

# Basic CSS

# Introduction

- CSS, or Cascading Styles Sheets are a way to style HTML
- HTML should be used for the content, and the style sheet for the presentation of your document
- Styles have a format of **property: value** and most properties can be applied to most HTML tags

# Applying CSS

- There are three ways of applying CSS to HTML:
  - Inline
  - Internal
  - External
- The preferred approach is to have the HTML document be presentation free, and so inline and internal styles should be avoided whenever possible.

# Inline

- In-line styles are placed straight into the HTML tags using the **style** attribute.
- For example, the following style attribute of the paragraph tag will make the whole paragraph red:

```
<p style="color: red">Content</p>
```

# Internal

- Internal styles affect a whole page.
- The **style** element is put inside the head of the document, and it specifies all of the styles for the page.
- The following internal style specification will make all of the paragraphs in the page red and all of the links blue:

```
<head>
```

```
<title>CSS Example</title>
```

```
<style type="text/css">p {color: red;} a {color:  
blue;}</style>
```

```
</head>
```

# External

- External styles are used for the whole, multiple-page website.
- They are put in a separate CSS file and linked to the HTML files.

# External

- The external style sheet can look something like this:

**p {color: red;} a {color: blue;}**

- It doesn't need any special additional syntax
- Can be written in a text editor like Notepad, and saved as "something.css"

# Linking External CSS

Once the external style sheet is completed, it can be linked to the HTML document like this:

```
<head>  
<title>CSS Example</title>  
<link rel="stylesheet" type="text/css"  
href="something.css">  
</head>
```

# CSS syntax

- Instead of tags, CSS has selectors. Selectors are the names given to styles in internal and external style sheets.
- We will focus on HTML selectors, which are simply the names of HTML tags and are used to change the style of a specific tag.
- For each selector there are **properties** inside curly brackets, which simply take the form of words such as color, font-weight or background-color.
- A **value** is given to the property following a colon and semi-colons separate the properties.

# Example

**body {font-size: 12px; color: blue;}**

- This will apply the given values to the font-size and color properties of the body selector.
- So when this is applied to an HTML document, all text between the body tags (which is all text in the window) will be 12 pixels in size and blue in color.

# Length values

- There are many property-specific units for values used in CSS, but there are some general units that are used in a number of properties.
- **em** is an element approximately equal to the **height of a character (font-size: 2em)**.
- **px** is the unit for **pixels (font-size: 12px)**.
- **pt** is the unit for **points (font-size: 12pt)**.
- **%** is the unit for **percentages (font-size: 50%)**.
- Furthermore, **cm** is for centimeters, **mm** for millimeters and **in** for inches.

# Zero value

- When a value is **zero**, you do not need to state a unit.
- For example, if you want to specify no border, use **border: 0**.

# Preferred Units

- A web page is meant to be flexible.
- Users should be allowed to view the web page however they like, which includes the font size and the size of the screen.
- Hence, it is generally accepted that **em** and **%** are the best units to use for font sizes, heights and widths rather than **px**.
- **px** leads to non-resizable text in most browsers, and should be used sparingly, for example in border sizes.

# Colors

CSS has **16,777,216** different colors. They can take the form of a **name**, an **rgb** (red/green/blue) value or a **hex** (hexadecimal) code.

**red**

Is the same as

**rgb(255,0,0)**

Is the same as

**rgb(100%,0%,0%)**

Is the same as

**#ff0000**

Is the same as

**#f00**

# Colors

- There are many predefined color names, like: **aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, yellow.**
- **transparent** is also a valid value.

# Colors

- The three values in the rgb value range from 0 to 255, 0 being the lowest level, 255 being the highest level.
- These values can also be expressed as a percentage.
- **Hexadecimal** is the **base-16** number system.
- Hex numbers are defined by a hash character (#) and can be three or six digits long.
- The three-digit version is a compressed version of the six-digit (for example, #f00 becomes #ff0000)
- The three-digit version is easier to decipher but the six-digit version gives you more control over the exact color.

# Colors

- Colors can be applied using **color** and **background-color**
- A blue background and yellow text would look like this:  
`h1 {color: yellow; background-color: blue;}`
- Usually, you don't want to use harsh, contrasting colors  
`h1 {color: #ffc; background-color: #009;}` is better.
- You can apply the **color** and **background-color** properties to most HTML elements, including **body**, which will change the colors of the page and everything in it.

# Text

- You can alter the size and shape of the text on a web page with the following properties:
- **font-family**
- **font-size**
- **font-weight**
- **font-style**
- **text-decoration**
- **text-transform**

# font-family

- This specifies the font, such as Times New Roman, Arial or Verdana.
- The font you specify must be on the user's computer, so you shouldn't use obscure or fancy fonts.
- There are some "safe" fonts (the most commonly used are Arial, Verdana and Times New Roman), but you can specify more than one font, separated by commas.
- The purpose of this is that if the user does not have the first font you specified, the browser will go through the list until it finds one that it does have.
- This is useful because different computers can have different fonts installed.

# font-family

- For example, **font-family: arial, helvetica**, will assure that similar fonts are used on PC and Mac (the two fonts look similar, and PCs usually have arial but not helvetica, and Macs usually don't have arial, but have helvetica).
- If the name of a font is more than one word, it should be put in quotation marks, such as **font-family: "Times New Roman"**.

# font-size

- Specifies the size of the font.
- Headings should not be regular paragraph text in a large font: you should use **h1**, **h2** etc.
- Likewise, if you want to make regular paragraph text larger, don't use headings: use **font-size**.

# font-weight

- Specifies whether the text is **bold** or not.
- Can take values **normal**, **bold**, **bolder**, **lighter**, **100**, **200**, **300**, **400**, **500**, **600**, **700**, **800** or **900**
- However, some browsers don't display this.
- Also, it can get confusing and annoying to have many different font weights, so it's best to stick with only **bold** and **normal**.

**font-weight: bold**

**font-weight: normal**

# font-style

Specifies whether the text is **italic** or not.

**font-style: italic**

**font-style: normal**

# About font weight and style

- Instead of **font-weight** and **font-style**, you can also use the `<strong>` and `<em>` tags in the HTML document.
- Generally, font-weight and font-style are used for changing a longer piece of text (like a paragraph or the whole page), and `<strong>` and `<em>` are used for changing a short piece of text (like a word or phrase).

# text-decoration

Specifies an whether the text is underlined or not.

**text-decoration: overline** places a line above the text

**text-decoration: line-through** puts a line through the text

**text-decoration: underline** underlines the text; this should only be used for links because users generally expect underlined text to be a link

The **text-decoration** property is usually used to decorate links, in particular specifying no underline with **text-decoration: none**.

# text-transform

Specifies the case of the text.

**text-transform: capitalize** turns the first letter of every word into uppercase.

**text-transform: uppercase** turns everything into uppercase.

**text-transform: lowercase** turns everything into lowercase.

**text-transform: none** makes no transformation.

# Example

```
body {font-family: arial, helvetica, sans-serif;  
font-size: 0.8em;}
```

```
h1 {font-size: 2em;}
```

```
h2 {font-size: 1.5em;}
```

```
a {text-decoration: none;}
```

```
strong {font-style: italic; text-transform:  
uppercase;}
```

# Text spacing

- The **letter-spacing** and **word-spacing** properties are for spacing between letters and words. The value can be a length or **normal**.
- The **line-height** property sets the height of the lines in an element (like a paragraph) without adjusting the size of the font. It can be a length, a percentage, or **normal**.
- The **text-align** property will align the text inside an element to **left**, **right**, **center** or **justify**.
- The **text-indent** property will **indent** the first line of a paragraph to a given length or percentage.
  - It is more common to separate paragraphs by a blank space than by indentation, since indentation is usually used in print, and rarely in digital media.

# Example

```
p {  
letter-spacing: 0.5em;  
word-spacing: 2em;  
line-height: 1.5em;  
text-align: center;  
}
```

# Margins and padding

- **margin** and **padding** are two commonly used properties for spacing-out elements.
- A margin is the space **outside** of an element.
- Padding is the space **inside** an element.

# Example

If we change the code for **h2** to the following, we see that this leaves a one-character-wide space around the header and the header itself is bloated by the three character-wide padding.

```
h2 {  
font-size: 1.5em;  
background-color: #ccc;  
margin: 1em; padding: 3em;  
}
```

# Borders

- **Borders** can be applied to most HTML elements.
- To make a border around an element, use **border-style**.
- The values can be **solid, dotted, dashed, double, groove, ridge, inset, outset**.
- **border-width** sets the **width** of the border, which is usually in pixels.
- There are also properties for **border-top-width, border-right-width, border-bottom-width** and **border-left-width**.
- **border-color** sets the color of the border.

# Example

```
h2 {  
border-style: dashed;  
border-width: 3px;  
border-left-width: 10px;  
border-right-width: 10px;  
border-color: red;  
}
```

This will make a red dashed border around all HTML secondary headers (**h2**'s) which is 3 pixels wide on the top and bottom and 10 pixels wide on the left and right (these override the 3 pixel wide width of the entire border).