

CMPU 1031 - Web Development 1

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Week 3: CSS examples



About Brightspace and lab

- Your module is now available in Brightspace. Please make sure to enroll yourself.
- You must submit your code in Brightspace before the next lab session.
- Team and lab group changes are no longer allowed.

TU856-TU850
Lectures are on
Fridays



Web Development 1
CMPU1031: Sept-Dec
Academic Term
2025/26

Colours and CSS

- There are different ways colours can be used with CSS to style elements on a page.
- CSS and use the following options:
 - A colour name (eg. green)
 - A RGB value eg. rgb(255, 120, 120)
 - A Hex value (eg. #777777)

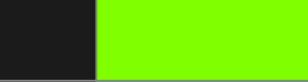
Be aware: the commands used in HTML and CSS make use of American English, so the property is **color** and not **colour**

Colours name

- To style an elements colour, the colour can be set using a name. The possibilities are, although, a bit limited ([around 140 colours](#)).

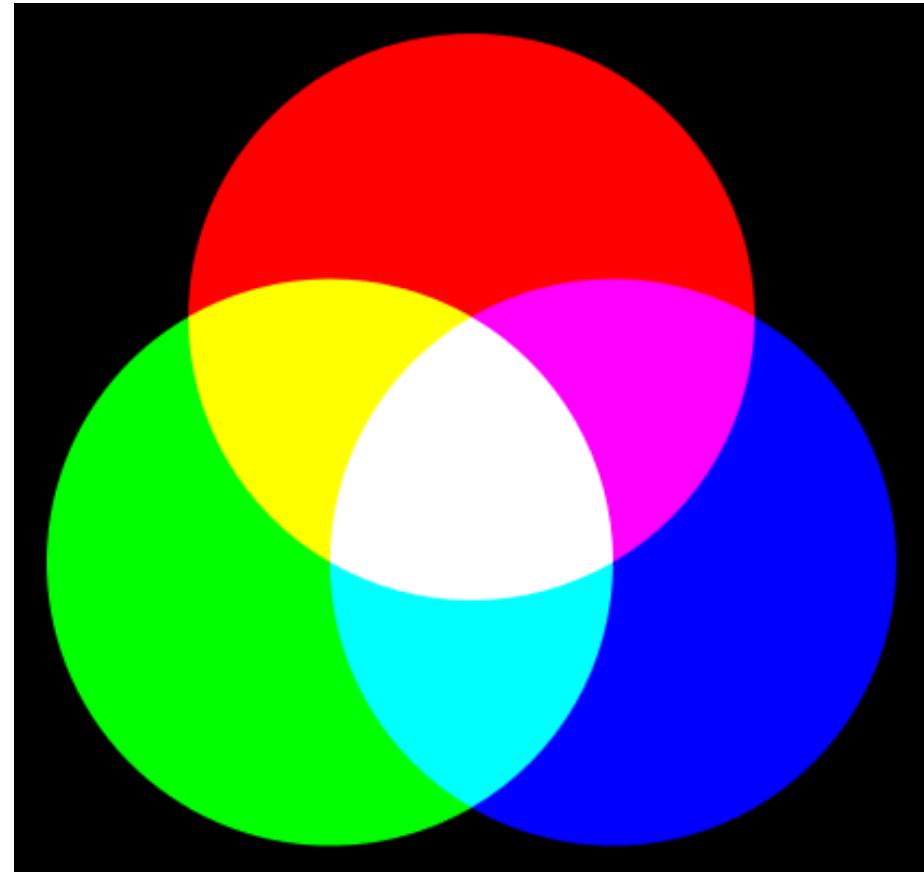
- Check the following CodePen link to see an example:

https://codepen.io/fatma_eltaher/pen/yyYzbVa

Description	Live
red	
orange	
yellow	
lime green	
green	
blue-green	
cyan	
sky blue	
blue	
purple	
magenta	
pink	
red	

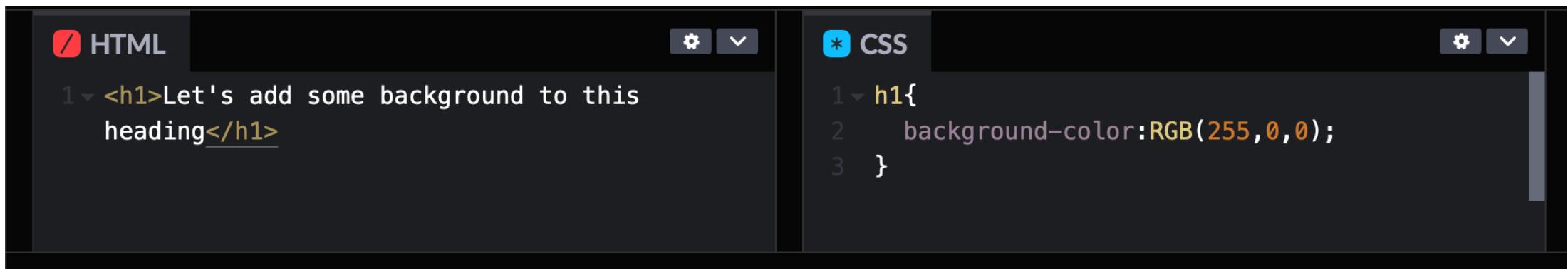
Red, green and blue (RGB)

- The RGB system is used to generate colours based on a mix of red, green and blue
- To style an HTML element colour, the colour can be set using a RGB value. RGB color values can be specified using:
 - `rgb(red, green, blue)`



Red, green and blue (RGB)

- To style an elements colour, the colour can be set using a RGB value. RGB color values can be specified using:
 - `rgb(red, green, blue)`
- Each parameter (red, green, blue) defines the **intensity** of the color between 0 and 255.
- What will be the background colour of the tag `<h1>` in the following code?



The image shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <h1>Let's add some background to this  
heading</h1>
```

The 'CSS' tab contains the following code:

```
1 * h1{  
2   background-color:RGB(255,0,0);  
3 }
```

Red, green and blue (RGBA)

- The RGBA system is an extension of the RGB system
- The A stands for Alpha and sets up the transparency of a colour
- The A value goes from 0 (full transparency) to 1 (no transparency)



The screenshot shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <h1>Let's add some background to this heading</h1>
```

The 'CSS' tab contains the following code:

```
1 * h1{  
2     background-color:rgba(255,0,0,0.3);  
3 }
```

Let's add some background to this heading

Click on the code to see the example in CodePen

Hex values

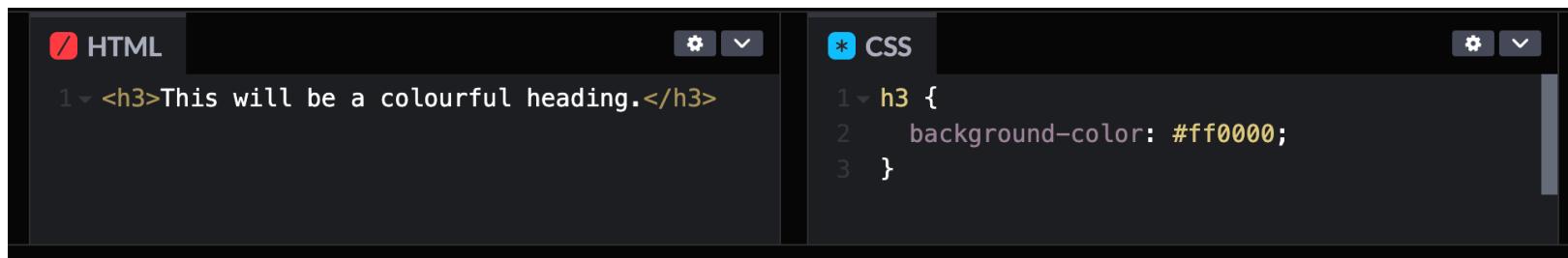
- The hex colour system is also based on red, green and blue colours, ranging from 0 to 255. However, we specify those values using hexadecimal numbers.
- In the hexadecimal numbers, we have a base **16** instead of base 10 (decimal numbers). Therefore, hexadecimal numbers are a combination of numbers from 0-9 and letters from A-F:

0 1 2 3 4 5 6 7 8 9 A B C D F

- Because we are using the hexadecimal system, we have more shades of colours options in a compact system.
- We specify the quantity of red, green and blue by the six pairs of hex numbers (#RRGGBB). Knowing that, what colour #FFFFFF would be?

Hex values

- A hexadecimal colour is specified with: **#RRGGBB**, where the RR (red), GG (green) and BB (blue) hexadecimal integers specify the components of the colour
- Each parameter RRGGBB defines the intensity of the color between 0 and F (Hexadecimal values)



The screenshot shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <h3>This will be a colourful heading.</h3>
```

The 'CSS' tab contains the following code:

```
1 h3 {  
2   background-color: #ff0000;  
3 }
```

This will be a colourful heading.

Click on the code to see the example in CodePen

Retrieving colours

- It might be tricky to guess what HEX and RGB values you need to result in a certain colour
- Some useful tools can help you with that, such as the Hex Color Tool website: <https://www.hexcolortool.com/>
- Another good tool for web developers is the EyeDropper Chrome extension: <https://eyedropper.org/>

Parent and children elements

- If one element contains another element, the outer element is the parent and the inner element is the child.
- Container HTML elements usually work as a parent element to one or multiple children elements
- By styling the container element, you can style the elements inside

The diagram illustrates the hierarchical structure of an HTML document. A blue box labeled "Parent" points to the opening tag of the `<article>` element. Another blue box labeled "Child of Article" points to the text "Intro to Golf", which is enclosed within the `<h3>` and `</h3>` tags. The code itself is as follows:

```
1 <article>
2   <h3>
3     Intro to Golf
4   </h3>
5   <p>
6     Golf is the greatest game ever....|
7   </p>
8 </article>
```

The code shows a nested structure where the `<h3>` and `<p>` tags are children of the `<article>` element. The text "Golf is the greatest game ever...." is currently being typed into the `<p>` tag.

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Practice

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Positioning a container – margin property

- The **margin** property can be used for a number of HTML elements, including containers
- You can specify which of the margins you want to set up:
 - margin-top
 - margin-right
 - margin-bottom
 - margin-left
- Or you can declare everything using the margin property. For example, the following code will set up a top margin = 20px, right margin = 60px, bottom margin = 80 px, and left margin = 100px:

```
#ToDo {  
    margin: 20px 60px 80px 100px;  
    background-color: grey;  
}
```

Positioning a container – margin property

The image shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <div id="ToDo">
2   <ul>
3     <li>Task 1</li>
4     <li>Task 2</li>
5     <li>Task 3</li>
6   </ul>
7 </div>
```

The 'CSS' tab contains the following code:

```
1 #ToDo {
2   margin: 20px 60px 80px 100px;
3   background-color: grey;
4 }
```

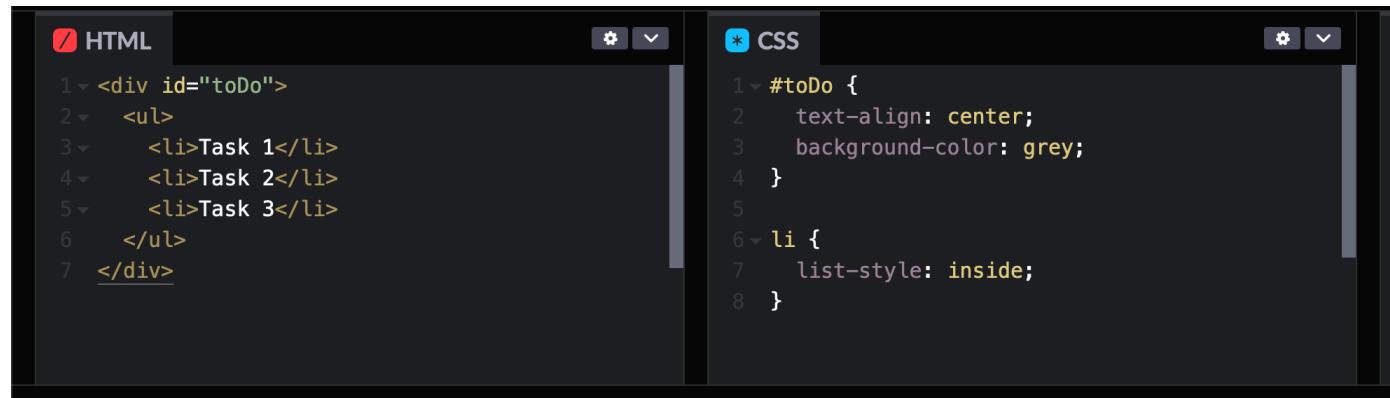
- Task 1
- Task 2
- Task 3

Click on the code to see the example in CodePen



Positioning text – text-align property

- For a container that holds text, it is possible to align only the text.
- The CSS property used is **text-align** and the most commonly used values are **center**, **left**, or **right**



```
* HTML
1 <div id="ToDo">
2   <ul>
3     <li>Task 1</li>
4     <li>Task 2</li>
5     <li>Task 3</li>
6   </ul>
7 </div>

* CSS
1 #ToDo {
2   text-align: center;
3   background-color: grey;
4 }
5
6 li {
7   list-style: inside;
8 }
```



- Task 1
- Task 2
- Task 3

Click on the code to see the example in CodePen

Background

- The CSS background properties can be used on a variety of elements.
- It is possible to set up the:
 - background-color
 - background-image
 - background-repeat
 - background-position

Background

HTML

```
3
4 <p id="bgimage">This is how the background
  image CSS property works</p>
5
6 <p id="bgrepeat">This is how the
  background repeat CSS property works</p>
7
8 <p id="bgposition">This is how the
  background position CSS property works</p>
9
10
```

CSS

```
1 /*this is a comment*/
2 /*background-color*/
3 #bgcolor{
4   background-color: green;
5 }
6
7 /*background image*/
8 #bgimage{
9   color: white;
10  background-image: url("https://cdn.pixabay.com/photo/2021/09/12/07/58/banner-
  6617553_480.jpg");
11 }
12
13 /*background repeat - used to repeat the same image multiple times in the background; it can
```

This is how the background colour CSS property works.

This is how the background image CSS property works

This is how the background repeat CSS property works

This is how the background position CSS property works



Click on the code to see the example in CodePen



https://www.w3schools.com/cssref/tryit.php?filename=trycss_background-repeatey

Border

- The CSS border properties allow you to specify the style, width, and color of an element's border.

```
/* HTML */
1 <p class="dotted">A dotted border.</p>
2 <p class="dashed">A dashed border.</p>
3 <p class="solid">A solid border.</p>
4 <p class="double">A double border.</p>
5 <p class="groove">A groove border.</p>
6 <p class="ridge">A ridge border.</p>
7 <p class="inset">An inset border.</p>
8 <p class="outset">An outset border.</p>
9 <p class="none">No border.</p>
10 <p class="hidden">A hidden border.</p>
11 <p class="mix">A mixed border.</p>

/* CSS */
1 p.dotted {border-style: dotted;}
2 p.dashed {border-style: dashed;}
3 p.solid {border-style: solid; border-width: 5px;}
4 p.double {border-style: double; border-color: green;}
5 p.groove {border-style: groove;}
6 p.ridge {border-style: ridge;}
7 p.inset {border-style: inset;}
8 p.outset {border-style: outset;}
9 p.none {border-style: none;}
10 p.hidden {border-style: hidden;}
11 p.mix {border-style: dotted dashed solid double;}
```

A dotted border.

A dashed border.

A solid border.

A double border.

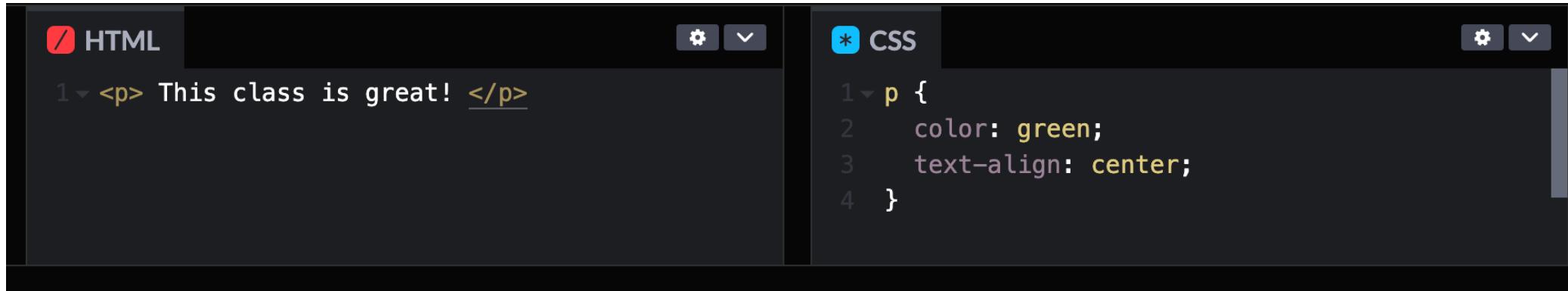
A groove border.

Click on the code to see the example in CodePen

CSS and text

- The appearance of text on the web page can be styled with CSS.
 - Text Color
 - Text Alignment
 - Text Decoration
 - Text Transformation
 - Line Height
 - Word Spacing

Text-colour



The screenshot shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <p> This class is great! </p>
```

The 'CSS' tab contains the following code:

```
1 p {  
2   color: green;  
3   text-align: center;  
4 }
```

This class is great!

Click on the code to see the example in CodePen



Text-alignment

- Properties:

- text-align: left;
- text-align: right;
- text-align: center;
- text-align: justify;

The image shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <div id="ToDo">
2   <ul>
3     <li>Task 1</li>
4     <li>Task 2</li>
5     <li>Task 3</li>
6   </ul>
7 </div>
```

The 'CSS' tab contains the following code:

```
* CSS
1 #ToDo {
2   text-align: center;
3   background-color: grey;
4 }
```

Task 1
Task 2
Task 3

Text-decoration

- text-decoration: underline;
- text-decoration: overline;
- text-decoration: line-through

The screenshot shows a code editor with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <p id="underline">This is an underline text</p>
2
3 <p id="overline">This is an overline text</p>
4
5 <p id="linethrough">This is a linethrough text</p>
6
7 <p id="allTogether">This is all together</p>
```

The 'CSS' tab contains the following code:

```
* CSS
1 #underline{
2   text-decoration: underline;
3 }
4
5 #overline{
6   text-decoration: overline;
7 }
8
9 #linethrough{
10   text-decoration: line-through;
11 }
12
13 #allTogether{
14   text-decoration: overline underline;
```

This is an underline text

This is an overline text

This is a linethrough text

This is all together

Click on the code to see the example in CodePen

Text-transform

- `text-transform: capitalize;`
- `text-transform: uppercase;`
- `text-transform: lowercase;`

The screenshot shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <p id="capitalize">Capitalize</p>
2
3 <p id="uppercase">Uppercase</p>
4
5 <p id="lowercase">Lowercase</p>
6
```

The 'CSS' tab contains the following code:

```
1
2 #capitalize{
3   text-transform: capitalize;
4 }
5
6 #uppercase{
7   text-transform: uppercase;
8 }
9
10 #lowercase{
11   text-transform: lowercase;
12 }
```

Capitalize

UPPERCASE

lowercase

Click on the code to see the example in CodePen

Line-height

The screenshot shows a code editor with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <p id="uppercase">Uppercase</p>
2
3 <p id="lowercase">Lowercase</p>
4
```

The 'CSS' tab contains the following code:

```
1 #uppercase{
2   text-transform: uppercase;
3   line-height: 400%;
4   background-color: green;
5
6 }
7
8 #lowercase{
9   text-transform: lowercase;
10  line-height: 50%;
11  background-color: red;
12 }
```

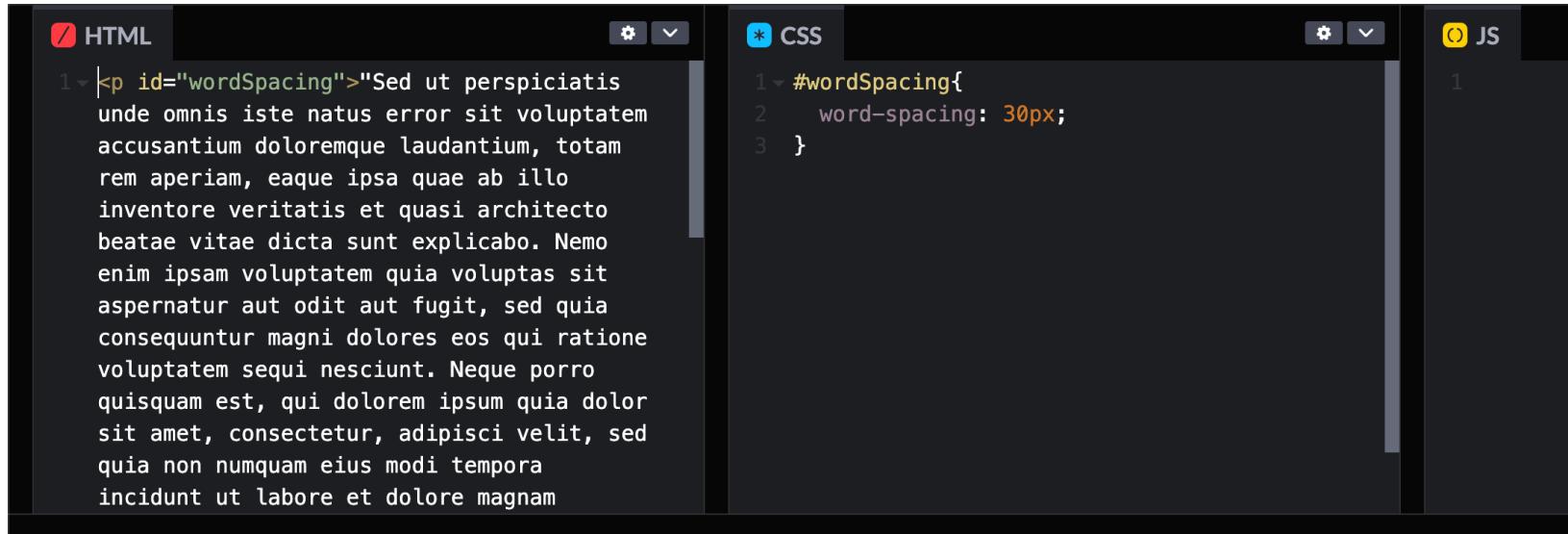
UPPERCASE

lowercase

Click on the code to see the example in CodePen



Word-spacing



```
HTML
1 <p id="wordSpacing">Sed ut perspiciatis
  unde omnis iste natus error sit voluptatem
  accusantium doloremque laudantium, totam
  rem aperiam, eaque ipsa quae ab illo
  inventore veritatis et quasi architecto
  beatae vitae dicta sunt explicabo. Nemo
  enim ipsam voluptatem quia voluptas sit
  aspernatur aut odit aut fugit, sed quia
  consequuntur magni dolores eos qui ratione
  voluptatem sequi nesciunt. Neque porro
  quisquam est, qui dolorem ipsum quia dolor
  sit amet, consectetur, adipisci velit, sed
  quia non numquam eius modi tempora
  incident ut labore et dolore magnam
```

```
CSS
1 #wordSpacing{
2   word-spacing: 30px;
3 }
```

```
JS
1
```

"Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exerc laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla pariatur?"

Click on the code to see the example in CodePen

CSS Fonts

```
✓ HTML
1 <p id="fontFamily">Sed ut perspiciatis
  unde omnis iste natus error sit voluptatem
  accusantium doloremque laudantium, totam
  rem aperiam, eaque ipsa quae ab illo
  inventore veritatis et quasi architecto
  beatae vitae dicta sunt explicabo. Nemo
  enim ipsam voluptatem quia voluptas sit
  aspernatur aut odit aut fugit, sed quia
  consequuntur magni dolores eos qui ratione
  voluptatem sequi nesciunt. Neque porro
  quisquam est, qui dolorem ipsum quia dolor
  sit amet, consectetur, adipisci velit, sed
  quia non numquam eius modi tempora
  incident ut labore et dolore magnam
```

```
* CSS
1 /*set up an extra font-family in case the
   chosen one is not available*/
2 #fontFamily{
3   font-family: Lucida Console, Courier
4   New;
5 }
```

"Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, t
inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptate
fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro qu
amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incident ut labore et dolc
minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea
rehrenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui doloren

Click on the code to see the example in CodePen

Font stack

- Browsers and computer systems can be limited in relation to how many fonts options they have available
- You can check this website to see what fonts are available for each system <https://www.cssfontstack.com/>
- Because of that, you need to have a font stack – extra options in case the font you've chosen is not available
- You can separate your fonts in the stack using a comma

Google Fonts API

It is possible to use the pre-built CSS fonts or link your stylesheet to external fonts, such as Google Fonts API: <https://fonts.googleapis.com/>
This API is open-source and free to use, even commercially.

To add a Google Font to your website:

1. Add the following to the **<head></head>** tag (replace the **Font+Name** with the name of the font you want to use)

```
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Font+Name">
```

2. Work on your CSS code and add the chosen font as a value of the **font-family** attribute.
Do not Forget to add an alternative font in case the Google one is not available

Google Fonts API



The screenshot shows a code editor interface with two panels. The left panel is labeled "HTML" and contains the following code:

```
1 <head>
2   <link rel="stylesheet"
3     href="https://fonts.googleapis.com/css?
4       family=Silkscreen">
5 </head>
6
7 <body>
8   <h1>Sed ut perspiciatis unde omnis iste
9     natus error sit voluptatem accusantium
```

The right panel is labeled "CSS" and contains the following code:

```
* body {
  font-family: "Silkscreen", sans-serif;
}
```

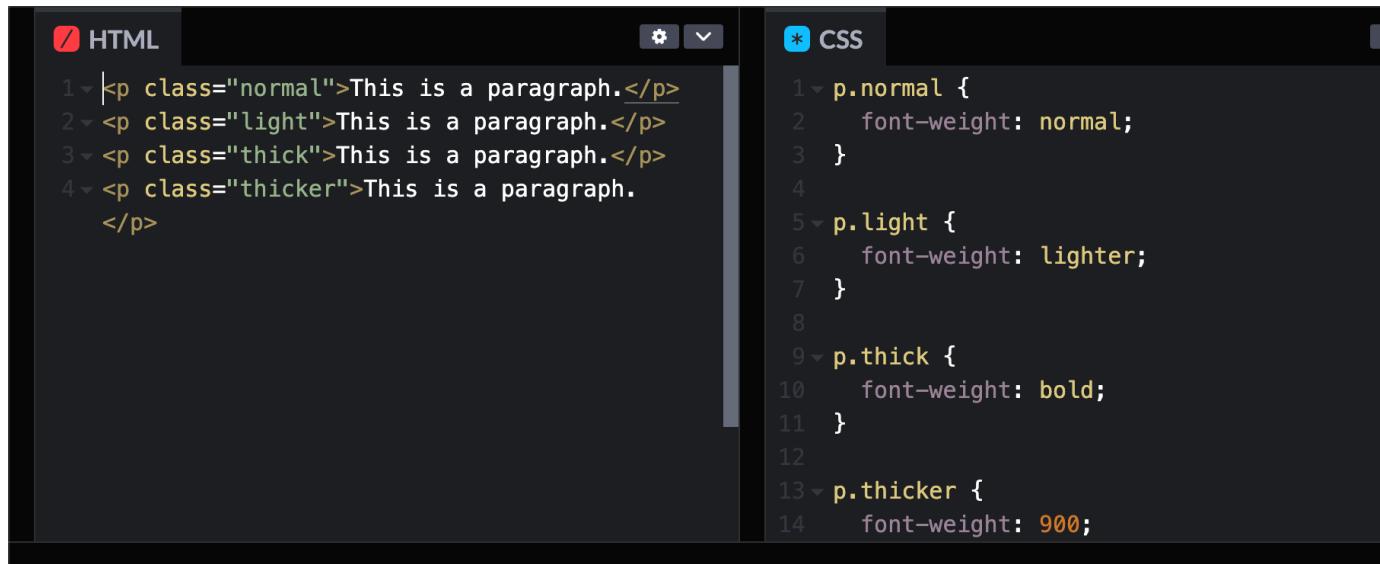
SED UT PERSPICIATIS UNDE OMNIS ISTE NATUS ERROR
ACCUSANTIUM DOLOREMQUE LAUDANTIUM, TOTAM REM I
QUAE AB ILLO INVENTORE VERITATIS ET QUASI ARCHITE
DICTA SUNT EXPLICABO. NEMO ENIM IPSAM VOLUPTATE
SIT ASPERNATUR AUT ODIT AUT FUGIT, SED QUIA CONS
DOLORES EOS QUI RATIONE VOLUPTATEM SEQUI NESCIU
QUISQUAM EST, QUI DOLOREM IPSUM QUIA DOLOR SIT A
ADIPISCI VELIT. SED QUIA NON NUMQUAM EIUS MODI TI

Click on the code to see the example in CodePen



Font-weight

A simple way to change the font weight.



```
* HTML
1 <p class="normal">This is a paragraph.</p>
2 <p class="light">This is a paragraph.</p>
3 <p class="thick">This is a paragraph.</p>
4 <p class="thicker">This is a paragraph.
</p>

* CSS
1 p.normal {
2   font-weight: normal;
3 }
4
5 p.light {
6   font-weight: lighter;
7 }
8
9 p.thick {
10   font-weight: bold;
11 }
12
13 p.thicker {
14   font-weight: 900;
```

This is a paragraph.

This is a paragraph.

This is a paragraph.

This is a paragraph.



Click on the code to see the example in CodePen

Font-size

- Different units can be used to set up the font-size. We will cover a number of units in future classes and see how they will be applied in the font-size property.
- We will start with pixels. Although it is not the most recommended one to be used, it is the easiest one to start with.
- Pixels are fixed units and one pixel is usually equal to one dot on the screen. That means the font-size in pixels will be rendered smaller on screens with higher resolution than on a lower resolution screen.
- Pixels are not recommended on responsive websites (websites that can be seen in most devices by adapting to them)

Font-size

The screenshot shows a code editor interface with two tabs: 'HTML' and 'CSS'. The 'HTML' tab contains the following code:

```
1 <p id="first">This is a paragraph</p>
2
3 <p id="second">This is paragraph, but with
   bigger font size</p>
4
5
```

The 'CSS' tab contains the following code:

```
1 #first {
2   font-size: 20px;
3 }
4
5 #second {
6   font-size: 40px;
7 }
```

This is a paragraph

This is paragraph, but with bigger font size

Click on the code to see the example in CodePen



Styling Links

- The four types of link states:
 - a:link - normal, not clicked yet
 - a:visited - link has been clicked
 - a:hover - when the user hovers the link
 - a:active - when the link is just clicked

Styling Links



The screenshot shows a code editor interface with two panels. The left panel, labeled 'HTML', contains the following code:

```
1 <a href="https://codepen.io/pen">Code Pen  
Website</a>
```

The right panel, labeled 'CSS', contains the following code:

```
1 a:link{  
2   color: red;  
3 }  
4  
5 a:visited{  
6   color: purple;  
7 }  
8  
9 a:hover{  
10  color: green;
```

[Code Pen Website](https://codepen.io/pen)

Click on the code to see the example in CodePen



Practice

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