



HTML



# What is HTML?

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

# A Simple HTML Document

- The `<!DOCTYPE html>` declaration defines this document to be HTML5
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the document
- The `<title>` element specifies a title for the document
- The `<body>` element contains the visible page content
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

## Example

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

# HTML Tags

HTML tags are element names surrounded by angle brackets:

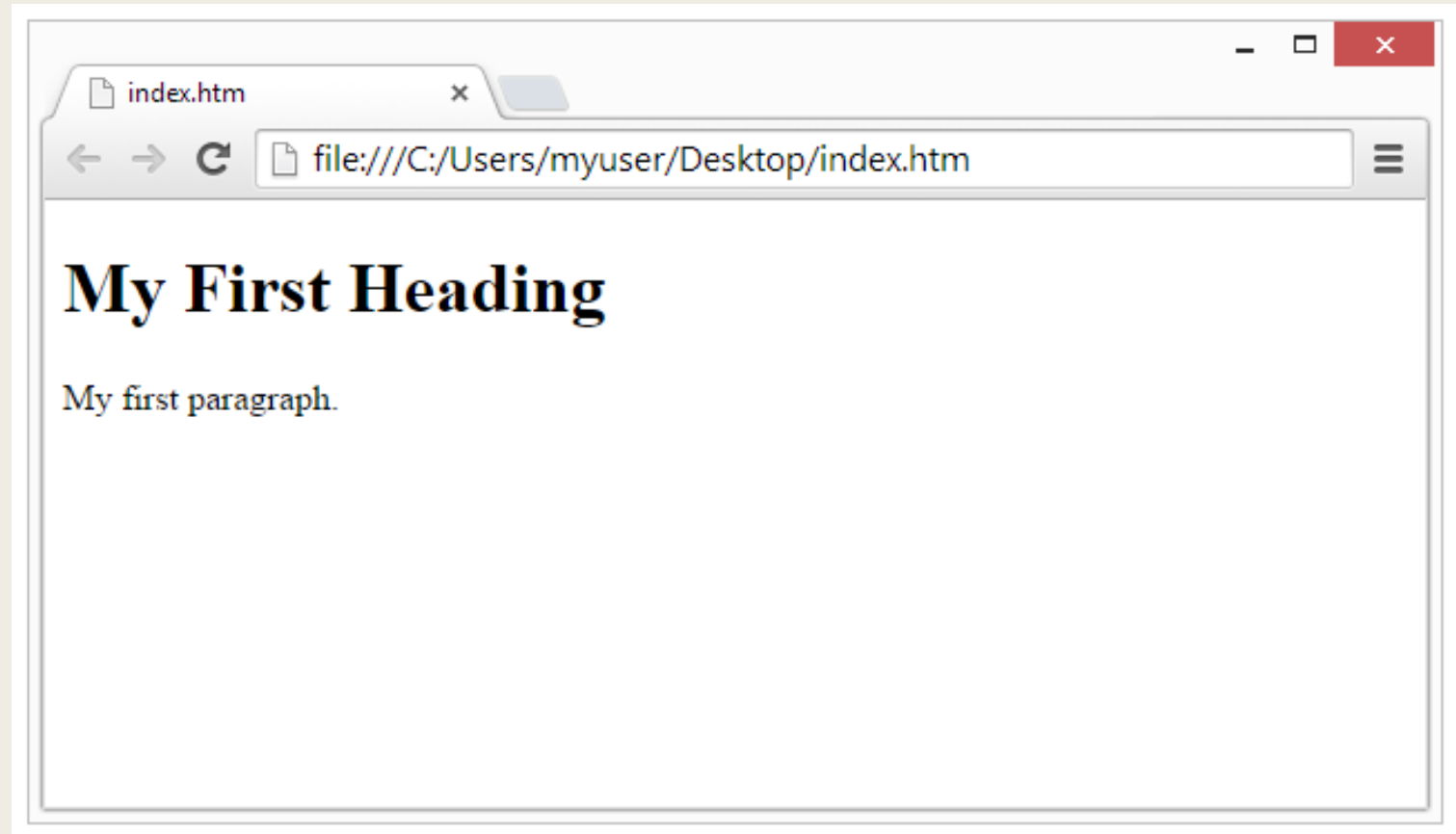
```
<tagname>content goes here...</tagname>
```

- HTML tags normally come **in pairs** like `<p>` and `</p>`
- The first tag in a pair is the **start tag**, the second tag is the **end tag**
- The end tag is written like the start tag, but with a **forward slash** inserted before the tag name

# Web Browsers

The purpose of a web browser (Chrome, IE, Firefox, Safari) is to read HTML documents and display them.

The browser does not display the HTML tags, but uses them to determine how to display the document:



# HTML Page Structure

```
<html>
```

```
<head>
```

```
<title>Page title</title>
```

```
</head>
```

```
<body>
```

```
<h1>This is a heading</h1>
```

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

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

```
</body>
```

```
</html>
```

# The <!DOCTYPE> Declaration

The `<!DOCTYPE>` declaration represents the document type, and helps browsers to display web pages correctly.

It must only appear once, at the top of the page (before any HTML tags).

The `<!DOCTYPE>` declaration is not case sensitive.

The `<!DOCTYPE>` declaration for HTML5 is:

## Example

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
```

# HTML Versions

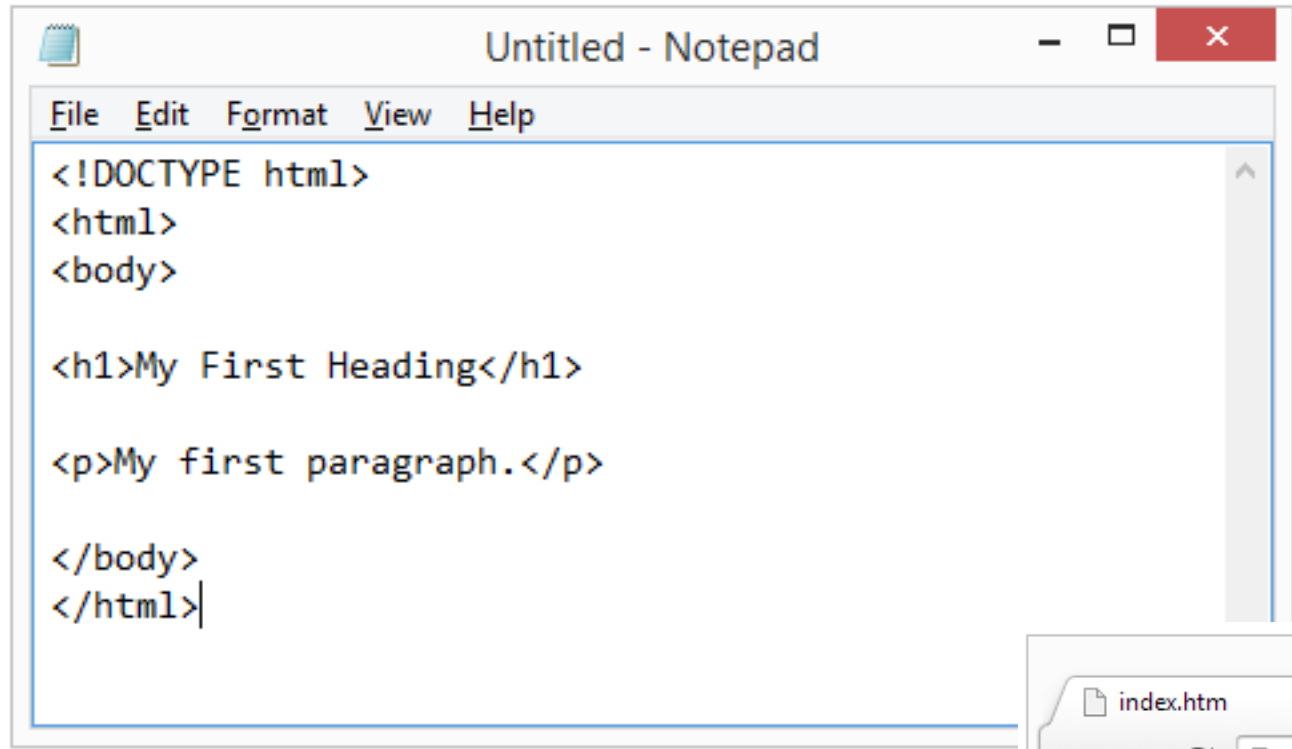
Since the early days of the web, there have been many versions of HTML:

Version	Year
HTML	1991
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML	2000
HTML5	2014



# Write/Save HTML Using Notepad or TextEdit

- Web pages can be created and modified by using professional HTML editors.
- However, for learning HTML we recommend a simple text editor like Notepad (PC) or TextEdit (Mac).
- We believe using a simple text editor is a good way to learn HTML.
- Save the file on your computer. Select File > Save as in the Notepad menu.
- Name the file "index.htm" and set the encoding to UTF-8 (which is the preferred encoding for HTML files).

A screenshot of a Notepad window titled "Untitled - Notepad". The window has a menu bar with "File", "Edit", "Format", "View", and "Help". The text area contains the following HTML code:

```
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

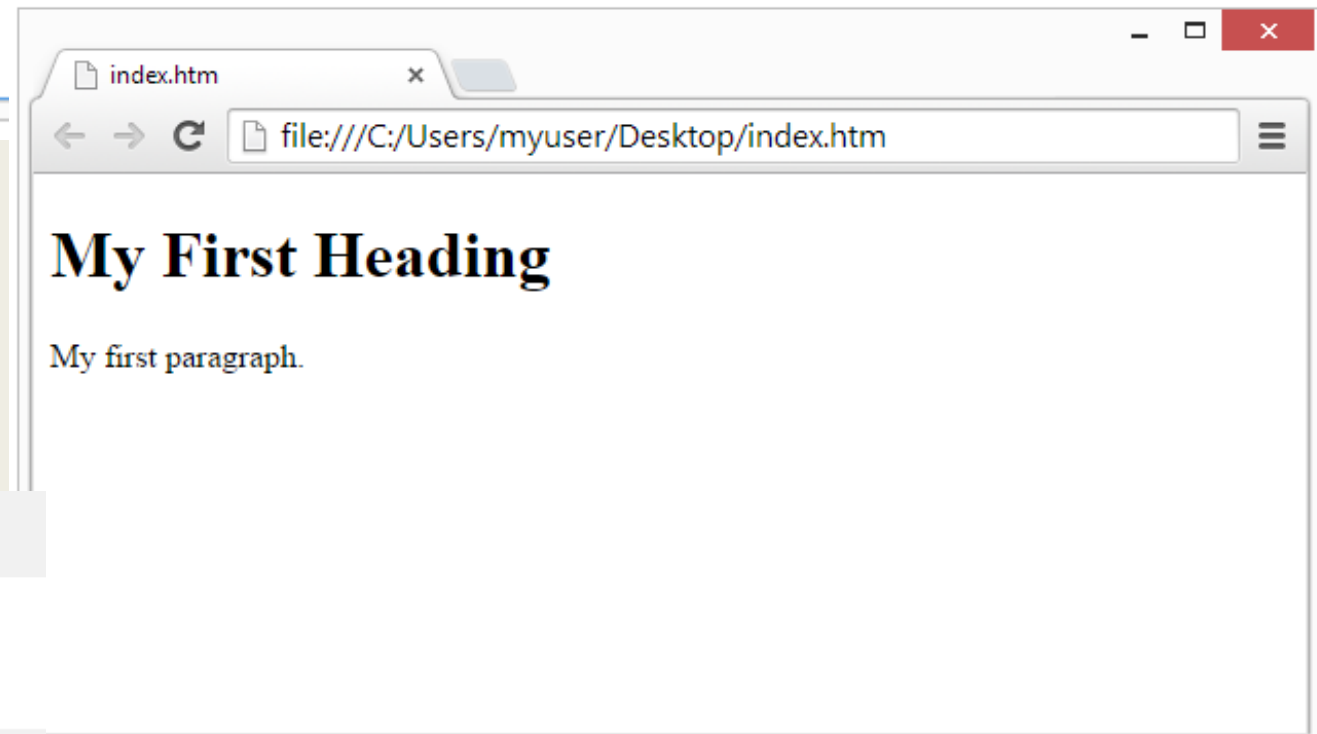
</body>
</html>
```

- All HTML documents must start with a document type declaration:  
`<!DOCTYPE html>`.
- The HTML document itself begins with `<html>` and ends with `</html>`.
- The visible part of the HTML document is between `<body>` and `</body>`.

- HTML headings are defined with the `<h1>` to `<h6>` tags.
- `<h1>` defines the most important heading. `<h6>` defines the least important heading:

#### Example

```
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
```



HTML paragraphs are defined with the <p> tag:

## Example

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

HTML links are defined with the <a> tag:

- The link's destination is specified in the href attribute.
- Attributes are used to provide additional information about HTML elements.

## Example

```
<a href="https://www.w3schools.com">This is a link</a>
```

HTML buttons are defined with the <button> tag:

### Example

```
<button>Click me</button>
```

HTML lists are defined with the <ul> (unordered/bullet list) or the <ol> (ordered/numbered list) tag, followed by <li> tags (list items):

### Example

```
<ul>  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ul>
```

HTML images are defined with the <img> tag.

The source file (src), alternative text (alt), width, and height are provided as attributes:

### Example

```

```

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Images</h2>
<p>HTML images are defined with the img tag:</p>



</body>
</html>
```

## HTML Images

HTML images are defined with the img tag:



```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Buttons</h2>
<p>HTML buttons are defined with the button tag:</p>

<button>Click me</button>

</body>
</html>
```

## HTML Buttons

HTML buttons are defined with the button tag:

Click me

```
<!DOCTYPE html>
<html>
<body>

<h2>An Unordered HTML List</h2>

<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>

<h2>An Ordered HTML List</h2>

<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

</body>
</html>
```

## An Unordered HTML List

- Coffee
- Tea
- Milk

## An Ordered HTML List

1. Coffee
2. Tea
3. Milk

# HTML Elements

An HTML element usually consists of a **start** tag and **end** tag, with the content inserted in between:

```
<tagname>Content goes here...</tagname>
```

The HTML element is everything from the start tag to the end tag:

```
<p>My first paragraph.</p>
```

HTML elements with no content are called empty elements. Empty elements do not have an end tag, such as the `<br>` element (which indicates a line break).



```
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

Do Not Forget  
the End Tag!!!

## Empty HTML Elements

### Example

```
<p>This is a <br> paragraph with a line break.</p>
```

Use Lowercase Tags

```
<!DOCTYPE html>
<html>
<body>

<p>This is a <br> paragraph with a line break.</p>

</body>
</html>
```

This is a  
paragraph with a line break.

# HTML Attributes

- All HTML elements can have attributes
- Attributes provide additional information about an element
- Attributes are always specified in the start tag
- Attributes usually come in name/value pairs like:  
name="value"

HTML links are defined with the <a> tag. The link address is specified in the href attribute:

## Example

```
<a href="https://www.w3schools.com">This is a link</a>
```

```
<!DOCTYPE html>
<html>
<body>

<h2>The href Attribute</h2>
<p>HTML links are defined with the a tag. The link address is specified in the
href attribute:</p>

<a href="https://www.w3schools.com">This is a link</a>

</body>
</html>
```

### The href Attribute

HTML links are defined with the a tag. The link address is specified in the href attribute:

[This is a link](https://www.w3schools.com)

- HTML images are defined with the <img> tag.
- The filename of the image source is specified in the src attribute:
- Images in HTML have a set of size attributes, which specifies the width and height of the image:

### Example

```

```

- The alt attribute specifies an alternative text to be used, when an image cannot be displayed.
- The value of the attribute can be read by screen readers. This way, someone "listening" to the webpage, e.g. a vision impaired person, can "hear" the element.

### Example

```

```

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>The src Attribute</h2>
```

```
<p>HTML images are defined with the img tag, and the filename of the image  
source is specified in the src attribute:</p>
```

```

```

```
</body>
```

```
</html>
```

### The src Attribute

HTML images are defined with the img tag, and the filename of the image source is specified in the src attribute:



```
<!DOCTYPE html>
<html>
<body>



<p>If we try to display an image that does not exist, the value of the alt
attribute will be displayed instead. </p>

</body>
</html>
```

 Girl with a jacket

If we try to display an image that does not exist, the value of the alt attribute will be displayed instead.

The style attribute is used to specify the styling of an element, like color, font, size etc.

## Example

```
<p style="color:red">I am a paragraph</p>
```

```
<!DOCTYPE html>
<html>
<body>

<h2>The style Attribute</h2>
<p>The style attribute is used to specify the styling of an element, like
color:</p>

<p style="color:red">I am a paragraph.</p>

</body>
</html>
```

## The style Attribute

The style attribute is used to specify the styling of an element, like color:

I am a paragraph.



# The lang Attribute

- The language of the document can be declared in the <html> tag.
- The language is declared with the lang attribute.
- Declaring a language is important for accessibility applications (screen readers) and search engines:

```
<!DOCTYPE html>
<html lang="en-US">
<body>

...

</body>
</html>
```

# The title Attribute

Here, a title attribute is added to the <p> element. The value of the title attribute will be displayed as a tooltip when you mouse over the paragraph:

## Example

```
<p title="I'm a tooltip">
This is a paragraph.
</p>
```

Use Lowercase Attributes

```
</html>
<body>

<h2 title="I'm a header">The title Attribute</h2>

<p title="I'm a tooltip">
Mouse over this paragraph, to display the title attribute as a tooltip.
</p>

</body>
</html>
```

## The title Attribute

Mouse over this paragraph, to display the title attribute as a tooltip.

I'm a tooltip

# Quote Attribute Values

Bad

```
<a href=https://www.w3schools.com>
```

Good

```
<a href="https://www.w3schools.com">
```

Example

```
<p title>About W3Schools>
```

*Single or Double Quotes?*

Using quotes are the most common. Omitting quotes can produce errors.

## About W3Schools

You cannot omit quotes around an attribute value if the value contains spaces.

If you move the mouse over the paragraph above, your browser will only display the first word from the title.

Double quotes around attribute values are the most common in HTML, but single quotes can also be used.

In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:

```
<!DOCTYPE html>
<html>
<body>

<h2>Single or Double Quotes?</h2>
<p>In some situations, when the attribute value itself contains double quotes,
it is necessary to use single quotes:</p>
<p>Move your mouse over the paragraphs below to see the effect:</p>

<p title='John "ShotGun" Nelson'>John with double quotes</p>
<p title="John 'ShotGun' Nelson">John with single quotes</p>

</body>
</html>
```

## Single or Double Quotes?

In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:

Move your mouse over the paragraphs below to see the effect:

John with double quotes

John "ShotGun" Nelson

John with single quotes

# Summary

- All HTML elements can have attributes
- The title attribute provides additional "tool-tip" information
- The href attribute provides address information for links
- The width and height attributes provide size information for images
- The alt attribute provides text for screen readers
- Always use lowercase attribute names
- Always quote attribute values with double quotes

# HTML Attributes

Attribute	Description
alt	Specifies an alternative text for an image, when the image cannot be displayed
disabled	Specifies that an input element should be disabled
href	Specifies the URL (web address) for a link
id	Specifies a unique id for an element
src	Specifies the URL (web address) for an image
style	Specifies an inline CSS style for an element
title	Specifies extra information about an element (displayed as a tool tip)

[https://www.w3schools.com/tags/ref\\_attributes.asp](https://www.w3schools.com/tags/ref_attributes.asp)