

## CSS (Cascading Style Sheet)

### *Introduction:*

CSS (Cascading Style Sheets) is a language that is designed to make things easier for the presentation of a page. In past, the development of big websites where fonts and colors were manually added to each single page has now changed to a single CSS file serving the style to the whole website. It helps to format the HTML documents by using required color, fonts, spacing and positioning. CSS uses rule sets and applies them to HTML elements using selectors.

Here is a sample portfolio screenshot that shows a webpage without CSS and with CSS.

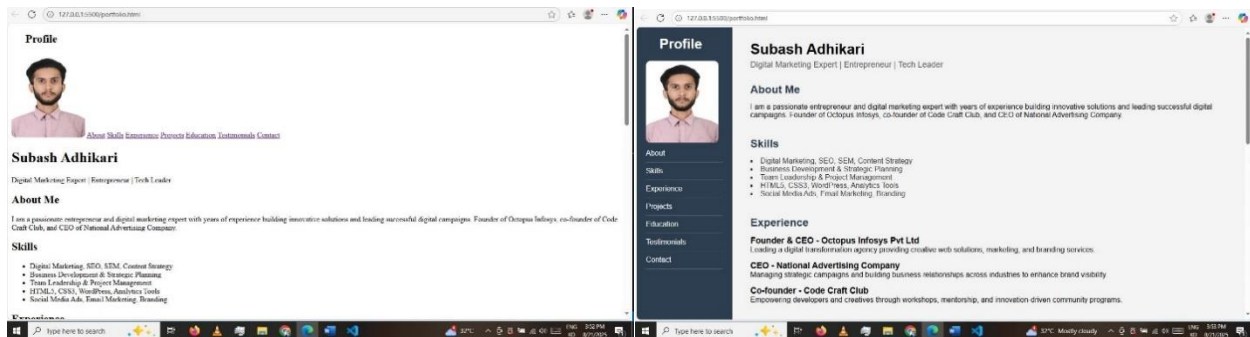


Figure 1: Webpage without CSS and with CSS

### *Why is CSS necessary?*

- Save the time of developer by reusing it in multiple pages.
- Change the style in whole program with a single adjustment.
- Help to perform clean coding and improve content readability on the webpage.
- Optimize website performance and user involvement.
- Help to make webpage responsive and adaptive in all types of devices.

### *CSS Composition:*

CSS consists of style rules that are understood by a browser if applied to a matching HTML tag. A style rule in CSS is a composition of two blocks:

- Selector: It targets the element of HTML in which the style is to be applied.  
`h1{}` focus all `<h1>...</h1>` element  
`.body{}` focus content inside `<body>...</body>`
- Declaration: It is used to apply the style code to the selected elements which is selected by a selector. It is written inside the `{ }` with one or more declarations. The declarations are further divided into two parts:
  - **CSS Properties and CSS Values:**

Properties of CSS are also known as the types of style used in the modification of code. The properties determine the type and the values define the range of change.

CSS Property: {color, font-size, margin, position}

CSS Value: (red, 16px, 10px, fixed)

### Syntax:

```
HTML EXAMPLE.html
HTML EXAMPLE.html > html > head > style > h1
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <style> /* Initialize CSS Code */
5     h1 { /* CSS Code after selecting h1 tag using selector */
6       color: blueviolet; /* Initialize declaration in property using value */
7       background-color: azure;
8       position: fixed;
9     }
10  </style>
11  <meta charset="UTF-8">
12  <meta name="viewport" content="width=device-width, initial-scale=1.0">
13  <title>Subash Adhikari - bi95gn</title> <!--Title of HTML pages -->
14 </head>
15 <body>
16   <h1>I love my country nepal</h1> <!-- HTML code where CSS Code is applied-->
17 </body>
18 </html>
```

Figure 2: Sample of CSS code

### Ways to use CSS:

- **Inline CSS:**

Inline CSS is the style that is directly applied inside the HTML elements using style attribute.

```
HTML EXAMPLE.html
HTML EXAMPLE.html > html > head
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Subash Adhikari - bi95gn</title>
7 </head>
8 <body>
9   <h1 style="color: aqua; font-size: smaller;">I love my country nepal</h1> <!--Inline CSS -->
10 </body>
11 </html>
```

Figure 3: Example of Inline CSS

- **Internal CSS:**

Internal CSS is the process of applying style using `<style>..</style>` elements inside the block of `<head>` section.

```
HTML EXAMPLE.html
HTML EXAMPLE.html > html > head > style
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <style> /* Inside CSS */
5     h1{
6       color: blueviolet;
7       background-color: azure;
8       position: fixed;
9     }
10  </style>
11  <meta charset="UTF-8">
12  <meta name="viewport" content="width=device-width, initial-scale=1.0">
13  <title>Subash Adhikari - bi95gn</title>
14 </head>
15 <body>
16   <h1>I love my country nepal</h1> <!-- HTML code where CSS Code is applied-->
17 </body>
18 </html>
```

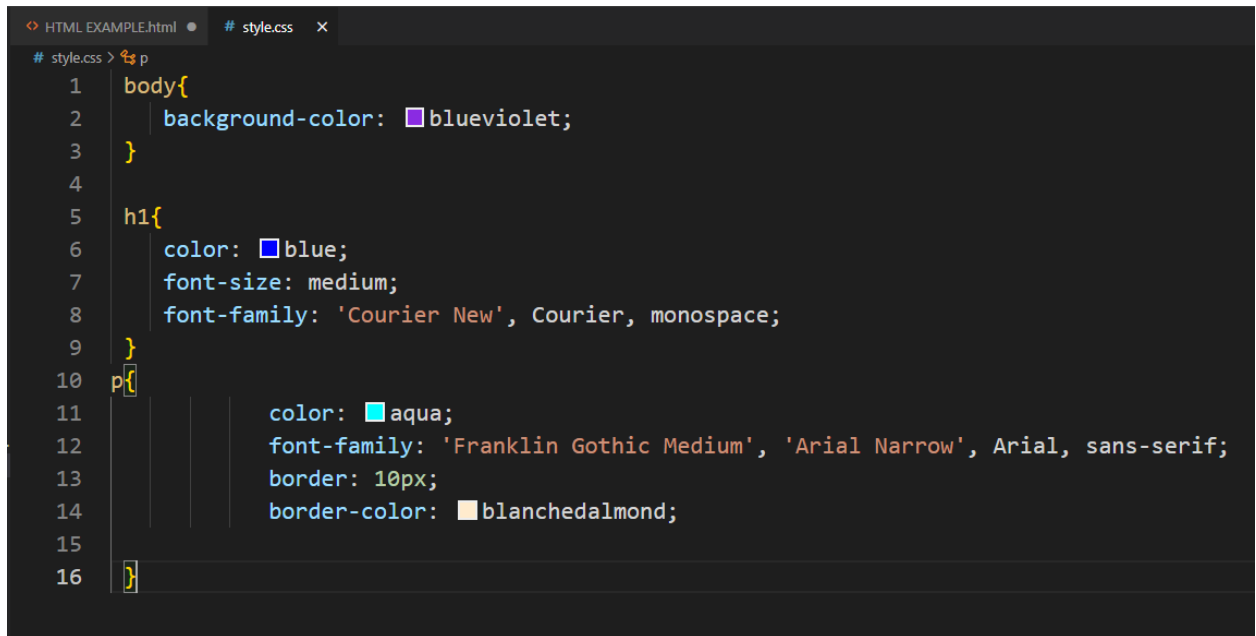
Figure 4: Example of Internal CSS

- **External CSS:**

External CSS is the process of applying style by linking .css file to the HTML file using `<link>` tag.

```
HTML EXAMPLE.html X # style.css
HTML EXAMPLE.html > html > body > p
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <link rel="stylesheet" href="style.css"> <!-- Linked with External CSS-->
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Subash Adhikari - bi95gn</title>
8 </head>
9 <body>
10  <h1>I love my country nepal</h1> <!-- HTML code where CSS Code is applied-->
11  <p>Nepal is green country.</p>
12 </body>
13 </html>
```

Figure 5: Example of External CSS linked in HTML file



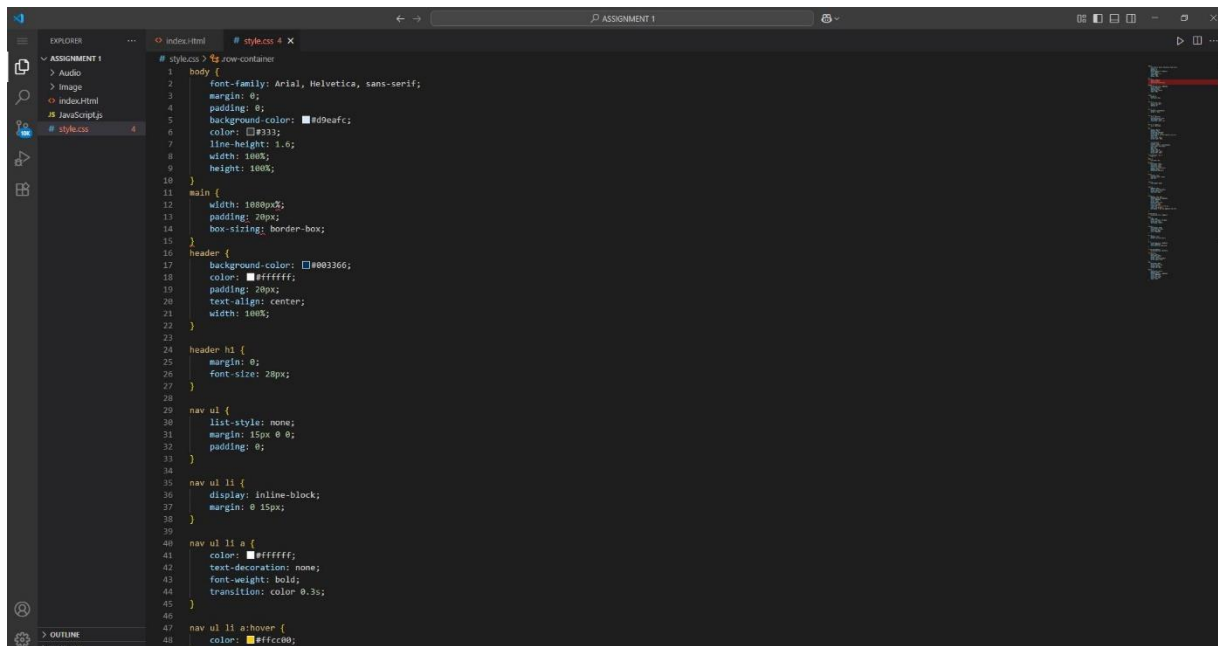
```
# style.css > p
1  body{
2      background-color: blueviolet;
3  }
4
5  h1{
6      color: blue;
7      font-size: medium;
8      font-family: 'Courier New', Courier, monospace;
9  }
10 p{
11     color: aqua;
12     font-family: 'Franklin Gothic Medium', 'Arial Narrow', Arial, sans-serif;
13     border: 10px;
14     border-color: blanchedalmond;
15 }
16 }
```

Figure 6: Example of External CSS Code

### Rules of cascading:

Cascading in CSS is defined as a process of applying styles based on priority. When multiple CSS styles are applied to the same tag or element, the browser will decide to apply the style based on cascading. Cascading follows the order of inline style, internal style and external style. This method permits developers to conduct heavy projects with multifaceted designs without errors.

### Example:



```
# style.css > row-container
1  body {
2      font-family: Arial, Helvetica, sans-serif;
3      margin: 0;
4      padding: 0;
5      background-color: #00beef;
6      color: #fff;
7      line-height: 1.6;
8      width: 100%;
9      height: 100%;
10 }
11 main {
12     width: 100%;
13     padding: 20px;
14     box-sizing: border-box;
15 }
16 header {
17     background-color: #003366;
18     color: #ffffff;
19     padding: 20px;
20     text-align: center;
21     width: 100%;
22 }
23
24 header h1 {
25     margin: 0;
26     font-size: 28px;
27 }
28
29 nav ul {
30     list-style: none;
31     margin: 15px 0 0;
32     padding: 0;
33 }
34
35 nav ul li {
36     display: inline-block;
37     margin: 0 15px;
38 }
39
40 nav ul li a {
41     color: #ffffff;
42     text-decoration: none;
43     font-weight: bold;
44     transition: color 0.3s;
45 }
46
47 nav ul li a:hover {
48     color: #ffcc00;
49 }
```

Figure 7 : Screenshot of CSS code

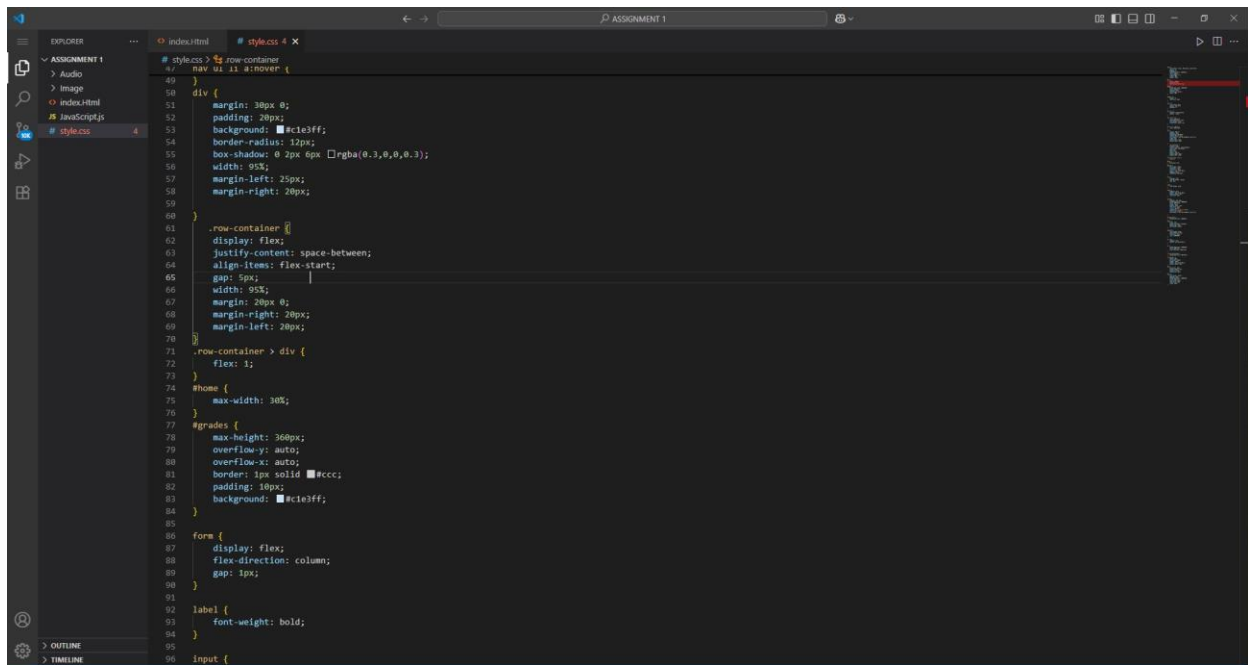


Figure 8: Screenshot of CSS code

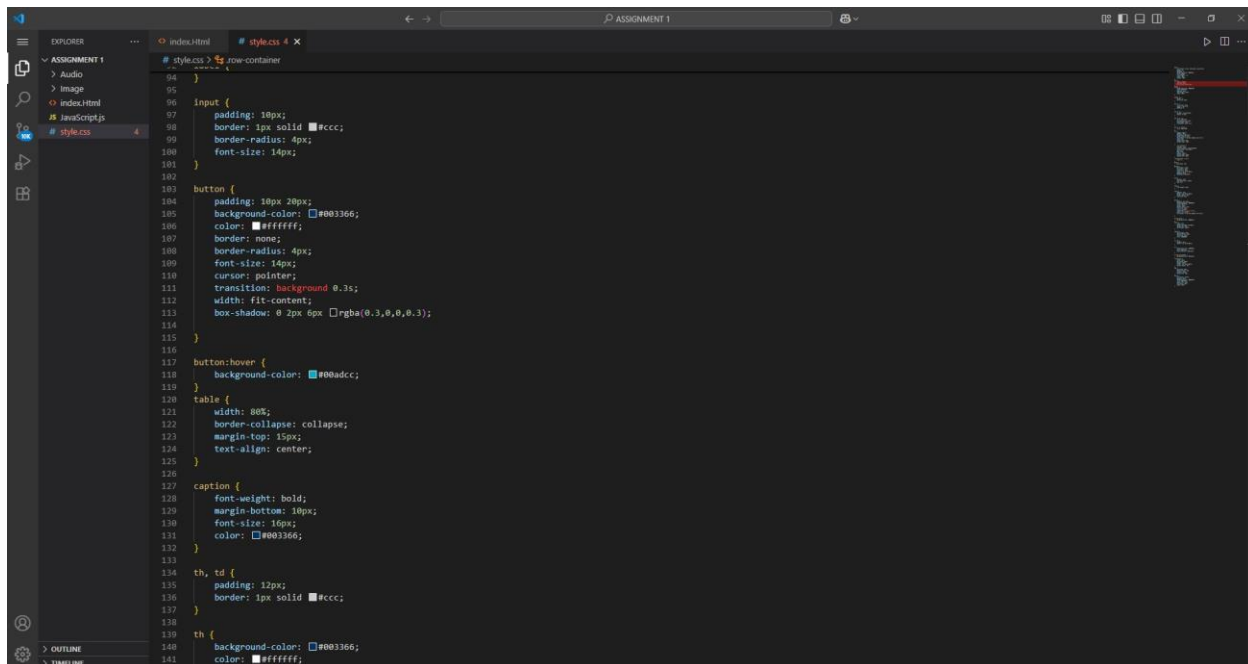


Figure 9: Screenshot of CSS code

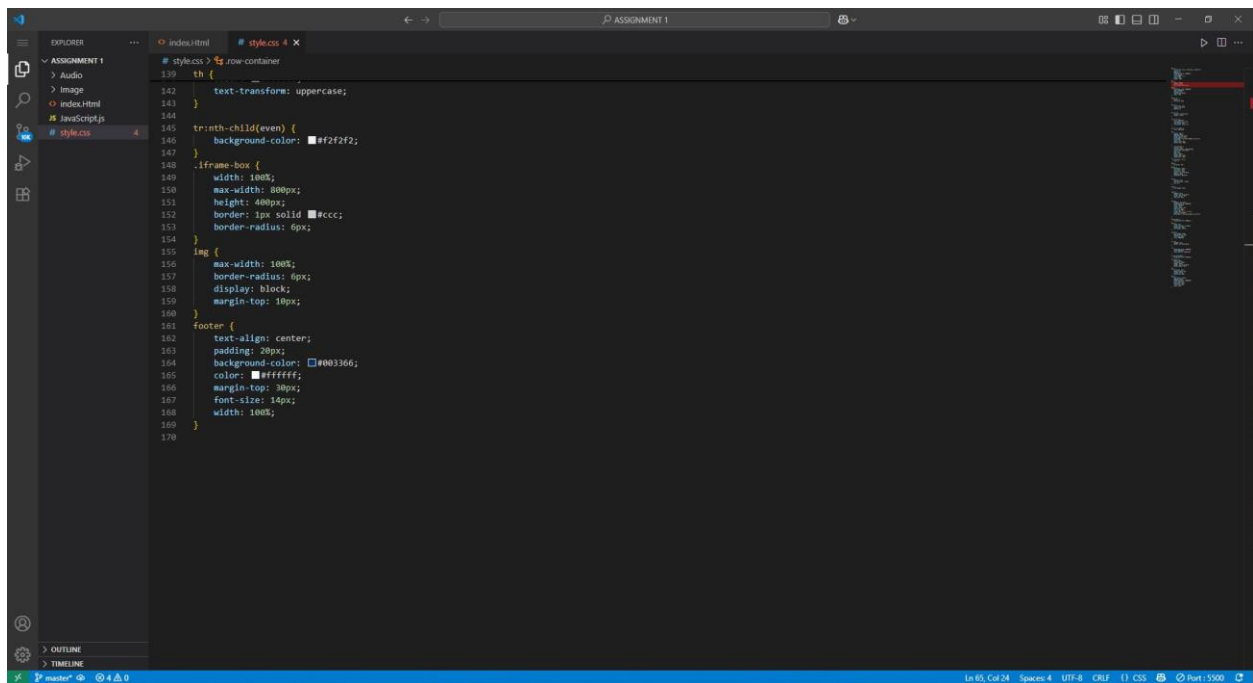


Figure 10: Screenshot of CSS code

Output Screen after adding CSS in HTML file:

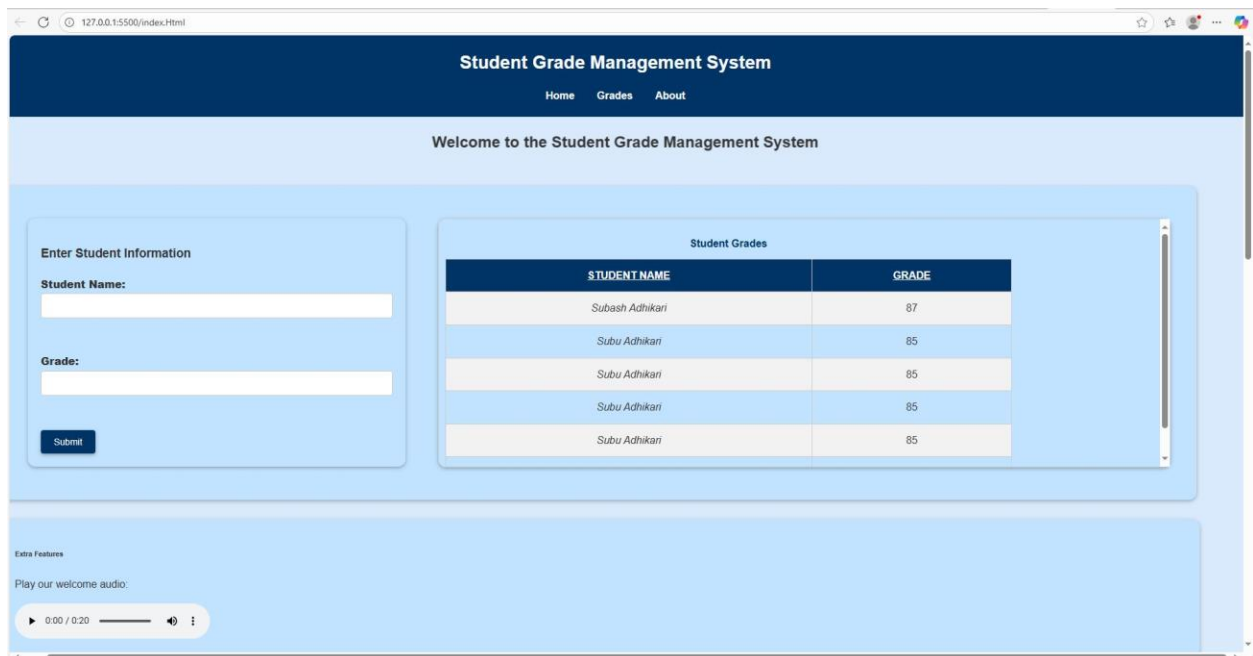


Figure 11: Screenshot of output screen

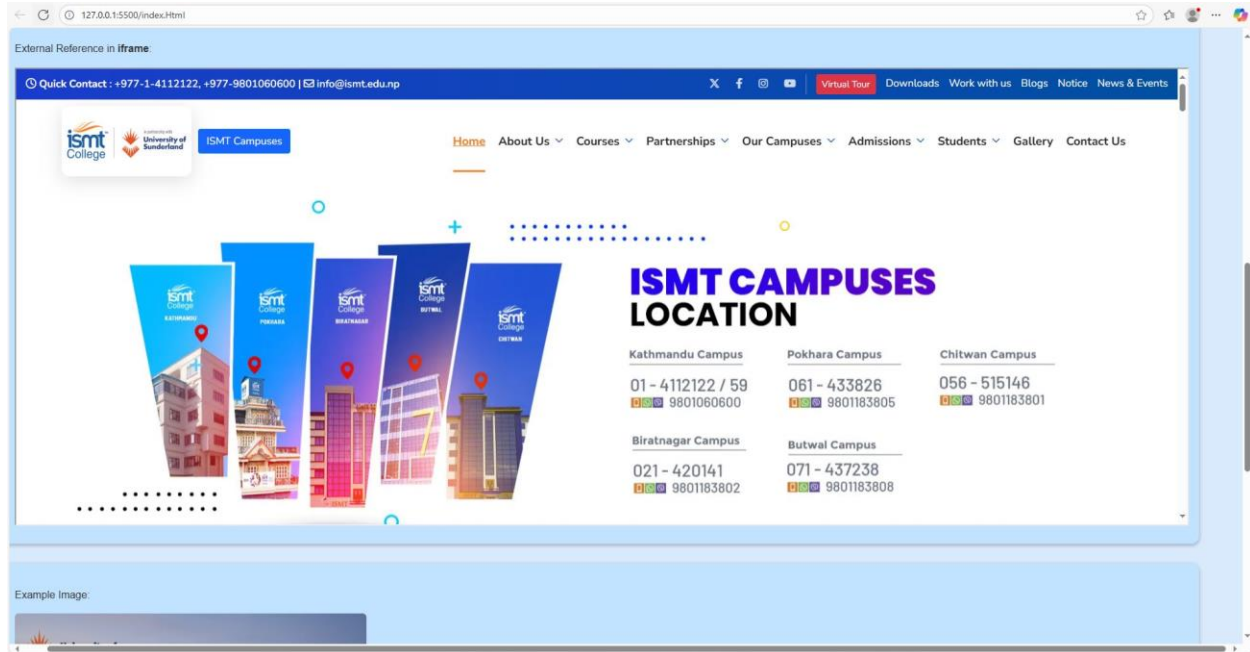


Figure 12: Screenshot of output screen

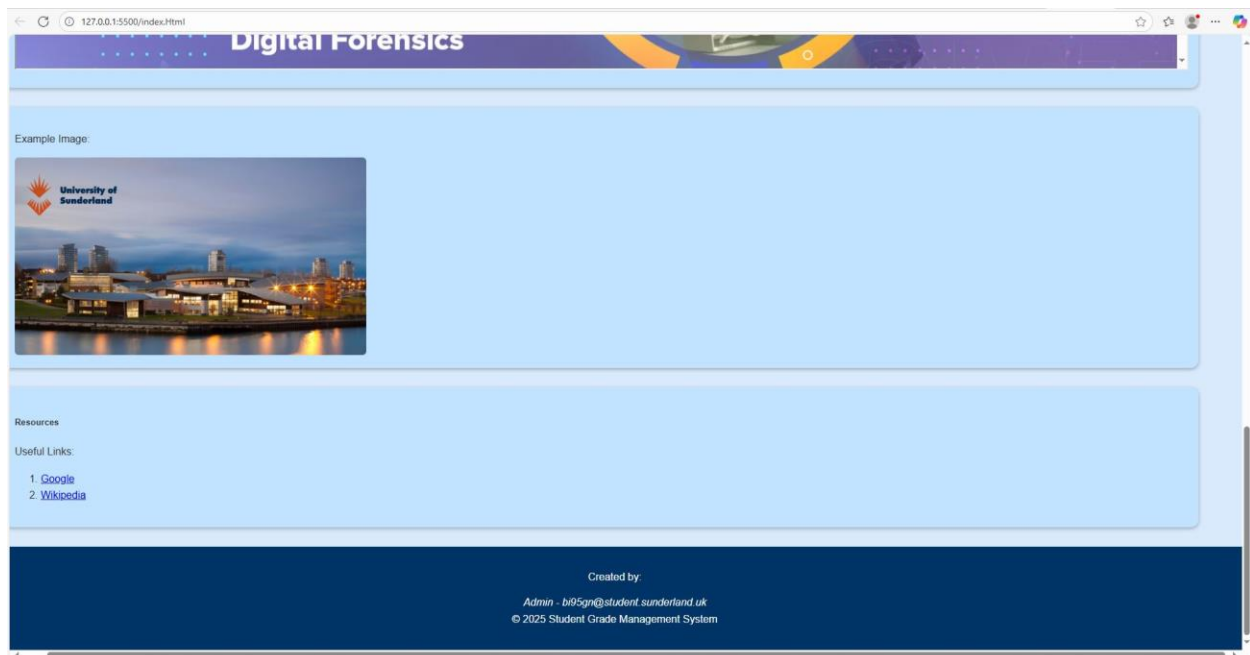


Figure 13: Screenshot of output screen