



Introduzione alle Applicazioni Web

# HTML

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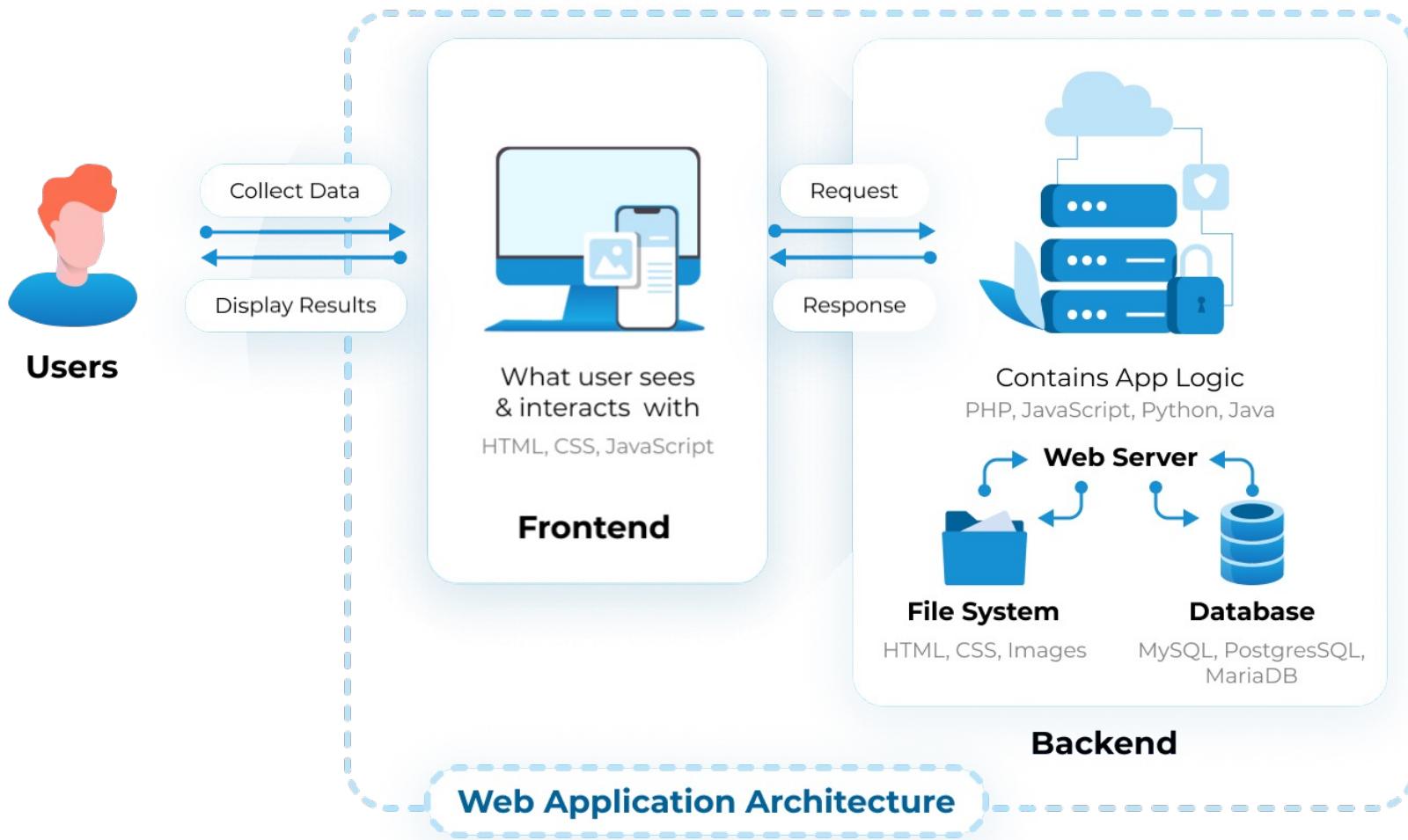


# Goals

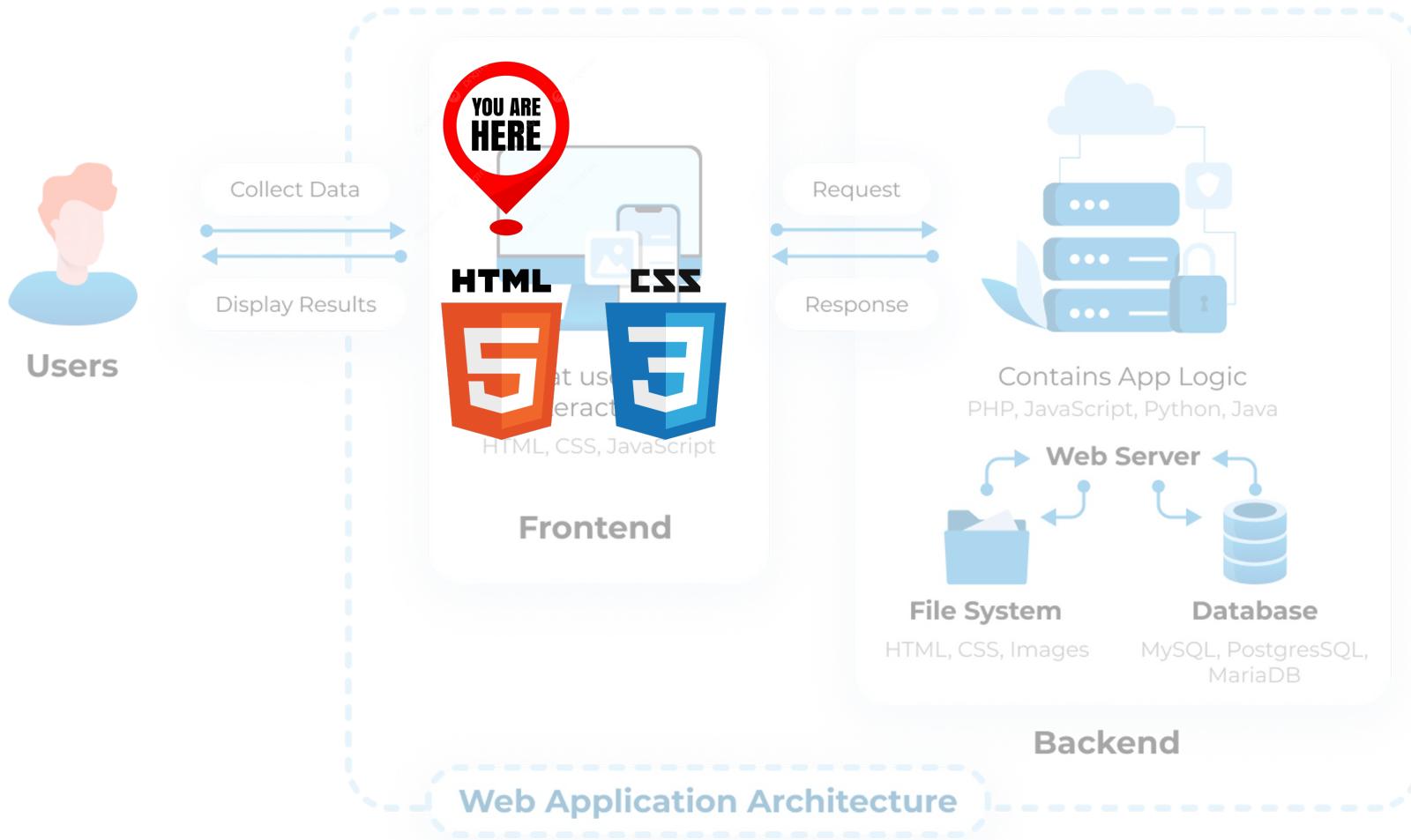
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- Understand **HTML document structure** and **syntax**.
- Learn essential and **semantic elements**.
- Explore **page structuring principles**.
- All of the above, aligned with **HTML5** standards in 2023.

# HTML: where are we?



# 📍 HTML: where are we?



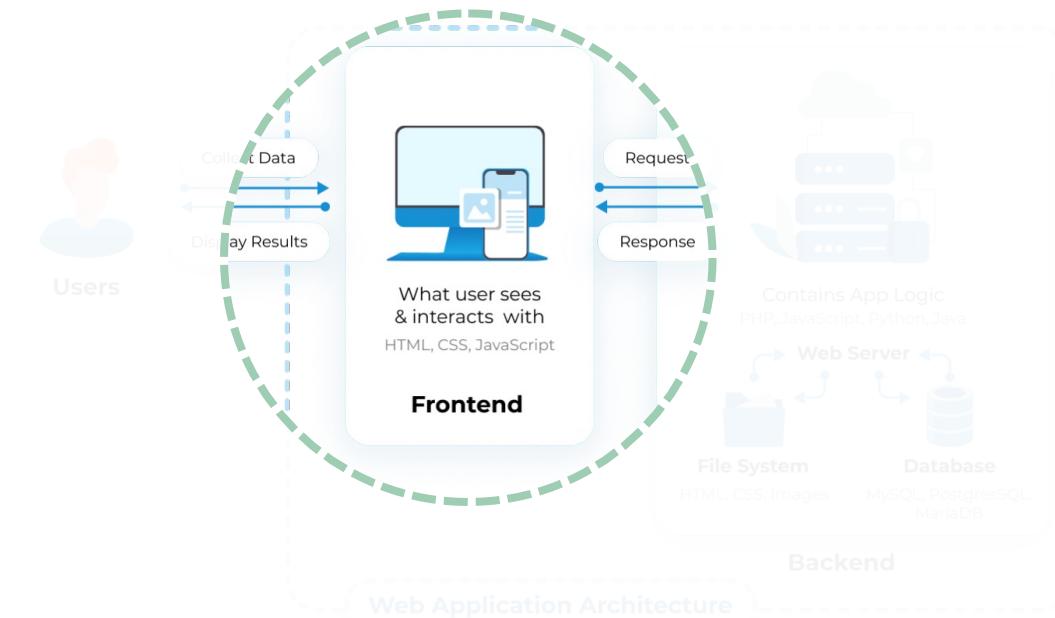


# Web architecture components: Frontend

**Frontend:** what the user sees and interacts with

Languages:

- **HTML:** a markup language used to **structure content on the web**. It defines elements like headings, paragraphs, images, and links.
- **CSS:** a style sheet language used to **control the presentation of HTML elements**, such as colors, fonts, and layouts.
- **JavaScript:** a programming language used to **add interactivity and dynamic behavior** to web pages.



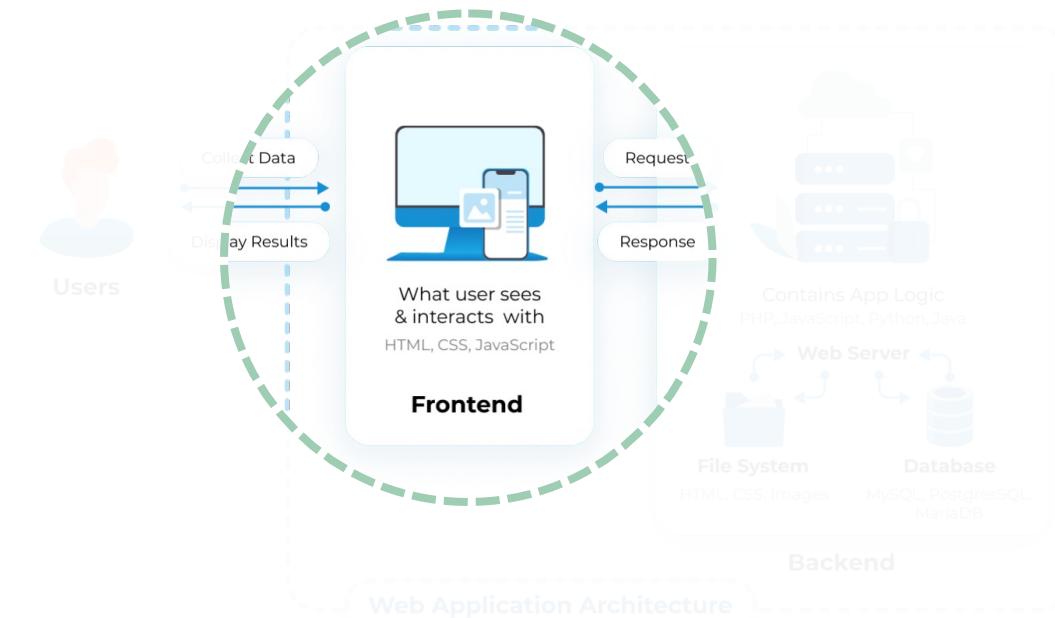


# Web architecture components: Frontend

**Frontend:** what the user sees and interacts with

**Applications:**

- **Browser:** an application that **retrieves, interprets, and displays web content**, including HTML, CSS, and JavaScript.



# A basic HTML document

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-  Nested tree of elements
- `<!DOCTYPE html>`: tells the web browser that the document follows the **HTML5** standard.
  - It should always be the first line in an HTML document before the `<html>` tag.
- `<html>`: defines the **root** element of an HTML document.
  - `lang="en"`: an **attribute** to specify the **language** of the content.

For browsers, search engines, and other tools (text-to-speech, spell-checking, and correct rendering).

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Sample page</title>
</head>
<body>
    <h1>Sample page</h1>
    <p>This is a simple sample.</p>
</body>
</html>
```

# A basic HTML document

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- <head>: contains **meta-information** about the document, such as the title and **links to external resources**.
- <title>: sets the webpage's **title**, shown in the browser tab.
- <body>: contains the content of the webpage **visible to users**.
- <h1>: a **top-level heading**, typically used for main titles.
- <p>: a **paragraph** of text.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Sample page</title>
</head>
<body>
    <h1>Sample page</h1>
    <p>This is a simple sample.</p>
</body>
</html>
```

# A basic HTML document

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- <!-- This is a comment -->
- <a href="demo.html">: creates a **hyperlink** where `href` specifies the target URL (in this case, "demo.html")
  - End tag: </a>
  - Inner text: simple
- Attributes: **name-value** pairs.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Sample page</title>
</head>
<body>
    <h1>Sample page</h1>
    <p>This is a <a href="demo.html">simple</a> sample.</p>
    <!-- This is a comment -->
</body>
</html>
```

# Let's see it in practice

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# Always Format Code! 🙏

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- **Mac:** Shift + Option + F
- **Windows:** Shift + Alt + F

```
<ul id="bigBarNavigation">
<li><a href="/">Home</a>
</li><li><a href="/contact">Contact US</a></li><li>
    <a href="/about">About US</a></li></ul>
```

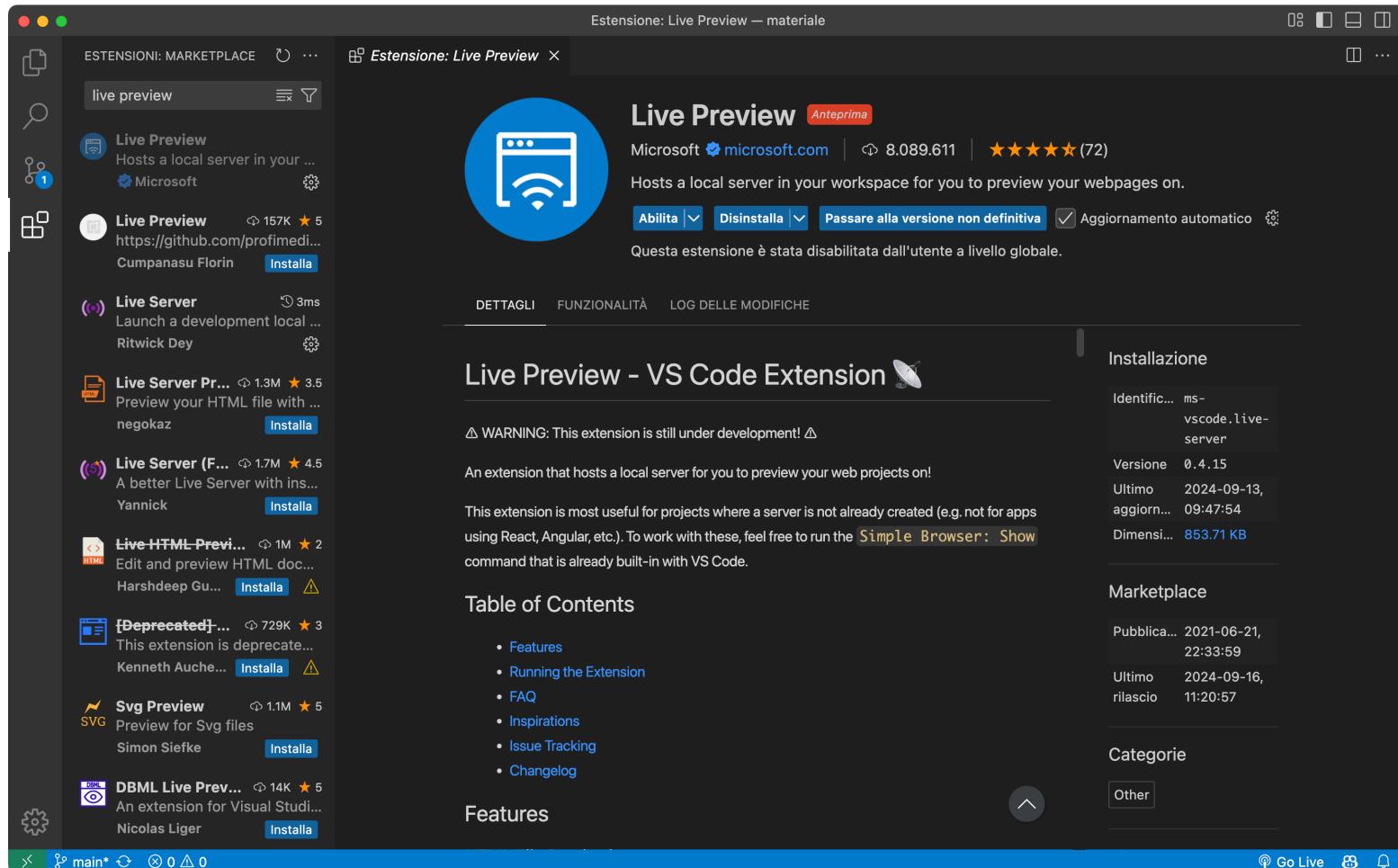
Looks messy and hard to read

```
<ul id="bigBarNavigation">
<li><a href="/">Home</a></li>
<li><a href="/contact">Contact US</a></li>
<li>
    <a href="/about">About US</a>
    <div class="subMenne">

    </div>
</li>
</ul>
```

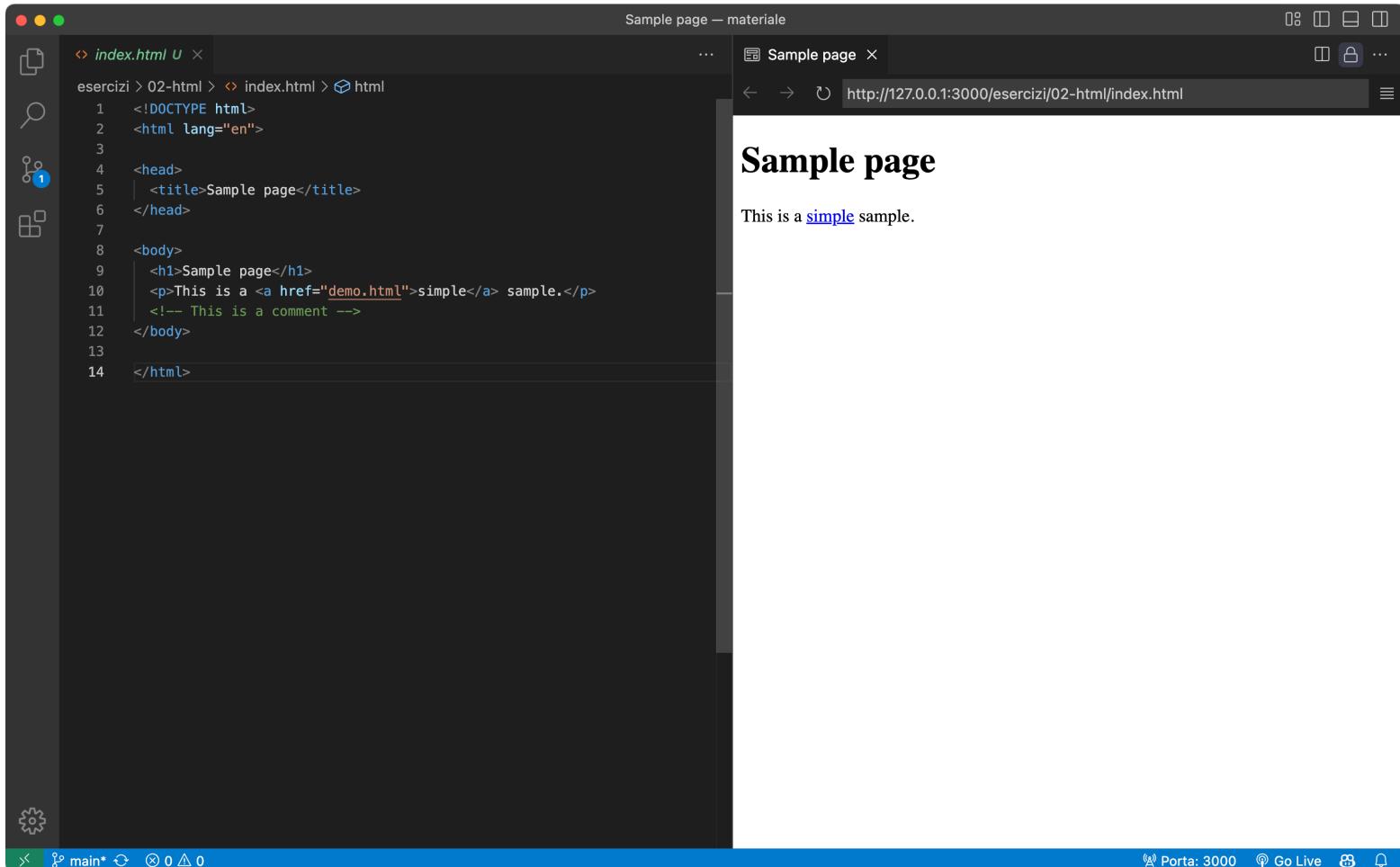
Looks nice, clean and easy to read

# Install Live Preview

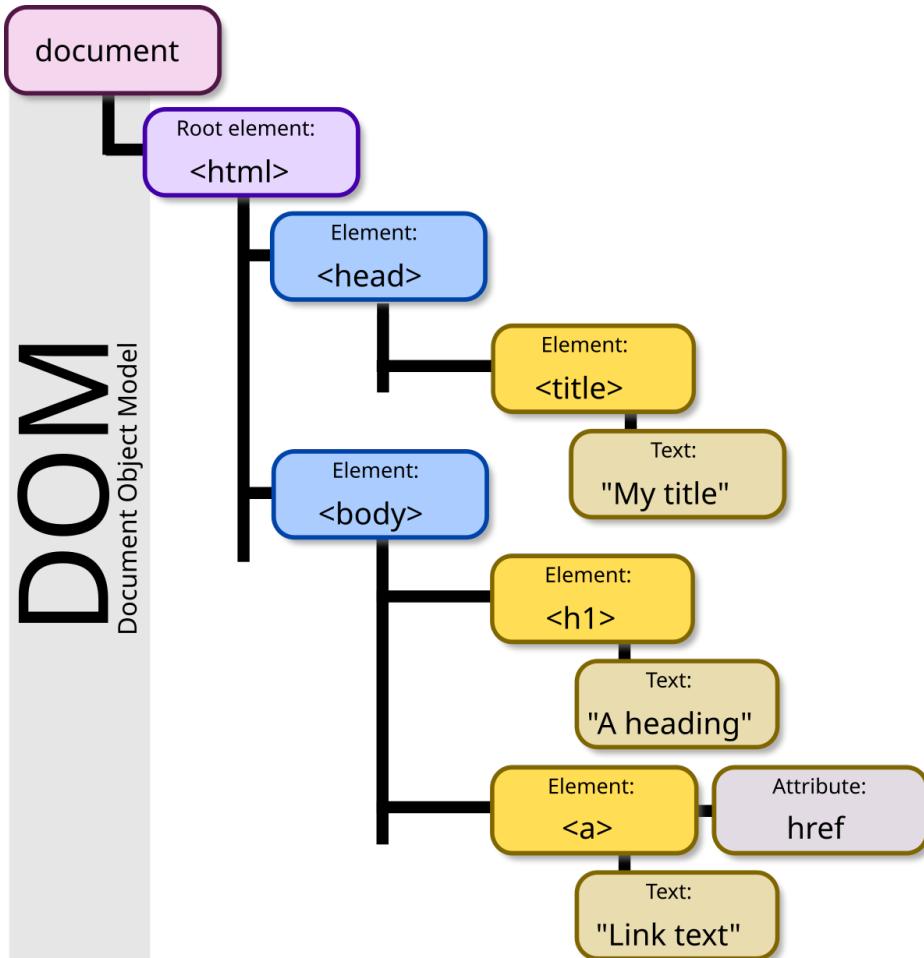


# Install Live Preview

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# Document Object Model (DOM)



- **Browser's internal representation** of a web page.
  - Obtained through parsing HTML.
  - Each node corresponds to a part of the document (e.g., elements, attributes, text)
- **Dynamic content manipulation**: allows JavaScript to modify a webpage's content, structure, and style in real time.
- **Navigation**: provides a way to traverse through elements and attributes, allowing scripts to access and manipulate specific parts of the webpage.

[https://en.wikipedia.org/wiki/Document\\_Object\\_Model](https://en.wikipedia.org/wiki/Document_Object_Model)

# HTML elements

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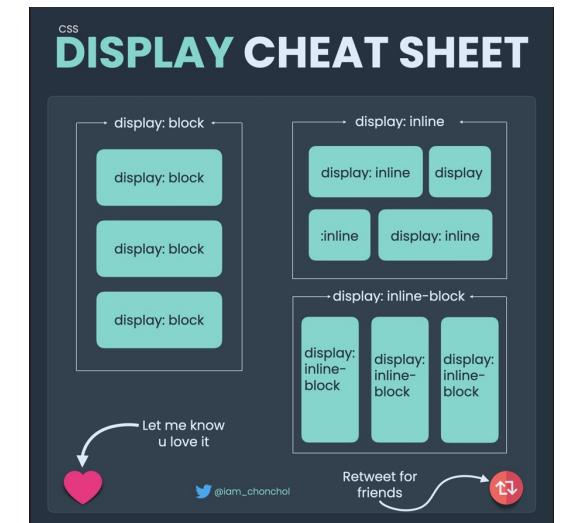
Used to define the **meaning** of a portion of a document.

The meaning will be rendered graphically, according to the stylesheets (CSS)

- ! No HTML code should deal with presentation issues!

Each element has a default **display** value

- **display:block:**
  - full-width, starts on a new line, top-to-bottom layout
- **display:inline:**
  - does not start a new line, occupies just the necessary space, left-to-right layout, wraps at the end of line.



# HTML elements reference

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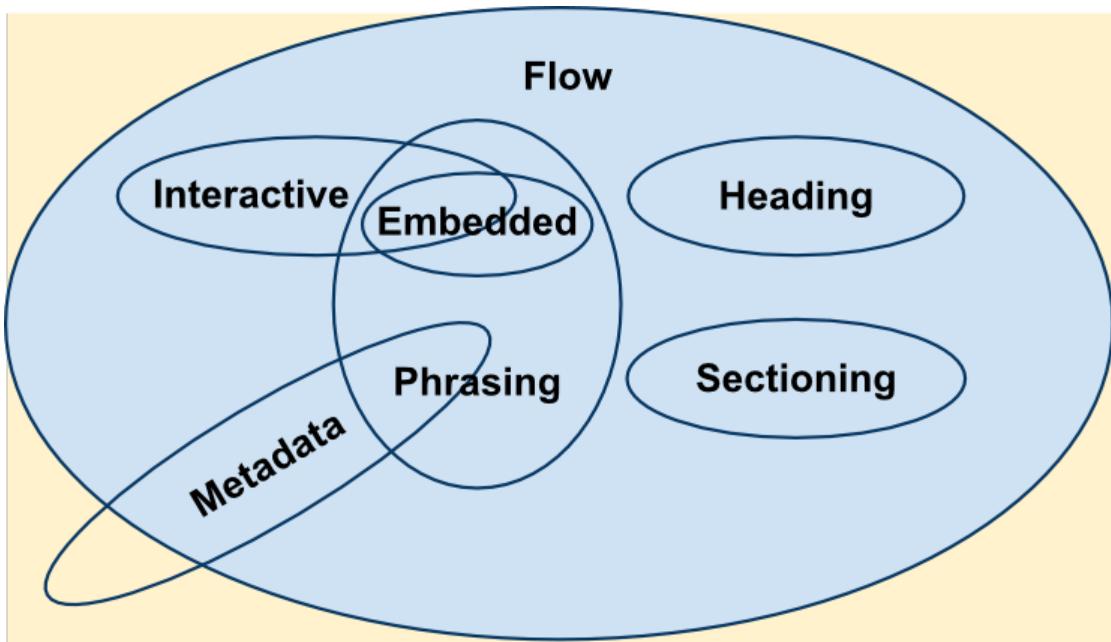


The **MDN Web Docs** site provides information about Open Web technologies, including **HTML**, **CSS**, and APIs for both Web sites and progressive web apps.

- <https://developer.mozilla.org/en-US/docs/Web/HTML/Element>

# HTML elements categories

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- **Flow content:** a broad category that encompasses most elements that can go inside the <body>
- **Sectioning content:** define the structure of a webpage by grouping related content into sections.  
Divide the page into logical areas, such as headers, footers, navigation, and main content.

<article>

<aside>

<nav>

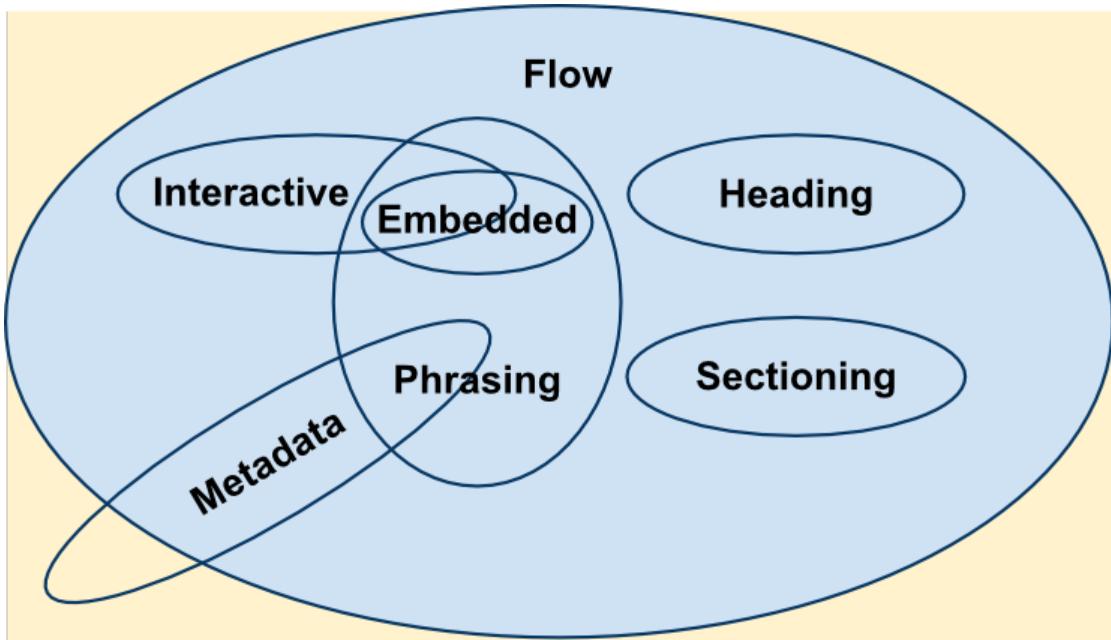
<section>

<header>

<footer>

# HTML elements categories

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- **Phrasing content (inline)**: elements that define the structure of inline content, typically within sections

Mark up text, links, media, and other content that maintains the flow of the document.

- **Heading content (block)**: defines the title of a section.

`<h1> - <h6>`

`<hgroup>`

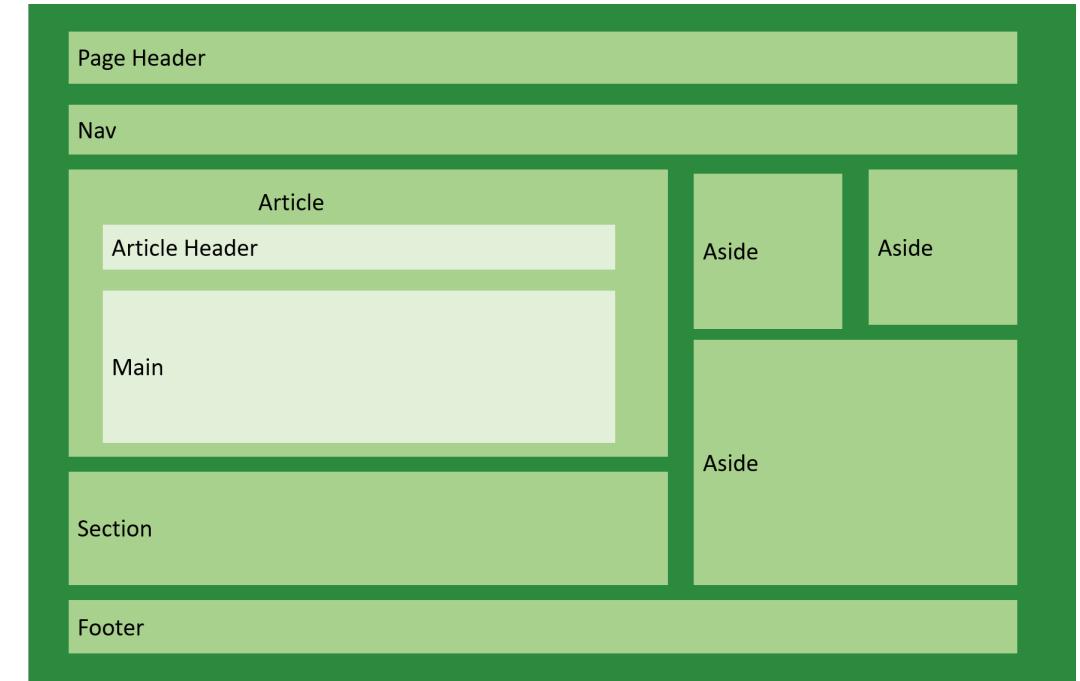
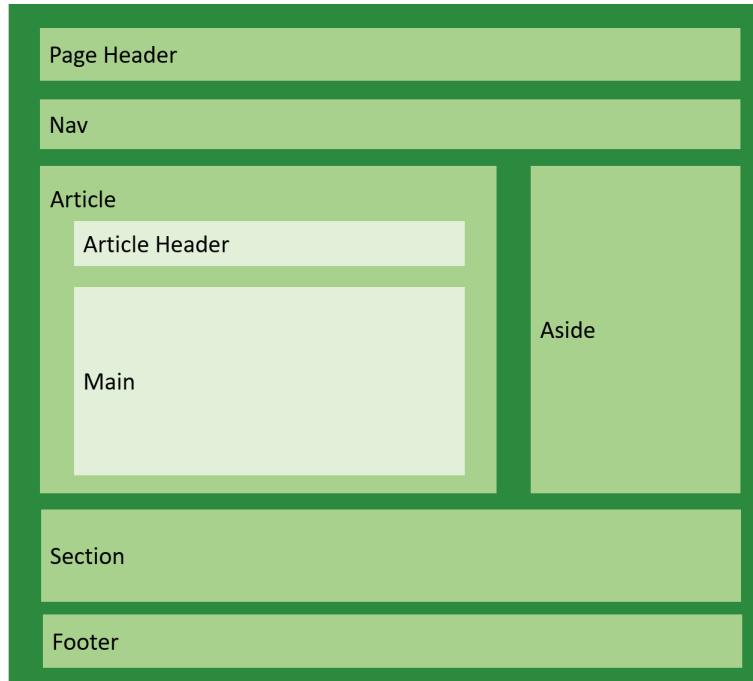
# Sectioning elements (block display)

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Element	Usage
<article>	self-contained composition in a document, page, application, or site, which is intended to be independently distributable or reusable
<section>	generic section of a document or application. A thematic grouping of content, typically with a heading
<nav>	section of a page that links to other pages or to parts within the page: a section with navigation links
<aside>	a portion of a document whose content is only indirectly related to the document's main content

# Typical layout

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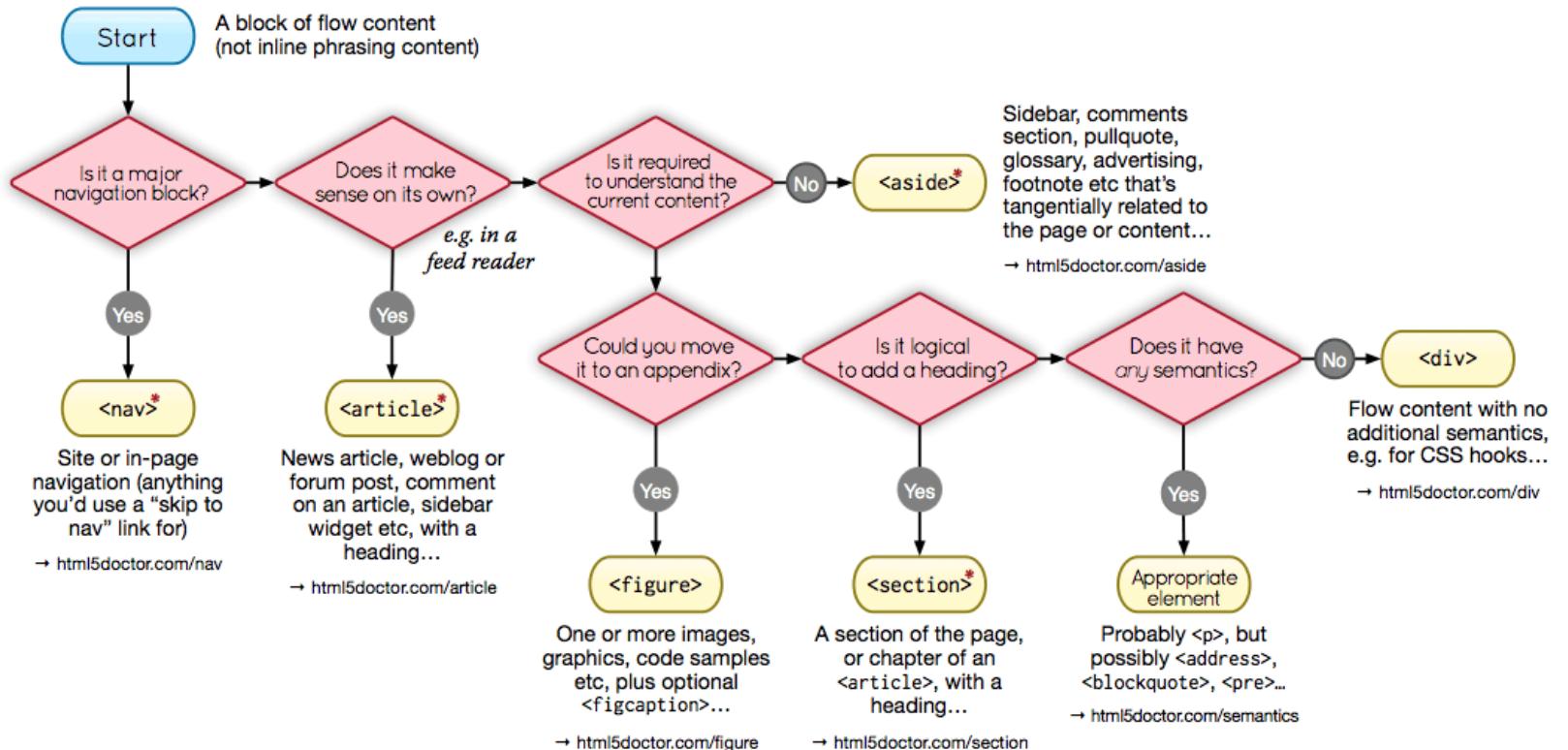


<https://devpractical.com/basic-one-column-layout-html-css/>

# HTML5 Element Flowchart

Sectioning content elements and friends

By @riddle & @boblet  
[www.html5doctor.com](http://www.html5doctor.com)



2011-07-22 v1.5

For more information:  
[www.html5doctor.com/semantics](http://www.html5doctor.com/semantics)

# Grouping content (block display)

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Element	Usage
<p>	a paragraph of text
<pre>	Block of preformatted text
<blockquote>	A section that is quoted from another source
<ol>	A list of items where the items have been intentionally ordered (the items on the list are <li> elements)
<ul>	A list of items where the order of the items is not important (the items on the list are <li> elements)
<menu>	An unordered list <ul>, whose elements are commands that may be executed

# Grouping content (block display)

---

Element	Usage
<dl>	A list of definitions. Each definition has a name (<dt>, definition term) and a value (<dd>, definition description)
<figure>	A sectioning element that can be used to annotate illustrations, diagrams, photos, code listings, etc.
<main>	Represents the dominant contents of the document
<div>	The <div> element has no meaning on its own. <span style="color: red;">⚠️</span> Use it with class and title attributes to group elements, but only when necessary

# Tabular data

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Information presented in a **two-dimensional table** comprised of **rows** and **columns** of **cells** containing data

- <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/table>

# Key attributes (usable on all elements)

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- **class = "aa bb cc"**

A space-separated list of class names.

Defines the classes an element belongs to.

Commonly used in CSS and JS for styling and selection.

- **id = "unique"**

A unique identifier for an element.

Must be unique within the HTML document.

Used in CSS and JS to select and manipulate the element.

# Key attributes (usable on all elements)

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- **style = "css fragment"**

Applies CSS styles to a specific HTML element (**CSS inline styling**)

⚠ Never do this! 💀

# «Wildcard» elements

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- **<div> </div>**

**Block-level container** with no predefined semantics.

Invisible layout structure.

Groups **blocks** using specific classes.

- **<span> </span>**

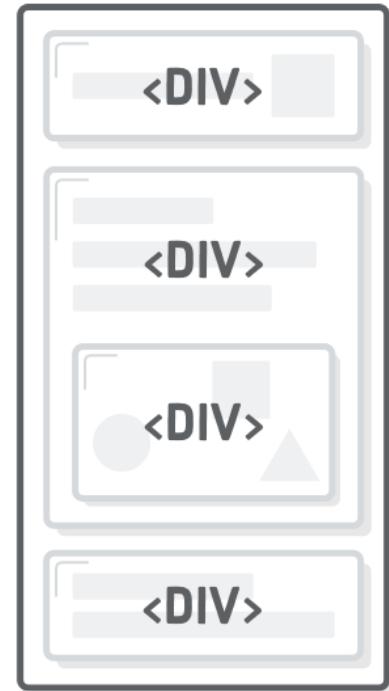
**Inline-level container** with no predefined semantics.

Invisible layout structure.

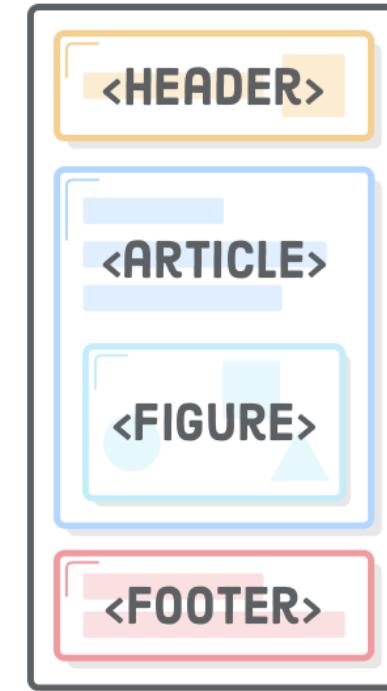
Marks parts of a **paragraph** using specific classes.

# Opaque vs. Semantic elements in HTML

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AMBIGUOUS STRUCTURE  
(AKA “<DIV> SOUP”)



IDENTIFIABLE SECTIONS  
(AKA “SEMANTIC MARKUP”)

<https://medium.com/@aschemily/html5-semantic-a-simple-web-page-246541d742aa>

# HTML Validator: <https://validator.w3.org/>

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The screenshot shows the W3C Markup Validation Service website. At the top, there's a navigation bar with icons for window control, a search bar containing "validator.w3.org", and various browser controls. Below the bar is a blue header with the W3C logo and the text "Markup Validation Service" and "Check the markup (HTML, XHTML, ...) of Web documents". The main content area has three tabs: "Validate by URI" (which is selected), "Validate by File Upload", and "Validate by Direct Input". Under "Validate by URI", there's a form to "Validate a document online" with an "Address:" input field and a "Check" button. A "More Options" link is also present. Below this section, a note explains the validator's capabilities and links to other tools like RSS/Atom feeds, CSS stylesheets, and MobileOK content. There's also a link to find broken links and another to non-DTD-based validators. On the left, there's a circular graphic with the text "INTERESTED IN 'DEVELOPING' YOUR DEVELOPER SKILLS?". To the right of the graphic, text encourages learning through W3Cx's Professional Certificate Program and provides a "Find out more!" link. Below this, a "Donate" link is mentioned. At the bottom, there's a navigation menu with links to Home, About..., News, Docs, Help & FAQ, Feedback, and Contribute. The W3C open source logo is on the left, and a copyright notice and a "VALIDATOR" button are on the right.

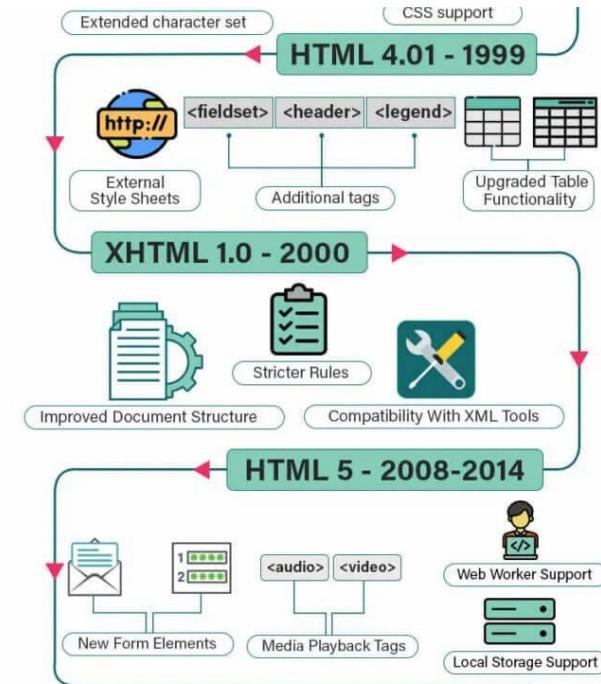
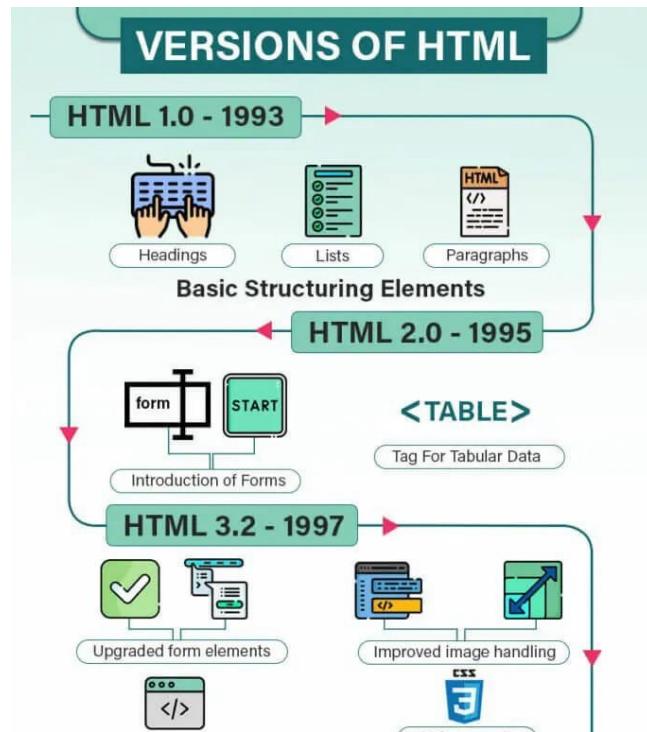
# Can I use: <https://caniuse.com/>

The screenshot shows the homepage of CanIUse.com. At the top, there's a navigation bar with links for Home, News, April 7, 2024 - 8 new features, Compare browsers, and About. Below the navigation is a search bar with the placeholder "Can I use" and a "Filter features" button. The main content area is divided into several sections:

- Latest features:** A list of recent browser features:
  - WebAssembly BigInt to i64 conversion in JS API
  - WebAssembly Threads and Atomics
  - WebAssembly Multi-Value
  - WebAssembly Import/Export of Mutable Globals
  - WebAssembly Non-trapping float-to-int Conversion
- Most searched features:** A list of the top searched features:
  - WebP image format
  - Flexbox
  - gap property for Flexbox
  - CSS Grid
  - WebGL
- Test a feature:** A section about testing features using BrowserStack, with options to test on IE 11, Safari 17, Safari on iPhone 14, and Chrome on Galaxy S23.
- Did you know?** A note encouraging users to vote for features or submit their own research.
- Third party tools:** A list of tools:
  - The CanIUse Embed — Add support tables to your site
  - Caniuse Component — Add support tables to your presentations
  - Caniuse command line tool
  - Doiuse...? — Lint your CSS to check what features work
  - I want to use — Select multiple features and see what % of users can use them
- Browser scores:** A chart showing current browser scores:

Browser	Score
Chrome	133: 436
Safari	18.3: 411
Firefox	135: 415

# HTML versions



<https://bharathikannansambasivam.wordpress.com/html-version-timeline/>



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