

HYPER TEXT MARKUP LANGUAGE (HTML)

The language used to develop web pages is called HTML. HTML is the language interpreted by a browser. Web pages are also called HTML document.

HTML is a set of special codes (Tags) that can be embedded in text to add formatting and linking information.

A web site is a group of web pages. **Hyper text** means a text which has been decorated.

HTML, or HyperText Markup Language, is the standard language used to create and design documents on the World Wide Web. It provides the structure and content of web pages by using a markup system consisting of various elements and tags.

Here's a detailed breakdown of HTML:

- **HyperText:** HTML documents contain hyperlinks that allow users to navigate between pages and access different resources on the web.
- **Markup Language:** HTML is a markup language because it uses tags to define elements within the document. Tags are enclosed in angle brackets < > and are used to define the structure and content of the page.

Advantages of HTML

HTML offers several advantages that make it a preferred choice for creating web pages and web applications. Here are some key advantages:

- **Ease of Learning and Use:** HTML has a relatively simple syntax and straightforward structure, making it easy for beginners to learn and use. Its tag-based markup system allows developers to create web content without needing advanced programming skills.
- **Platform Independence:** HTML is platform-independent, meaning web pages created with HTML can be accessed and viewed on any device with a web browser, regardless of the operating system or hardware platform. This universality contributes to the widespread adoption of HTML for web development.
- **SEO-Friendliness:** HTML provides features that are beneficial for search engine optimization (SEO), such as semantic markup, proper use of headings, meta tags, and structured data markup. These features help search engines understand and index web pages more effectively, improving their visibility in search results.
- **Integration with Other Technologies:** HTML can be easily integrated with other web technologies like CSS (Cascading Style Sheets) for styling and layout, JavaScript for interactivity and dynamic behavior.
- **Compatibility:** HTML is supported by all major web browsers, ensuring compatibility across different platforms and devices. While minor rendering differences may exist, HTML provides a standardized way to create web content that works consistently across various browsers and devices.

Applications of HTML include:

- **Static Websites:** HTML is commonly used to create static websites, which contain fixed content and layout that does not change frequently. Static websites are suitable for businesses, portfolios, blogs, and informational sites.
- **Dynamic Web Pages:** HTML, in conjunction with CSS and JavaScript, can be used to create dynamic web pages that respond to user interactions and input.

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Dynamic web pages enable features like form validation, real-time updates, and interactive user interfaces.

- **Web Applications:** HTML serves as the foundation for building web applications, which are software programs accessed through a web browser. Web applications can range from simple applications like email clients and online banking portals to complex applications like social media platforms and online marketplaces.

### HTML TAGS

TAGS are Instruction that are embedded directly in to the text of the document. An HTML TAG is a signal to a browser that it should do something other than displaying it as text on the screen.

HTML tags are the building blocks of HTML documents. They define the structure and content of web pages. HTML tags are enclosed in angle brackets < > and typically come in pairs: an opening tag and a closing tag. Here are some common HTML tags categorized by their functionality:

#### Document Structure Tags:

- <html>: Defines the root of an HTML document.
- <head>: Contains meta-information about the document, such as the title, links to stylesheets, and scripts.
- <title>: Sets the title of the document, displayed in the browser's title bar or tab.
- <body>: Contains the main content of the document.

#### Text Formatting Tags:

- <h1>, <h2>, <h3>, <h4>, <h5>, <h6>: Define headings of different levels.
- <p>: Represents a paragraph of text.
- <strong> or <b>: Indicates strong importance, typically displayed as bold.
- <em> or <i>: Indicates emphasis, typically displayed as italic.
- <u>: Underlines text.
- <br>: Inserts a line break within text.
- <hr>: Creates a horizontal rule (a line) to separate content.

#### Lists:

- <ul>: Defines an unordered list (bullet points).
- <ol>: Defines an ordered list (numbered points).
- <li>: Represents a list item within <ul> or <ol>.

#### Links and Anchors:

- <a>: Creates a hyperlink.
- <href>: Specifies the URL of the linked document.
- <target>: Specifies where to open the linked document (\_blank, \_self, \_parent, \_top).

#### Images:

- <img>: Embeds an image.
- <src>: Specifies the URL of the image.

#### Tables:

- <table>: Defines a table.

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- <tr>: Defines a table row.
- <td>: Defines a table cell (data).
- <th>: Defines a table header cell.

**Forms:**

- <form>: Defines a form for user input.
- <input>: Creates an input control (text field, checkbox, radio button, etc.).
- <textarea>: Creates a multiline text input control.
- <select>: Creates a dropdown list.
- <button>: Creates a clickable button.

HTML tags can be categorized into two main types based on whether they require both an opening and a closing tag:

**Paired Tags (or Paired Elements):**

Paired tags consist of both an opening tag and a closing tag. The opening tag <tag> marks the beginning of the element, and the closing tag </tag> marks the end.

Content is placed between the opening and closing tags.

Examples of paired tags include <p>, <div>, <h1>, <ul>, <li>, <table>, <a>, etc.

Example:

- <p>This is a paragraph.</p>
- <div>This is a division.</div>

**Unpaired Tags (or Self-Closing Tags):**

Unpaired tags do not require a separate closing tag.

They are self-contained and typically represent standalone elements or empty containers.

Unpaired tags end with a forward slash / before the closing angle bracket >.

Examples of unpaired tags include <br>, <img>, <hr>, etc.

**Step by Step Explanation on how to write, save, and run your very first HTML code.**

**Step 1: Open a Text Editor**

You don't need special software to write HTML. You can use:

- Notepad (Windows)
- TextEdit (Mac → set it to plain text mode)

**Step 2: Write Your First HTML Code**

Type the following code in your editor:

```
<!DOCTYPE html>
<html>
<head>
  <title>My First HTML Page</title>
</head>
<body>
  <h1>Hello, World!</h1>
```



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```
<p>This is my first web page.</p>  
</body>  
</html>
```

**Step 3: Save the File**

1. In your text editor, click **File** → **Save As**.
2. Choose a location (like **Desktop**).
3. Enter a name, for example:
4. index.html
5. Select **Save as type: All Files** (if using Notepad).

**Step 4: Run the HTML File**

- Go to the location where you saved index.html.
  - Double-click the file.
  - It will open in your **default web browser** (Chrome, Edge, Firefox, etc.).
- You'll see:

**Hello, World!** (big heading)  
This is my first web page. (paragraph text)

**Step 5 (Optional: Edit and Refresh)**

- Go back to your editor, make changes (like changing text).
- Save the file.
- Refresh the browser to see the changes instantly.



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