

# HTML5 and CSS

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# Agenda

- HTML
- HTML5
- CSS

# Goal For Today

Begin practicing writing in HTML, learn how to style our HTML documents with CSS.

# Other Relevant HTML Elements

`<div>` and `<span>`

- Generic container (block-level and inline)

`<main>`

- Contains central topic of the document

`<nav>`

- Define a section with navigation links
- There can be several of them in a document



# Other Relevant HTML Elements

`<section>`

- Use to separate contents or to generate blocks to organize main content

`<aside>`

- Information related to main content (e.g., references)

`<article>`

- Independent item (e.g., magazine article, blog entry)
- Intended to be independently distributable

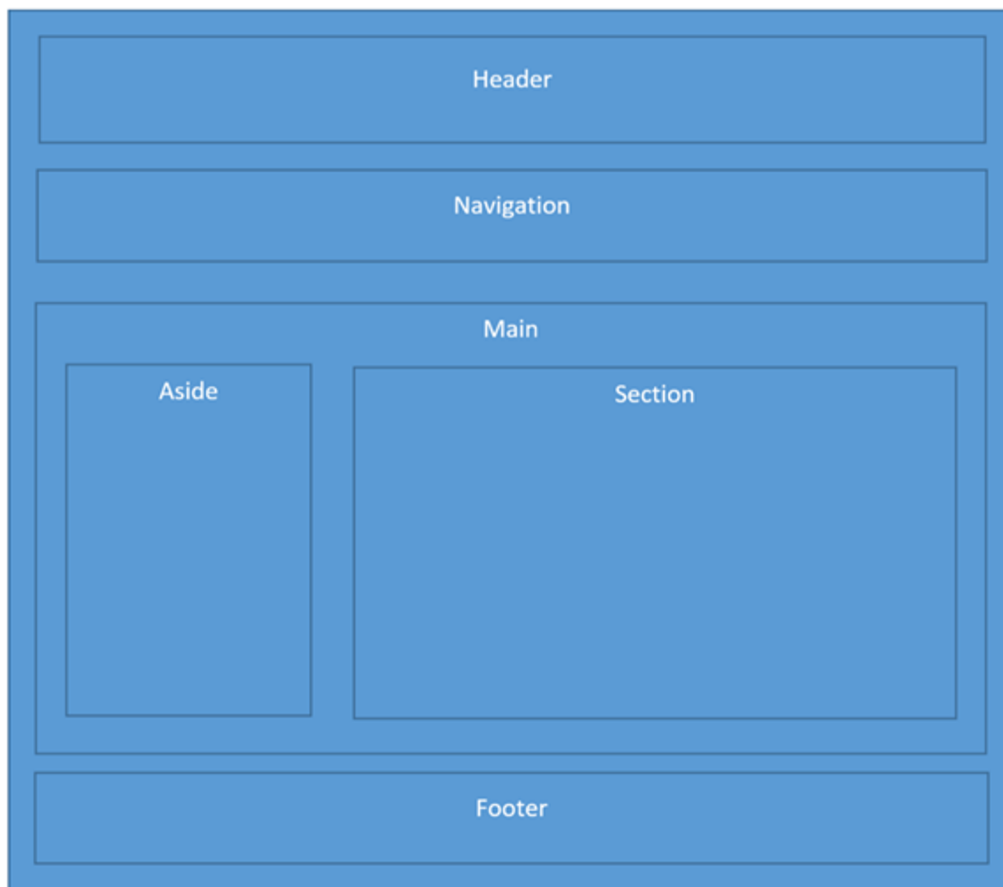
# Other Relevant HTML Elements

## <header>

- <article>, <section>, <nav> can have their own header

## <footer>

- <article>, <section>, <nav> can have their own footer



# Display Values

- Display Values: block or inline
- Block-level element
  - Begins on new lines
  - Stretches to the left and right as far as possible
- Inline element
  - Does not start on a new line
  - Takes only as much space as necessary

# Display Values

- Block-level elements examples

`<p>`, headings, lists, tables

- Inline elements

`<a>`, `<img>`

- You can make inline elements displayed as block-level elements and vice versa.
- Block elements : may contain other block elements, inline elements and data. Some block elements may not contain other block elements

# HTML5 Video

- HTML5 <video> element allows embedding of video in a web page

- Example:

```
<video width="400" height="400" controls>  
  <source src="mystory.mp4" type="video/mp4">  
  <source ... >  
  <source ... >  
  HTML5 video element not supported by browser  
</video>
```

- You can add or replace controls with **autoplay**
- Several files can be listed and the browser will use the first format recognized
- Example:

–[http://www.w3schools.com/html/tryit.asp?filename=tryhtml5\\_video\\_all](http://www.w3schools.com/html/tryit.asp?filename=tryhtml5_video_all)

# iframe

Format:

```
<iframe src="URL_TO_DISPLAY"></iframe>
```

Additional attributes

- width and height
- To remove border use style="border:none"

Playing youtube videos with iframe

- [http://www.w3schools.com/html/html\\_youtube.asp](http://www.w3schools.com/html/html_youtube.asp)

# iframe

You can customize the video interaction by adding options after the link

- ?controls=0 : player controls does not display
  - ?loop=1 : video will loop (forever)

YouTube <object> and <embed> were deprecated



# HTML5 Audio

HTML5 <audio> element allows playing audio files

Example:

```
<audio controls>  
  <source src="macarena.mp3" type="audio/mpeg">
```

HTML5 video element not supported by browser

```
</audio>
```

You can add or replace controls with autoplay

Several files can be listed and the browser will use the first format recognized

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# CSS

# CSS (Cascading Style Sheets)

- HTML is for controlling structure

- CSS is for controlling presentation

```
<link rel="stylesheet" href="ExternalFile.css" type="text/css" />
```

Place the above link in the <head> tag to link the two!

# CSS Reasoning

- Text file with rules. It includes no html
- Style sheets files use a .css extension
- Allows you to apply typographic styles (font size, line spacing, etc.)
- Allows you to apply spacing instructions
- Allows you to have page layout control
- Smaller html files by avoiding redundancy in style specification
- Easy update a collection of pages by updating only a single file

# CSS

## Rule:

- Basic element of a style sheet
- Describes the formatting associated with a page element

## Rule format:

Selector {declaration(s)}

- Selector: identifies what should be styled in a web document
- Declaration: describes styling information (what and how that portion of the web document should be modified)

# Example

```
h1 {
```

```
    color:orange;
```

```
    text-align: left;
```

```
}
```



# CSS

- Declaration: consists of property: value pair(s) enclosed in { }
- Examples:

```
p {  
    font-size: 2em; color: red;  
}
```

- Popular properties: color, font-family, font-size, text-decoration...
- CSS Properties: <http://www.w3schools.com/cssref/>

# Types of Style Sheets

- **Inline**

- Style information applied to specific tag (e.g., `<p style=..."`)
- Avoid if possible (I still do it sometimes)

- **Internal**

- Using the `<style>` tag in the header of the html document
- Convenient to provide own style to a specific page

- **External**

- External style sheet which web pages link to (see `<link>` tag)
- Preferred approach

# CSS Validator

You know the drill now:

<https://jigsaw.w3.org/css-validator/>

# Colors

- You may use prespecified colors (Your standard colors: Red, Green, Blue, Cyan)
- You could also simply specify the RGB values
  - White is the same as `rgb(255,255,255)`
  - Also the same as `#ffffff`
- RGBA allows a fourth parameter that controls Opacity
  - Can be used by calling `rgba(Red, Green, Blue, Alpha)`
  - Alpha value is a decimal between 0.0 and 1.0
  - 0.0 is transparent, 1.0 is opaque
- References: [http://www.w3schools.com/css/css3\\_colors.asp](http://www.w3schools.com/css/css3_colors.asp)

# Sizing

- Length units - centimeters (cm), millimeters (mm), etc.
- Whitespace cannot appear between number and the unit
- Two types of length units:
  - Relative (e.g., em, rem)
  - Absolute (e.g., cm, pc)
- Relative
  - **ex**: height of the lowercase x in the font
  - **em**: Relative to the size of the current font
    - 3em: 3 times size of current font
  - **rem**: relative to the size of the font of the root element
  - <http://www.sitepoint.com/power-em-units-css/>

Preferred: relative and percentages

# Comments

HTML: `<!-- this is a comment -->`

CSS: Our usual suspect → `/* this is a comment */`

# Inheritance

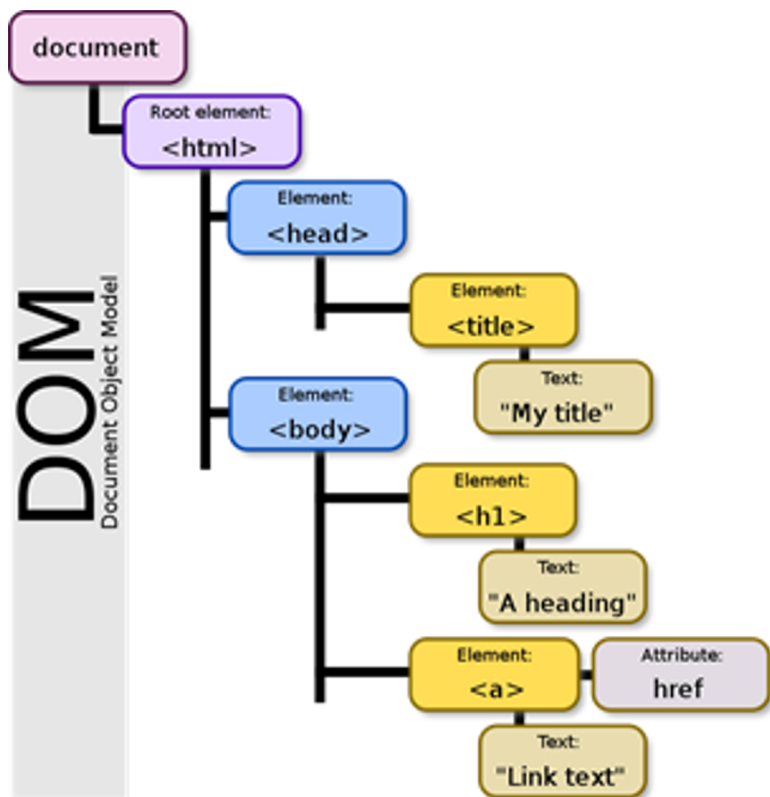
- Inheritance of Properties:
  - A child element inherits the same properties of its parent element (unless otherwise indicated by the CSS specification)
- Examples of inherited properties
  - color, font-family, font-size, letter-spacing, ...
- Examples of non-inherited properties
  - border, margin, padding, ...

Examples: `propinheritance.html/.css`

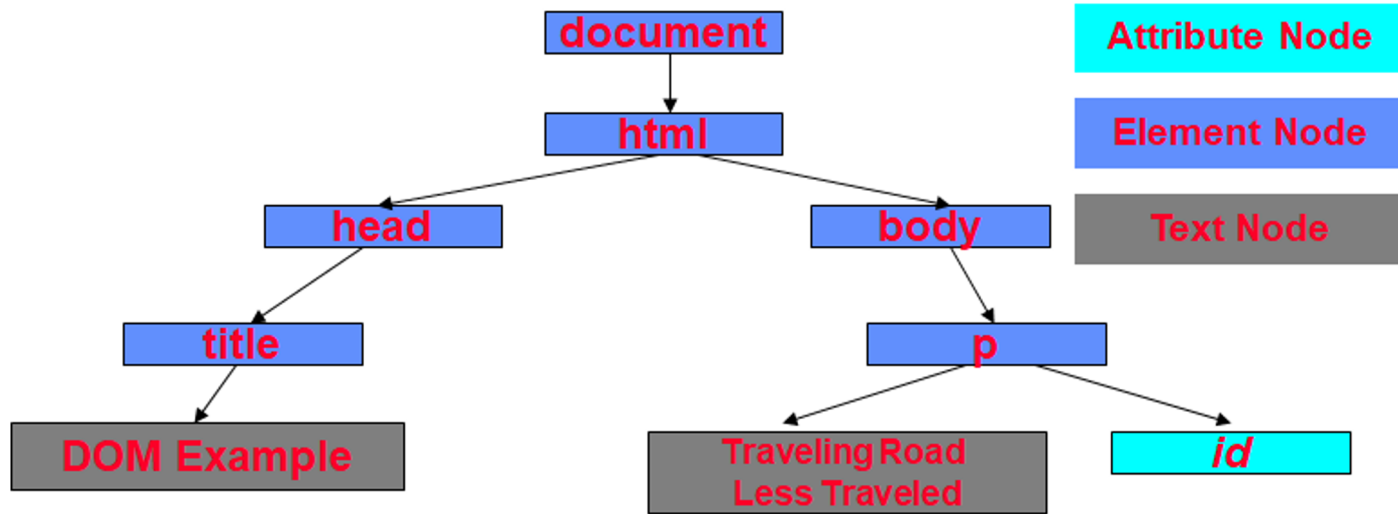
# DOM (Document Object Model)

- A cross-platform and language-independent programming interface for HTML and XML documents
- Represents a document with a logical tree wherein each node is an object representing a part of the document.
- Each branch of the tree ends in a node, and each node contains objects.
- Allow programmatic access to the tree
  - with them one can change the structure, style or content of a document.
  - Nodes can have event handlers attached to them. Once an event is triggered, the event handlers get executed.





Source: Wikipedia



<html>

<head><title>DOM Example</title></head>

<body>

<p id="message">Traveling the road less traveled. </p>

</body>

</html>

# Quick Pause

## Any Questions?

# Kinds of Selectors

- Class Selectors:

- Allow us to apply the same rules to a set of elements
- Use when you need to apply a style many times in your document
- Created with a period (also known as full stop)

- ID Selectors:

- Similar to class selectors but appear only once in the document
- Used when you need to apply a style only once in your document
- Created using #

# Kinds of Selectors

- Descendant selector
  - Override the type, class and id selector styles
  - Typically with two elements where the second is a descendant
- Examples

```
li a {font-size: 2em}
```

```
#header h2 {font-weight: normal;}
```

```
#content h2 {font-weight: bold;}
```

# WTWAW (What To Walk Away With)

Make sure you know:

- Why we use CSS
- How basic CSS rules are structured
- Use colors and size elements
- How to comment
- Explain what the DOM is
- Use various types of selectors (namely type, class and id)