➢What is HTML?

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

➢A Simple HTML Document

Example

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

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

</body>
</html>
```

Example Explained

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

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➢What is an HTML Element?

An HTML element is defined by a start tag, some content, and an end tag:

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

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

<h1>My First Heading</h1>

My first paragraph.

Start tag	Element content	End tag
<h1>	My First Heading	</h1>
	My first paragraph.	
 	none	*none*

Note: Some HTML elements have no content (like the
 element). These elements are called empty elements. Empty elements do not have an end tag!

➢Web Browsers

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

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

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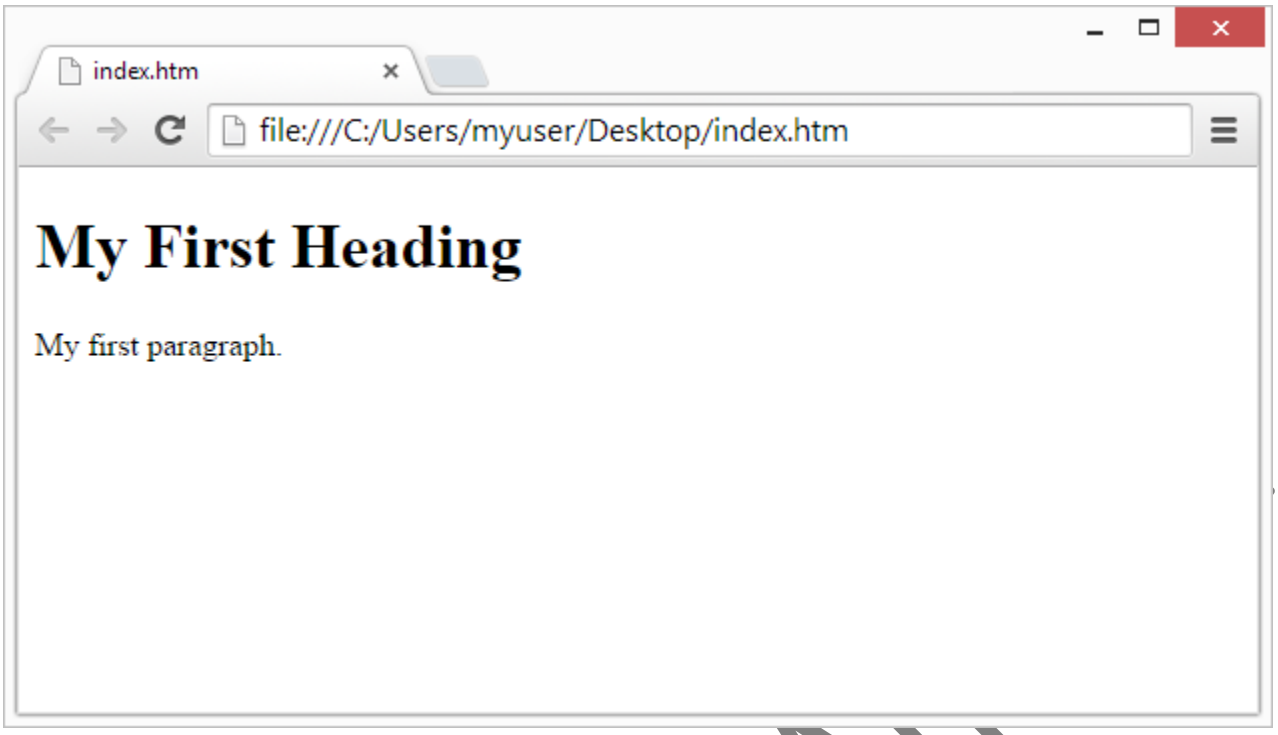

➢HTML Page Structure

Below is a visualization of an HTML page structure:

```
<html>
    <head>
        <title>page title</title>
    </head>
    <body>
        <h1>this is heading</h1>
        <p>this is paragraph</p>
        <p>this is another paragraph
    </body>
</html>
```

Code With Ar

Note: The content inside the <body> section will be displayed in a browser. The content inside the <title> element will be shown in the browser's title bar or in the page's tab

HTML Editors

A simple text editor is all you need to learn HTML.

➢Learn 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 that using a simple text editor is a good way to learn HTML.

Follow the steps below to create your first web page with Notepad or TextEdit.

❖ Step 1: Open Notepad (PC)

Windows 8 or later:

Open the **Start Screen** (the window symbol at the bottom left on your screen). Type **Notepad**.

Windows 7 or earlier:

Open **Start** > **Programs** > **Accessories** > **Notepad**

❖ Step 1: Open TextEdit (Mac)

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Open **Finder** > **Applications** > **TextEdit**

Also change some preferences to get the application to save files correctly. In **Preferences** > **Format** > choose **"Plain Text"**

Then under "Open and Save", check the box that says "Display HTML files as HTML code instead of formatted text".

Then open a new document to place the code.

❖ Step 2: Write Some HTML

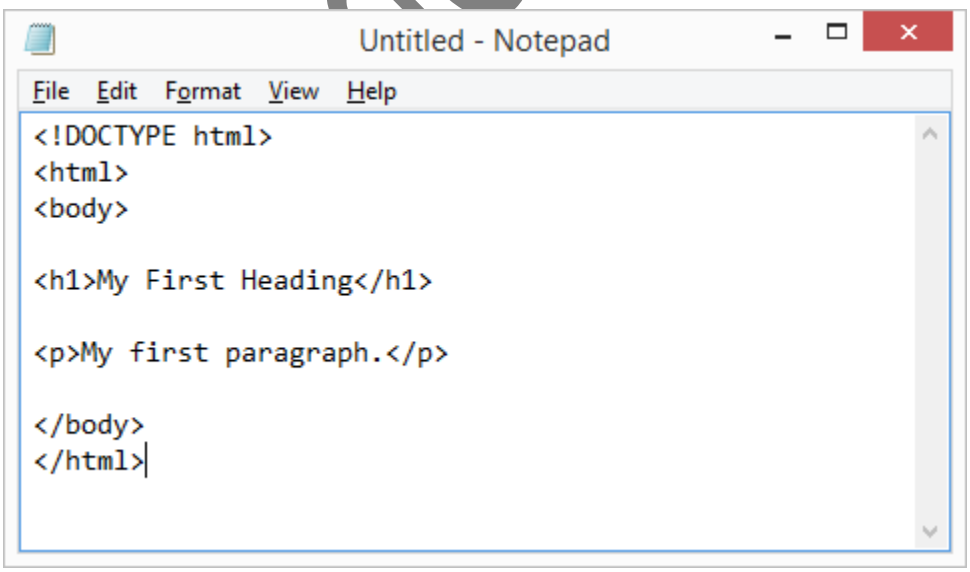
Write or copy the following HTML code into Notepad:

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

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```



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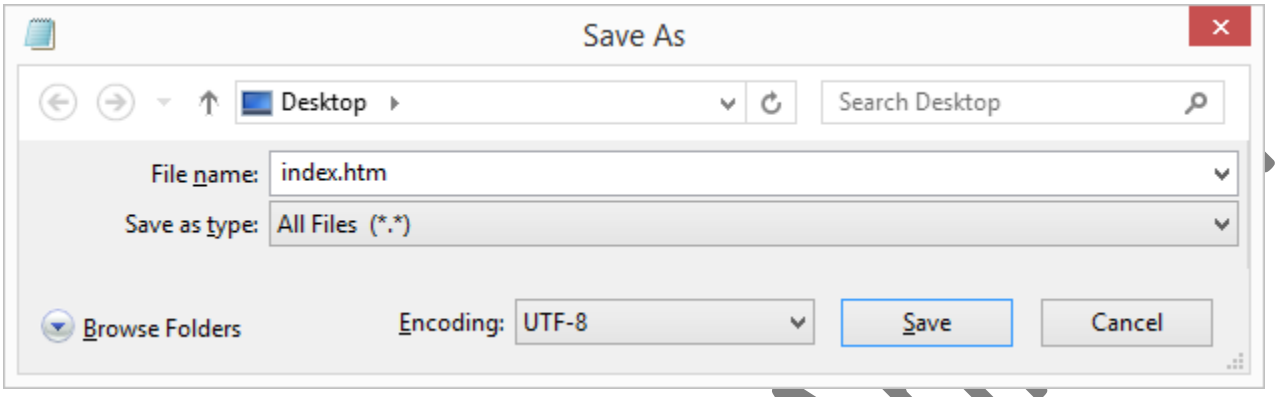
❖ Step 3: Save the HTML Page

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).



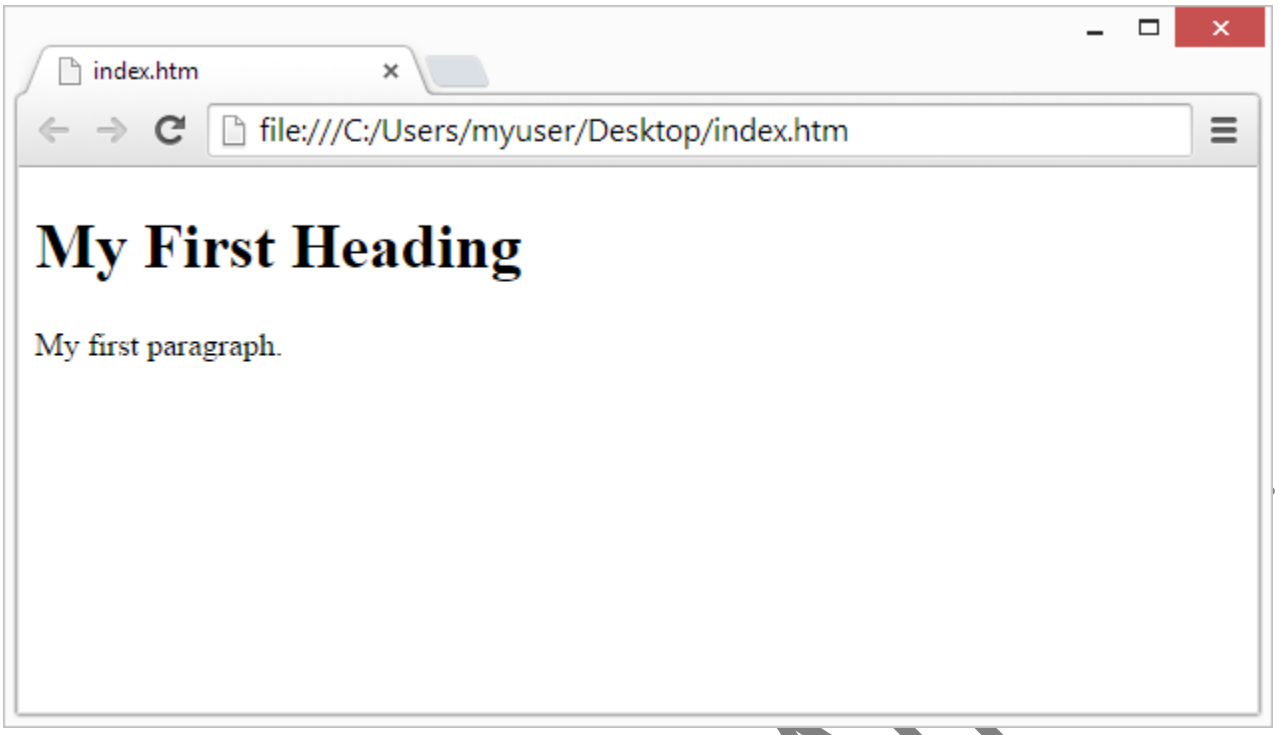
Tip: You can use either .htm or .html as file extension. There is no difference; it is up to you.

❖ Step 4: View the HTML Page in Your Browser

Open the saved HTML file in your favorite browser (double click on the file, or right-click - and choose "Open with").

The result will look much like this:

CodeWith



➢Online Editor - "Try it Yourself"

With our free online editor, you can edit the HTML code and view the result in your browser.

It is the perfect tool when you want to **test** code fast. It also has color coding and the ability to save and share code with others:

Example

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

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>
```

Code With Ar

```
</body>
</html>
```

HTML Basic Examples

In this chapter we will show some basic HTML examples.

Don't worry if we use tags you have not learned about yet.

➢HTML Documents

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>`.

Example

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

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

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The <!DOCTYPE> declaration is not case sensitive.

The <!DOCTYPE> declaration for HTML5 is:

```
<!DOCTYPE html>
```

➢HTML Headings

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

HTML paragraphs are defined with the <p> tag:

Example

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

➢HTML Links

HTML links are defined with the <a> tag:

Example

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

The link's destination is specified in the href attribute.

Attributes are used to provide additional information about HTML elements.

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You will learn more about attributes in a later chapter.

➢HTML Images

HTML images are defined with the `<img>` tag.

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

Example

```
<img src="moon.jpg" alt="code with ankush.com" width="104" height="142">
```

➢How to View HTML Source

Have you ever seen a Web page and wondered "Hey! How did they do that?"

View HTML Source Code:

Click CTRL + U in an HTML page, or right-click on the page and select "View Page Source". This will open a new tab containing the HTML source code of the page.

Inspect an HTML Element:

Right-click on an element (or a blank area), and choose "Inspect" to see what elements are made up of (you will see both the HTML and the CSS). You can also edit the HTML or CSS on-the-fly in the Elements or Styles panel that opens.

HTML Elements

An HTML element is defined by a start tag, some content, and an end tag.

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➢HTML Elements

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

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

Examples of some HTML elements:

<h1>My First Heading</h1>

My first paragraph.

Start tag	Element content	End tag
<h1>	My First Heading	</h1>
	My first paragraph.	
 	none	*none*

Note: Some HTML elements have no content (like the
 element). These elements are called empty elements. Empty elements do not have an end tag!

➢Nested HTML Elements

HTML elements can be nested (this means that elements can contain other elements).

All HTML documents consist of nested HTML elements.

The following example contains four HTML elements (`<html>`, `<body>`, `<h1>` and `<p>`):

Example

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

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

</body>
</html>
```

Example Explained

The `<html>` element is the root element and it defines the whole HTML document.

It has a start tag `<html>` and an end tag `</html>`.

Then, inside the `<html>` element there is a `<body>` element:

```
<body>

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

</body>
```

The `<body>` element defines the document's body.

It has a start tag `<body>` and an end tag `</body>`.

Then, inside the `<body>` element there are two other elements: `<h1>` and `<p>`:

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

The `<h1>` element defines a heading.

It has a start tag `<h1>` and an end tag `</h1>`:

```
<h1>My First Heading</h1>
```

The `<p>` element defines a paragraph.

It has a start tag `<p>` and an end tag `</p>`:

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

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ADVERTISEMENT

➢Never Skip the End Tag

Some HTML elements will display correctly, even if you forget the end tag:

Example

```
<html>
<body>

<p>This is a paragraph
<p>This is a paragraph

</body>
</html>
```

However, never rely on this! Unexpected results and errors may occur if you forget the end tag!

➢Empty HTML Elements

HTML elements with no content are called empty elements.

The `<br>` tag defines a line break, and is an empty element without a closing tag:

Example

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

➢HTML is Not Case Sensitive

HTML tags are not case sensitive: `<P>` means the same as `<p>`.

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The HTML standard does not require lowercase tags, but W3C **recommends** lowercase in HTML, and **demands** lowercase for stricter document types like XHTML.

➢HTML Tag Reference

Tag	Description
<html>	Defines the root of an HTML document
<body>	Defines the document's body
<h1> to <h6>	Defines HTML headings

HTML Attributes

HTML attributes provide additional information about HTML elements.

➢HTML Attributes

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

➢The href Attribute

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The `<a>` tag defines a hyperlink. The `href` attribute specifies the URL of the page the link goes to:

Example

```
<a href="https://www.code with ankush.com">Visit mywebsite</a>
```

➢The src Attribute

The `<img>` tag is used to embed an image in an HTML page. The `src` attribute specifies the path to the image to be displayed:

Example

```
<img src="img_girl.jpg">
```

There are two ways to specify the URL in the `src` attribute:

1. Absolute URL - Links to an external image that is hosted on another website. Example: src="https://www.code with ankush.com/images/img_girl.jpg".

Notes: External images might be under copyright. If you do not get permission to use it, you may be in violation of copyright laws. In addition, you cannot control external images; it can suddenly be removed or changed.

2. Relative URL - Links to an image that is hosted within the website. Here, the URL does not include the domain name. If the URL begins without a slash, it will be relative to the current page. Example: src="img_girl.jpg". If the URL begins with a slash, it will be relative to the domain. Example: src="/images/img_girl.jpg".

Tip: It is almost always best to use relative URLs. They will not break if you change domain.

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➢The width and height Attributes

The `<img>` tag should also contain the `width` and `height` attributes, which specify the width and height of the image (in pixels):

Example

```
<img src="img_girl.jpg" width="500" height="600">
```

The alt Attribute

The required `alt` attribute for the `<img>` tag specifies an alternate text for an image, if the image for some reason cannot be displayed. This can be due to a slow connection, or an error in the `src` attribute, or if the user uses a screen reader.

Example

```
<img src="img_girl.jpg" alt="Girl with a jacket">
```

Example

See what happens if we try to display an image that does not exist:

```
<img src="img_typo.jpg" alt="Girl with a jacket">
```

The style Attribute

The `style` attribute is used to add styles to an element, such as color, font, size, and more.

Example

```
<p style="color:red;">This is a red paragraph.</p>
```

The lang Attribute

You should always include the `lang` attribute inside the `<html>` tag, to declare the language of the Web page. This is meant to assist search engines and browsers.

The following example specifies English as the language:

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

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```
<body>
...
</body>
</html>
```

Country codes can also be added to the language code in the `lang` attribute. So, the first two characters define the language of the HTML page, and the last two characters define the country.

The following example specifies English as the language and United States as the country:

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

The title Attribute

The `title` attribute defines some extra information about an element.

The value of the title attribute will be displayed as a tooltip when you mouse over the element:

Example

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

We Suggest: Always Use Lowercase Attributes

The HTML standard does not require lowercase attribute names.

The title attribute (and all other attributes) can be written with uppercase or lowercase like **title** or **TITLE**.

We Suggest: Always Quote Attribute Values

The HTML standard does not require quotes around attribute values.

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Good:

```
<a href="https://www.code with ankush.com/html/">Visit our HTML tutorial</a>
```

Bad:

```
<a href=https://www.code wigth ankush.com/html/>Visit our HTML tutorial</a>
```

Sometimes you have to use quotes. This example will not display the title attribute correctly, because it contains a space:

Single or Double Quotes?

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:

```
<p title='John "ShotGun" Nelson'>
```

Or vice versa:

```
<p title="John 'ShotGun' Nelson">
```

HTML Headings

HTML headings are titles or subtitles that you want to display on a webpage.

Example

Heading 1

Heading 2

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Heading 3

Heading 4

Heading 5

Heading 6

HTML Headings

HTML headings are defined with the `<h1>` to `<h6>` tags.

`<h1>` defines the most important heading. `<h6>` defines the least important heading.

Example

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

Note: Browsers automatically add some white space (a margin) before and after a heading.

Headings Are Important

Search engines use the headings to index the structure and content of your web pages.

Users often skim a page by its headings. It is important to use headings to show the document structure.

`<h1>` headings should be used for main headings, followed by `<h2>` headings, then the less important `<h3>`, and so on.

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Note: Use HTML headings for headings only. Don't use headings to make text **BIG** or **bold**.

Bigger Headings

Each HTML heading has a default size. However, you can specify the size for any heading with the `style` attribute, using the CSS `font-size` property:

Example

```
<h1 style="font-size:60px;">Heading 1</h1>
```

HTML Paragraphs

A paragraph always starts on a new line, and is usually a block of text.

HTML Paragraphs

The HTML `<p>` element defines a paragraph.

A paragraph always starts on a new line, and browsers automatically add some white space (a margin) before and after a paragraph.

Example

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

HTML 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 display by adding extra spaces or extra lines in your HTML code.

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

Example

```
<p>
This paragraph
contains a lot of lines
```

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```
in the source code,
but the browser
ignores it.
</p>

<p>
This paragraph
contains        a lot of spaces
in the source        code,
but the        browser
ignores it.
</p>
```

HTML Horizontal Rules

The `<hr>` tag defines a thematic break in an HTML page, and is most often displayed as a horizontal rule.

The `<hr>` element is used to separate content (or define a change) in an HTML page:

Example

```
<h1>This is heading 1</h1>
<p>This is some text.</p>
<hr>
<h2>This is heading 2</h2>
<p>This is some other text.</p>
<hr>
```

The `<hr>` tag is an empty tag, which means that it has no end tag.

HTML Line Breaks

The HTML `<br>` element defines a line break.

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Use
 if you want a line break (a new line) without starting a new paragraph:

Example

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

The
 tag is an empty tag, which means that it has no end tag.

The Poem Problem

This poem will display on a single line:

Example

```
<p>
  My Bonnie lies over the ocean.

  My Bonnie lies over the sea.

  My Bonnie lies over the ocean.

  Oh, bring back my Bonnie to me.
</p>
```

Solution - The HTML <pre> Element

The HTML <pre> element defines preformatted text.

The text inside a <pre> element is displayed in a fixed-width font (usually Courier), and it preserves both spaces and line breaks:

Example

```
<pre>
  My Bonnie lies over the ocean.

  My Bonnie lies over the sea.
```

Code With Ankush

My Bonnie lies over the ocean.

Oh, bring back my Bonnie to me.
</pre>

HTML Styles

The HTML `style` attribute is used to add styles to an element, such as color, font, size, and more.

Example

I am Red

I am Blue

I am Big

The HTML Style Attribute

Setting the style of an HTML element, can be done with the `style` attribute.

The HTML `style` attribute has the following syntax:

<*tagname* style="*property:value;*">

The ***property*** is a CSS property. The ***value*** is a CSS value.

Background Color

The CSS `background-color` property defines the background color for an HTML element.

Example

Set the background color for a page to powderblue:

```
<body style="background-color:powderblue;">

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
```

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Example

Set background color for two different elements:

```
<body>

<h1 style="background-color:powderblue;">This is a heading</h1>
<p style="background-color:tomato;">This is a paragraph.</p>

</body>
```

Text Color

The CSS `color` property defines the text color for an HTML element:

Example

```
<h1 style="color:blue;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>
```

Fonts

The CSS `font-family` property defines the font to be used for an HTML element:

Example

```
<h1 style="font-family:verdana;">This is a heading</h1>
<p style="font-family:courier;">This is a paragraph.</p>
```

Text Size

The CSS `font-size` property defines the text size for an HTML element:

Example

```
<h1 style="font-size:300%;">This is a heading</h1>
<p style="font-size:160%;">This is a paragraph.</p>
```

Text Alignment

The CSS `text-align` property defines the horizontal text alignment for an HTML element:

Example

```
<h1 style="text-align:center;">Centered Heading</h1>
<p style="text-align:center;">Centered paragraph.</p>
```

HTML Text Formatting

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HTML contains several elements for defining text with a special meaning.

Example

This text is bold

This text is italic

This is subscript and superscript

HTML Formatting Elements

Formatting elements were designed to display special types of text:

- <b> - Bold text
- - Important text
- <i> - Italic text
- - Emphasized text
- <mark> - Marked text
- <small> - Smaller text
- <del> - Deleted text
- <ins> - Inserted text
- <sub> - Subscript text
- <sup> - Superscript text

HTML <b> and Elements

The HTML <b> element defines bold text, without any extra importance.

Example

```
<b>This text is bold</b>
```

The HTML element defines text with strong importance. The content inside is typically displayed in bold.

Example

```
<strong>This text is important!</strong>
```

HTML <i> and Elements

The HTML <i> element defines a part of text in an alternate voice or mood. The content inside is typically displayed in italic.

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Tip: The <i> tag is often used to indicate a technical term, a phrase from another language, a thought, a ship name, etc.

Example

```
<i>This text is italic</i>
```

The HTML element defines emphasized text. The content inside is typically displayed in italic.

Tip: A screen reader will pronounce the words in with an emphasis, using verbal stress.

Example

```
<em>This text is emphasized</em>
```

HTML <small> Element

The HTML <small> element defines smaller text:

Example

```
<small>This is some smaller text.</small>
```

HTML <mark> Element

The HTML <mark> element defines text that should be marked or highlighted:

Example

```
<p>Do not forget to buy <mark>milk</mark> today.</p>
```

HTML <del> Element

The HTML <del> element defines text that has been deleted from a document. Browsers will usually strike a line through deleted text:

Example

```
<p>My favorite color is <del>blue</del> red.</p>
```

HTML <ins> Element

The HTML <ins> element defines a text that has been inserted into a document. Browsers will usually underline inserted text:

Example

```
<p>My favorite color is <del>blue</del> <ins>red</ins>.</p>
```

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HTML <sub> Element

The HTML `<sub>` element defines subscript text. Subscript text appears half a character below the normal line, and is sometimes rendered in a smaller font. Subscript text can be used for chemical formulas, like H_2O:

Example

```
<p>This is <sub>subscripted</sub> text.</p>
```

HTML <sup> Element

The HTML `<sup>` element defines superscript text. Superscript text appears half a character above the normal line, and is sometimes rendered in a smaller font. Superscript text can be used for footnotes, like WWW[1]:

Example

```
<p>This is <sup>superscripted</sup> text.</p>
```

HTML Quotation and Citation Elements

In this chapter we will go through the `<blockquote>`,`<q>`, `<abbr>`, `<address>`, `<cite>`, and `<bdo>` HTML elements.

Example

Here is a quote from WWF's website:

For 60 years, WWF has worked to help people and nature thrive. As the world's leading conservation organization, WWF works in nearly 100 countries. At every level, we collaborate with people around the world to develop and deliver innovative solutions that protect communities, wildlife, and the places in which they live.

HTML <blockquote> for Quotations

The HTML `<blockquote>` element defines a section that is quoted from another source.

Browsers usually indent `<blockquote>` elements.

Example

```
<p>Here is a quote from WWF's website:</p>
<blockquote cite="http://www.worldwildlife.org/who/index.html">
For 60 years, WWF has worked to help people and nature thrive. As the world's leading conservation organization, WWF works in nearly 100 countries. At every level, we collaborate with people around the world to develop and deliver
```

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innovative solutions that protect communities, wildlife, and the places in which they live.
</blockquote>

HTML <q> for Short Quotations

The HTML `<q>` tag defines a short quotation.

Browsers normally insert quotation marks around the quotation.

Example

```
<p>WWF's goal is to: <q>Build a future where people live in harmony with nature.</q></p>
```

HTML <abbr> for Abbreviations

The HTML `<abbr>` tag defines an abbreviation or an acronym, like "HTML", "CSS", "Mr.", "Dr.", "ASAP", "ATM".

Marking abbreviations can give useful information to browsers, translation systems and search-engines.

Tip: Use the global title attribute to show the description for the abbreviation/acronym when you mouse over the element.

Example

```
<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>
```

HTML <address> for Contact Information

The HTML `<address>` tag defines the contact information for the author/owner of a document or an article.

The contact information can be an email address, URL, physical address, phone number, social media handle, etc.

The text in the `<address>` element usually renders in *italic*, and browsers will always add a line break before and after the `<address>` element.

Example

```
<address>
Written by John Doe.<br>
Visit us at:<br>
Example.com<br>
Box 564, Disneyland<br>
USA
</address>
```

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HTML <cite> for Work Title

The HTML `<cite>` tag defines the title of a creative work (e.g. a book, a poem, a song, a movie, a painting, a sculpture, etc.).

Note: A person's name is not the title of a work.

The text in the `<cite>` element usually renders in *italic*.

Example

```
<p><cite>The Scream</cite> by Edvard Munch. Painted in 1893.</p>
```

HTML <bdo> for Bi-Directional Override

BDO stands for Bi-Directional Override.

The HTML `<bdo>` tag is used to override the current text direction:

Example

```
<bdo dir="rtl">This text will be written from right to left</bdo>
```

HTML Comments

HTML comments are not displayed in the browser, but they can help document your HTML source code.

HTML Comment Tag

You can add comments to your HTML source by using the following syntax:

```
<!-- Write your comments here -->
```

Notice that there is an exclamation point (!) in the start tag, but not in the end tag.

Note: Comments are not displayed by the browser, but they can help document your HTML source code.

Add Comments

With comments you can place notifications and reminders in your HTML code:

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Example

```
<!-- This is a comment -->

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

<!-- Remember to add more information here -->
```

Hide Content

Comments can be used to hide content.

This can be helpful if you hide content temporarily:

Example

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

<!-- <p>This is another paragraph </p> -->

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

You can also hide more than one line. Everything between the `<!--` and the `-->` will be hidden from the display.

Example

Hide a section of HTML code:

```
<p>This is a paragraph.</p>
<!--
<p>Look at this cool image:</p>
<img border="0" src="pic_trulli.jpg" alt="Trulli">
-->
<p>This is a paragraph too.</p>
```

Hide Inline Content

Comments can be used to hide parts in the middle of the HTML code.

Example

Hide a part of a paragraph:

```
<p>This <!-- great text --> is a paragraph.</p>
```

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HTML Colors

HTML colors are specified with predefined color names, or with RGB, HEX, HSL, RGBA, or HSLA values.

Color Names

In HTML, a color can be specified by using a color name:

LightGray

HTML supports 140 standard color names.

Background Color

You can set the background color for HTML elements:

Hello World

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

Example

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
<p style="background-color:Tomato;">Lorem ipsum...</p>
```

Text Color

You can set the color of text:

Hello World

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

Example

```
<h1 style="color:Tomato;">Hello World</h1>
<p style="color:DodgerBlue;">Lorem ipsum...</p>
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>
```

Border Color

You can set the color of borders:

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Hello World

Hello World

Hello World

Example

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>
<h1 style="border:2px solid Violet;">Hello World</h1>
```

Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values.

The following three elements have their background color set with RGB, HEX, and HSL values:

```
rgb(255, 99, 71)

#ff6347
```

The following two elements have their background color set with RGBA and HSLA values, which add an Alpha channel to the color (here we have 50% transparency):

Example

```
<h1 style="background-color:rgb(255, 99, 71);">...</h1>
<h1 style="background-color:#ff6347;">...</h1>
<h1 style="background-color:hsl(9, 100%, 64%);">...</h1>
```

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```
<h1 style="background-color:rgba(255, 99, 71, 0.5);">...</h1>
<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">...</h1>
```

HTML RGB and RGBA Colors

An RGB color value represents RED, GREEN, and BLUE light sources.

An RGBA color value is an extension of RGB with an Alpha channel (opacity).

RGB Color Values

In HTML, a color can be specified as an RGB value, using this formula:

rgb(*red, green, blue*)

Each parameter (red, green, and blue) defines the intensity of the color with a value between 0 and 255.

This means that there are 256 x 256 x 256 = 16777216 possible colors!

For example, rgb(255, 0, 0) is displayed as red, because red is set to its highest value (255), and the other two (green and blue) are set to 0.

Another example, rgb(0, 255, 0) is displayed as green, because green is set to its highest value (255), and the other two (red and blue) are set to 0.

To display black, set all color parameters to 0, like this: rgb(0, 0, 0).

To display white, set all color parameters to 255, like this: rgb(255, 255, 255).

Experiment by mixing the RGB values below:

```
rgb(255, 99, 71)
```

RED

255

GREEN

99

BLUE

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Example

rgb(255, 0, 0)

rgb(0, 0, 255)

rgb(60, 179, 113)

rgb(238, 130, 238)

rgb(255, 165, 0)

rgb(106, 90, 205)

Code

Shades of Gray

Shades of gray are often defined using equal values for all three parameters:

Example

rgb(60, 60, 60)

```
rgb(100, 100, 100)
rgb(140, 140, 140)
rgb(180, 180, 180)
rgb(200, 200, 200)
rgb(240, 240, 240)
```

RGBA Color Values

RGBA color values are an extension of RGB color values with an Alpha channel - which specifies the opacity for a color.

An RGBA color value is specified with:

`rgba(red, green, blue, alpha)`

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

HTML HEX Colors

A hexadecimal color is specified with: #RRGGBB, where the RR (red), GG (green) and BB (blue) hexadecimal integers specify the components of the color.

HEX Color Values

In HTML, a color can be specified using a hexadecimal value in the form:

Code With

#rrggbb

Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

For example, #ff0000 is displayed as red, because red is set to its highest value (ff), and the other two (green and blue) are set to 00.

Another example, #00ff00 is displayed as green, because green is set to its highest value (ff), and the other two (red and blue) are set to 00.

To display black, set all color parameters to 00, like this: #000000.

To display white, set all color parameters to ff, like this: #ffffff.

Experiment by mixing the HEX values below:

#ff6347

Example

#ff0000

#0000ff

#3cb371

#ee82ee

#ffa500

#6a5acd

Shades of Gray

Shades of gray are often defined using equal values for all three parameters:

Example

#404040

#686868

#a0a0a0

#bebebe

#dcdcdc

#f8f8f8

HTML HSL and HSLA Colors

HSL stands for hue, saturation, and lightness.

HSLA color values are an extension of HSL with an Alpha channel (opacity).

HSL Color Values

In HTML, a color can be specified using hue, saturation, and lightness (HSL) in the form:

`hsl(hue, saturation, lightness)`

Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue.

Saturation is a percentage value. 0% means a shade of gray, and 100% is the full color.

Lightness is also a percentage value. 0% is black, and 100% is white.

Experiment by mixing the HSL values below:

```
hsl(0, 100%, 50%)
```

Saturation

Saturation can be described as the intensity of a color.

100% is pure color, no shades of gray.

50% is 50% gray, but you can still see the color.

0% is completely gray; you can no longer see the color.

Lightness

The lightness of a color can be described as how much light you want to give the color, where 0% means no light (black), 50% means 50% light (neither dark nor light), and 100% means full lightness (white).\

Shades of Gray

Shades of gray are often defined by setting the hue and saturation to 0, and adjusting the lightness from 0% to 100% to get darker/lighter shades:

HSLA Color Values

HSLA color values are an extension of HSL color values, with an Alpha channel - which specifies the opacity for a color.

An HSLA color value is specified with:

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hsla(*hue, saturation, lightness, alpha*)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

HTML Links

Links are found in nearly all web pages. Links allow users to click their way from page to page.

HTML Links - Hyperlinks

HTML links are hyperlinks.

You can click on a link and jump to another document.

When you move the mouse over a link, the mouse arrow will turn into a little hand.

Note: A link does not have to be text. A link can be an image or any other HTML element!

HTML Links - Syntax

The HTML `<a>` tag defines a hyperlink. It has the following syntax:

```
<a href="url">link text</a>
```

The most important attribute of the `<a>` element is the `href` attribute, which indicates the link's destination.

The *link text* is the part that will be visible to the reader.

Clicking on the link text, will send the reader to the specified URL address.

Example

This example shows how to create a link to W3Schools.com:

```
<a href="https://code with ANKUSH.com/">Visit W3Schools.com!</a>
```

By default, links will appear as follows in all browsers:

- An unvisited link is underlined and blue
- A visited link is underlined and purple
- An active link is underlined and red

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Tip: Links can of course be styled with CSS, to get another look!

HTML Links - The target Attribute

By default, the linked page will be displayed in the current browser window. To change this, you must specify another target for the link.

The `target` attribute specifies where to open the linked document.

The `target` attribute can have one of the following values:

- `_self` - Default. Opens the document in the same window/tab as it was clicked
- `_blank` - Opens the document in a new window or tab
- `_parent` - Opens the document in the parent frame
- `_top` - Opens the document in the full body of the window

Example

Use target="_blank" to open the linked document in a new browser window or tab:

```
<a href="https://www.CODE WITH ANKUSH.com/" target="_blank">Visit WEBSITE</a>
```

Absolute URLs vs. Relative URLs

Both examples above are using an **absolute URL** (a full web address) in the `href` attribute.

A local link (a link to a page within the same website) is specified with a **relative URL** (without the "https://www" part):

Example

```
<h2>Absolute URLs</h2>
<p><a href="https://www.w3.org/">W3C</a></p>
<p><a href="https://www.google.com/">Google</a></p>

<h2>Relative URLs</h2>
<p><a href="html_images.asp">HTML Images</a></p>
<p><a href="/css/default.asp">CSS Tutorial</a></p>
```

HTML Links - Use an Image as a Link

To use an image as a link, just put the `<img>` tag inside the `<a>` tag:

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Example

```
<a href="default.asp">
<img src="smiley.gif" alt="HTML tutorial" style="width:42px;height:42px;">
</a>
```

Link to an Email Address

Use `mailto:` inside the `href` attribute to create a link that opens the user's email program (to let them send a new email):

Example

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

Button as a Link

To use an HTML button as a link, you have to add some JavaScript code.

JavaScript allows you to specify what happens at certain events, such as a click of a button:

Example

```
<button onclick="document.location='default.asp'">HTML Tutorial</button>
```

Link Titles

The `title` attribute specifies extra information about an element. The information is most often shown as a tooltip text when the mouse moves over the element.

Example

```
<a href="https://www.CODE WITH ANKUSH.com/html/" title="Go to HTML section">Visit our HTML Tutorial</a>
```

More on Absolute URLs and Relative URLs

Example

Use a full URL to link to a web page:

```
<a href="https://www.CODE WITH ANKUSH.com/html/default.asp">HTML tutorial</a>
```

Example

Link to a page located in the html folder on the current web site:

```
<a href="/html/default.asp">HTML tutorial</a>
```

Example

Link to a page located in the same folder as the current page:

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```
<a href="default.asp">HTML tutorial</a>
```

HTML Links - Create Bookmarks

HTML links can be used to create bookmarks, so that readers can jump to specific parts of a web page.

Create a Bookmark in HTML

Bookmarks can be useful if a web page is very long.

To create a bookmark - first create the bookmark, then add a link to it.

When the link is clicked, the page will scroll down or up to the location with the bookmark.

Example

First, use the `id` attribute to create a bookmark:

```
<h2 id="C4">Chapter 4</h2>
```

Then, add a link to the bookmark ("Jump to Chapter 4"), from within the same page:

Example

```
<a href="#C4">Jump to Chapter 4</a>
```

You can also add a link to a bookmark on another page:

```
<a href="html_demo.html#C4">Jump to Chapter 4</a>
```

HTML Images

Images can improve the design and the appearance of a web page.

Example

```
<img src="pic_trulli.jpg" alt="Italian Trulli">
```

Example

```
<img src="img_girl.jpg" alt="Girl in a jacket">
```

Example

```
<img src="img_chania.jpg" alt="Flowers in Chania">
```

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HTML Images Syntax

The HTML `<img>` tag is used to embed an image in a web page.

Images are not technically inserted into a web page; images are linked to web pages. The `<img>` tag creates a holding space for the referenced image.

The `<img>` tag is empty, it contains attributes only, and does not have a closing tag.

The `<img>` tag has two required attributes:

- src - Specifies the path to the image
- alt - Specifies an alternate text for the image

Syntax

```
<img src="url" alt="alternatetext">
```

The src Attribute

The required `src` attribute specifies the path (URL) to the image.

Note: When a web page loads, it is the browser, at that moment, that gets the image from a web server and inserts it into the page. Therefore, make sure that the image actually stays in the same spot in relation to the web page, otherwise your visitors will get a broken link icon. The broken link icon and the `alt` text are shown if the browser cannot find the image.

Example

```
<img src="img_chania.jpg" alt="Flowers in Chania">
```

The alt Attribute

The required `alt` attribute provides an alternate text for an image, if the user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).

The value of the `alt` attribute should describe the image:

Example

```
<img src="img_chania.jpg" alt="Flowers in Chania">
```

If a browser cannot find an image, it will display the value of the `alt` attribute:

Example

```
<img src="wrongname.gif" alt="Flowers in Chania">
```

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Image Size - Width and Height

You can use the `style` attribute to specify the width and height of an image.

Example

```
<img src="img_girl.jpg" alt="Girl in a jacket" style="width:500px;height:600px;">
```

Alternatively, you can use the `width` and `height` attributes:

Example

```
<img src="img_girl.jpg" alt="Girl in a jacket" width="500" height="600">
```

The `width` and `height` attributes always define the width and height of the image in pixels.

Width and Height, or Style?

The `width`, `height`, and `style` attributes are all valid in HTML.

However, we suggest using the `style` attribute. It prevents styles sheets from changing the size of images:

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
img {
  width: 100%;
}
</style>
</head>
<body>

<img src="html5.gif" alt="HTML5 Icon" width="128" height="128">

<img src="html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">

</body>
</html>
```

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Images in Another Folder

If you have your images in a sub-folder, you must include the folder name in the `src` attribute:

Example

```
<img src="/images/html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">
```

Images on Another Server/Website

Some web sites point to an image on another server.

To point to an image on another server, you must specify an absolute (full) URL in the `src` attribute:

Example

```
<img src="https://www.CODW WITH ANKUSH.com/images/w3schools_green.jpg" alt="CODE WITH ANKUSH.com">
```

Notes on external images: External images might be under copyright. If you do not get permission to use it, you may be in violation of copyright laws. In addition, you cannot control external images; they can suddenly be removed or changed.

Animated Images

HTML allows animated GIFs:

Example

```
<img src="programming.gif" alt="Computer Man" style="width:48px;height:48px;">
```

Image as a Link

To use an image as a link, put the `<img>` tag inside the `<a>` tag:

Example

```
<a href="default.asp">
  <img src="smiley.gif" alt="HTML tutorial" style="width:42px;height:42px;">
</a>
```

Image Floating

Use the CSS `float` property to let the image float to the right or to the left of a text:

Example

```
<p><img src="smiley.gif" alt="Smiley face" style="float:right;width:42px;height:42px;">
The image will float to the right of the text.</p>

<p><img src="smiley.gif" alt="Smiley face" style="float:left;width:42px;height:42px;">
The image will float to the left of the text.</p>
```

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Tip: To learn more about CSS Float, read our CSS Float Tutorial.

Common Image Formats

Here are the most common image file types, which are supported in all browsers (Chrome, Edge, Firefox, Safari, Opera):

Abbreviation	File Format	File Extension
APNG	Animated Portable Network Graphics	.apng
GIF	Graphics Interchange Format	.gif
ICO	Microsoft Icon	.ico, .cur
JPEG	Joint Photographic Expert Group image	.jpg, .jpeg, .jfif, .pjpeg, .pjp
PNG	Portable Network Graphics	.png
SVG	Scalable Vector Graphics	.svg

Image Maps

The HTML `<map>` tag defines an image map. An image map is an image with clickable areas. The areas are defined with one or more `<area>` tags.

Try to click on the computer, phone, or the cup of coffee in the image below:

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Example

Here is the HTML source code for the image map above:

```
<img src="workplace.jpg" alt="Workplace" usemap="#workmap">

<map name="workmap">
  <area shape="rect" coords="34,44,270,350" alt="Computer" href="computer.htm">
  <area shape="rect" coords="290,172,333,250" alt="Phone" href="phone.htm">
  <area shape="circle" coords="337,300,44" alt="Coffee" href="coffee.htm">
</map>
```

How Does it Work?

The idea behind an image map is that you should be able to perform different actions depending on where in the image you click.

To create an image map you need an image, and some HTML code that describes the clickable areas.

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The Image

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The image is inserted using the `<img>` tag. The only difference from other images is that you must add a `usemap` attribute:

```
<img src="workplace.jpg" alt="Workplace" usemap="#workmap">
```

The `usemap` value starts with a hash tag `#` followed by the name of the image map, and is used to create a relationship between the image and the image map.

Tip: You can use any image as an image map!

Create Image Map

Then, add a `<map>` element.

The `<map>` element is used to create an image map, and is linked to the image by using the required `name` attribute:

```
<map name="workmap">
```

The `name` attribute must have the same value as the `<img>`'s `usemap` attribute .

The Areas

Then, add the clickable areas.

A clickable area is defined using an `<area>` element.

Shape

You must define the shape of the clickable area, and you can choose one of these values:

- `rect` - defines a rectangular region
- `circle` - defines a circular region
- `poly` - defines a polygonal region
- `default` - defines the entire region

You must also define some coordinates to be able to place the clickable area onto the image.

Shape="rect"

The coordinates for `shape="rect"` come in pairs, one for the x-axis and one for the y-axis.

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So, the coordinates `34,44` is located 34 pixels from the left margin and 44 pixels from the top:

The coordinates `270,350` is located 270 pixels from the left margin and 350 pixels from the top:

Now we have enough data to create a clickable rectangular area:

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Example

```
<area shape="rect" coords="34, 44, 270, 350" href="computer.htm">
```

This is the area that becomes clickable and will send the user to the page "computer.htm":

Shape="circle"

To add a circle area, first locate the coordinates of the center of the circle:

```
337,300
```

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Then specify the radius of the circle:

`44` pixels

Now you have enough data to create a clickable circular area:

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Example

```
<area shape="circle" coords="337, 300, 44" href="coffee.htm">
```

This is the area that becomes clickable and will send the user to the page "coffee.htm":

Shape="poly"

The `shape="poly"` contains several coordinate points, which creates a shape formed with straight lines (a polygon).

This can be used to create any shape.

Like maybe a croissant shape!

How can we make the croissant in the image below become a clickable link?

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We have to find the x and y coordinates for all edges of the croissant:

The coordinates come in pairs, one for the x-axis and one for the y-axis:

Example

```
<area shape="poly"
coords="140,121,181,116,204,160,204,222,191,270,140,329,85,355,58,352,37,322,40,259,103,161,128,147"
href="croissant.htm">
```

This is the area that becomes clickable and will send the user to the page "croissant.htm":

Image Map and JavaScript

A clickable area can also trigger a JavaScript function.

Add a `click` event to the `<area>` element to execute a JavaScript function:

Example

Here, we use the onclick attribute to execute a JavaScript function when the area is clicked:

```
<map name="workmap">
  <area shape="circle" coords="337,300,44" href="coffee.htm" onclick="myFunction()">
</map>

<script>
function myFunction() {
  alert("You clicked the coffee cup!");
}
</script>
```

The HTML `<video>` element is used to show a video on a web page.

Example

Courtesy of Big Buck Bunny:

Your browser does not support HTML5 video.

The HTML <video> Element

To show a video in HTML, use the `<video>` element:

Example

```
<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

How it Works

The `controls` attribute adds video controls, like play, pause, and volume.

It is a good idea to always include `width` and `height` attributes. If height and width are not set, the page might flicker while the video loads.

The `<source>` element allows you to specify alternative video files which the browser may choose from. The browser will use the first recognized format.

The text between the `<video>` and `</video>` tags will only be displayed in browsers that do not support the `<video>` element.

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HTML <video> Autoplay

To start a video automatically, use the `autoplay` attribute:

Example

```
<video width="320" height="240" autoplay>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

Note: Chromium browsers do not allow autoplay in most cases. However, muted autoplay is always allowed.

Add `muted` after `autoplay` to let your video start playing automatically (but muted):

Example

```
<video width="320" height="240" autoplay muted>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

Browser Support

The numbers in the table specify the first browser version that fully supports the `<video>` element.

Element					
<video>	4.0	9.0	3.5	4.0	10.5

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HTML Video Formats

There are three supported video formats: MP4, WebM, and Ogg. The browser support for the different formats is:

Browser	MP4	WebM	Ogg
Edge	YES	YES	YES

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Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	YES	NO
Opera	YES	YES	YES

HTML Video - Media Types

File Format	Media Type
MP4	video/mp4
WebM	video/webm
Ogg	video/ogg

HTML Video - Methods, Properties, and Events

The HTML DOM defines methods, properties, and events for the `<video>` element.

This allows you to load, play, and pause videos, as well as setting duration and volume.

There are also DOM events that can notify you when a video begins to play, is paused, etc.

Example: Using JavaScript

Your browser does not support HTML5 video.

Video courtesy of Big Buck Bunny.

For a full DOM reference, go to our HTML Audio/Video DOM Reference.

HTML Video Tags

Tag	Description
<video>	Defines a video or movie

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<source>	Defines multiple media resources for media elements, such as <video> and <audio>
<track>	Defines text tracks in media players

HTML Audio

The HTML `<audio>` element is used to play an audio file on a web page.

The HTML <audio> Element

To play an audio file in HTML, use the `<audio>` element:

Example

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

HTML Audio - How It Works

The `controls` attribute adds audio controls, like play, pause, and volume.

The `<source>` element allows you to specify alternative audio files which the browser may choose from. The browser will use the first recognized format.

The text between the `<audio>` and `</audio>` tags will only be displayed in browsers that do not support the `<audio>` element.

HTML <audio> Autoplay

To start an audio file automatically, use the `autoplay` attribute:

Example

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

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Note: Chromium browsers do not allow autoplay in most cases. However, muted autoplay is always allowed.

Add `muted` after `autoplay` to let your audio file start playing automatically (but muted):

Example

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

Browser Support

The numbers in the table specify the first browser version that fully supports the `<audio>` element.

Element					
<audio>	4.0	9.0	3.5	4.0	10.5

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HTML Audio Formats

There are three supported audio formats: MP3, WAV, and OGG. The browser support for the different formats is:

Browser	MP3	WAV	OGG
Edge/IE	YES	YES*	YES*
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	YES	NO
Opera	YES	YES	YES

*From Edge 79

HTML Audio - Media Types

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File Format	Media Type
MP3	audio/mpeg
OGG	audio/ogg
WAV	audio/wav

HTML Audio - Methods, Properties, and Events

The HTML DOM defines methods, properties, and events for the `<audio>` element.

This allows you to load, play, and pause audios, as well as set duration and volume.

There are also DOM events that can notify you when an audio begins to play, is paused, etc.

For a full DOM reference, go to our HTML Audio/Video DOM Reference.

HTML Audio Tags

Tag	Description
<audio>	Defines sound content
<source>	Defines multiple media resources for media elements, such as <video> and <audio>

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