

Chapter 1: Introduction

1.1 Introduction to CSS

What is CSS & Why CSS?

- CSS stands for Cascading Style Sheets
- It is used to style **html elements**
- Initial release on December 17, 1996

1.2 Inline CSS

- 3 main ways to add css with html: Inline CSS, Internal CSS, External CSS
- Inline CSS refers to style inside html element. Syntax: <tagName style="property:value; property:value; ... ">
- Inline CSS Example is given below:

```
<h1 style="background-color: green">Welcome to CSS</h1>

    aperiam fugiat blanditiis voluptatibus quo!

    aperiam fugiat blanditiis voluptatibus quo!
```

1.3 Internal CSS

- Inside <head> tag we can use internal css with the help of <style> tag
- Internal CSS Syntax:

```
<style>
  selector {
    property: value;
    property: value;
    ...;
  }
</style>
```

Internal CSS Example is given below; In the example tag is a selector:

```
background-color: green;
    color: white;
}
<//>
</head>
</body>
    Welcome to CSS
    aperiam fugiat blanditiis voluptatibus quo!
</body>
</html>
```

1.4 Exetrnal CSS

- Inside <head> tag we can link the external css file with the help of <link rel="stylesheet" href="cssFileNameOrAddressHere"/> tag
- create a css file with an extension of .css as shown below: style.css

```
p {
  background-color: green;
  color: white;
}
```

• then add the css file inside html file as shown below:

Chapter 2: Selectors & Combinators

2.1 Basic Selectors

- Basic Selectors: Element Selector, grouping selectors, nested selector, Universal Selector, ID selectors, class selectors,
- Element selector: select an element by using its name. Example:

```
<head>
<style>
h1 {
```

```
background-color: green;
}
</style>
</head>
<body>
    <h1>Bangladesh</h1>
</body>
```

• Grouping selector: select multiple element by using their names separted with comma. Example:

• Nested selector: select elements by nesting. ul li a {...}, div p {...} Example:

```
Q
<!DOCTYPE html>
<html lang="en">
 <head>
   <title>Learn Internal CSS</title>
   <style>
     ul li a {
       color: green;
     }
   </style>
 </head>
 <body>
     <a href="#">Google</a>
   </body>
</html>
```

Universal selector can help to select all the html elements. It is denoted by *
 Example:

```
<!DOCTYPE html>
<html lang="en">
    <head>
        <title>Learn Internal CSS</title>
```

```
    * {
        background-color: salmon;
        color: white;
     }
      </style>
    </head>
    <body>
      <h1>Hello CSS</h1>
      aperiam fugiat blanditiis voluptatibus quo!
    </body>
    </html>
```

• id selector: is unique inside html document. #id can help to select any element with a given id. use # notation for selecting an id. Example:

• class selector: .class can help to select any element with a given class. use dot notation for selecting a class. Example:

2.2 More on Class & ID Selectors

- we can use multiple class name for an html element such as <h1 class="style1 style2" >
 this is something </h1>
- selecting elements with class name, id name example is given below:

```
<title>Learn Internal CSS</title>
    <style>
     .heading h1 {
       background-color: salmon;
       color: white;
     }
     #heading2 p {
       background-color: green;
       color: white;
   </style>
 </head>
 <body>
   <div class="heading">
     <h1>Hello CSS</h1>
     aperiam fugiat blanditiis voluptatibus quo!
   <div id="heading2">
     <h1>Hello CSS</h1>
     aperiam fugiat blanditiis voluptatibus quo!
 </body>
</html>
```

2.3 Selectors & Combinators

- Attribute selectors
 - References: https://developer.mozilla.org/en-US/docs/Web/CSS/Attribute_selectors
 - syntax for Attribute selectors

```
Q
/*for attribute name attr.*/
element[attr] {
  property: value;
}
/*for attribute name attr with exactly same value.*/
element[attr='value'] {
 property: value;
}
/* element with "value" anywhere in the url.*/
element[attr*='value'] {
  property: value;
}
/* element with "value" anywhere in the url without case sensitivity.*/
element[attr*='value' i] {
  property: value;
}
/* element end with .value; mainly for link(a) tag.*/
element[attr$='.value'] {
```

```
property: value;
}
```

- Pseudo class selectors
 - Link Pseudo classes: link, visited, hover, active
 - o Input Pseudo classes: focus, enabled, disabled, checked, required, optional, valid, invalid
 - o General Pseudo classes: first-child, last-child, first-of-type, last-of-type, nth-child(n), nth-last-of-type(n), root, not
 - References: https://developer.mozilla.org/en-US/docs/Web/CSS/Pseudo-classes
 - o syntax for Pseudo class selectors

```
selector:pseudo-class {
  property: value;
}
```

- Pseudo element selectors
 - o Common Pseudo element: after, before, first-letter, first-line, placeholder, select
 - References: https://developer.mozilla.org/en-US/docs/Web/CSS/Pseudo-elements
 - o syntax for Pseudo element selectors

```
selector::pseudo-element {
property: value;
}
-- Child selectors (div > p)
```

- descendent selectors (div p)
- adjacent selectors (div + p)
- general sibling selectors (div ~ p)

2.4 Pseudo class & Pseudo elements part-1

2.5 Pseudo class & Pseudo elements part-2

- class: hover, focus, nth-child(),
- elements: first-letter, first-line, after, before, selection

2.6 CSS Specificity

- References:
 - https://www.w3.org/TR/selectors-3/#specificity
 - specificity calculator: https://specificity.keegan.st/
- Universal selector (*) specificity 0

- Count the number of Elements and Pesudo elements (c) 1
- Count the number of Classes, attributes, Pseudo classes (b) 10
- Count the number of IDs (a) 100
- Inline CSS 1000
- !important 10000
- How to calculate specificity

```
/* specificity calculator */
/* a=number of id */
/* b=number of class, pseduo classes, attributes */
/* b=number of elements, pesudo elemnts, attributes */
/* a=0 b=0 c=1 === 001 */
h1 {
 background-color: grey;
/* a=0 b=1 c=1 === 011 */
h1.heading {
 background-color: blue;
}
/* a=0 b=1 c=0 === 010 */
.heading {
  background-color: green;
}
/* a=1 b=1 c=0 === 100 */
#head {
 background-color: red;
/* a=1 b=0 c=1 === 101 */
h1#head {
 background-color: pink;
}
/* a=1 b=1 c=1 === 111 */
h1#head.heading {
  background-color: brown;
}
```

Chapter 3: Typography

3.1 Font Properties

- font-size: value; here value can be px/em/rem. 1rem=16px=100%
- font-weight: value; here value can be 100/thin, 200/extra light, 300/light, 400/normal, 500/medium, 600/semi-medium, 700/bold, 800/extra bold, 900/black
- font-style: value; here value can be italic/normal/oblique
- font-family: value; here value can be any valid font name. In the following example paragaph will have Times New Roman as its font; if Times New Roman is not available then Times will be applied and if Times is not available then serif font will be applied. This process is known as fallback.

```
p {
   font-size: 2rem;
   font-weight: bold;
   font-style: italic;
   font-family: 'Times New Roman', Times, serif;
}
```

• Use google font: https://fonts.google.com/

3.2 Color

- color: value; here value can be any color names, hexadcimal colors value, RGB(Red, Green, Blue) color value, hsl (Hue, Saturation, Lightness) value
- Color Name: we can use color names directly as shown below:

```
p {
  color: green;
}
```

RGB: we can use Red, Green, Blue values as shown below:

```
p {
  color: rgb(0, 255, 0);
}
```

• Hexadecimal color: It is a code consist of 6 characters where first 2 characters for Red, Next 2 for Green and last 2 characters for Blue. Example is given below:

```
p {
  color: #00ff00;
  /*we can write one value instead of two similar values*/
  color: #0f0;
}
```

Important Tools:

- Canva color wheel: https://www.canva.com/colors/color-wheel/
- Color Picker: https://htmlcolorcodes.com/color-picker/
- Image color picker: https://imagecolorpicker.com/en
- How to use colorzilla plugin, how to use https://flatuicolors.com/

3.3 Text styling

- text-align: value; here value can be center / left / right / justify
- text-transform: value; here value can be uppercase / lowercase / capitalize
- text-decoration: value; here value can be underline / overline / line-through / none
- text-shadow: value; here value can be x axis, y axis, colorName
- text-indent: value;
- letter-spacing: value;
- word-spacing: value;
- line-height: value;Example

```
p {
   text-align: justify;
   text-decoration: underline;
   text-transform: uppercase;
   letter-spacing: 0.1rem;
   word-spacing: 0.2rem;
   line-height: 1rem;
   text-shadow: 0.1rem 0.1rem green;
}
```

3.3 Icon & emoji styling

- Get emoji from here: https://unicode-table.com/en/
- Get icon from here: https://www.iconfinder.com/

```
<style>
    span {
      color: red;
      font-size: 2rem;
    }
</style>
I <span> ♥ </span> Bangladesh
```

How to use font awesome icons

- get font awesome icons here: https://fontawesome.com/
- o get font awesome cdn from here: https://cdnjs.com/libraries/font-awesome
- add the font awesome cdn inside the html head tag and then you are ready to use font awesome icons

Example

```
<i class="far fa-address-card"></i>
<i style="color: red;" class="far fa-address-card fa-2x"></i>
```

Chapter 4: Box Model

4.1 Margin

- margin-top, margin-right, margin-bottom, margin-left
- margin

4.2 Padding

- padding-top, padding-right, padding-bottom, padding-left
- padding

4.3 border

- border-top, border-right, border-bottom, border-left
- border: borderWidth borderColor borderStyle;
 - o example: border: 1px green solid;
 - o border-style
 - border-top-style
 - border-right-style
 - border-bottom-style
 - border-left-style
 - o border-width
 - border-top-width
 - border-right-width
 - border-bottom-width
 - border-left-width
 - o border-color
 - border-top-color
 - border-right-color
 - border-bottom-color
 - border-left-color

4.4 box model

• content, padding, border, margin

4.5 box sizing & opacity

- box-sizing: border-box
- opacity: value; value can be between 0-1

4.6 Inline, block element, width, max-width

• display: inline/block

4.7 overflow

overflow: value; here default value is visible, hidden, auto, scroll

Chapter 5: Background

5.1 How to set background image in webpage

- background-image, background-position, background-size, background-repeat, background-attachment
- shorthand: background: bg-image position/bg-size bg-repeat bg-attachment bg-origin bg-clip
- example

```
body {
  height: 80vh;
  background-image: url('./images/me.JPG');
  background-position: center center;
  background-size: cover;
  background-repeat: no-repeat;
  background-attachment: fixed;
  background-origin: padding-box;
  background-clip: border-box;
  background-color: #ccc;
}
```

5.2 gradient-linear/radial

- background: linear-gradient(direction, colors)
- example

```
.banner {
  width: 400px;
```



```
height: 400px;
background: linear-gradient(to right, green, orange);
}
```

- background: radial-gradient(style-type, colors)
- example

```
.banner {
  width: 400px;
  height: 400px;
  background: radial-gradient(circle, green, orange);
}
```

Chapter 6: Layout design

6.1 float

- float: left/right
- clear: left/right/both
- example: create 3 div in html and add div1, div2, div3 classes with them

```
g
.div1 {
 width: 50%;
 height: 10rem;
 background-color: orange;
  float: left;
}
.div2 {
 width: 50%;
 height: 10rem;
 background-color: plum;
  float: left;
}
.clear-div {
  clear: both;
}
.div3 {
  height: 10rem;
  background-color: burlywood;
}
```

6.2 Position

- position: static(default)/absolute/relative/fixed/sticky
- make sure to use top, right, bottom, left property with position property

6.3 z-index & css variables

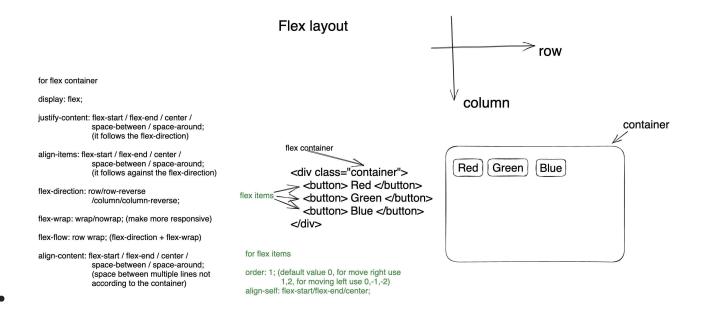
- z-index helps us to maintain the order of stacked elements
- z-index: value ; value can be negative or positive
- to declare a varibale use the following syntax

```
<!-- how to declare a valriable -- > :root {
    --variable-name: value;
}
<!-- how to use css valriable -- > selector {
    property: var(--variable-name, fallback-value);
}
```

• example of css variables: make sure to create 2 html div with class div1, div2

```
:root {
  --primary-color: black;
  --secondary-color: green;
}
.div1 {
 width: 10rem;
 height: 10rem;
  background-color: black;
  background-color: var(--primary-color);
  position: absolute;
  z-index: 1;
}
.div2 {
 width: 10rem;
 height: 10rem;
  background-color: green;
  background-color: var(--secondary-color);
  position: absolute;
  left: 5rem;
 top: 5rem;
}
```

6.4 flexbox layout



- flex layout learning game: https://flexboxfroggy.com/
- example

```
Q
.flex-container {
 display: flex;
  flex-direction: column/column-reverse/row/row-reverse;
  flex-wrap: wrap/no-wrap;
  justify-content: flex-start/flex-end/center/space-between/space-around;
  align-items: flex-start/flex-end/center/space-between/space-around;
.flex-item1 {
  order: 2;
  flex-basis: 30%;
  flex: 1;
}
.flex-item2 {
 order: 1;
 flex-basis: 70%;
  flex: 2;
}
```

6.5 text-shadow and box-shadow

- text-shadow: x-value y-value blur-value color
- box-shadow: x-value y-value color
- box-shadow: x-value y-value blur-radius color
- box-shadow: inset x-value y-value color

6.6 How to design a card

6.7 Grid Layout part-1

• example

```
Q
.grid-container {
  display: grid;
 grid-template-columns: auto auto;
  <!-- grid-template-rows: 120px 110px 40px; -->
  <!-- grid-column-gap: 10px;
 grid-row-gap: 10px; -->
  grid-gap: 10px;
}
.grid-item1{
 grid-column-start: 1;
 grid-column-end: 3;
 grid-column: 1 / 3;
 grid-column: 1 / span 3;
 grid-row-start: 1;
 grid-row-end: 3;
 grid-row: 1 / 3;
 grid-row: 1 / span 3;
}
```

6.8 Grid Layout part-2

• example 1

```
Q
<head>
  <style>
    .grid-container {
      display: grid;
      grid-template-columns: auto auto auto auto auto;
    }
    header {
     background-color: chocolate;
     grid-column: 1/7;
    }
    nav {
     background-color: cornflowerblue;
     grid-column: 1/2;
    }
    main {
     background-color: cornsilk;
     grid-column: 2/5;
    }
    aside {
      background-color: aqua;
      grid-column: 5/7;
    }
    footer {
     background-color: burlywood;
     grid-column: 1/7;
    }
  </style>
</head>
```

```
<body>
 <div class="grid-container">
   <header>
     Header
   </header>
   <nav>
     Menu
   </nav>
   <main>
     Main
   </main>
   <aside>
     Aside
   </aside>
   <footer>
     footer
   </footer>
 </div>
</body>
```

• example 2

```
Q
<head>
 <style>
    .grid-container {
     display: grid;
     grid-template-areas:
       'header header header header'
        'nav main main aside aside'
       'footer footer footer footer';
   }
   header {
     background-color: chocolate;
     grid-area: header;
   }
   nav {
     background-color: cornflowerblue;
     grid-area: nav;
   }
   main {
     background-color: cornsilk;
     grid-area: main;
   }
   aside {
     background-color: aqua;
     grid-area: aside;
   }
   footer {
     background-color: burlywood;
     grid-area: footer;
   }
  </style>
</head>
```

```
<body>
 <div class="grid-container">
   <header>
     Header
   </header>
   <nav>
     Menu
   </nav>
   <main>
     Main
   </main>
   <aside>
     Aside
   </aside>
   <footer>
     footer
   </footer>
 </div>
</body>
```

6.9 Grid Layout part-3

Chapter 7: Responsive web design (RWD)

7.1 Introduction to RWD

- Use box-sizing box-sizing: border-box
- Use media query
- Use media end points

7.2 Responsive navigation menu

7.3 Responsive column design

- 7.4 Responsive web design using grid view part-1
- 7.5 Responsive web design using grid view part-1

Chapter 8: Animation

8.1

html and css basic setup

```
<header class="center">
  <div class="header_circle center">Hello guys good morning!</div>
</header>
.center {
 display: flex;
  justify-content: center;
  align-items: center;
}
header {
  height: 100vh; /* display: flex; justify-content: center; align-items: center;
  background-color: green;
.header__circle {
 width: 20rem;
 height: 20rem;
 background-color: brown;
  color: white; /* display: flex; justify-content:
center; align-items: center; */ /* making circle */
  border-radius: 50%; /*
triangel shape width: 0; height: 0; border-left: 50px solid transparent;
border-right: 50px solid transparent; border-bottom: 100px solid #32557f; */
```

transition property

transition properties

}

- transition-property
- transition-duration
- transition-delay
- transition-timing-function
- transition [some animations can be attractive however sometime they can cause accessibility issues and also cause migraine]

```
/* transition-property: background-color;
transition-duration: 1s;
transition-timing-function: linear;
transition-delay: 2s;
*/
<!-- shrothand -->
transition: background-color 1s;
```

```
transition: background-color 1s linear;
transition: background-color 1s linear 0.5s;
/* default value; slow down at the end */
transition-timing-function: ease;
/* starts of slowly but then transition speed get fast */
transition-timing-function: ease-in;
/* starts of fast but then transition speed gets slow */
transition-timing-function: ease-out;
/* transition at an even speed */
transition-timing-function: linear;
/* A Cubic Bezier curve is defined by four points P0, P1, P2, and P3. */
/* P1 and P3 are the start and the end of the curve */
/* p1 and p3 values must be in the range of 0 to 1. */
/* it can be used with transition and animation */
/* https://cubic-bezier.com/#.17,.67,.83,.67 */
transition-timing-function: cubic-bezier(p1, p2, p3, p4);
```

transform property

- transform property has 4 differnt values
 - transform: scale(number)
 - transform: rotate(degree)
 - transform: translate(x,y)
 - transform: skew(degree) / skewX(degree) / skewY(degree)

[we can also use multiple transform property together like: transform: translate() rotate()]

```
.header__circle {
  width: 20rem;
  height: 20rem;
  background-color: brown;
  color: white;

  /* making circle */
  border-radius: 50%;

  /* making beautiful style */
  border-radius: 220px 220px 40px 50px;

  transition: all 0.3s linear;
}

/* lets add some transform properties here */
  .header__circle:hover {
   background-color: orange;
   /* transform: scale(1.2); */
```

```
/* transform: translate(0px, -340px); */
transform: rotate(25deg);
}
```

skew example

```
.center {
  display: flex;
  justify-content: center;
  align-items: center;
}
header {
  height: 100vh;
}
.header__circle {
  width: 20rem;
  height: 20rem;
  background-color: brown;
  color: white;
  transform: skew(-5deg);
  transition: all 0.3s linear;
  border-radius: 0.6rem;
}
/* lets add some transform properties here */
.header__circle:hover {
  background-color: orange;
  /* transform: scale(1.2); */
  /* transform: translate(0px, -340px); */
}
```

animation property

example

```
animation-name: circle-anim;
        animation-duration: 2s;
        animation-fill-mode: forwards;
        animation-iteration-count: infinite;
        animation-timing-function: linear;
       position: relative;
      }
      @keyframes circle-anim {
        0% {
          background-color: chocolate;
          top: 0;
          left: 0;
        }
        25% {
          background-color: chocolate;
          top: -100px;
          left: 0;
        }
        50% {
          background-color: chocolate;
          top: 0px;
          left: 0;
        }
        75% {
          background-color: chocolate;
          top: 100px;
          left: 0;
        }
        100% {
          background-color: rgb(30, 210, 60);
          top: 0;
        }
    </style>
 </head>
 <body>
    <div class="container">
      <div class="circle-div"></div>
    </div>
 </body>
</html>
```

8.3 transition and transform

• Important transition properties: transition-property, transition-duration, transition-delay, transition-timing-function, transition

8.4 Animated progress bar

Chapter 9: How to create/design

9.1 How to design a navigation menu

example

```
Q
<!DOCTYPE html>
<html lang="en">
 <head>
   <title>Document</title>
 </head>
 <body>
   <div id="nav-menu">
     <u1>
       <a href="#">Home</a>
       <a href="#">Tutorials</a>
       <a href="#">About</a>
       <a href="#">Contact</a>
     </div>
 </body>
</html>
```

9.2 How to center elements

using flex

```
.container {
  width: 30rem;
  height: 30rem;
  background-color: chocolate;
  display: flex;
  justify-content: center;
  align-items: center;
}
.child {
  width: 50px;
  height: 50px;
  background-color: burlywood;
}
```

• using grid

```
.container {
  width: 30rem;
  height: 30rem;
  background-color: chocolate;
  display: grid;
  place-items: center;
}
.child {
```

```
width: 50px;
height: 50px;
background-color: burlywood;
}
```

• using position

```
Q
.parent-div {
  width: 30rem;
  height: 30rem;
  background-color: chocolate;
  position: relative;
}
.child-div {
  width: 50px;
 height: 50px;
  background-color: burlywood;
  position: absolute;
  top: 50%;
  left: 50%;
  transform: translate(-50%, -50%);
}
```

9.3 How to create linable icon button

9.4 How to create drop down menu

9.5 How to design a table

- create a basic table first and then start styling
- Example:

```
Q
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <title>Document</title>
    <style>
      table {
        border-collapse: collapse;
        height: 300px;
        width: 300px;
      }
      td,
        border: 1px solid black;
        padding: 5px;
        text-align: center;
        vertical-align: middle;
      }
```

```
th {
     background-color: darkgreen;
     color: white;
     height: 30px;
     font-size: 18px;
   }
   tr:nth-child(odd) {
     background-color: gray;
   tr:nth-child(even) {
     background-color: sandybrown;
   tr:hover {
     background-color: tomato;
  </>
 </head>
 <body>
  <caption>
     Student details
   </caption>
   <thead>
     ID
      Name
      GPA
     </thead>
   101
      Anis
      3.92
     102
      Rasel
      3.44
     103
      Kolpona
      2.44
     </body>
</html>
```

9.6 How to design a form part-1

9.7 How to design a form part-2

• form elements styling example

```
Q
input[type='text'] {
  box-sizing: border-box;
  width: 50%;
  padding: 0.5rem 1rem;
  font-size: 1rem;
  margin: 1rem 0;
  border: 0.3rem solid orange;
  border-radius: 0.5rem;
}
button {
  background-color: sandybrown;
  border: none;
  border-radius: 0.5rem;
  color: white;
  cursor: pointer;
  font-size: 1.5rem;
  padding: 2rem 1rem;
  width: 10rem;
}
select {
  background-color: sandybrown;
  padding: 1rem;
  border: none;
 border-radius: 0.5rem;
}
textarea {
  resize: none;
 width: 50rem;
  padding: 1rem;
  border: 0.3rem solid black;
  border-radius: 0.5rem;
}
```

Chapter 10: CSS Architecture: BEM Methodology - https://github.com/anisul-Islam/bem-methodology

Chapter 11: Project

Project 1 - CV Project

- Project-1 CV Project part-1
- Project-1 CV Project part-2
- Publish a website on github

Project 2 - Calculator Project

- Project-2- Calculator Project part-1
- Project-2- Calculator Project part-2

Project 3 - Portfolio Project

- Project-3- Portfolio Project part-1
- Project-3- Portfolio Project part-2
- Project-3- Portfolio Project part-3
- Project-3- Portfolio Project part-4
- Project-3- Portfolio Project part-5
- Project-3- Portfolio Project part-6
- Project-3- Portfolio Project part-7
- Project-3- Portfolio Project part-8
- Project-3- Portfolio Project part-9

Project 4 - Restaurant Project

- Project-4- Restaurant Project part-1
- Project-4- Restaurant Project part-2
- Project-4- Restaurant Project part-3

Project 5 - Blog website Project

- Project-5 Blog website Project part-1
- Project-5 Blog website Project part-2
- Project-5 Blog website Project part-3
- Project-5 Blog website Project part-4
- Project-5 Blog website Project part-5
- Project-5 Blog website Project part-6
- Project-5 Blog website Project part-7
- Project-5 Blog website Project part-8
- Project-5 Blog website Project part-9

Releases

No releases published

Packages

No packages published