

Internship Report – Frontend Dev(Week 2)

Name: Zainab

Father Name: Assad Qayyum

Date: 1st July, 2025

Internship Domain: Front-end Intern

Task: CSS – Selectors, Colors, Units and Typography

Task Overview:

Today's task is to learn Selectors, Colors, Units and Typography in CSS and practice with examples.

Content Covered:

Today I learned these concepts of CSS:

- Selectors
- Colors
- Units
- Typography

Introduction:

In this report, I will be exploring the fundamental concepts of CSS (Cascading Style Sheets) that are essential for styling web pages. The focus of today's learning includes understanding how to apply styles using selectors, enhance appearance using colors, manage layout and sizing with units, and improve text presentation through typography.

1. CSS Selectors:

A CSS selector selects the HTML element(s) you want to style. CSS selectors are used to "find" (or select) the HTML elements you want to style.

a) The CSS element Selector:

The element selector selects HTML elements based on the element name.

Example: Here, all <p> elements on the page will be center-aligned, with a red text color:

```
p {  
  text-align: center;  
  color: red;  
}
```

b) The CSS id Selector:

The id selector uses the id attribute of an HTML element to select a specific element. To select an element with a specific id, write a hash (#) character, followed by the id of the element.

Example: Here, the CSS rule below will be applied to the HTML element with id="para1":

```
#para1 {  
  text-align: center;  
  color: red;  
}
```

c) The CSS class Selector:

The class selector selects HTML elements with a specific class attribute. To select elements with a specific class, write a period (.) character, followed by the class name.

Example: In this example all HTML elements with class="center" will be red and center-aligned:

```
.center {
```

```
text-align: center;
color: red;
}
```

d) The CSS Universal Selector:

The universal selector (*) selects all HTML elements on the page.

Example: The CSS rule below will affect every HTML element on the page:

```
* {
  text-align: center;
  color: blue;
}
```

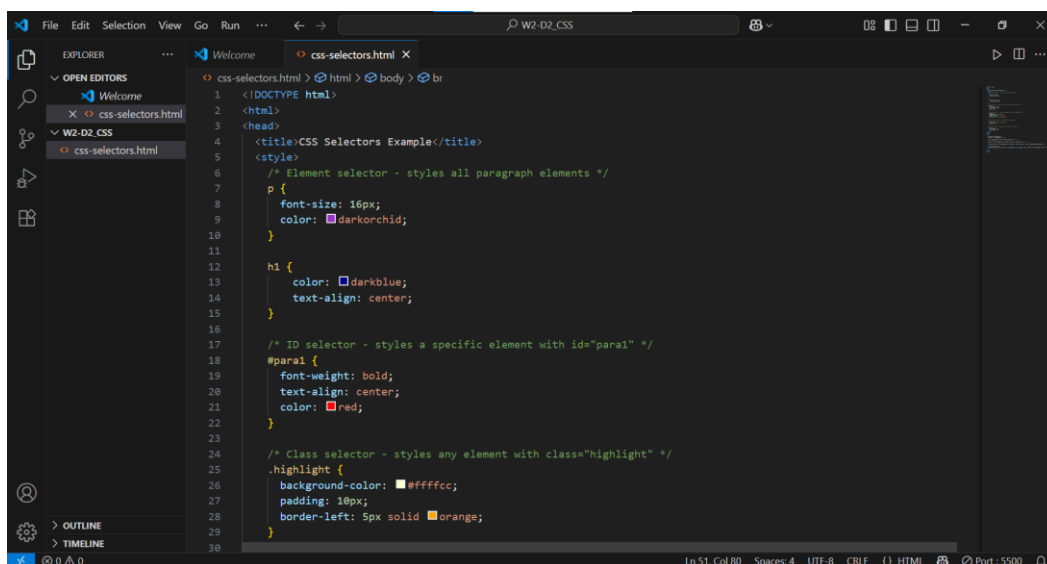
e) The CSS Grouping Selector:

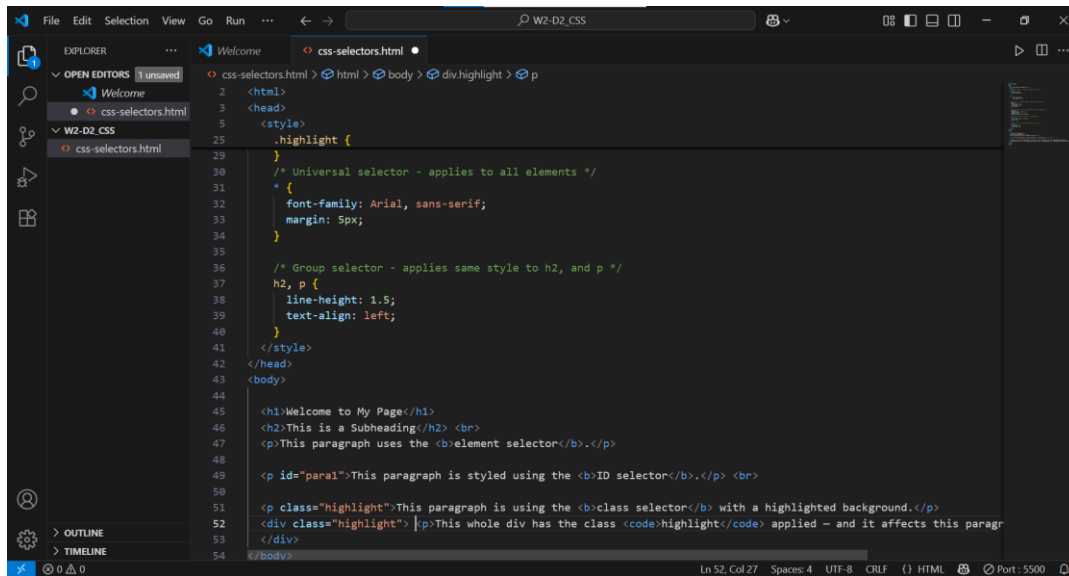
The grouping selector selects all the HTML elements with the same style definitions. To group selectors, separate each selector with a comma.

Example: In this example we have grouped the selectors(for h1, h2 and p elements)

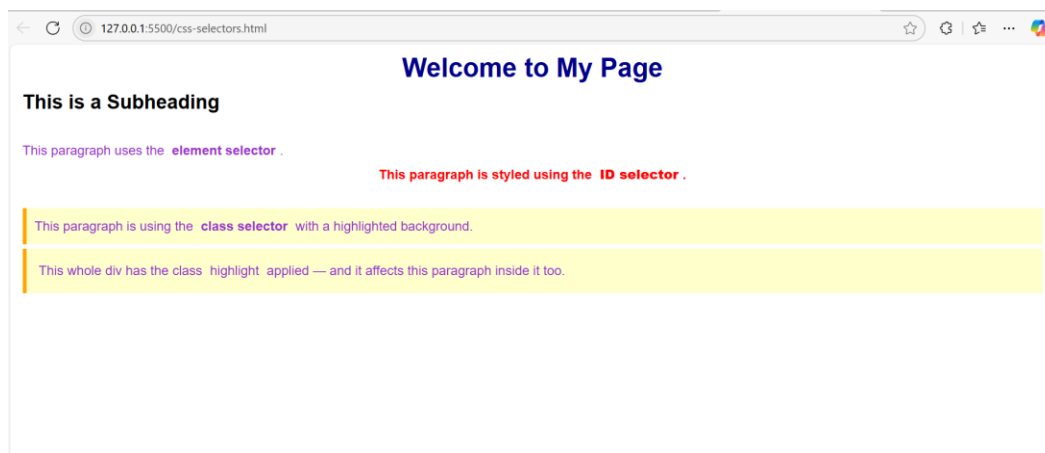
```
h1, h2, p {
  text-align: center;
  color: red;
}
```

Code Example:





```
1 <html>
2 <head>
3   <style>
4     .highlight {
5       font-family: Arial, sans-serif;
6       margin: 5px;
7     }
8   </style>
9 </head>
10 <body>
11   <h1>Welcome to My Page</h1>
12   <h2>This is a Subheading</h2> <br>
13   <p>This paragraph uses the <b>element selector</b>.</p>
14   <p id="para1">This paragraph is styled using the <b>ID selector</b>.</p> <br>
15   <p class="highlight">This paragraph is using the <b>class selector</b> with a highlighted background.</p>
16   <div class="highlight"><p>This whole div has the class <code>highlight</code> applied — and it affects this paragraph</p></div>
17 </body>
```



2. CSS Colors:

CSS lets you change the color of text, background, borders, etc. Colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values.

CSS Background Color:

You can set the background color for html element.

```
<h1 style="background-color: Blue;">Hello World</h1>
<p style="background-color: Red;">This is a paragraph.</p>
```

CSS Text Color:

You can set the color of text.

```
<h1 style="color: Red;">Hello World</h1>  
<p style="color: Blue;">This is paragraph 1.</p>  
<p style="color: Green;">This is paragraph 2.</p>
```

CSS Border Color:

You can set the color of borders:

```
<h1 style="border:2px solid Red;">Hello World</h1>  
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>  
<h1 style="border:2px solid Violet;">Hello World</h1>
```

A) CSS RGB Colors:

An RGB color value represents RED, GREEN, and BLUE light sources.

RGB Value:

In CSS, a color can be specified as an RGB value, using this formula:

rgb(red, green, blue): where each parameter defines the intensity of the color between 0 and 255.

RGBA Value:

RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity for a color.

rgba(red, green, blue, alpha): here the alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all).

B) CSS HEX Colors:

A hexadecimal color is specified with: #RRGGBB, where the RR (red), GG (green) and BB (blue) hexadecimal integers specify the components of the color.

HEX Value:

In CSS, a color can be specified using a hexadecimal value in the form:

#rrggbb, where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

3 Digit HEX Value:

The 3-digit hex code is short for 6-digit hex codes. The 3-digit hex code can only be used when both the values (RR, GG, and BB) are the same for each component.

So, if we have #ff00cc, it can be written like this: #f0c. #**rgb** where r, g, and b represent the red, green, and blue components with values between 0 and f.

C) CSS HSL Colors:

HSL stands for hue, saturation, and lightness.

HSL Value:

In CSS, a color can be specified using hue, saturation, and lightness (HSL) in the form:

hsl(hue, saturation, lightness)

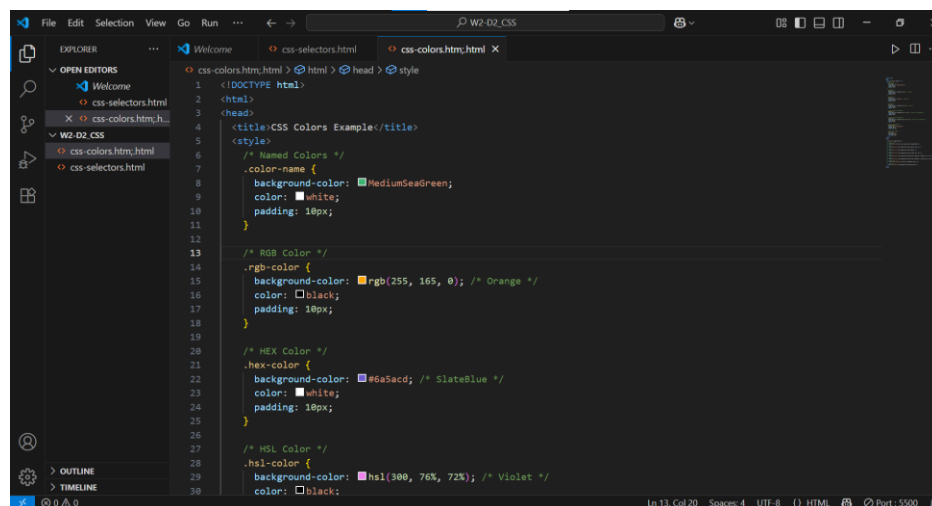
- Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue.
- Saturation is a percentage value. 0% means shade of gray, and 100% is the full color.
- Lightness is also a percentage. 0% is black, 50% is neither light nor dark, 100% is white

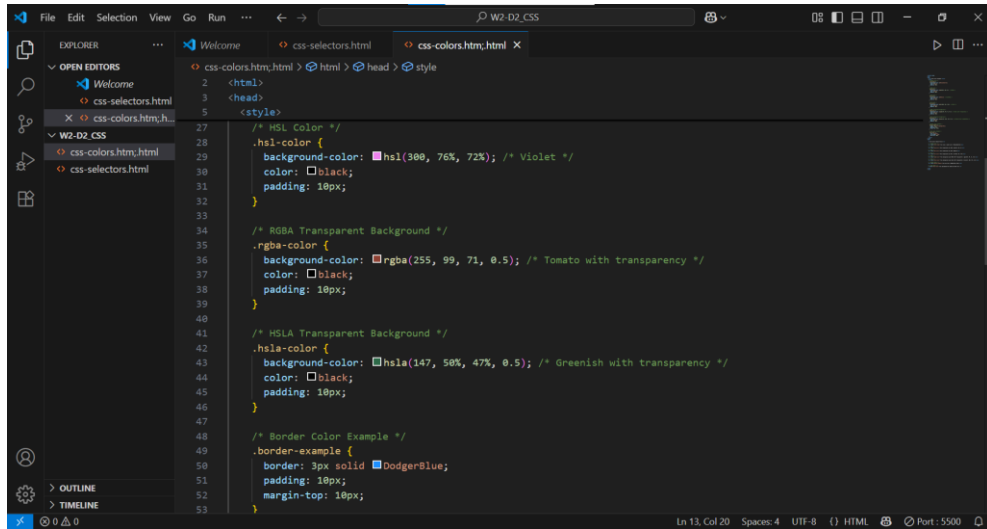
HSLA Value:

HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity for a color.

hsla(hue, saturation, lightness, alpha): alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all).

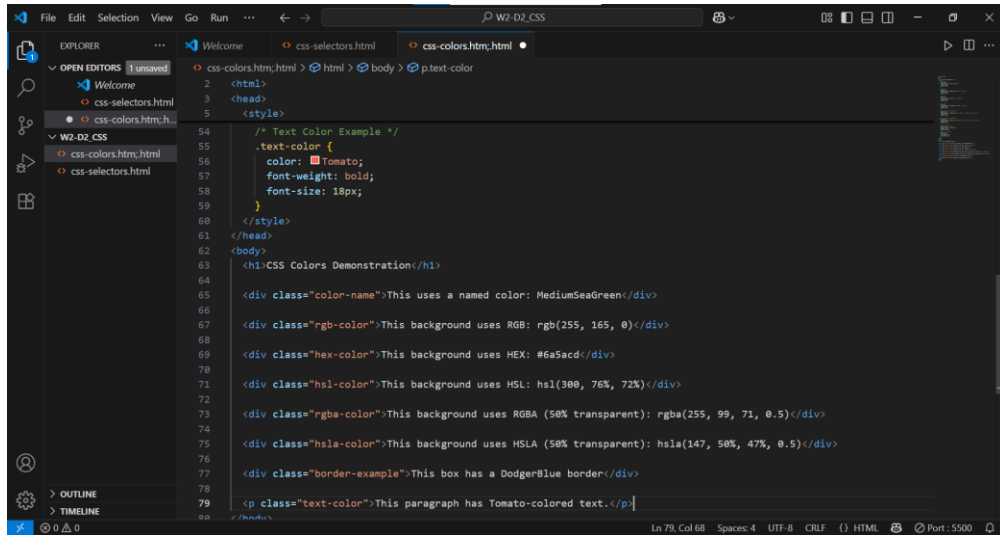
Code Example:





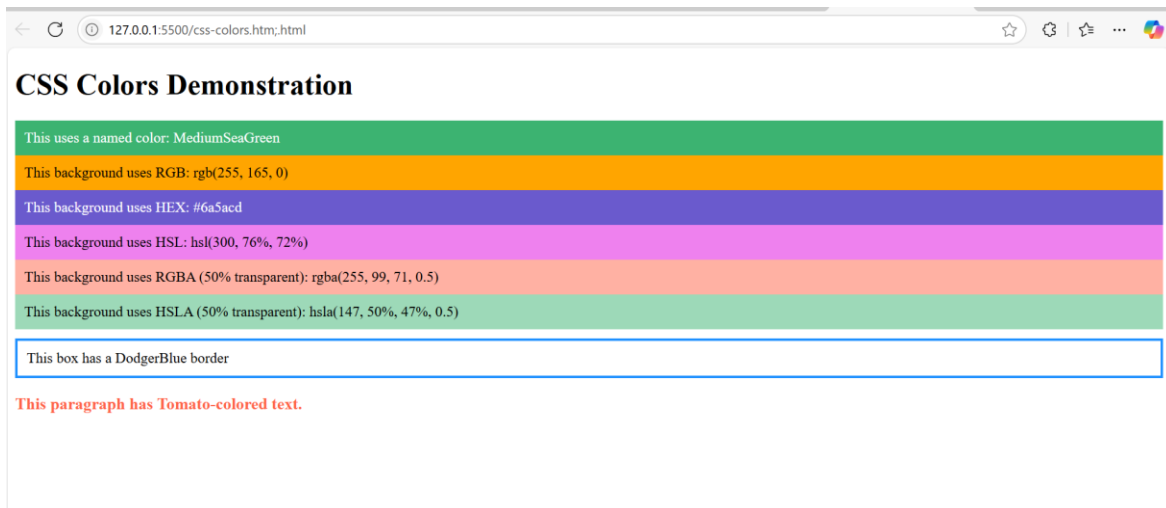
The VS Code editor displays the 'css-selectors.html' file. The Explorer sidebar on the left shows the project structure with 'W2-D2.CSS' selected. The main editor area shows the following CSS code:

```
1 <html>
2 <head>
3 <style>
4
5 /* HSL Color */
6 .hsl-color {
7   background-color: hsl(300, 76%, 72%); /* Violet */
8   color: black;
9   padding: 10px;
10 }
11
12 /* RGBA Transparent Background */
13 .rgba-color {
14   background-color: rgba(255, 99, 71, 0.5); /* Tomato with transparency */
15   color: black;
16   padding: 10px;
17 }
18
19 /* HSLA Transparent Background */
20 .hsla-color {
21   background-color: hsla(147, 50%, 47%, 0.5); /* Greenish with transparency */
22   color: black;
23   padding: 10px;
24 }
25
26 /* Border Color Example */
27 .border-example {
28   border: 3px solid DodgerBlue;
29   padding: 10px;
30   margin-top: 10px;
31 }
32
```



The VS Code editor displays the 'css-selectors.html' file. The Explorer sidebar on the left shows the project structure with 'W2-D2.CSS' selected. The main editor area shows the following HTML code:

```
1 <html>
2 <head>
3 <style>
4
5 /* Text Color Example */
6 .text-color {
7   color: Tomato;
8   font-weight: bold;
9   font-size: 18px;
10 }
11
12 </style>
13 </head>
14 <body>
15 <h1>CSS Colors Demonstration</h1>
16
17 <div class="color-name">This uses a named color: MediumSeaGreen</div>
18
19 <div class="rgb-color">This background uses RGB: rgb(255, 165, 0)</div>
20
21 <div class="hex-color">This background uses HEX: #6a5acd</div>
22
23 <div class="hsl-color">This background uses HSL: hsl(300, 76%, 72%)</div>
24
25 <div class="rgba-color">This background uses RGBA (50% transparent): rgba(255, 99, 71, 0.5)</div>
26
27 <div class="hsla-color">This background uses HSLA (50% transparent): hsla(147, 50%, 47%, 0.5)</div>
28
29 <div class="border-example">This box has a DodgerBlue border</div>
30
31 <p class="text-color">This paragraph has Tomato-colored text.</p>
32
```



3. CSS Units:

CSS has several different units for expressing a length. Many CSS properties take "length" values, such as width, margin, padding, font-size, etc.

Length is a number followed by a length unit, such as 10px, 2em, etc.

There are two types of length units:

Absolute Lengths:

The absolute length units are fixed and a length expressed in any of these will appear as exactly that size. Absolute length units are not recommended for use on screen, because screen sizes vary so much.

It includes:

cm: centimeters

mm: millimeters

in: inches (1in = 96px = 2.54cm)

px *: pixels (1px = 1/96th of 1in)

pt: points (1pt = 1/72 of 1in)

Relative Lengths:

Relative length units specify a length relative to another length property. Relative length units scale better between different rendering mediums.

It includes:

em: Relative to the font-size of the element (2em means 2 times the size of the current font)

ex: Relative to the x-height of the current font (rarely used)

ch: Relative to width of the "0" (zero)

rem: Relative to font-size of the root element

vw: Relative to 1% of the width of the viewport*

vh: Relative to 1% of the height of the viewport*

% Relative to the parent element

Code Example:

This screenshot shows the initial state of the VS Code editor. The Explorer sidebar on the left displays the project structure with files like 'css-selectors.html', 'css-colors.htm.html', and 'css-colors.html'. The main editor window is open to 'css-colors.html' and contains the following CSS code:

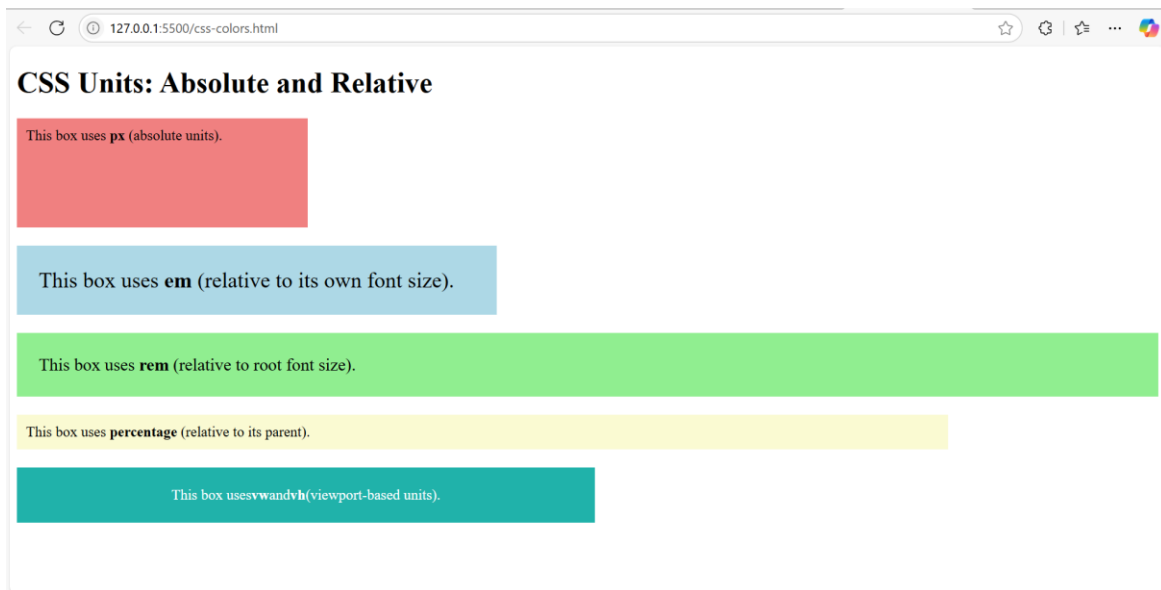
```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>CSS Units Example</title>
5   <style>
6     /* Absolute unit: px */
7     .box-px {
8       width: 300px;
9       height: 100px;
10      background-color: lightcoral;
11      font-size: 16px;
12      padding: 10px;
13      margin-bottom: 20px;
14    }
15
16    /* Relative to parent: em */
17    .box-em {
18      width: 20em;
19      font-size: 1.5em;
20      background-color: lightblue;
21      padding: 1em;
22      margin-bottom: 20px;
23    }
24
25    /* Relative to root font size: rem */
26    .box-rem {
27      font-size: 1.2rem;
28      padding: 1.5rem;
29      background-color: lightgreen;
30      margin-bottom: 20px;
31    }
32  </style>
33
```

This screenshot shows the VS Code editor with the CSS file updated to include viewport-based units. The Explorer sidebar remains the same. The main editor window shows the following CSS code:

```
25 /* Relative to root font size: rem */
26 .box-rem {
27   font-size: 1.2rem;
28   padding: 1.5rem;
29   background-color: lightgreen;
30   margin-bottom: 20px;
31 }
32
33 /* Width as percentage of parent */
34 .box-percent {
35   width: 80%;
36   background-color: lightgoldenrodyellow;
37   padding: 10px;
38   margin-bottom: 20px;
39 }
40
41 /* Viewport width and height */
42 .box-viewport {
43   width: 50vw;
44   height: 10vh;
45   background-color: lightseagreen;
46   color: white;
47   display: flex;
48   align-items: center;
49   justify-content: center;
50 }
51 </style>
```

This screenshot shows the final state of the VS Code editor. The Explorer sidebar is the same. The main editor window shows the HTML file 'css-colors.html' with the following code:

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>CSS Units Example</title>
5   <style>
6     .box-viewport {
7       align-items: center;
8       justify-content: center;
9     }
10  </style>
11 </head>
12 <body>
13   <h1>CSS Units: Absolute and Relative</h1>
14
15   <div class="box-px">This box uses <strong>px</strong> (absolute units).</div>
16
17   <div class="box-em">This box uses <strong>em</strong> (relative to its own font size).</div>
18
19   <div class="box-rem">This box uses <strong>rem</strong> (relative to root font size).</div>
20
21   <div class="box-percent">This box uses <strong>percentage</strong> (relative to its parent).</div>
22
23   <div class="box-viewport">This box uses <strong>vw</strong> and <strong>vh</strong> (viewport-based units).</div>
24
25 </body>
26 </html>
```



4. CSS Typography:

Typography is all about the style and appearance of text on your webpage. It includes:

- What font is used
- How large or small the text is
- How much space is between lines or letters
- Whether the text is bold, italic, underlined
- How the text is aligned (left, center, right)

It includes the following common properties:

font-family font-family: Arial, sans-serif;

font-size font-size: 18px;

font-weight font-weight: bold;

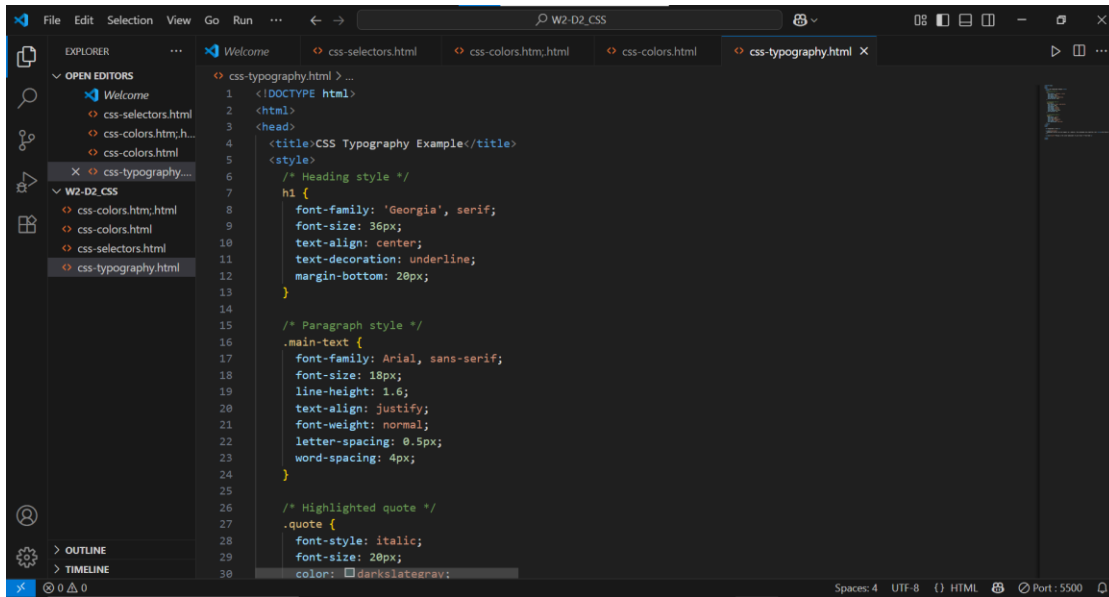
line-height line-height: 1.5;

text-align text-align: center;

text-decoration text-decoration: underline;

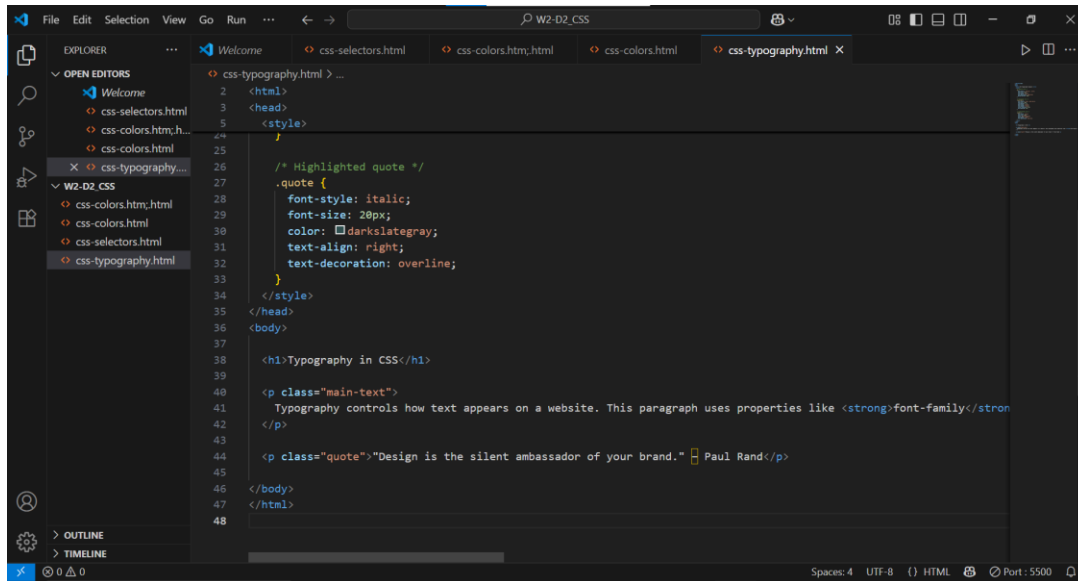
word-spacing word-spacing: 5px;

Code Example:



The image shows a Visual Studio Code editor window with the file explorer on the left and the code editor in the center. The file explorer shows a project named 'W2-D2_CSS' with several files. The code editor is open to 'css-typography.html' and displays the following CSS code:

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>CSS Typography Example</title>
5 <style>
6 /* Heading style */
7 h1 {
8   font-family: 'Georgia', serif;
9   font-size: 36px;
10  text-align: center;
11  text-decoration: underline;
12  margin-bottom: 20px;
13 }
14
15 /* Paragraph style */
16 .main-text {
17   font-family: Arial, sans-serif;
18   font-size: 18px;
19   line-height: 1.6;
20   text-align: justify;
21   font-weight: normal;
22   letter-spacing: 0.5px;
23   word-spacing: 4px;
24 }
25
26 /* Highlighted quote */
27 .quote {
28   font-style: italic;
29   font-size: 20px;
30   color: darkslategray;
```



The image shows a Visual Studio Code editor window with the file explorer on the left and the code editor in the center. The file explorer shows a project named 'W2-D2_CSS' with several files. The code editor is open to 'css-typography.html' and displays the following HTML code:

```
1 <html>
2 <head>
3 <style>
4 /*
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
```

