


HTML5 Element Index

Head	Sections	Grouping	Tables	Forms	Forms 2	Embedded	Text-level	Text-level 2	
doctype	body	p	table	form	keygen	img	a	time	
html	article	hr	caption	fieldset	output	iframe	em	code	
head	nav	pre	thead	legend	progress	embed	strong	kbd	
title	aside	blockquote	tbody	label	meter	object	i, b	samp	
base	section	ol	tfoot	input	Interactive	param	u	var	
link	header	ul	tr	button		video	s	mark	
meta	footer	li	th	select	details	audio	small	bdi	
style	h1-h6	dl, dt, dd	td	datalist	summary	source	abbr	bdo	
script	main	figure	col	optgroup	command	canvas	q	ruby, rt, rp	
noscript	address	figcaption	colgroup	option	menu	track	cite	span	
		div		textarea	Edits	map	dfn	br	
						area	sub, sup	wbr	
						del, ins			

Titles

<h1> <h2> <h3> <h4> <h5> <h6>

Titles usage

`<h1>`This is a Main Heading`</h1>`

`<h2>`This is a Level 2 Heading`</h2>`

`<h3>`This is a Level 3 Heading`</h3>`

`<h4>`This is a Level 4 Heading`</h4>`

`<h5>`This is a Level 5 Heading`</h5>`

`<h6>`This is a Level 6 Heading`</h6>`

`<h1>` is used for main headings

`<h2>` is used for subheadings

If there are further sections under the subheadings then the `<h3>` element is used, and so on...

Browsers display the contents of headings at different sizes. The contents of an `<h1>` element is the largest, and the contents of an `<h6>` element is the smallest. The exact size at which each browser shows the headings can vary slightly. Users can also adjust the size of text in their browser. You will see how to control the size of text, its color, and the fonts used when we come to look at CSS.

Paragraphs

<p>

To create a paragraph, surround the words that make up the paragraph with an opening <p> tag and closing </p> tag.

Bold, Italic, sup, sub

** <sup> <sub>**

Line Breaks & Horizontal Rules

`
`

As you have already seen, the browser will automatically show each new paragraph or heading on a new line. But if you wanted to add a line break inside the middle of a paragraph you can use the line break tag `
`.

`<hr>`

To create a break between themes — such as a change of topic in a book or a new scene in a play — you can add a horizontal rule between sections using the `<hr />` tag.

Semantic things

<blockquote>

<abbr>

<address>

Lists

Links

THIS IS THE PAGE THE
LINK TAKES YOU TO

THIS IS THE **TEXT** THE
USER CLICKS ON

```
<a href="http://www.imdb.com">IMDB</a>
```

OPENING LINK TAG

CLOSING
LINK TAG

A diagram illustrating the components of an HTML link tag. The code snippet is `IMDB`. Brackets are used to group parts of the code with descriptive labels. A bracket under the `href="http://www.imdb.com"` part is labeled "THIS IS THE PAGE THE LINK TAKES YOU TO". A bracket under the `IMDB` text is labeled "THIS IS THE TEXT THE USER CLICKS ON". A bracket under the entire opening tag `` is labeled "OPENING LINK TAG". A bracket under the closing tag `` is labeled "CLOSING LINK TAG". The text "IMDB" is highlighted in green, and the URL "http://www.imdb.com" is highlighted in orange.

<a>

mailto:

target:

_blank

_self

_parent

_top

href="#top"

Images

```

```

Iframes

```
<iframe src="banner.html" width="468" height="60" align="left"></iframe>
```

Figure, figurecaption

<figure>

<figcaption>Sea otters hold hands when they sleep so they don't drift away from each other.</figcaption>

</figure>

RESULT



Sea otters hold hands when they sleep so they don't drift away from each other.

Labels

<table>

<tr>

<td>

```
<table>
<tr>
  <th></th>
  <th scope="col">Saturday</th>
  <th scope="col">Sunday</th>
</tr>
<tr>
  <th scope="row">Tickets sold:</th>
  <td>120</td>
  <td>135</td>
</tr>
<tr>
  <th scope="row">Total sales:</th>
  <td>$600</td>
  <td>$675</td>
</tr>
</table>
```

Tabels

<thead>

<tbody>

<tfoot>

cellpadding

cellspacing

colspan

rowspan

HTML5 page

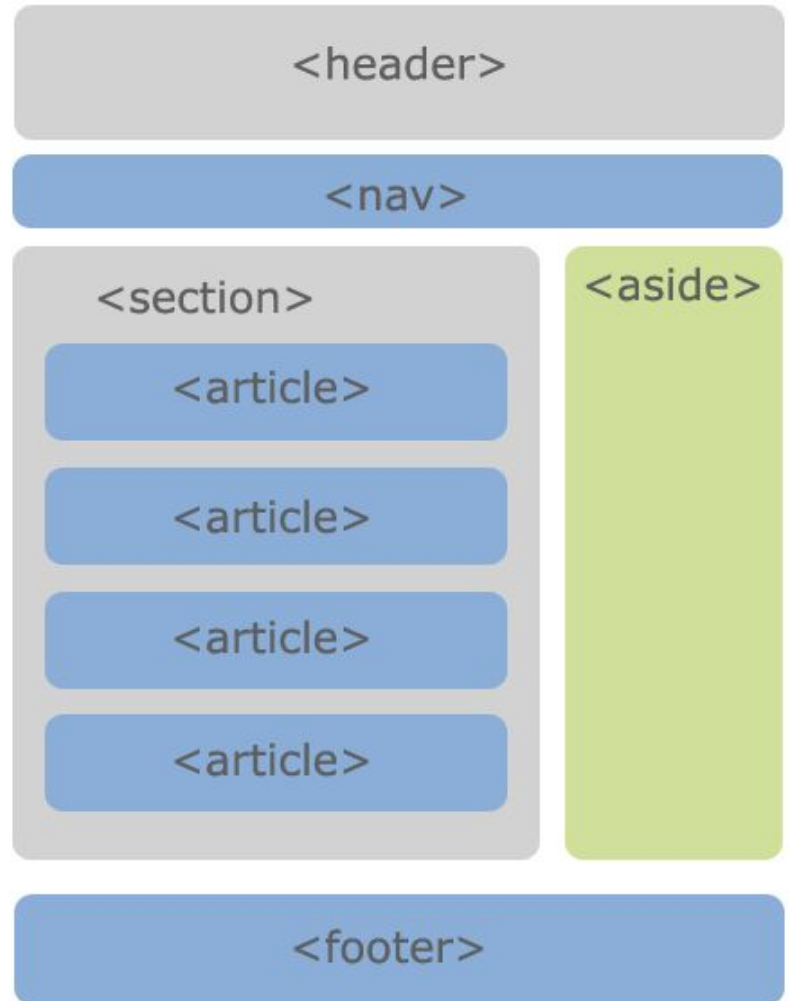
header

section

article

aside

footer



Forms

Text input (single-line)

Used for a single line of text such as email addresses and names.

Password input

Like a single line text box but it masks the characters entered.

Text area (multi-line)

For longer areas of text, such as messages and comments.

MAKING CHOICES:

Radio buttons

For use when a user must select one of a number of options.

☒ Rock ☐ Pop ☐ Jazz

Checkboxes

When a user can select and unselect one or more options.

☒ iTunes ☐ Last.fm ☐ Spotify

Drop-down boxes

When a user must pick one of a number of options from a list.

Forms inputs

SUBMITTING FORMS:

Submit buttons

To submit data from your form to another web page.

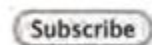


Image buttons

Similar to submit buttons but they allow you to use an image.



UPLOADING FILES:

File upload

Allows users to upload files (e.g. images) to a website.



A user fills in a form and then presses a button to submit the information to the server.



Forms: Input types

text search

email tel

url color

date range

time number



FIGURE 3.3 Opera 10.50 renders a calendar widget.



FIGURE 3.4 `<input type=date>` on the BlackBerry browser.

Keyword	State	Data type	input 1 of 860 ^ v x
hidden	Hidden	An arbitrary string	n/a
text	Text	Text with no line breaks	A text field
search	Search	Text with no line breaks	Search field
tel	Telephone	Text with no line breaks	A text field
url	URL	An absolute URL	A text field
email	E-mail	An e-mail address or list of e-mail addresses	A text field
password	Password	Text with no line breaks (sensitive information)	A text field that obscures data entry
datetime	Date and Time	A date and time (year, month, day, hour, minute, second, fraction of a second) with the time zone set to UTC	A date and time control
date	Date	A date (year, month, day) with no time zone	A date control
month	Month	A date consisting of a year and a month with no time zone	A month control
week	Week	A date consisting of a week-year number and a week number with no time zone	A week control
time	Time	A time (hour, minute, seconds, fractional seconds) with no time zone	A time control
number	Number	A numerical value	A text field or spinner control
range	Range	A numerical value, with the extra semantic that the exact value is not important	A slider control or similar
color	Colour	An sRGB colour with 8-bit red, green, and blue components	A colour well
checkbox	Checkbox	A set of zero or more values from a predefined list	A checkbox
radio	Radio Button	An enumerated value	A radio button
file	File Upload	Zero or more files each with a MIME type and optionally a file name	A label and a button
submit	Submit Button	An enumerated value, with the extra semantic that it must be the last value selected and initiates form submission	A button
image	Image Button	A coordinate, relative to a particular image's size, with the extra semantic that it must be the last value selected and initiates form submission	Either a clickable image, or a button
reset	Reset Button	n/a	A button
button	Button	n/a	A button

Form input types

<http://www.w3.org/html/wg/drafts/html/master/semantics.html#the-input-element>

HTML5 form attributes

- [placeholder](#)
- [autofocus](#)
- [autocomplete](#)
- [required](#)
- [pattern](#)
- [list](#)
- [multiple](#)
- [novalidate](#)
- [formnovalidate](#)
- [form](#)

<http://html5doctor.com/html5-forms-introduction-and-new-attributes/> Article

Placeholder

First up is the `placeholder` attribute, which allows us to set placeholder text as we would currently do in HTML4 with the `value` attribute. It should only be used for short descriptions. For anything longer, use the `title` attribute. The difference from HTML4 is that the text is only displayed when the field is empty and hasn't received focus. Once the field receives focus (e.g., you click or tab to the field), and you begin to type, the text simply disappears.

```
<input type="text" name="user-name" id="user-name" placeholder="at least 3 characters">
```


Autofocus

autofocus does exactly what it says on the tin. Adding it to an input automatically focuses that field when the page is rendered. As with `placeholder`, `autofocus` is something that we used JavaScript for in the past.

```
<input type="text" name="first-name" id="first-name" autofocus>
```

Autocomplete

The **autocomplete** attribute helps users complete forms based on earlier input. The attribute has been around since IE5.5 but has finally been standardized as part of HTML5. The default state is set to on. This means that generally we won't have to use it. However, if you want to insist that a form field be entered each time a form is completed (as opposed to the browser autofilling the field), you would implement it like so:

```
<input type="text" name="tracking-code" id="tracking-code" autocomplete="off">
```

Required

The **required** attribute doesn't need much introduction; like **autofocus**, it does exactly what you'd expect. By adding it to a form field, the browser requires the user to enter data into that field before submitting the form. This replaces the basic form validation currently implemented with JavaScript, making things a little more usable and saving us a little more development time. **required** is a Boolean attribute, like **autofocus**. Let's see it in action.

```
<input type="text" id="given-name" name="given-name" required>
```



A screenshot of a web form with two text input fields. The first field is labeled "First Name" and is empty. The second field is labeled "Last name only" and is also empty. A red error message box with a bracket pointing to the "First Name" field contains the text "This is a required field".

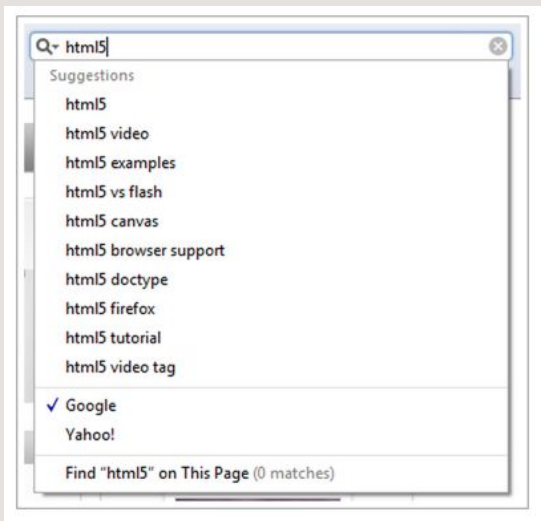
Pattern

The `pattern` attribute is likely to get a lot of developers very excited (well, as excited as you can get about form attributes). It specifies a JavaScript regular expression for the field's value to be checked against. `pattern` makes it easy for us to implement specific validation for product codes, invoice numbers, and so on. The possibilities for `pattern` are wide-ranging, and this is just one simple example using a product number.

```
<input pattern="[0-9][A-Z]{3}" name="product" type="text" title="Single digit followed by three uppercase letters."/>
```

List and the datalist element

The `list` attribute enables the user to associate a list of options with a particular field. The value of the `list` attribute must be the same as the ID of a `datalist` element that resides in the same document. The `datalist` element is new in HTML5 and represents a predefined list of options for form controls. It works in a similar way to the in-browser search boxes that autocomplete as you type (see Figure 4).



list and the datalist element 2

<label>Your favorite fruit:

<datalist id="fruits">

<option value="Blackberry">Blackberry</option>

<option value="Blackcurrant">Blackcurrant</option>

<option value="Blueberry">Blueberry</option>

</datalist>

If other, please specify:

<input type="text" name="fruit" list="fruits">

</label>

novalidate and formnovalidate

The `novalidate` and `formnovalidate` attributes indicate that the form shouldn't be validated when submitted. They are both Boolean attributes. `formnovalidate` can be applied to submit or image input types. The `novalidate` attribute can be set only on the `form` element.

An example use case for the `formnovalidate` attribute could be on a “save draft” button, where the form has fields that are required for submitting the draft but aren't required for saving the draft. `novalidate` would be used in cases where you don't want to validate the form but do want to take advantage of the more useful user interface enhancements that the new input types offer.

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

  <label for="email">Email: </label>

  <input type="text" name="email" value="gordo@example.com">

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

</form>
```

Form

The `form` attribute is used to associate an `input`, `select`, or `textarea` element with a form (known as its *form owner*).

Using `form` means that the element doesn't need to be a child of the associated form and can be moved away from it in the source. The primary use case for this is that input buttons that are placed within tables can now be associated with a form.

```
<input type="button" name="sort-l-h" form="sort">
```


Special symbols

<http://character-code.com/>



¤

¤

¤t;

Generic Currency
Symbol



$

$

\$

Dollar Sign



¢

¢

¢

Cent Sign



£

£

£

Pound Sterling



¥

¥

¥

Yen Symbol



₣

₣

Franc Sign

Video

```
<video src=track.ogv></video>
```

Audio

```
<audio controls>
```

```
<source src="audio/music.ogg" type="audio/ogg; codecs=vorbis">
```

```
<source src="audio/music.mp3" type="audio/mpeg"> Тер audio не  
поддерживается вашим браузером.
```

```
<a href="audio/music.mp3">Скачайте музыку</a>.
```

```
</audio>
```

HTML 5 support IE9

```
<head>
```

```
  <!--[if lt IE 9]>
```

```
  <script src="../../lib/html5shiv/html5shiv.js"></script>
```

```
  <![endif]-->
```

```
</head>
```

Can i use? <http://caniuse.com/>

Can I use

?  Settings

CSS

- ::first-letter CSS pseudo-element selector
- ::placeholder CSS pseudo-element
- ::selection CSS pseudo-element
- @font-face Web fonts
- Blending of HTML/SVG elements
- calc() as CSS unit value
- 2.1 selectors
- all property
- Animation
- Appearance
- background-attachment
- background-blend-mode
- background-position edge offsets
- box-decoration-break

HTML5

- accept attribute for file input
- Audio element
- Audio Tracks
- Autofocus attribute
- Canvas (basic support)
- Canvas blend modes
- classList (DOMTokenList)
- Color input type
- contenteditable attribute (basic support)
- Custom Elements
- Custom protocol handling
- Datalist element
- dataset & data-* attributes
- Date and time input types

SVG

- Inline SVG in HTML5
- SVG (basic support)
- SVG effects for HTML
- SVG favicons
- SVG filters
- SVG fonts
- SVG fragment identifiers
- SVG in CSS backgrounds
- SVG in HTML img element
- SVG SMIL animation
- **All SVG features**

JS API

How to test?



YSlow

Modernizr <https://modernizr.com/>



DOWNLOAD

DOCUMENTATION

**Respond to your user's
browser features.**

Emmet

<http://docs.emmet.io/>

Tools for Testing Website Performance

<http://www.sitepoint.com/tools-testing-website-performance/>

<http://tools.pingdom.com/> Speed test and reports

Responsive test

<http://mattkersley.com/responsive/>

<https://www.google.com/webmasters/tools/mobile-friendly/>

Links

<http://htmlbook.ru/>

<http://www.w3.org/>

<https://css-tricks.com/>

<http://html5test.com/>

Books:

<http://abookapart.com/>

<https://shop.smashingmagazine.com/>