CSS Basics

R0244 - Verkkosivujen kehittäminen / R0278 - Foundations of Web Development
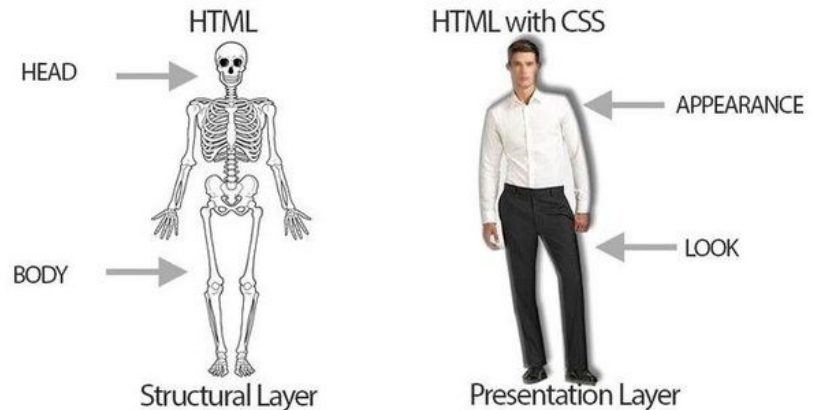
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1. What is CSS?

▸ Cascading Style Sheets
  ▸ Style your web page.
  ▸ Flexible, x-platform
  ▸ standards based
  ▸ Developed by W3C.

HTML — HEAD, BODY — Structural Layer

HTML with CSS — APPEARANCE, LOOK — Presentation Layer

HTML   HTML+CSS

CSS3   W3C®

1. What is CSS?

- Separates style from structure.
  - Easier maintenance.
  - Styles are re-usable, same CSS file can be used in several pages.
  - Check out http://www.csszengarden.com/ to see how the layout can be completely changed with CSS only, not touching anything in HTML.
- Greater typography and page layout control.

Now is a good time to familiarise yourself with one of the key principles of software and web development:
Separation of Concerns (SoC).

1. What is CSS?

▸ You can use CSS as

  ▸ Inline style `<element style="background: black;">`

    ▸ body section

    ▸ HTML style **attribute**

    ▸ Only applied to that specific element

  ▸ Embedded style

    ▸ head section

    ▸ HTML style **element**

    ▸ Applies to the whole page

```
<style>
    element{
        background: black;
    }
</style>
```

  ▸ External styles

  RECOMMENDED

    ▸ separate .css file

```
<link rel="stylesheet"
href="styles.css">
```

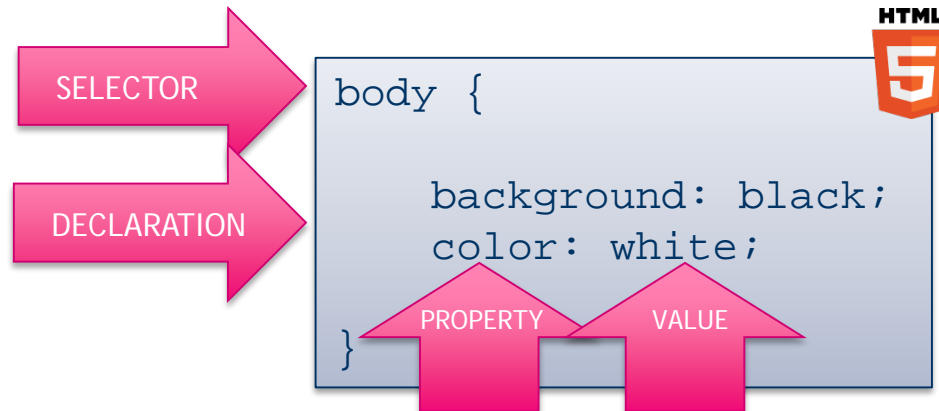   ▸ Associated with the page in head section.

2. External Style Sheets

▸ Typically styles are in their own separate file.

▸ CSS files are

  ▸ text files

  ▸ .css extension

  ▸ no HTML

▸ You can use same CSS files for several pages.

▸ Associated with link element:

```
<html>
    <head>
        <link rel="stylesheet" href="styles.css">
    </head>
    <body></body>
</html>
```

3. CSS Syntax

▸ CSS consists of **selectors** and **declarations.**

▸ Declarations consist of **properties** and **values.**

▸ Declaration blocks are enclosed in curly brackets.

▸ Declarations are separated by semicolons.

▸ Properties and values are separated by colons.

SELECTOR

DECLARATION

```
body {

     background: black;
     color: white;

}
```

PROPERTY   VALUE

4. Colours

- Colours make a big difference on a website -> choose them carefully!
  - Make sure contrast between text and background colours is sufficient.
  - Too little colour -> site looks boring.
  - Too many colours -> site looks tacky.
  - Colour preferences vary depending on gender, age and other factors -> no "one colour suits all" decision.
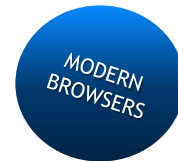
4. Colours

- You can define colour values in several ways in CSS:
  - RGB (red, green, blue): `background: rgb(255,0,0);`
  - RGBA (red, green, blue, alpha-transparency: `background: rgb(255,0,0, 0.5);`
  - hexadecimal numbers: two characters for each color: `background: #ff0000;`
  - HSL (hue, saturation, luminosity): `background: hsl(0, 70%, 100%);`
  - Namecode: `background: red;`
    - https://www.w3schools.com/colors/colors_names.asp

4. Colours

- ▸ You can define colours for
  - ▸ background
  - ▸ text
  - ▸ borders

Foo box

```
div {
    background: black;
    color: #ffffff;
    border: 2px solid rgb(255, 0, 0);
}
```
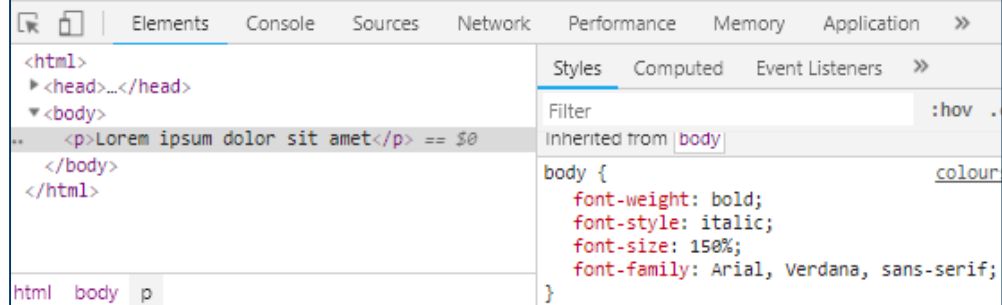
5. Text

▶ To style text in CSS you can use the following:

  ▶ font-weight (bold)

  ▶ font-style (italic)

  ▶ font-size (can be defined with text, em, px, pt or percentage values)

  ▶ font-family (a list of fonts and a generic family name)

Lorem ipsum dolor sit amet

```
<html>
 ▶<head>...</head>
 ▼<body>
     <p>Lorem ipsum dolor sit amet</p>  == $0
   </body>
 </html>

html   body   p
```

Elements Console Sources Network Performance Memory Application »

Styles Computed Event Listeners »

Filter   :hov .
Inherited from body

```
body {
    font-weight: bold;
    font-style: italic;
    font-size: 150%;
    font-family: Arial, Verdana, sans-serif;
}
```
colour

5. Text

- When choosing font, remember:
  - not everybody has same fonts installed on their computers.
  - some fonts may not have all characters.
  - some fonts may not have all styles and weights (bold, italic)
  - some fonts work better as headings, some as paragraph text.
  - consider carefully if you want to use several different fonts whether they go together well.

5. Text

- ▶ Other CSS text properties:
  - ▶ `line-height` (px, pt, cm, %)
  - ▶ `text-align` (left, right, center, justify)
  - ▶ `text-indent` (px, pt, cm, %)
  - ▶ `text-decoration` (underline, overline..)
  - ▶ `text-transform` (uppercase, lowercase..)
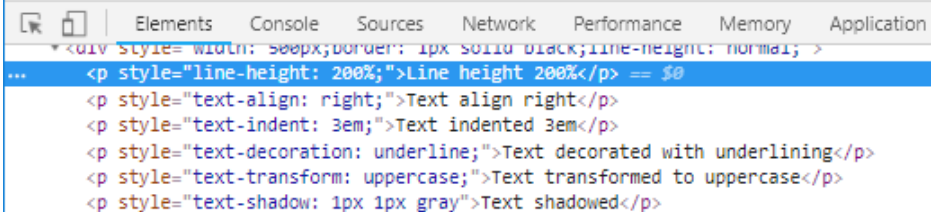 - ▶ `text-shadow` (horizontal, vertical, colour)

Line height 200%

Text align right

Text indented 3em

Text decorated with underlining

TEXT TRANSFORMED TO UPPERCASE

Text shadowed

Elements   Console   Sources   Network   Performance   Memory   Application

```
▼<div style="width: 500px;border: 1px solid black;line-height: normal;">
    <p style="line-height: 200%;">Line height 200%</p> == $0
    <p style="text-align: right;">Text align right</p>
    <p style="text-indent: 3em;">Text indented 3em</p>
    <p style="text-decoration: underline;">Text decorated with underlining</p>
    <p style="text-transform: uppercase;">Text transformed to uppercase</p>
    <p style="text-shadow: 1px 1px gray">Text shadowed</p>
```

6. Selectors

- CSS rules can be set based on
  - element
  - class
  - id
  - descendant
- All these options have their purpose and you should think carefully which ones to use.
- So far you've seen examples of using element as a selector:

```
body {
    background: black;
    color: white;
}
```

6. Selectors

- Class selector
  - In CSS class selectors are defined with a .
  - In HTML classes are defined with `class` attribute.

```
.red {
    color: red;
}
```

```
<p class="red">Lorem
ipsum dolor sit amet.</p>
```

6. Selectors

- ID selector
  - In CSS class selectors are defined with a #.
  - In HTML classes are defined with `id` attribute.
  - **There can only be one element on a page per id.**

```
#red {
    color: red;
}
```

```
<p id="red">Lorem ipsum
dolor sit amet.</p>
```

6. Selectors

▸ You can also define a class or an id selector with an element selector:

```
p.red {
    color: red;
}
```

```
<p class="red">Lorem
ipsum dolor sit amet.</p>
```

▸ This example would mean that:

▸ All p elements with class red would be coloured red.

▸ All other elements with class red would not be affected by this rule.

6. Selectors

▶ Descendant

  ▶ If you only want to apply some CSS rules for specific elements inside an element you can have multiple selectors separated with **space**.

```css
#red span {
    color: red;
}
```

```html
<p id="red">Lorem
<span>ipsum</span> dolor
sit amet.</p>
```

  ▶ This means that the CSS rule will be applied to any span element within an element that has an id red.

6. Selectors

▸ If you want to set a CSS rule for multiple selectors you list all the selectors, separated by **commas**:

```
.red, h2, #important {
    color: red;
}
```
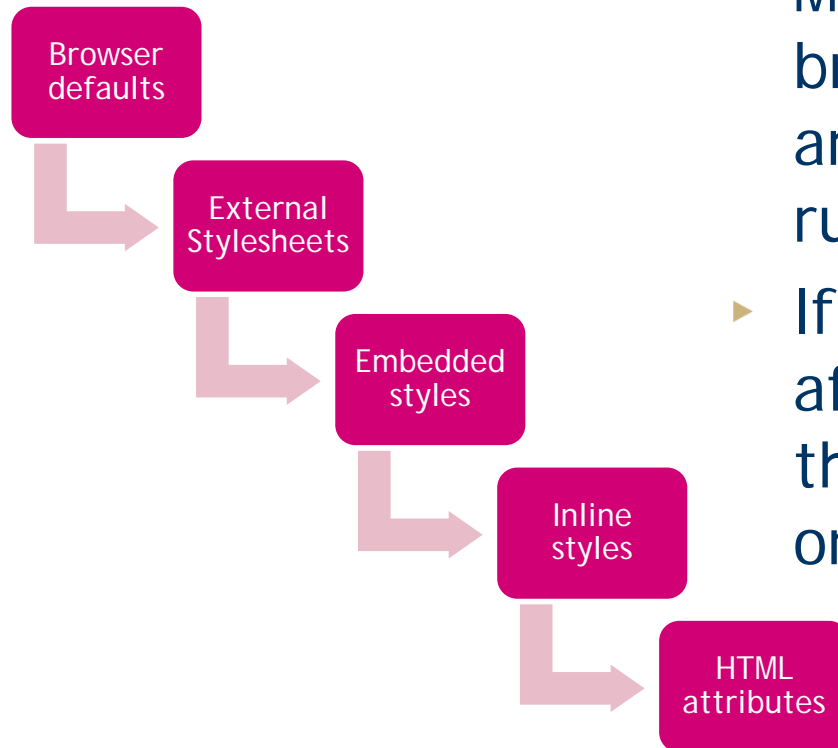
```
<h2>Sub heading</h2>
<p class="red">Foo</p>
<p id="important">
important msg</p>
```

▸ This means that the CSS rule will be applied to all elements with class red, all level two headings and an element with the id important.

7. The Cascade

Browser defaults

External Stylesheets

Embedded styles

Inline styles

HTML attributes

‣ Most CSS rules have browser defaults which are used if there are no rules set.

‣ If there are several rules affecting same element the rule that wins is the one that is

  ‣ more specifically defined.
  ‣ last on the style sheet.

8. Valid CSS

▸ You should always make sure you're writing valid CSS.

▸ You can validate your CSS in
https://jigsaw.w3.org/css-validator/

9. Questions, comments?