mdn web docs

HTML basics

HTML (**H**yper**T**ext **M**arkup **L**anguage) is the code that is used to structure a web page and its content. For example, content could be structured within a set of paragraphs, a list of bulleted points, or using images and data tables. As the title suggests, this article will give you a basic understanding of HTML and its functions.

So what is HTML?

HTML is a *markup language* that defines the structure of your content. HTML consists of a series of **elements**, which you use to enclose, or wrap, different parts of the content to make it appear a certain way, or act a certain way. The enclosing tags can make a word or image hyperlink to somewhere else, can italicize words, can make the font bigger or smaller, and so on. For example, take the following line of content:

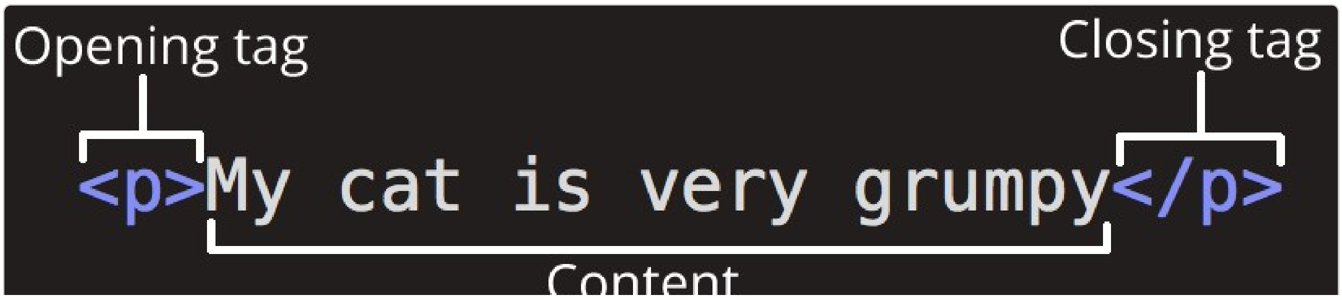
```
My cat is very grumpy
```

If we wanted the line to stand by itself, we could specify that it is a paragraph by enclosing it in paragraph tags:

HTML
```html
<p>My cat is very grumpy</p>
```

Anatomy of an HTML element

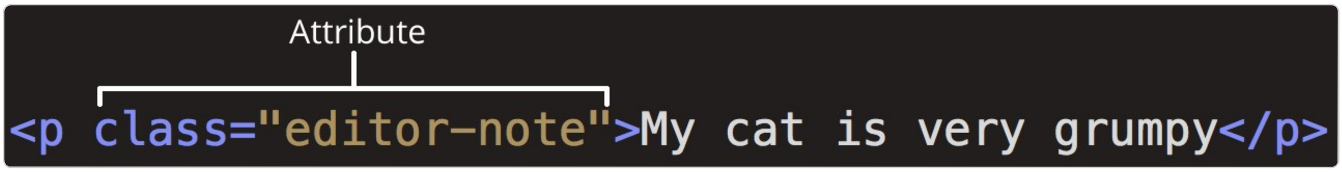
Let's explore this paragraph element a bit further.



The main parts of our element are as follows:

1. **The opening tag:** This consists of the name of the element (in this case, p), wrapped in opening and closing **angle brackets**. This states where the element begins or starts to take effect — in this case where the paragraph begins.
2. **The closing tag:** This is the same as the opening tag, except that it includes a *forward slash* before the element name. This states where the element ends — in this case where the paragraph ends. Failing to add a closing tag is one of the standard beginner errors and can lead to strange results.
3. **The content:** This is the content of the element, which in this case, is just text.
4. **The element:** The opening tag, the closing tag, and the content together comprise the element.

Elements can also have attributes that look like the following:



```
<p class="editor-note">My cat is very grumpy</p>
```

Attributes contain extra information about the element that you don't want to appear in the actual content. Here, `class` is the attribute *name* and `editor-note` is the attribute *value*. The `class` attribute allows you to give the element a non-unique identifier that can be used to target it (and any other elements with the same `class` value) with style information and other things. Some attributes have no value, such as `required`.

Attributes that set a value always have:

1. A space between it and the element name (or the previous attribute, if the element already has one or more attributes).
2. The attribute name followed by an equal sign.
3. The attribute value wrapped by opening and closing quotation marks.

> **Note:** Simple attribute values that don't contain ASCII whitespace (or any of the characters `"` `'` `` ` `` `=` `<` `>`) can remain unquoted, but it is recommended that you quote all attribute values, as it makes the code more consistent and understandable.

Nesting elements

You can put elements inside other elements too — this is called **nesting**. If we wanted to state that our cat is **very** grumpy, we could wrap the word "very" in a `<strong>` element, which means that the word is to be strongly emphasized:

HTML

```
<p>My cat is <strong>very</strong> grumpy.</p>
```

You do however need to make sure that your elements are properly nested. In the example above, we opened the `<p>` element first, then the `<strong>` element; therefore, we have to close the `<strong>` element first, then the `<p>` element. The following is incorrect:

HTML

```
<p>My cat is <strong>very grumpy.</p></strong>
```

The elements have to open and close correctly so that they are clearly inside or outside one another. If they overlap as shown above, then your web browser will try to make the best guess at what you were trying to say, which can lead to unexpected results. So don't do it!

Void elements

Some elements have no content and are called **void elements**. Take the `<img>` element that we already have in our HTML page:

HTML

```
<img src="images/firefox-icon.png" alt="My test image" />
```

This contains two attributes, but there is no closing `</img>` tag and no inner content. This is because an image element doesn't wrap content to affect it. Its purpose is to embed an image in the HTML page in the place it appears.

Anatomy of an HTML document

That wraps up the basics of individual HTML elements, but they aren't handy on their own. Now we'll look at how individual elements are combined to form an entire HTML page. Let's revisit the code we put into our `index.html` example (which we first met in the Dealing with files article):

HTML

```html
<!doctype html>
<html lang="en-US">
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width" />
    <title>My test page</title>
  </head>
  <body>
    <img src="images/firefox-icon.png" alt="My test image" />
  </body>
</html>
```

Here, we have the following:

- `<!DOCTYPE html>` — doctype. It is a required preamble. In the mists of time, when HTML was young (around 1991/92), doctypes were meant to act as links to a set of rules that the HTML page had to follow to be considered good HTML, which could mean automatic error checking and other useful things. However, these days, they don't do much and are basically just needed to make sure your document behaves correctly. That's all you need to know for now.
- `<html></html>` — the `<html>` element. This element wraps all the content on the entire page and is sometimes known as the root element. It also includes the `lang` attribute, setting the primary language of the document.
- `<head></head>` — the `<head>` element. This element acts as a container for all the stuff you want to include on the HTML page that *isn't* the content you are showing

to your page's viewers. This includes things like keywords and a page description that you want to appear in search results, CSS to style our content, character set declarations, and more.

- `<meta charset="utf-8">` — This element sets the character set your document should use to UTF-8 which includes most characters from the vast majority of written languages. Essentially, it can now handle any textual content you might put on it. There is no reason not to set this, and it can help avoid some problems later on.
- `<meta name="viewport" content="width=device-width">` — This viewport element ensures the page renders at the width of viewport, preventing mobile browsers from rendering pages wider than the viewport and then shrinking them down.
- `<title></title>` — the `<title>` element. This sets the title of your page, which is the title that appears in the browser tab the page is loaded in. It is also used to describe the page when you bookmark/favorite it.
- `<body></body>` — the `<body>` element. This contains *all* the content that you want to show to web users when they visit your page, whether that's text, images, videos, games, playable audio tracks, or whatever else.

Images

Let's turn our attention to the `<img>` element again:

HTML

```html
<img src="images/firefox-icon.png" alt="My test image" />
```

As we said before, it embeds an image into our page in the position it appears. It does this via the `src` (source) attribute, which contains the path to our image file.

We have also included an `alt` (alternative) attribute. In the `alt` attribute, you specify descriptive text for users who cannot see the image, possibly because of the following reasons:

1. They are visually impaired. Users with significant visual impairments often use tools called screen readers to read out the alt text to them.

2. Something has gone wrong causing the image not to display. For example, try deliberately changing the path inside your `src` attribute to make it incorrect. If you save and reload the page, you should see something like this in place of the image:

My test image

The keywords for alt text are "descriptive text". The alt text you write should provide the reader with enough information to have a good idea of what the image conveys. In this example, our current text of "My test image" is no good at all. A much better alternative for our Firefox logo would be "The Firefox logo: a flaming fox surrounding the Earth."

Try coming up with some better alt text for your image now.

> **Note:** Find out more about accessibility in our accessibility learning module.

Marking up text

This section will cover some essential HTML elements you'll use for marking up the text.

Headings

Heading elements allow you to specify that certain parts of your content are headings — or subheadings. In the same way that a book has the main title, chapter titles, and subtitles, an HTML document can too. HTML contains 6 heading levels, <h1> - <h6>, although you'll commonly only use 3 to 4 at most:

HTML

```html
<!-- 4 heading levels: -->
<h1>My main title</h1>
<h2>My top level heading</h2>
<h3>My subheading</h3>
<h4>My sub-subheading</h4>
```

> **Note:** Anything in HTML between `<!--` and `-->` is an **HTML comment**. The

browser ignores comments as it renders the code. In other words, they are not visible on the page - just in the code. HTML comments are a way for you to write helpful notes about your code or logic.

Now try adding a suitable title to your HTML page just above your `<img>` element.

Note: You'll see that your heading level 1 has an implicit style. Don't use heading elements to make text bigger or bold, because they are used for accessibility and other reasons such as SEO. Try to create a meaningful sequence of headings on your pages, without skipping levels.

Paragraphs

As explained above, `<p>` elements are for containing paragraphs of text; you'll use these frequently when marking up regular text content:

HTML

```html
<p>This is a single paragraph</p>
```

Add your sample text (you should have it from *What will your website look like?*) into one or a few paragraphs, placed directly below your `<img>` element.

Lists

A lot of the web's content is lists and HTML has special elements for these. Marking up lists always consists of at least 2 elements. The most common list types are ordered and unordered lists:

1. **Unordered lists** are for lists where the order of the items doesn't matter, such as a shopping list. These are wrapped in a `<ul>` element.
2. **Ordered lists** are for lists where the order of the items does matter, such as a recipe. These are wrapped in an `<ol>` element.

Each item inside the lists is put inside an `<li>` (list item) element.

For example, if we wanted to turn the part of the following paragraph fragment into a list

HTML

```
<p>
  At Mozilla, we're a global community of technologists, thinkers, and builders
  working together…
</p>
```

We could modify the markup to this

HTML

```
<p>At Mozilla, we're a global community of</p>

<ul>
  <li>technologists</li>
  <li>thinkers</li>
  <li>builders</li>
</ul>

<p>working together…</p>
```

Try adding an ordered or unordered list to your example page.

Links

Links are very important — they are what makes the web a web! To add a link, we need to use a simple element — `<a>` — "a" being the short form for "anchor". To make text within your paragraph into a link, follow these steps:

1. Choose some text. We chose the text "Mozilla Manifesto".
2. Wrap the text in an `<a>` element, as shown below:

   HTML

   ```
   <a>Mozilla Manifesto</a>
   ```

3. Give the `<a>` element an `href` attribute, as shown below:

   HTML

```
<a href="">Mozilla Manifesto</a>
```

4. Fill in the value of this attribute with the web address that you want the link to point to:

   HTML

   ```
   <a href="https://www.mozilla.org/en-US/about/manifesto/">
     Mozilla Manifesto
   </a>
   ```

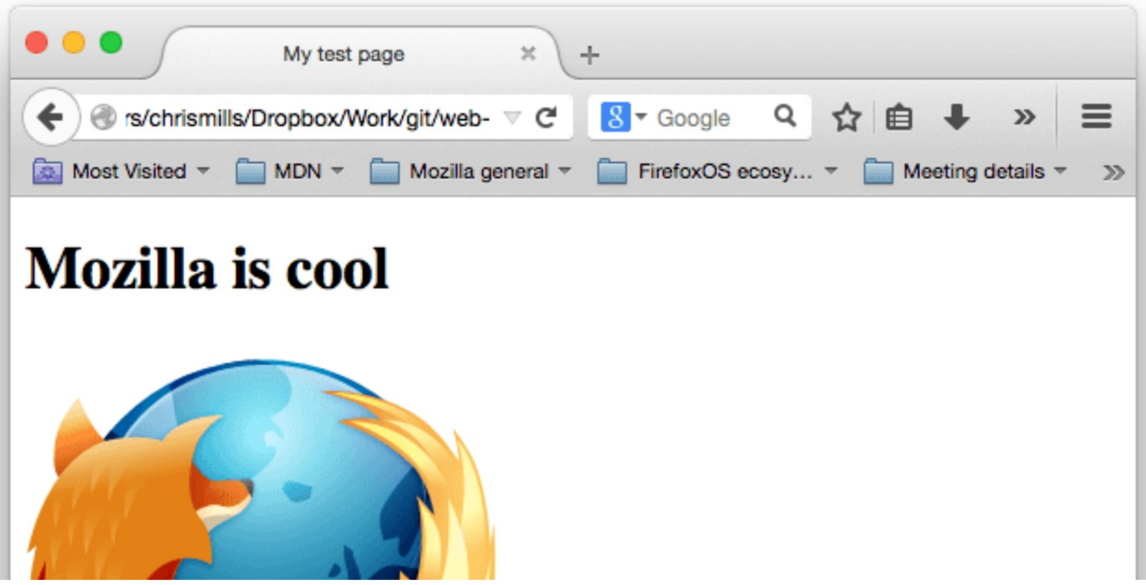
You might get unexpected results if you omit the `https://` or `http://` part, called the *protocol*, at the beginning of the web address. After making a link, click it to make sure it is sending you where you wanted it to.

> **Note:** `href` might appear like a rather obscure choice for an attribute name at first. If you are having trouble remembering it, remember that it stands for ***h****ypertext* ***ref****erence*.

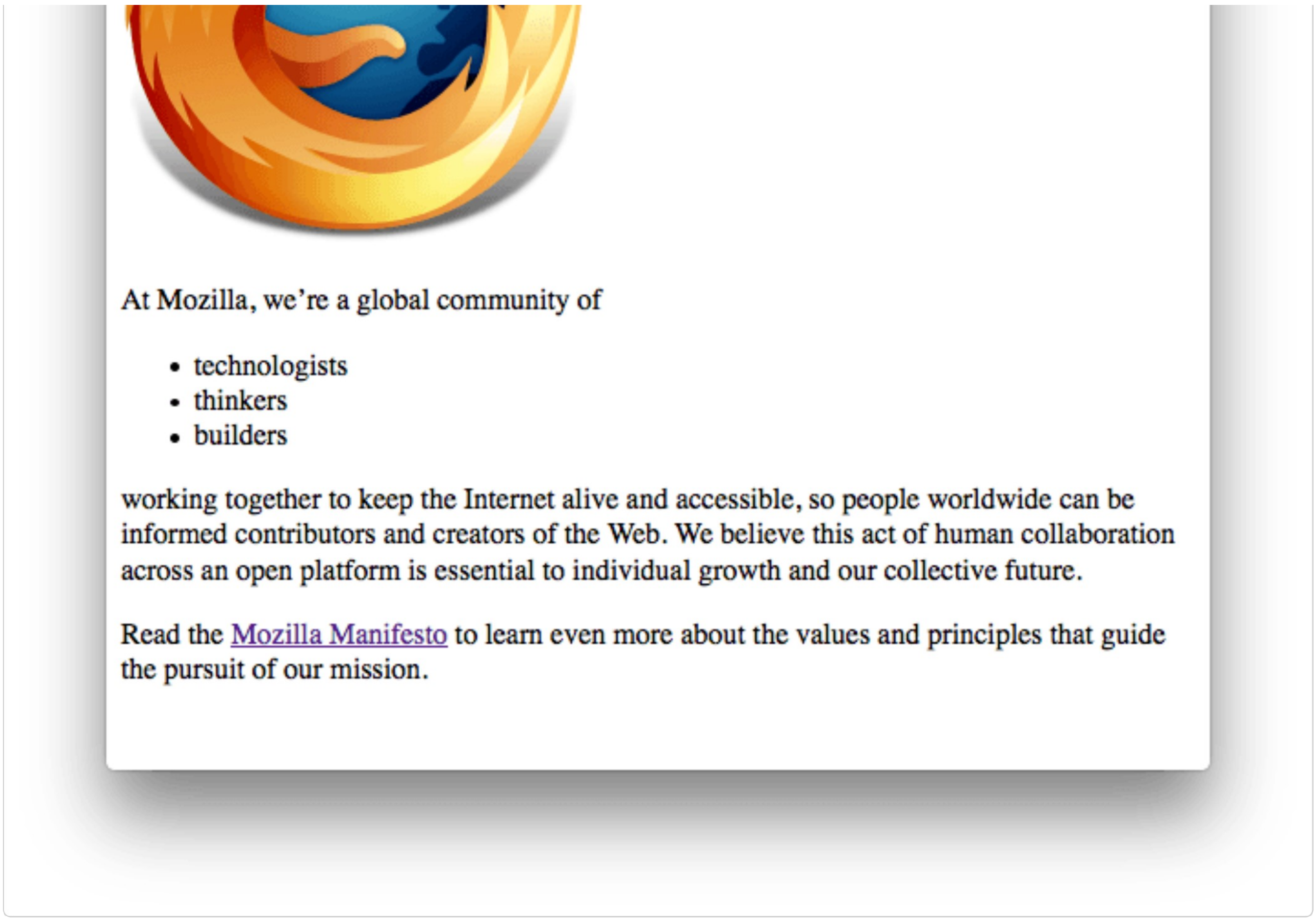
Add a link to your page now, if you haven't already done so.

Conclusion

If you have followed all the instructions in this article, you should end up with a page that looks like the one below (you can also view it here):



Mozilla is cool



At Mozilla, we're a global community of

- technologists
- thinkers
- builders

working together to keep the Internet alive and accessible, so people worldwide can be informed contributors and creators of the Web. We believe this act of human collaboration across an open platform is essential to individual growth and our collective future.

Read the Mozilla Manifesto to learn even more about the values and principles that guide the pursuit of our mission.

If you get stuck, you can always compare your work with our finished example code on GitHub.

Here, we have only really scratched the surface of HTML. To find out more, go to our Learning HTML topic.