Oum El Bouaghi University

Faculty of Exact Sciences, Natural and Life Science

Department of Mathematics and Computer Science

Advanced Web programming

CSS3
Cascading Style Sheets

Concerned students

Faculty	Department	Level	Speciality
ESNL	MI	B3	ISSE

Introduction

What is CSS?

- CSS3 or Cascading Style Sheets Level 3 is used for styling web pages to make them more attractive and user-friendly.

- Stylesheets allow describing the presentation of HTML elements separately from the content and its structure.

- This separation easily allows for modifying a site's style by editing a single file instead of going through HTML pages and changing the style of each tag.

Style Cascade

There are four levels of style definition called Cascade:

1. The default style defines by each browser or all HTML tags.

2. The style defined in a deparate style sheet and included in an HTML page using the **<link rel='stylesheet' href='URL d un fichier de styles .css' />** tag.

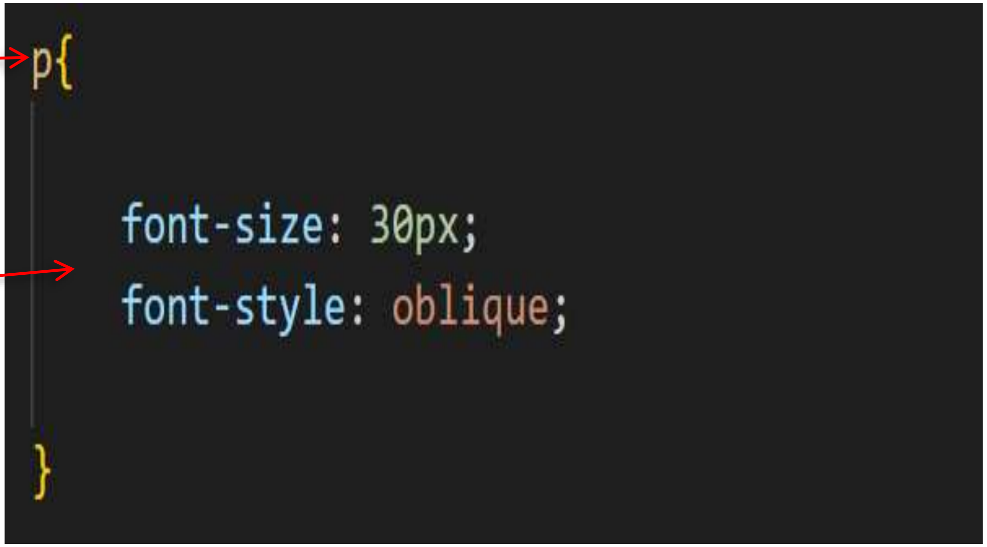
3. Style can be defined at the page level by introducing the **<style> </style>** tag whithin the **<head>** tag. **(not supported)**

4. The global **style** attribute allows to define a style for all HTML tags. **(not supported)**

CSS Syntax

- **A CSS code can be written as follows:**

```
Selector
{
   property: value;
   property: value;
   property: value;
}
```



```
p{

    font-size: 30px;
    font-style: oblique;

}
```

Selectors

- **Universal Selector (*) in CSS: Select all HTML elements**
  - **Example: * { color: blue; }**

- **Style of a elements' category**
  - **Example: h1 { color: #FF00FF; }**

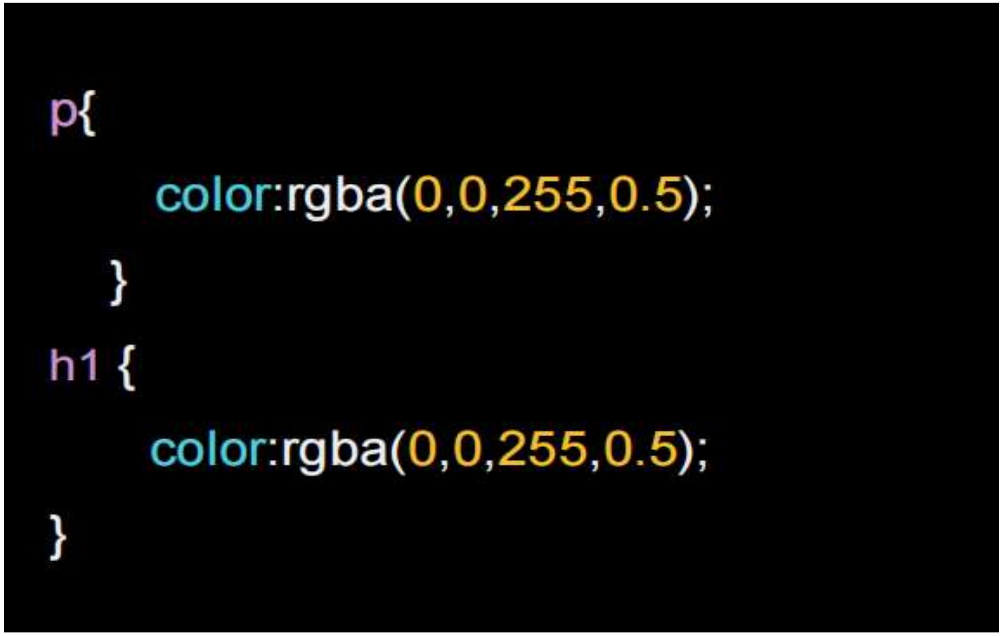
- **Style for multiple categories of elements**
  - **Example: h1, h2, h3, p { color: green; }**

- **Style for nested elements**
  - **Example: p em { color: red; } /* Italics within a paragraph */**

Selectors

- **Selectors: Used for selecting particular HTML elements where a style has to be applied.**

Select all the <p> and <h1> elements:



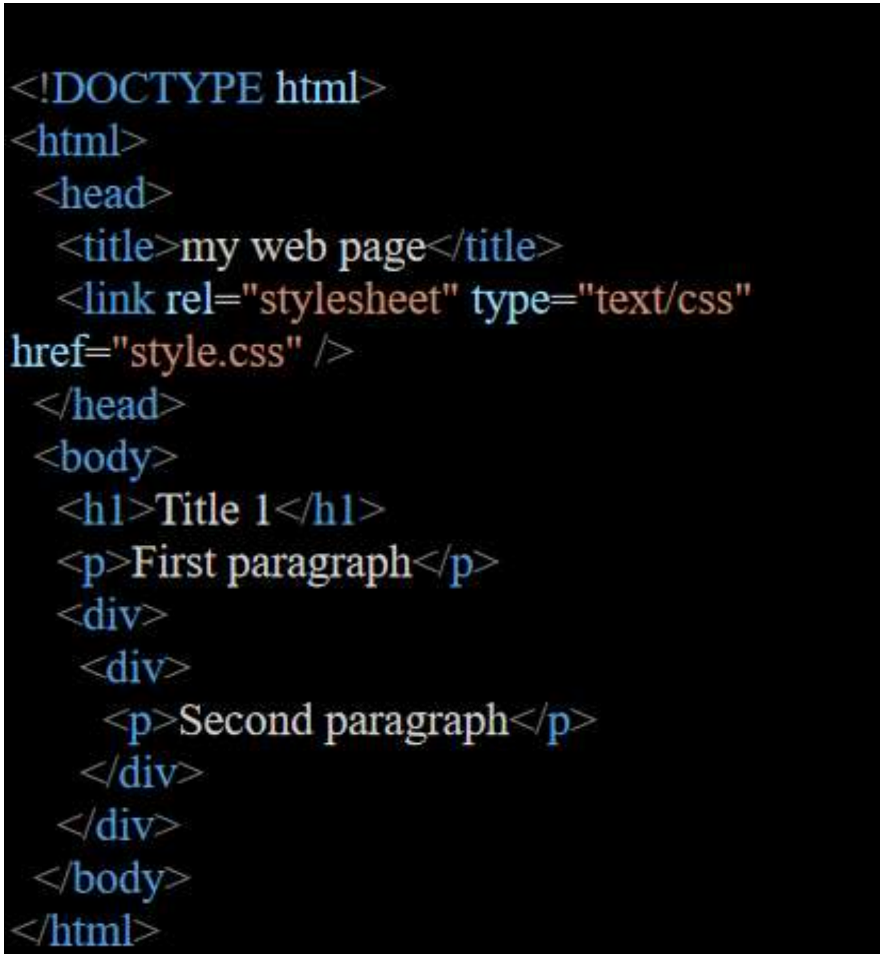
```
p{
       color:rgba(0,0,255,0.5);
    }
h1 {
       color:rgba(0,0,255,0.5);
}
```

```
Selector{
      property:value
    }
```

Selectors

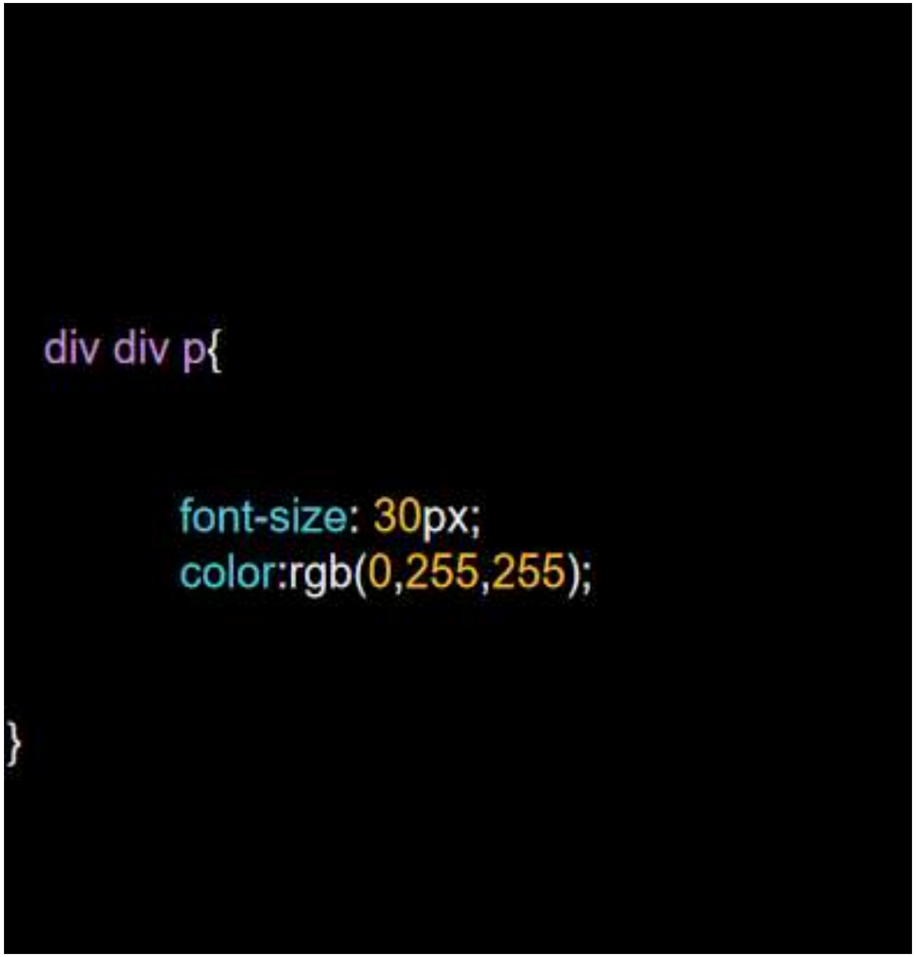
- **Select all <p> under two divs**

index.HTML



```
<!DOCTYPE html>
<html>
  <head>
    <title>my web page</title>
    <link rel="stylesheet" type="text/css"
href="style.css" />
  </head>
  <body>
    <h1>Title 1</h1>
    <p>First paragraph</p>
    <div>
      <div>
        <p>Second paragraph</p>
      </div>
    </div>
  </body>
</html>
```

style.css



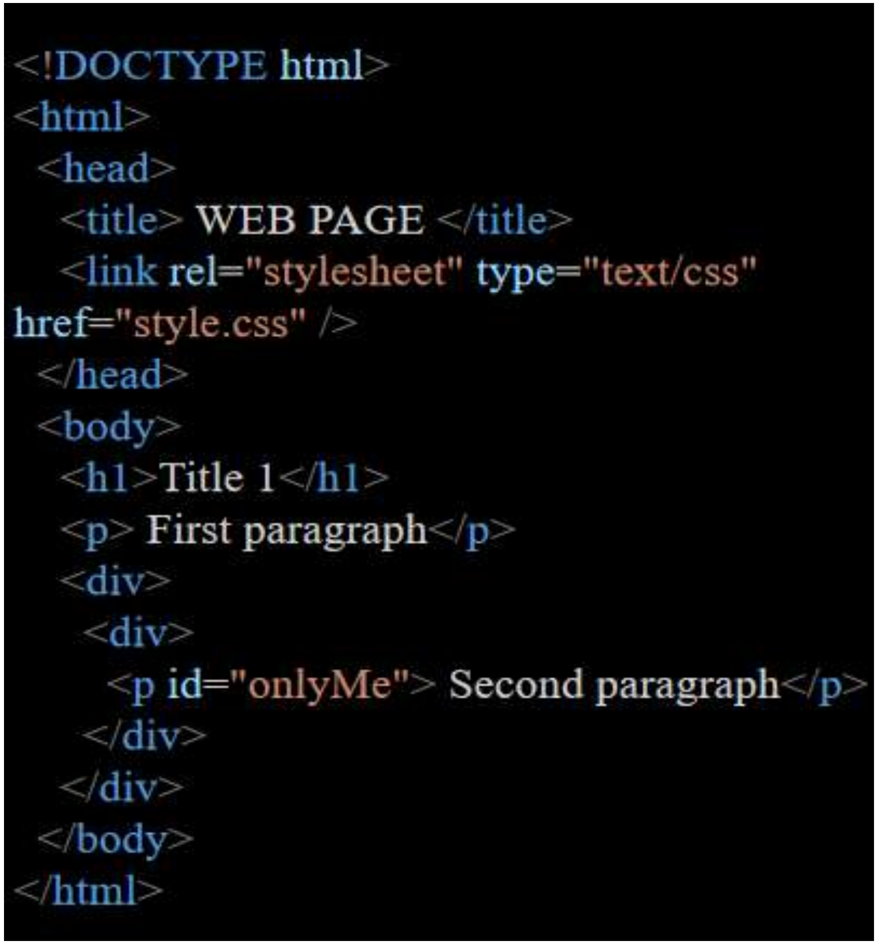
```
   div div p{


              font-size: 30px;
              color:rgb(0,255,255);


}
```

Style Cascade

Selectors

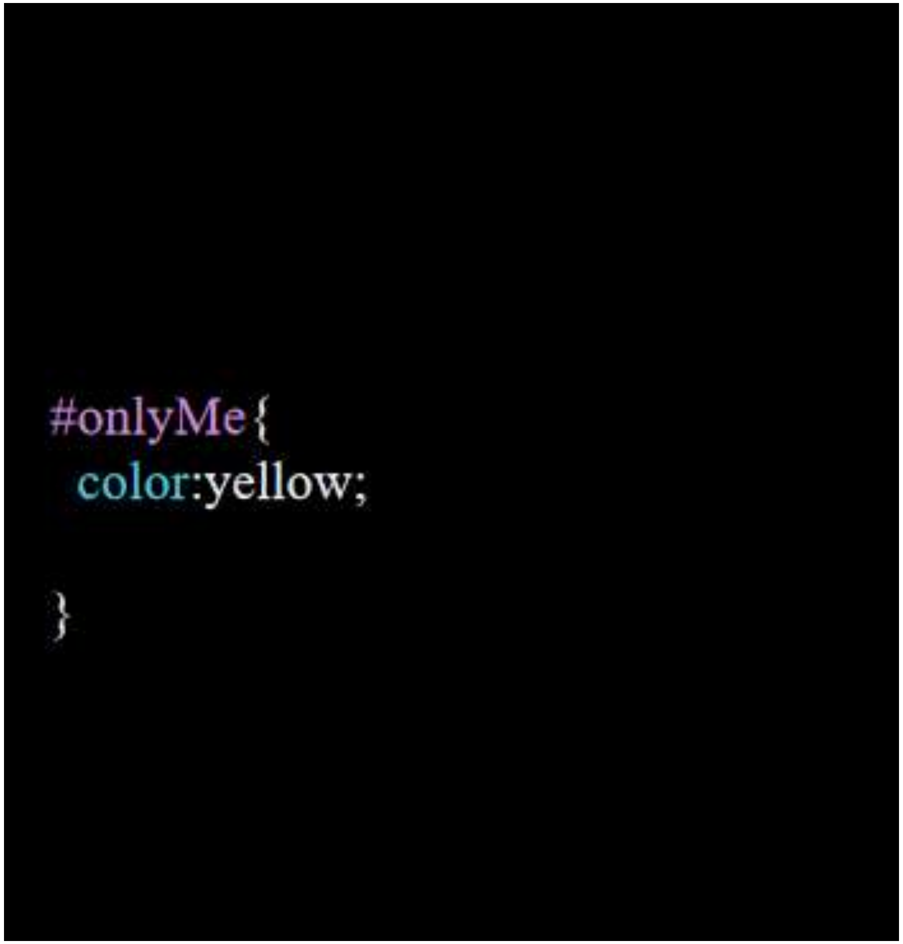
- **Select one element with ID: Apply a CSS style based on a specific condition being fulfilled.**

index.HTML



```
<!DOCTYPE html>
<html>
  <head>
    <title> WEB PAGE </title>
    <link rel="stylesheet" type="text/css"
href="style.css" />
  </head>
  <body>
    <h1>Title 1</h1>
    <p> First paragraph</p>
    <div>
      <div>
        <p id="onlyMe"> Second paragraph</p>
      </div>
    </div>
  </body>
</html>
```

style.css



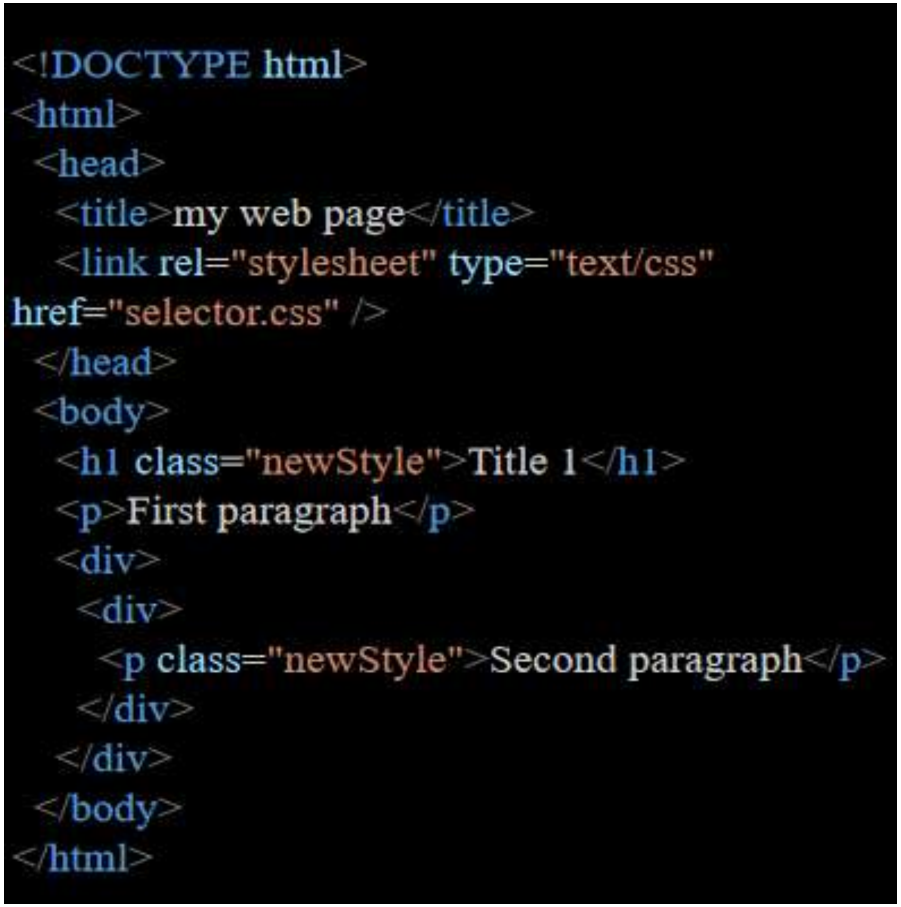
```
#onlyMe{
  color:yellow;

}
```

Style Cascade

Selectors

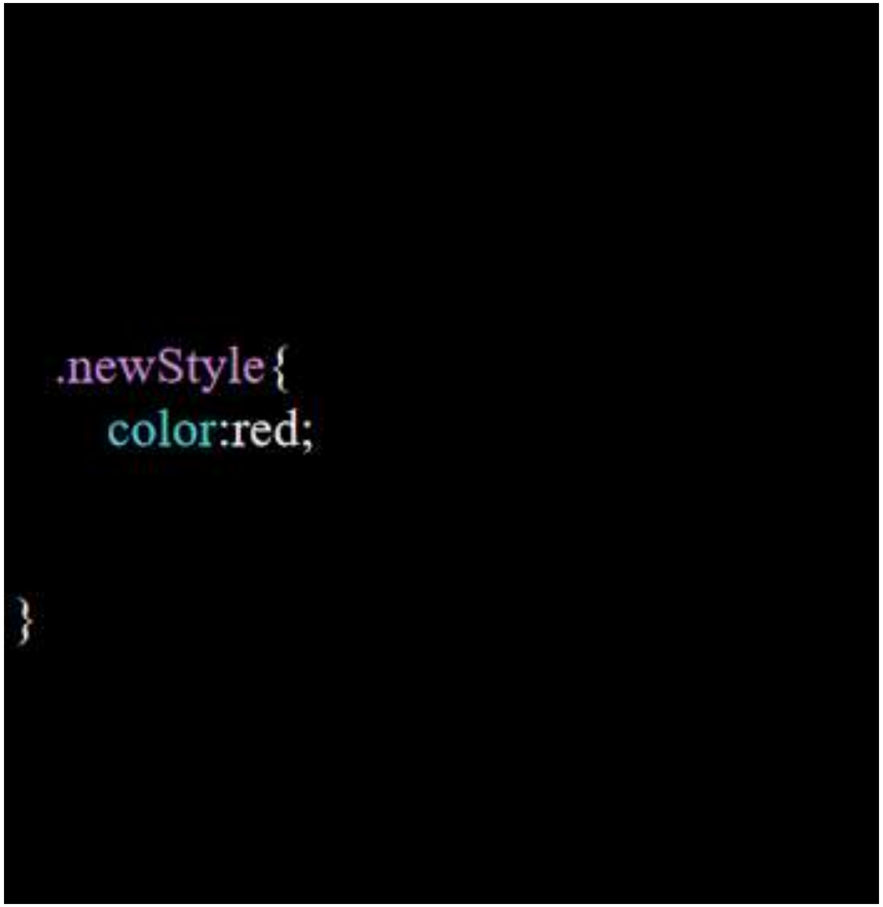
- **Select a group of elements: Select every element having the class name “newStyle”.**

index.HTML



```
<!DOCTYPE html>
<html>
  <head>
    <title>my web page</title>
    <link rel="stylesheet" type="text/css"
href="selector.css" />
  </head>
  <body>
    <h1 class="newStyle">Title 1</h1>
    <p>First paragraph</p>
    <div>
      <div>
        <p class="newStyle">Second paragraph</p>
      </div>
    </div>
  </body>
</html>
```

style.css



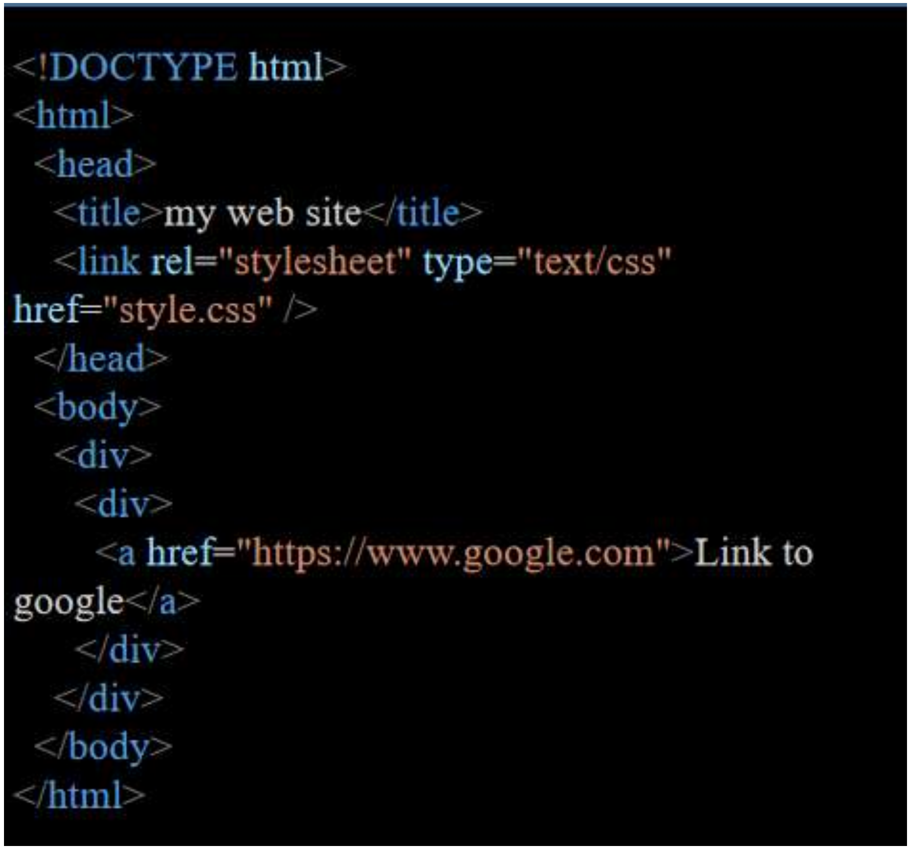
```
  .newStyle{
      color:red;


}
```

Style Cascade

Selectors

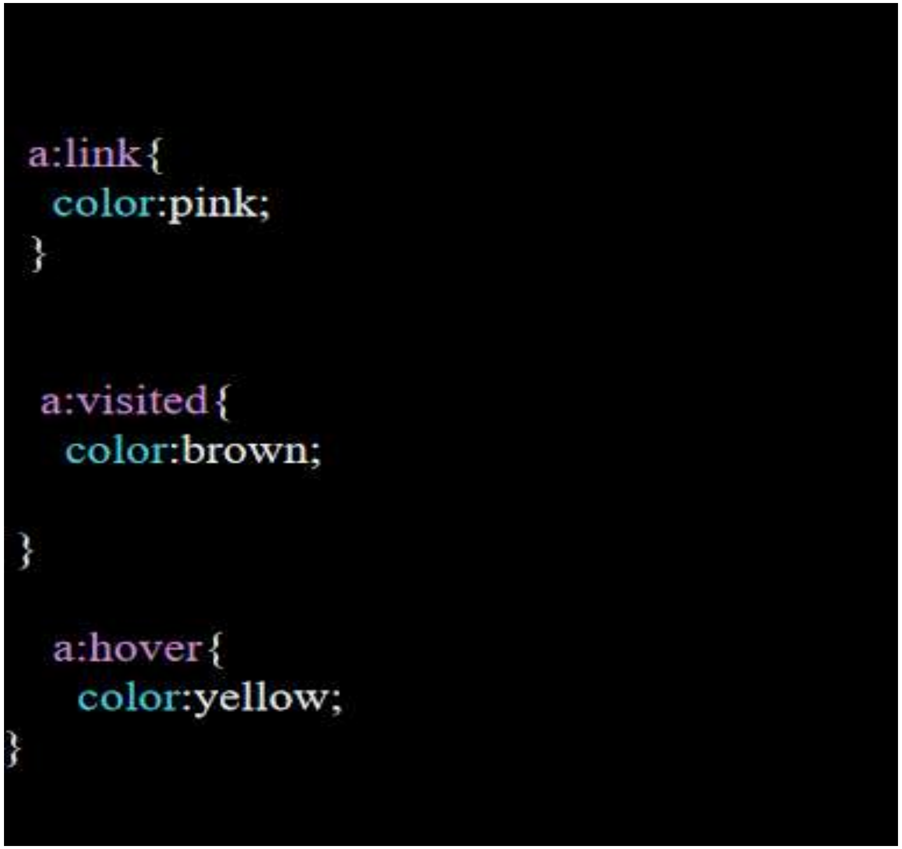
- **CSS selector pseudo-classes: Apply css style once certain action is performed**

index.HTML



```
<!DOCTYPE html>
<html>
  <head>
    <title>my web site</title>
    <link rel="stylesheet" type="text/css"
href="style.css" />
  </head>
  <body>
    <div>
      <div>
        <a href="https://www.google.com">Link to
google</a>
      </div>
    </div>
  </body>
</html>
```

style.css



```
 a:link{
   color:pink;
 }


  a:visited{
    color:brown;

}

   a:hover{
     color:yellow;
}
```

Color properties

Colors specification

- **Predefined names:** aqua, black, blue, fucshia, green, gray, lime, maroon, navy, olive, purple,red, silver, teal, white, yellow

- **Hexadecimal RGB code**
  - Example: Yellow : #FFFF00

- **Specification: rgba(red, green, blue, alpha)**

  - **Red, green, and blue: numbers between 0 and 255**
  - **Transparensy: between0 and 1**

- **Color** color: black;
  color: #000000;

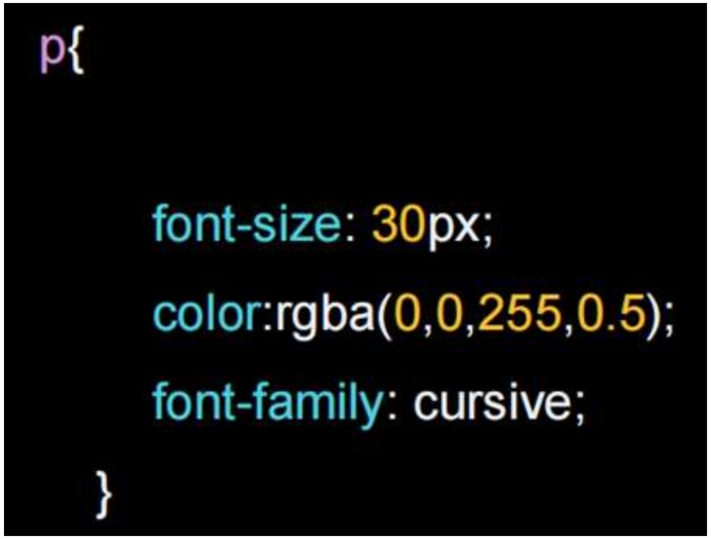
Background

• **background-color**	background-color: white;
	background-color: #FFFFFF;

• **background-image**	background-image: url("URL");
• **background-repeat**	background-repeat: no-repeat;
• **background-position**	background-position: center;

Writing fonts ways

1. **Existing Fonts in CSS:** **Serif, Sans-serif, Cursive, Monospace, Fantasy.**



```
p{


      font-size: 30px;
      color:rgba(0,0,255,0.5);
      font-family: cursive;
  }
```

2. **External fonts**

- **Visit google fonts website:** https://fonts.google.com/
- **Choose your font**
- **Import its link**

Writing fonts ways

3. Other attributes

• **font-family**	font-family: times;
	font-family: arial, verdana;

• **font-size**	font-size: 1.5em;
• **font-style**	font-style: italic;

• **font-weight**	font-weight: bold;
	font-weight: bolder;

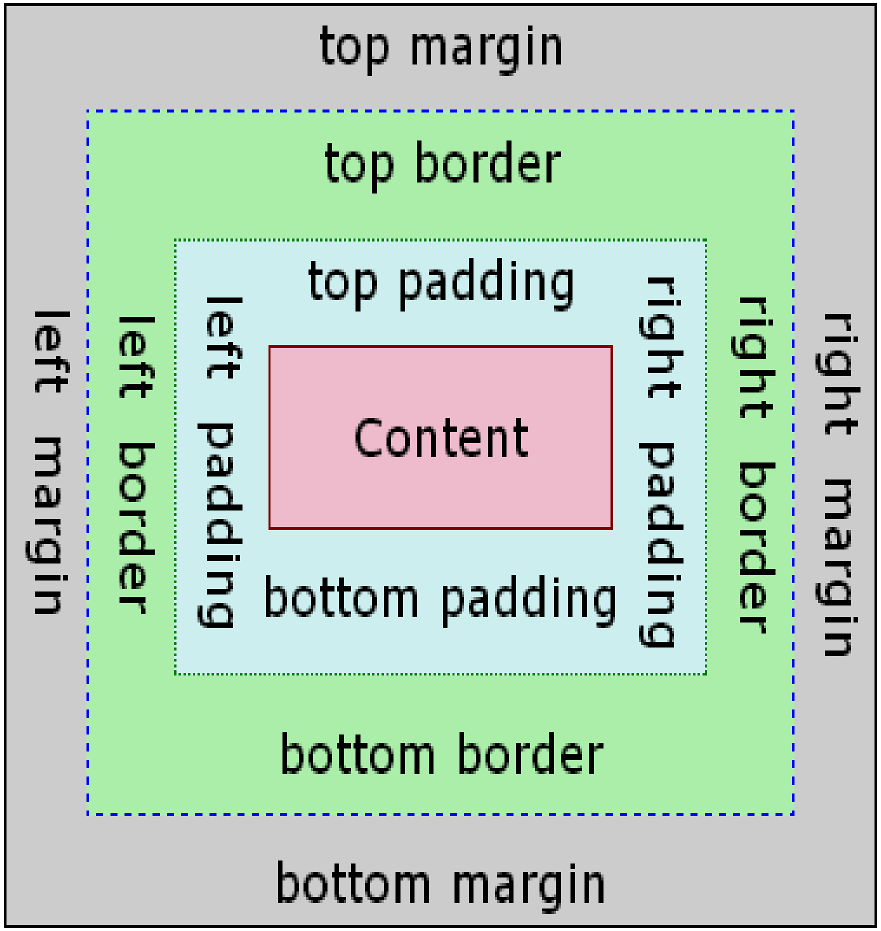
• **text-decoration**	text-decoration: underline; text-decoration: line-through

Box models

Every HTML element can be visualized as a box comprising:

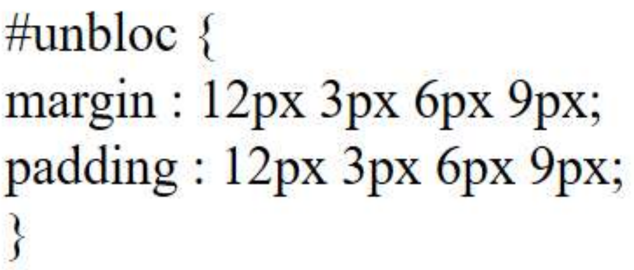
- **Content:** It holds the text and images within the box.
- **Padding:** This transparent area surrounds the content, providing space.
- **Border:** A border that goes around the padding and content.
- **Margin:** Clears an area outside the border. The margin is transparent .

- There exists a top margin (**top**), right margin (**right**), bottom margin (**bottom**), and left margin (**left**). The same applies to the padding.



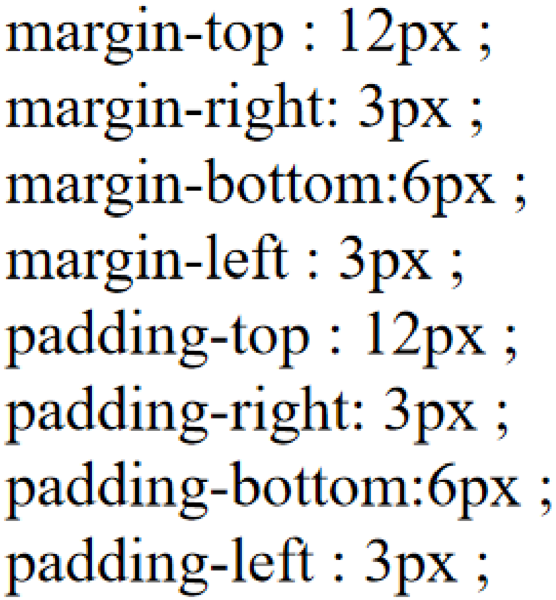
Box models

- These block parameters can be spefied as follows:



```
#unbloc {
margin : 12px 3px 6px 9px;
padding : 12px 3px 6px 9px;
}
```

- They can be also specified like this:



```
margin-top : 12px ;
margin-right: 3px ;
margin-bottom:6px ;
margin-left : 3px ;
padding-top : 12px ;
padding-right: 3px ;
padding-bottom:6px ;
padding-left : 3px ;
```

Lists properties

Unordered Lists

• list-style	list-style: disc;
	list-style: circle;
	list-style: square;

• list-style-image	list-style-image: url("URL");

Ordered Lists

• list-style	list-style: decimal;
	list-style: upper-roman;
	list-style: lower-alpha;

Style Cascade

Table properties

• **Table elements:**	border, width, border-collapse: collapse…

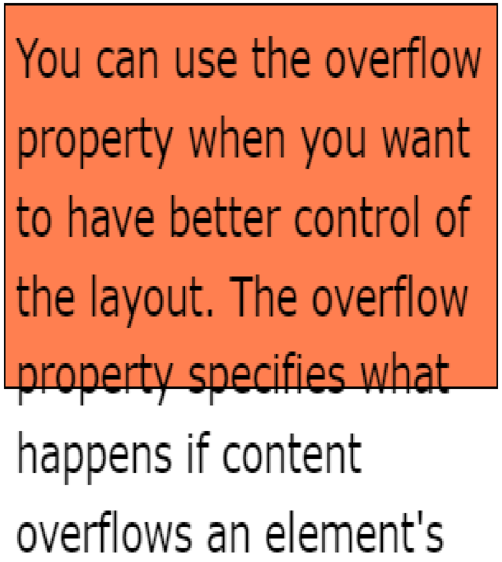
• **Caption elements:**	caption-side: top;
	caption-side: bottom;

• **Tr element:**	height

• **Td and th elements:**	border, width…
	vertical-align: top;
	vertical-align: middle;
	vertical-align: bottom;

Overflow and tag types

- **overflow** property: controls what is happening to the content that is too big to fit into an area. Such a property has the following values:
    - **visible:** What exceeds is displayed
    - **hidden:** The overflow is clipped, and the remaining part of the content will be invisible
    - **auto:** scroll bar



You can use the overflow property when you want to have better control of the layout. The overflow property specifies what happens if content overflows an element's

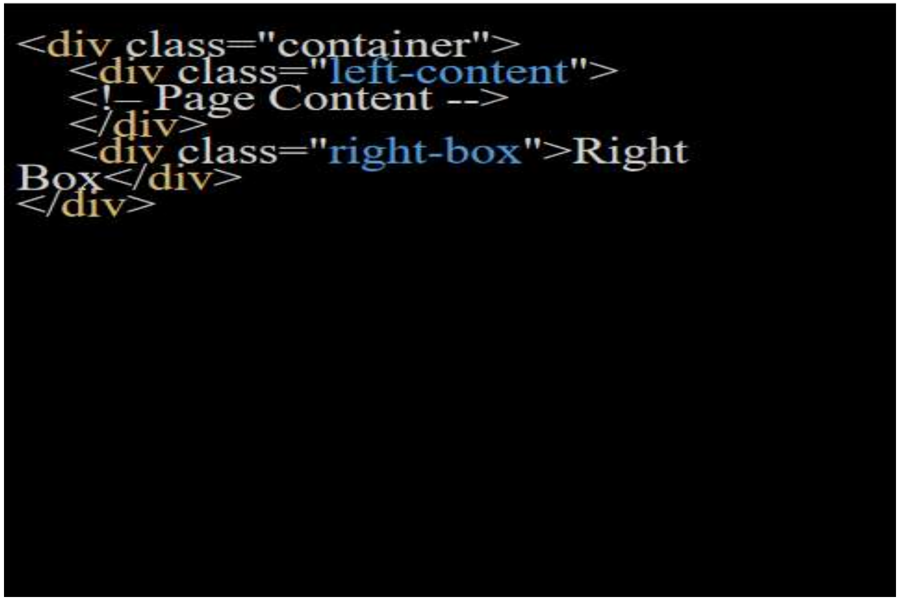
- **display: modifies the display behavior**
    - **block:** displays as a block-level element
    - **Inline:** displays as an inline-level element
    - **Inline-block:** size, margin, but no line break
    - **None:** removes the element

Float Positioning

The float property is used for:

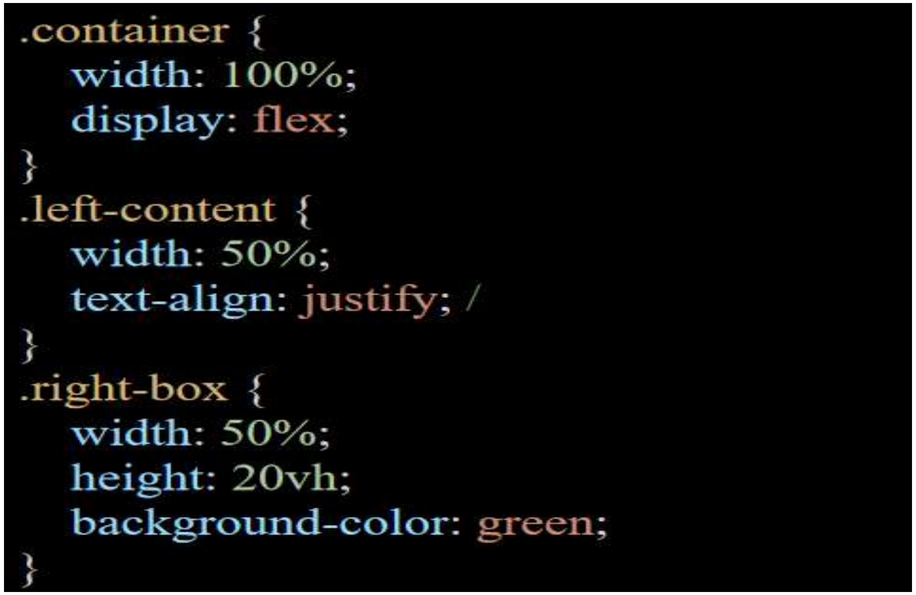
- Specifying how an element should float.
- Positioning and formatting content (for example: in a container, let an image float left to the text).

HTML

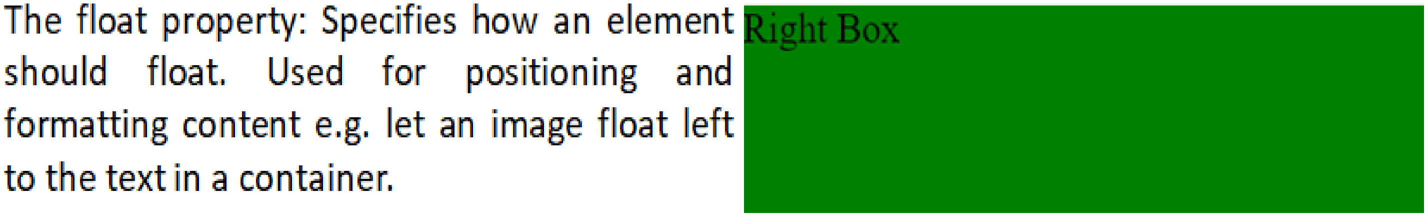


```
<div class="container">
    <div class="left-content">
    <!– Page Content -->
    </div>
    <div class="right-box">Right
Box</div>
</div>
```

CSS



```
.container {
   width: 100%;
   display: flex;
}
.left-content {
   width: 50%;
   text-align: justify; /
}
.right-box {
   width: 50%;
   height: 20vh;
   background-color: green;
}
```



The float property: Specifies how an element should float. Used for positioning and formatting content e.g. let an image float left to the text in a container.

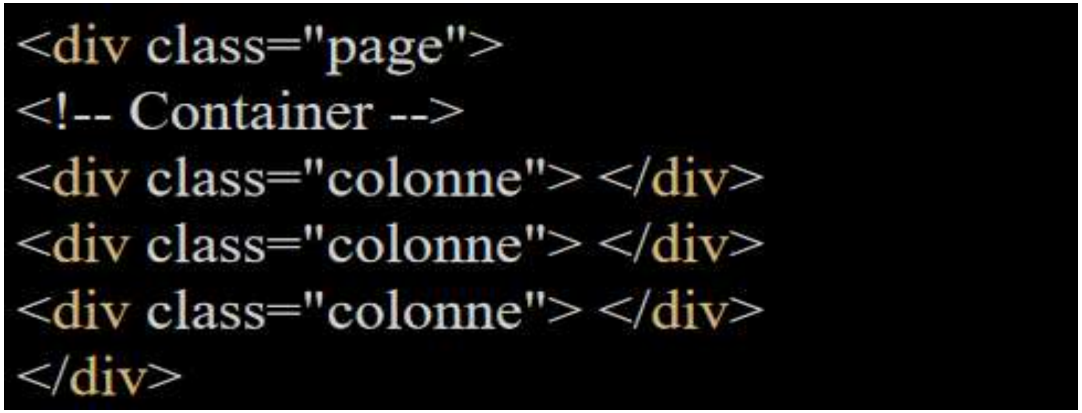
Right Box

Style Cascade

Float Positioning

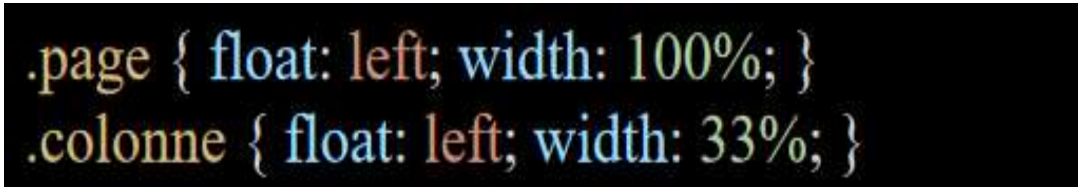
- **Example: Pagination in three columns**

HTML:



```
<div class="page">
<!-- Container -->
<div class="colonne"> </div>
<div class="colonne"> </div>
<div class="colonne"> </div>
</div>
```

CSS:



```
.page { float: left; width: 100%; }
.colonne { float: left; width: 33%; }
```

Absolute positioning

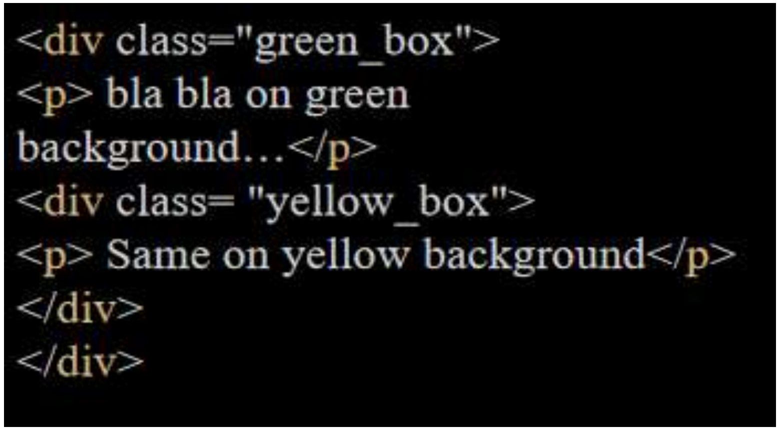
- **Position property:** Specifies the type of positioning method used for an element.

- **There are five different position values, where the element with position:**

  - **Static:** HTML elements are positioned static by default.
  - **Relative:** is positioned relative to its normal position. It can be moved using top, bottom, left, right properties.
  - **Fixed:** Always stays in the same place even if the page is scrolled. The top, right, bottom, and left properties are used to position the element.
  - **Absolute:** is positioned relative to its closest positioned ancestor or to the document if there is no positioned ancestor.
  - **Sticky:** is positioned based on the user's scroll position.

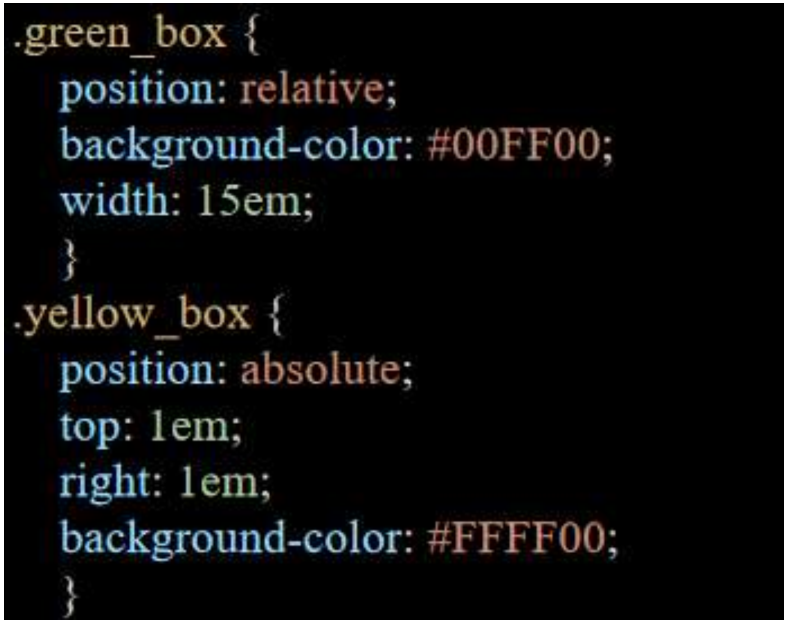
Absolute positioning

HTML

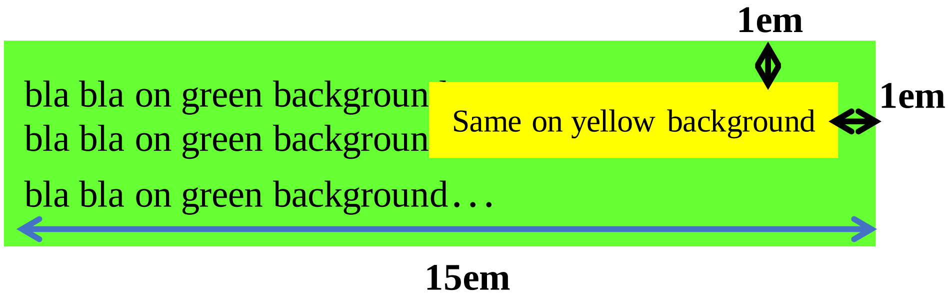


```
<div class="green_box">
<p> bla bla on green
background…</p>
<div class= "yellow_box">
<p> Same on yellow background</p>
</div>
</div>
```

CSS



```
.green_box {
   position: relative;
   background-color: #00FF00;
   width: 15em;
   }
.yellow_box {
   position: absolute;
   top: 1em;
   right: 1em;
   background-color: #FFFF00;
   }
```


1em
bla bla on green backgroun
bla bla on green backgroun
Same on yellow background
1em
bla bla on green background…
15em

References

https://fonts.google.com/

https://www.w3schools.com/css/default.asp