Front End Technologies CSS - Day 13

Agenda

- **INHERITANCE**
- **CSS BOX Model**

Inheritance: Inheritance is the mechanism by which some styles are applied not only to a specified element, but also to its descendants. Let's now understand this with an example.

Example:

Index.html

```html
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">

        .div1{
            color: red;
        }
    </style>
</head>
<body>
    <div class="div1">
        <h1 class="firsth1">Java</h1>
        <h2>Python</h2>
        <h3>Javascript</h3>
    </div>

    <div class="div2">
        <h1>Spring</h1>
        <h2>Django</h2>
        <h3>Node.js</h3>
    </div>
</body>
</html>
```
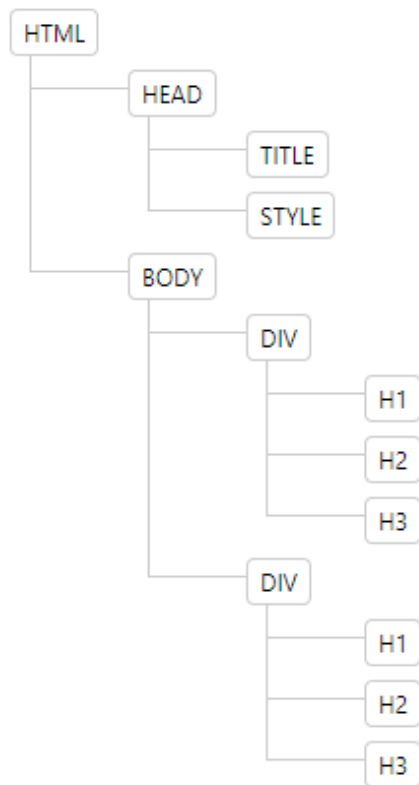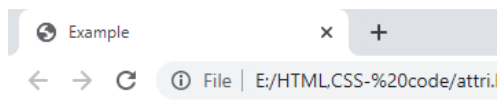
DOM:

Output:

Java

Python

Javascript
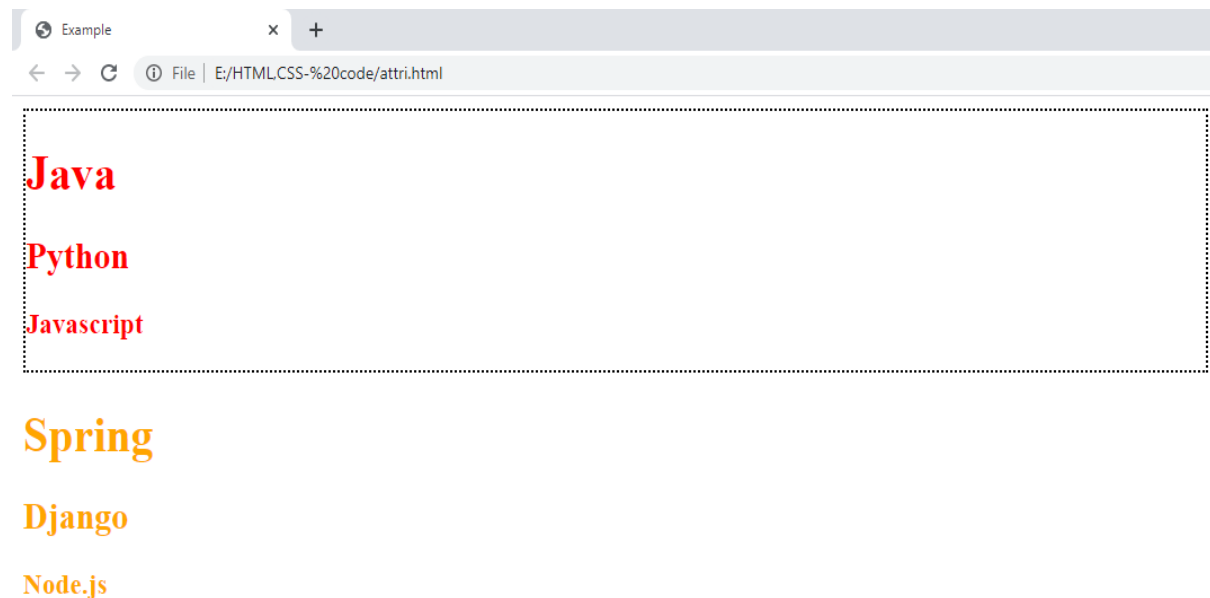
Spring

Django

Node.js

Here, styling is applied to div tag but if you observe the output carefully h1, h2 and h3 tag inside the div tag inherits the value color from the div.

Example:

Index.html

```html
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">

        .div1{
            color: red;
            border: 2px dotted black;
        }

        .div2{
            color: orange;
        }
    </style>
</head>
<body>
    <div class="div1">
        <h1 class="firsth1">Java</h1>
        <h2>Python</h2>
        <h3>Javascript</h3>
    </div>

    <div class="div2">
        <h1>Spring</h1>
        <h2>Django</h2>
        <h3>Node.js</h3>
    </div>
</body>
</html>
```

Output:

Example × +

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Java

Python

Javascript

Spring

Django

Node.js

If you observe the output of this example, property border doesn't get inherited.
borders were inherited, documents would become much more cluttered. This is

one of the condition of inheritance where all the properties will not get inherited. The properties which will not get inherited are listed below.

float, position, left, right, top, bottom, z-index, display, width, border, padding, margin, height, max-width, min-width, min-height, max-height, background-size, background-image, background-clip, background-color, background-origin, background-repeat, background-position, overflow, text-overflow, vertical-align.

Example:

Index.html

```html
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">

        .firsth1{
            color: teal;
        }

        .div1{
            color: red;
        }

        .div2{
            color: orange;
        }
    </style>
</head>
<body>
    <div class="div1">
        <h1 class="firsth1">Java</h1>
        <h2>Python</h2>
        <h3>Javascript</h3>
    </div>

    <div class="div2">
        <h1>Spring</h1>
        <h2>Django</h2>
        <h3>Node.js</h3>
    </div>
</body>
</html>
```
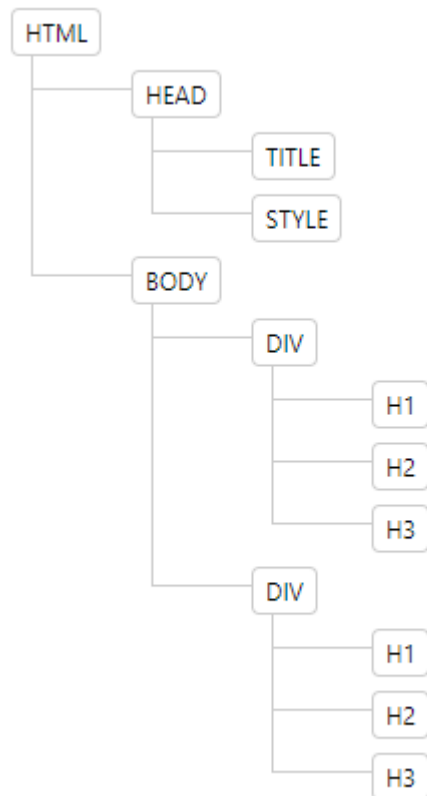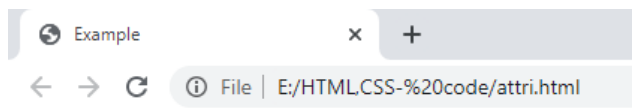
DOM:

In this example, two styling is applied to same h1 tag one using inheritance and another using class name in the h1 tag. Now let's see which styling will be applied for that first calculate the specificity.

Specificity Calculator.

Selector	Specificity		
	ID's	Classes	elements
.firsth1	0	1	0
.div1	0	1	0

Now, the specificity value for both the selector is same so it should now it should go with order of selector. Acording to that styling given to the div1 tag should be applied i.e red color should be applied to h1 tag present in first div1 tag. Let's see the output is that really working according to that or not.

Output:
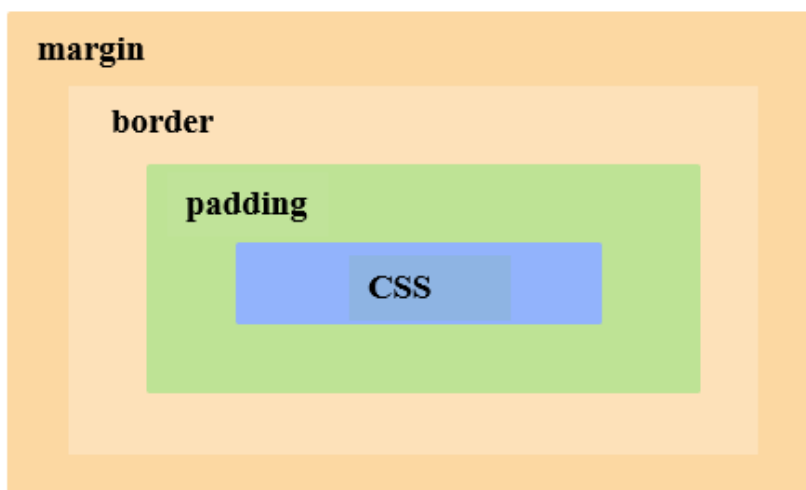

Now, if you observe the output it is not how we expected this is because **whenever some property is inherited from parent such a property has no specificity**. So styling given to .firsth1 selector is applied.

CSS BOX Model: All HTML elements can be considered as boxes. In CSS, the term "box model" is used when talking about design and layout. The CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content. The image below illustrates the box model:

Content Area: This area consists of content like text, image, or other media content. It is bounded by the content edge and its dimensions are given by content box width and height.

Padding Area: It includes the element's padding. This area is actually the space around the content area and within the border box. Its dimensions are given by the width of the padding-box and the height of the padding-box.
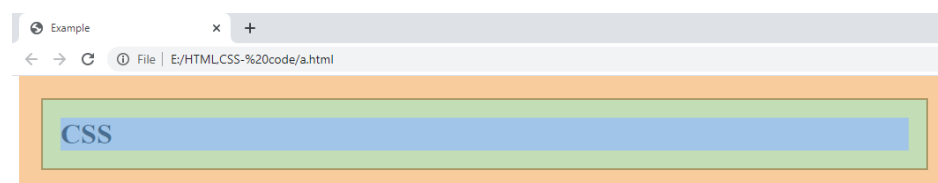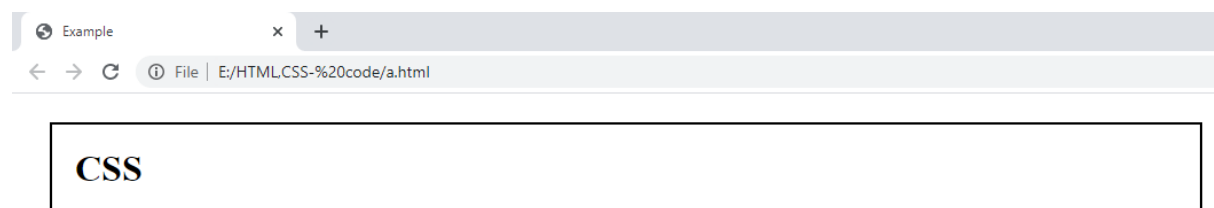
Border Area: It is the area between the box's padding and margin. Its dimensions are given by the width and height of border.

Margin Area: This area consists of space between border and margin. The dimensions of Margin area are the margin-box width and the margin-box height. It is useful to separate the element from its neighbors.

Index.html

```html
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">
        h1{
            padding: 20px;
            border: 2px solid black;
            margin: 25px;
        }
    </style>
</head>
<body>
    <h1>CSS</h1>
</body>
</html>
```
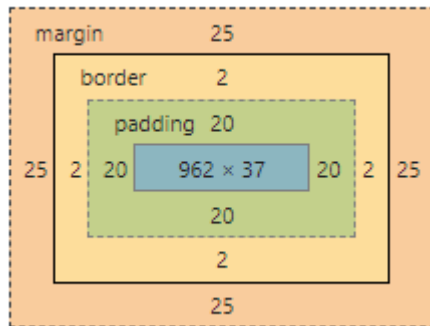
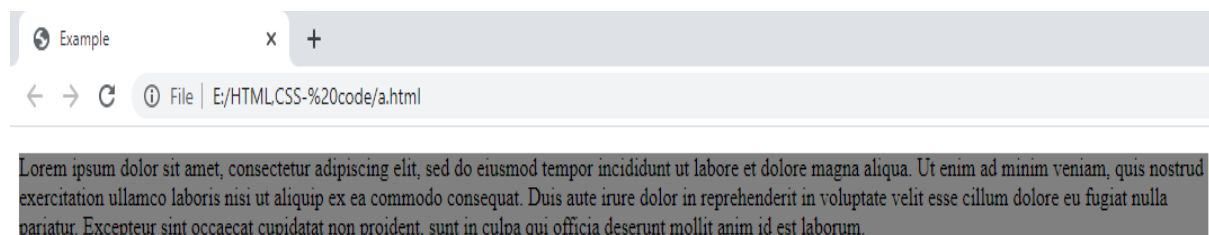## Output:

CSS Box model:

In this example, content is taking an area upto 962 * 37, you can change the width and height of content. Above the content area there is padding region which is of 20px, next is border which is taking an area upto 2px and last margin is of 25px as shown in the box model above.

Example:

Index.html:
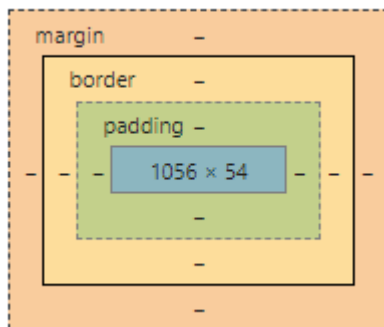
```
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">
        div{
            background-color: cyan;
        }

        p{
            background-color: grey;
        }
    </style>
</head>
<body>
    <div>
        <p>
            Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut
            enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor
            in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non
            proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
        </p>
    </div>
</body>
</html>
```

Output:

Box model:

Here, styling is applied to div and p tag but in the output you are seeing only grey color because it is covering complete dimension of div tag. Now we will see by changing the dimension of p tag.

Index.html:

```html
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">
        div{
            background-color: cyan;
        }

        p{
            background-color: grey;
            width: 300px;
            height: 300px;
        }
    </style>
</head>
<body>
    <div>
        <p>
            Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut
            enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor
            in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non
            proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
        </p>
    </div>
</body>
</html>
```
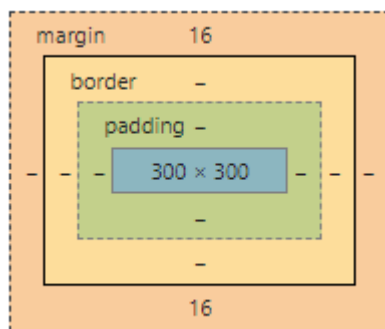
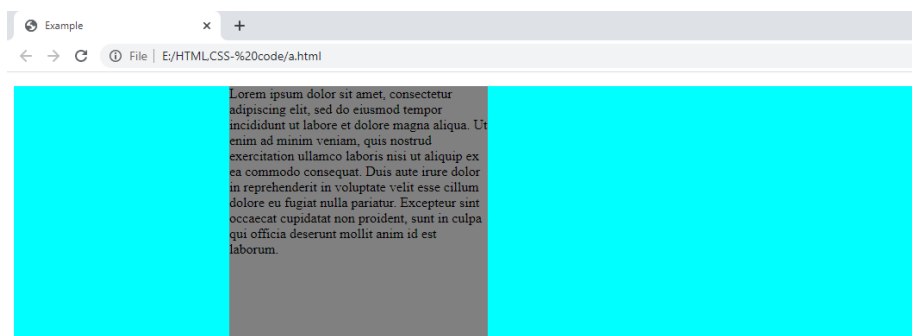**Output:**

CSS Box Model:

Now after specifying the dimension for p tag if you observe the output, styling of div tag was there due to p tag was covering the entrie region it was not visible. If you want the content area to come to the center that also can be done as shown below.

Index.html

```html
<!DOCTYPE html>
<html>
<head>
    <title>Example</title>
    <style type="text/css">
        div{
            background-color: cyan;
        }

        p{
            background-color: grey;
            width: 300px;
            height: 300px;
            margin-left: 250px;
        }
    </style>
</head>
<body>
    <div>
        <p>
            Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut
            enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor
            in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non
            proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
        </p>
    </div>
</body>
</html>
```

Output:

Box Model: