

Why do we use CSS?

Cascading style sheets (CSS) are used to:

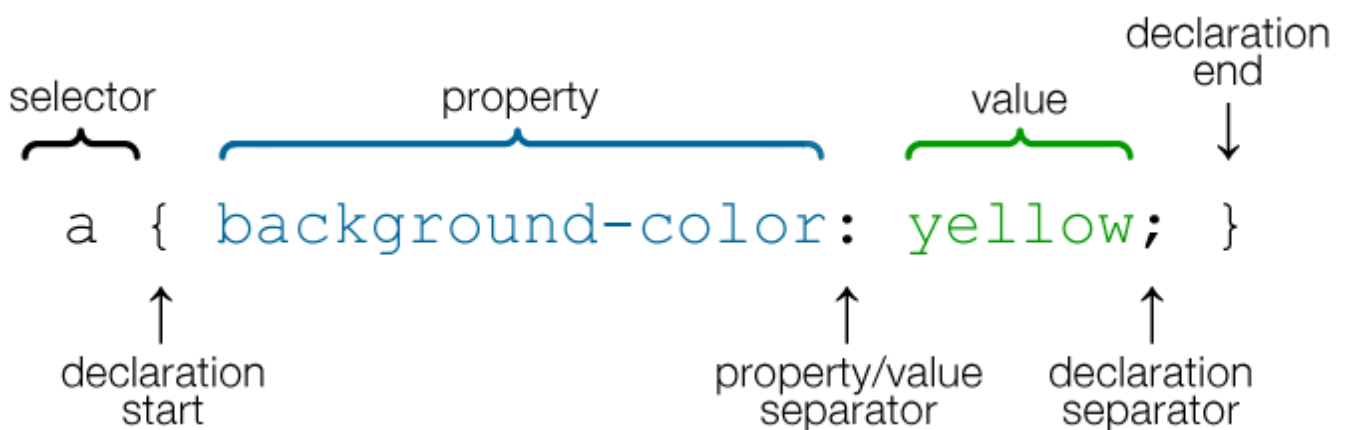
- **separate webpage content from appearance.** Website HTML files should contain site content, but the HTML files should not contain information about how the content is displayed. Information about how webpages should appear should go into CSS files.
- **ensure that the same look-and-feel is maintained throughout a website.** This is particularly important in the management of large website.
- **greatly simplify the process of modifying a website's appearance.** By removing the need to independently update each webpage we also remove the risk of forgetting to update some webpages. Using CSS also saves a lot of typing, as we only need to make a change once and it will automatically update all the webpages in a website.

CSS Selectors, Properties, and Values

Whereas HTML has **tags**, CSS has **selectors**. Selectors are the names given to styles in internal and external style sheets. We will learn about the 3 places to put CSS later – internal, external and inline.

CSS allows you to create rules that control the way that each individual html tag looks on your website.

**Example of a CSS Selector that will target the style anchor tag <a> **



The above selector will change the background colour of all anchor tags on your page to be yellow.

CSS declarations sit inside curly brackets and each is made up of two parts: a property and a value, separated by a colon. You can specify several properties in one declaration, each separated by a semi-colon.

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This rule indicates that all <h1>, <h2> and <h3> elements should be shown in the Arial typeface, in a yellow colour. This is a multiple selector rule, with two property / values.



Properties indicate the aspects of the element you want to change. For example, color, font, width, height and border. Values specify the settings you want to use for the chosen properties. For example, if you want to specify a colour property then the value is the colour you want the text in these elements to be.

Where to put your CSS code?

There are 3 places you can put your CSS code – Internal, External and Inline.

There are three ways to apply CSS to HTML.

In-line

In-line styles are plonked straight into the HTML tags using the `style` attribute.

They look something like this:

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

This will make only one specific paragraph red.

But, if you remember, the best-practice approach is that the HTML should be a stand-alone, **presentation free** document, and so in-line styles should be avoided wherever possible.

Internal

Embedded, or **internal** styles are used for the whole page. Inside the head tags, the style tags surround all of the styles for the page.

This would look something like this:

```
1  <html>
2  <head>
3
4      <title>Internal CSS Example</title>
5
6      <style type="text/css">
7          p {color: red}
8
9          a {color: blue}
10     </style>
11 </head>
12 <body>
13 .
14 .
```

This will make all of the paragraphs in the page red and all of the links blue.

Not very useful, as we would have to copy everything between the `<style>` `</style>` onto each page!

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External

External styles are used for the whole, multiple-page website. There is a **separate CSS file**, which will simply look something like:

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

Put the above into NotePad++ and save the file as "style.css". Save it in the same folder as your other web pages. It can be linked to in the HTML like this:

```
<html>  
<head>  
  
    <link rel="stylesheet" type="text/css" href="style.css" />  
</head>
```

Now change HTML file so that it starts something like this:

```
<html>  
<head>  
    <title>My first web page</title>  
    <link rel="stylesheet" type="text/css" href="web.css" />  
</head>
```

Save the HTML file. This now links to the CSS.

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Exercise part 1:

Create this HTML file and save it as internal-css.html. Open it in your browser to view it and explain below what happened.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Using Internal CSS</title>
5
6      <style type="text/css">
7          body {
8              font-family: arial;
9              background-color: lightGrey
10         }
11
12         h1 {
13             color: brown
14         }
15     </style>
16
17 </head>
18
19 <body>
20     <h1>Potatoes</h1>
21     <p>There are dozens of different potato
22     varieties. They are usually described as
23     early, second early and maincrop.</p>
24 </body>
25 </html>
```

Explanation_____

Exercise part 2: Now cut everything out of the <style> </style> tags and put the CSS code into its own file and reference it.

Selectors

There are 3 main types of selectors. So far we've just been using Type selectors – these target HTML tags.

Type selectors

Examples:

p{ } - would target all paragraphs on a page

a{ } - would target all anchors / links on a page

h1,h2,h3 { } - would target all H1, H2 and H3 headings on a page

address{ } - would target all address elements on a page

Class Selectors

You can name these however you want and can apply them to a HTML element. They start with a dot in CSS. Example:

```
.red-text{color: red}
```

How to apply it to HTML

– put the attribute class into the opening HTML tag and give it name of the class you just created.

These can be used over and over again on different HTML elements.

```
<p class="red-text"> This is a paragraph and the text will be red </p>
```

```
<address class="red-text"> This is an address and the text will be red  
</address>
```

ID Selectors

These selectors start with a # in CSS, and you can also name them whatever you like. However, these should not be used over and over again, and should be used for style larger areas of your website.

Example:

```
#content{background-color:honeydew; color:red; font-size: 16px}
```

<!-- This would make everything inside a tag with the id content have a background of honeydew, a text color of red with a text size of 16px.

How to apply it to HTML

```
<div id="content"> <p> ..... </div>
```

Cascading Style Sheets

CSS Comments

Use `/*` to open a comment and `*/` to close a comment.

Color

This property sets the text colour of an element. Color is set using either a keyword or a hexadecimal number. Keywords include the obvious colours, such as:

- red
- green
- yellow

Hexadecimal numbers must be preceded by an `#` and be six digits in length. The six digits represent the amount of red (first two digits), green (middle two digits) and blue (last two digits). For example:

- `#FF0000` is the colour red
- `#00FF00` is the colour green
- `#FFFF00` is the colour yellow

```
p{ color:#FF00FF }
```

Exercise1:

Insert the code above into a webpage to see it working. Using hex numbers, change the colour of the text to light grey. Look the hex number for light grey up on Google.

Note where you found them _____

Exercise2:

Read about the importance of colour and choosing a colour scheme here:

<https://neilpatel.com/blog/website-color-scheme/>

Create a colour scheme for your website using this tool: <https://www.colorsfire.com/>

Think of your background colour, paragraph colour, heading colour, link colour and the background of your header or footer area.

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Font-Family

The font-family property helps to ensure that text looks the way it was intended to on various platforms. This property specifies a hierarchical list of preferred fonts that a browser should use to draw an element. The browser will use the first font in the list that is installed on the system it is running on.

Because none of the desired fonts may be on the system a browser is running on, CSS introduces the idea of a font family. A font family is a generic name for a type of font. The specified font families are:

- **serif** (e.g. Times)
- **sans-serif** (e.g. Helvetica)
- **cursive** (e.g. Zapf-Chancery)
- **fantasy** (e.g. Western)
- **monospace** (e.g. Courier)

The font-family property is a list of font names and font family names. Each item in the list is separated by a comma.

Font names should be capitalized (for example, Arial, not arial). When the name of a font is more than one word, it should be quoted, as in "Times New Roman".

```
body { font-family: fantasy }
```

Exercise: Insert the code above into a webpage to see it working. Write code to make text red and monospace.

You can learn more here: https://www.w3schools.com/css/css_font.asp

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Font-Size

The font-size property specifies how large text appears on a webpage. The font-size property can specify the size of a text element in several units:

- points – example: 6pt
- estimated measurement: 6em
- viewport width,,: 6vw
- pixels: 6px

All of the above produce different sizes on the screen. It's confusing and there is a lot of discussion online about which is best to use!

```
h1 {font-size: 50px }
```

Exercise: Insert the code above into a webpage to see it working.

px and em are the two most commonly used font-sizes. Research both of these and explain the advantages/disadvantages of each over the other.

The most modern approach to font sizing is now the rem or vw

Some resources:

Watch this video: <https://youtu.be/vy-IRUMpEOs>

Read: <https://www.futurehosting.com/blog/web-design-basics-rem-vs-em-vs-px-sizing-elements-in-css/>

Read: <https://learn-the-web.algonquindesign.ca/topics/basic-typography/>

Read: <https://css-tricks.com/rem-ems/>