

Fundamentals of Web Development: HTML and CSS

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HTML

HyperText Markup Language

- Standard markup language for creating web pages and web applications
- With CSS and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web
- Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages
- HTML describes the structure of a web page semantically and originally included cues for the appearance of the document (more about this later)

Tags

- Everything is defined by a **<tag>**
- Examples: div, span, a, ul, ...

```
<html>
<head>
|   <title>Example Page</title>
</head>
<body>
|   <h1>This is a title</h1>
|   This is normal text
</body>
</html>
```

This is a title

This is normal text

Tags

- **H1, H2, ...** Headings
- **P** Paragraph
- **BR** Line Break
- **OL** Ordered List
- **UL** Unordered List
- **LI** List item (for the two above)
- **DIV** Generic container for a block of HTML
- **SPAN** Generic container for a block of text or inline HTML
- **A** Anchor (hypertext link)
- **IMG** Image

Attributes

- Class: defines equal styles for elements with the same class name
- ID: uniquely identifies an element
- Href: specifies the URL of the page the link goes to
- Src: embeds resources in the page (images, scripts, ...)

Styling

- Inline:
 - ``
White text on black background
``
- CSS file:
 - more on this later :)

Metadata

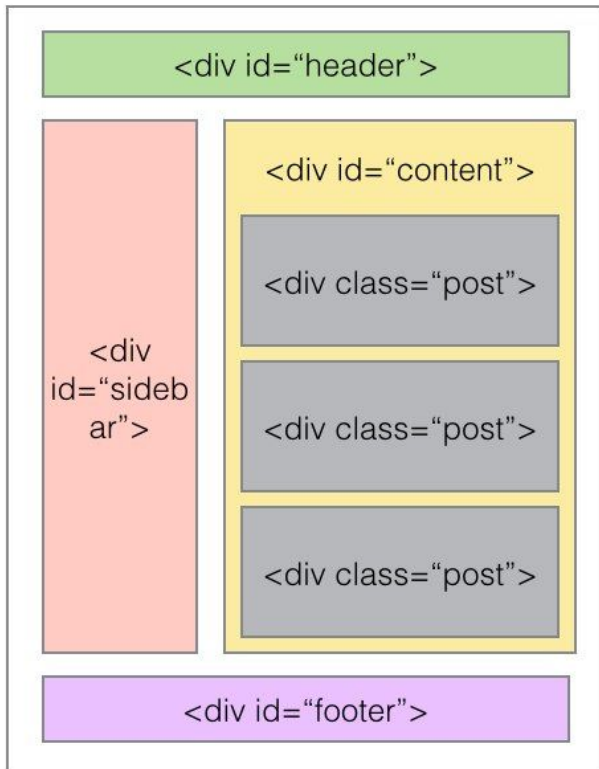
- Meta-information about the page
- Good for the modern web (SEO, mobile, ...)
- Just use a boilerplate if you don't need anything special

HTML5

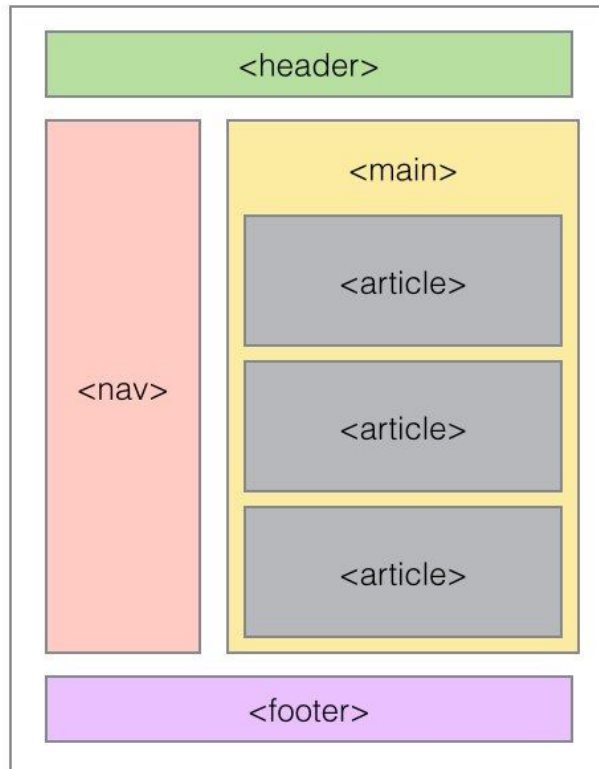
- New **semantic** elements like <header>, <footer>, <article>, and <section>.
- New **attributes** of form elements like number, date, time, calendar, and range.
- New **graphic** elements: <svg> and <canvas>.
- New **multimedia** elements: <audio> and <video>.

HTML4 vs HTML5 Page Structure on a Blog

HTML4: Lots of Classes/IDs



HTML5: Semantic Tags/Sections



CSS

Cascading Style Sheets

CSS is a language used for describing the presentation of a document written in a markup language like HTML.

Example

```
<html>
<body>
  <h1 style="color: blue;">This is a title</h1>
  <div style="text-align: center;">This is normal text</div>
</body>
</html>
```

This is a title

This is normal text

Properties

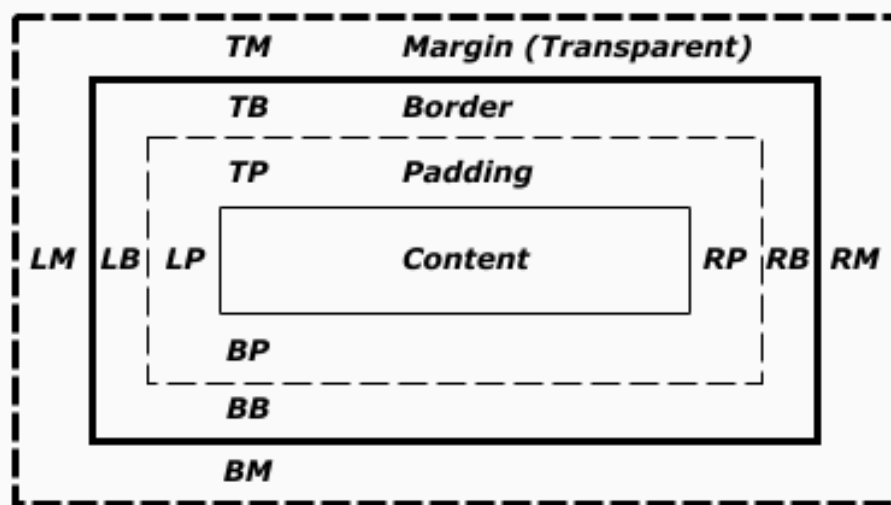
- **color** → color of the text
- **background-color** → color of the background
- **background-image: url("")** → set a background image
- **background-size** → size of the background image
- **background-repeat** → if/how the background image has to be repeated
- **background-position** → how to position the background image

Properties: display content

- **display** → specifies if/how an element is displayed
 - *block*: always starts on a new line and takes up the full width available
 - *inline*: does not start on a new line and only takes up as much width as necessary
- **visibility** → specifies whether or not an element is visible
 - Hidden elements take up space on the page! Use `display:none` to "delete" them
- **width & height** → specify the width/height of an element
 - % → in percentage of the containing block
 - px → in pixels
 - em → relative to the font-size of the element (good for responsiveness)
 - rem → relative to font-size of the root element (good for responsiveness)

Properties: setting spaces

- **padding** → sets the padding space on all sides of an element
 - The padding area is the space between the content of the element and its border
- **margin** → create space around elements, outside of any defined borders
- **border** → draw a line around the element it is applied to
- **position** → position of an element in the page
 - relative, fixed, absolute, ...



- Margin edge
- Border edge
- - - Padding edge
- Content edge

Properties: text

- **line-height** → on block level elements it specifies the minimum height of line boxes within the element (*leading*)
- **font-size** → size of the font
- **font-weight** → weight or boldness of a font
- **font-family** → select the actual font(s) and fallbacks
 - pro tip: [Fontquirrel](#) helps you find great fonts for free!

Selectors

- Tag
 - `ul { ... }`
- Class
 - `.top_divs { ... }`
- ID
 - `#leftfooter { ... }`
- https://en.wikipedia.org/wiki/Cascading_Style_Sheets#Selector too many options!
 - $A B \rightarrow$ a B descendent of an A element
 - $A > B \rightarrow$ a B element child of an A element
 - A, B, C, ... \rightarrow all of them share those properties

Pseudoclasses

A CSS pseudo-class is a keyword added to selectors that specifies a special state of the element to be selected.

- `:hover` will apply a style when the user hovers over the element specified by the selector
 - must come after `a:link` and `a:visited` to be effective
- `:visited` → visited link
- `:link` → unvisited link
- ...

References

<https://developer.mozilla.org/>

<https://www.w3schools.com/>