CSS

CSS

- CSS stands for Cascading Style Sheets
- CSS is the language we use to style an HTML document.
- CSS describes how HTML elements should be displayed.
- CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

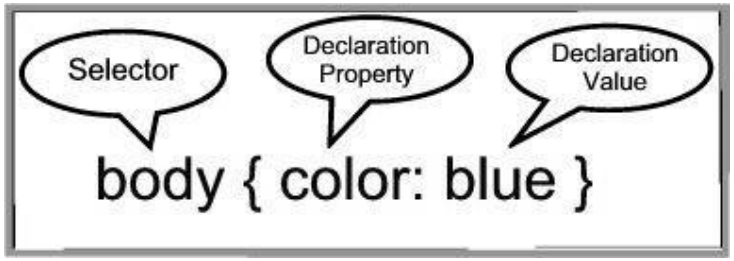
Purpose

- Cascading Style Sheets 3 (CSS 3)
  - Used to specify the presentation of elements separately from the structure of the document.
- Keep all styling details separate and refer to this file from our HTML document.
- Multiple HTML documents can make use of the same CSS file, so that all of them can have same look-and-feel as defined in the CSS file.

CSS Syntax

- The CSS syntax is made up of three parts: a selector, a property and a value:

selector {property:value}



Eg. body {color: black}

For the <p> HTML element represents a paragraph

p {font-family:"Times New Roman"}

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

Main.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>Inline Styles</title>
  </head>
  <body>
    <p style = "font-size: 20pt;">
          This text has font-size style applied to it
    </p>
  </body>
</html>
```

Inline CSS

Main.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>InternalStyles</title>
     <style type = "text/css">
        p  { font-size: 20pt;}
     </style>
  </head>
  <body>
     <p>This text has font-size style applied to it
</p>
  </body>
</html>
```

Embedded CSS
Internal CSS

Main.html
Inline CSS

```
<!DOCTYPE html>
<html>
  <head>
    <title>Inline Styles</title>
  </head>
  <body>
  <p style = "font-size: 20pt;">
  This text has font-size style applied to it
  </p>
  </body>
</html>
```

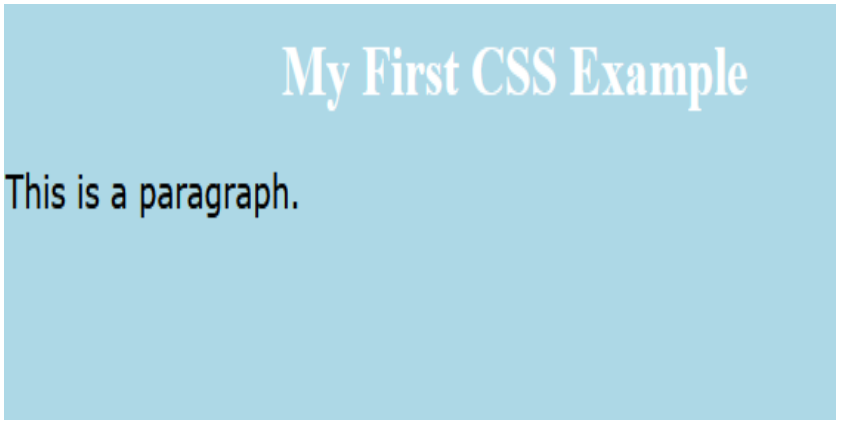
Main.html
Embedded CSS / Internal CSS

```
<!DOCTYPE html>
<html>
  <head>
    <title>InlternalStyles</title>
     <style type = "text/css">
      p   { font-size: 20pt; color: red}
     </style>
  </head>
  <body>
     <p>This text has font-size style applied to it </p>
</body></html>
```

- The type attribute identifies the content between the <style> and </style> tags.
- The default value is "text/css", which indicates that the content is CSS.
- You define internal styles in the head section by using the <style> tag
- External styles are defined within the <link> element, inside the <head> section of an HTML page.
- An external style sheet can be written in any text editor, and must be saved with a .css extension.
- The external .css file should not contain any HTML tags.

Exercise 1:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: lightblue;  }
h1 {
  color: white;
  text-align: center; }
p {
  font-family: verdana;
  font-size: 20px; }
</style>
</head>
<body>
<h1>My First CSS Example</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

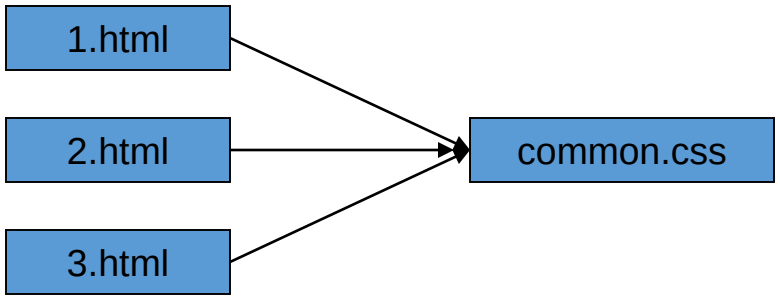


External CSS:

- External styles are defined within the <link> element, inside the <head> section of an HTML page.
- An external style sheet can be written in any text editor, and must be saved with a .css extension.
- The external .css file should not contain any HTML tags.

External CSS:

- Keep all styling details separate and refer to this file from our HTML document.
- CSS eliminates the need for messy code -- namely font tags, and nested tables.
- Multiple HTML documents can make use of the same CSS file, so that all of them can have same look-and-feel as defined in the CSS file.
- External Style Sheets can save you a lot of work.



External CSS:

Each page must link to the style sheet using the <link> tag. The <link> tag goes inside the head section:

<head> <link rel="stylesheet" type="text/css" href="mystyle.css" /> </head>

The browser will read the style definitions from the file '*mystyle.css*', and format the document according to it.

An external style sheet can be written in any text editor. The file should not contain any html tags.

Main.html - External CSS

```
<!DOCTYPE html>
<html><head>
    <title>External Styles</title>
    <link rel = "stylesheet" type = "text/css"  href =
        “Styles.css">
 </head> <body>
    <p>This text has font-size style applied to it </p>
</body> </html>
```

External CSS

rel: relationship between external and current file

Type: type of document you are linking is css

Styles.css

```
p  { font-size: 20pt;}
```

Exercise

one.html

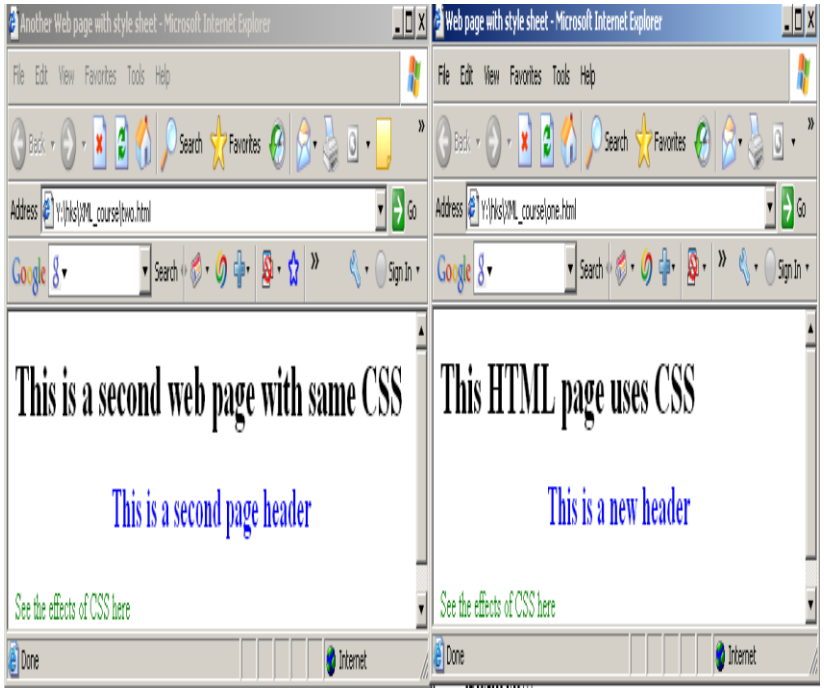
```
<html>
<head>
<title>Web page with style sheet</title>
</head>
<body>
<link href="common.css" rel="stylesheet"
type="text/css" >
<h1>This HTML page uses CSS</h1>
<h2>This is  a new header </h2>
<p> See the effects of CSS here </p>
</body>
</html>
```

two.html

```
<html>
<head>
<title>Another Web page with style sheet</title>
</head>
<body>
<link href="common.css" rel="stylesheet"
      type="text/css" >
<h1>This is a second web page with same CSS</h1>
<h2>This is  a second page header </h2>
<p> See the effects of CSS here </p>
</body>
</html>
```

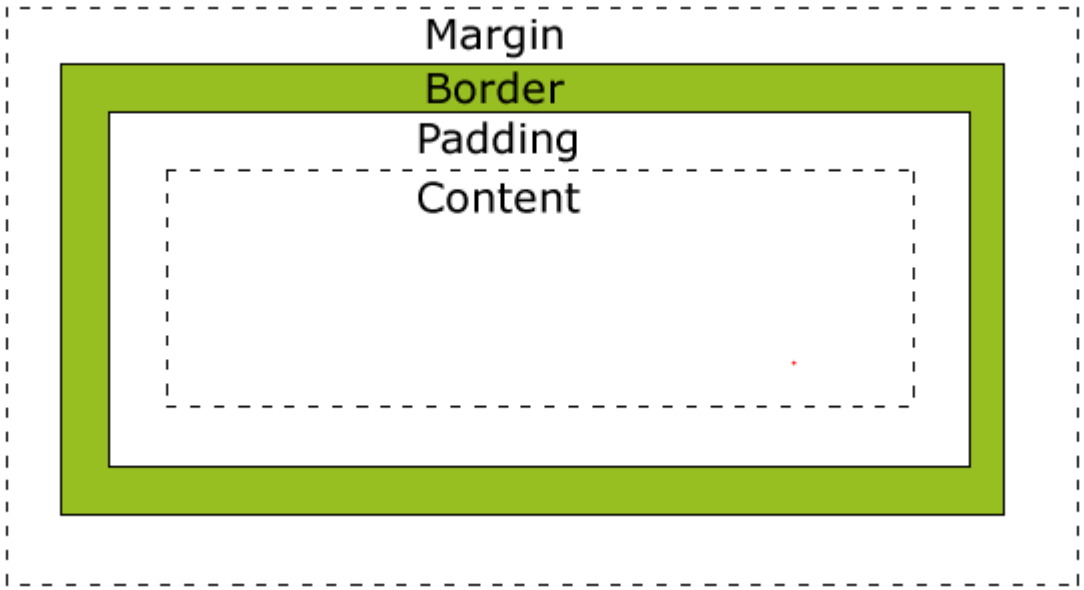
common.css

```
body { color:black}

h2 {text-align:center; color:blue;font-
family:"verdana"}

p {font-family: "sans serif"; color:green}
```



Box model in CSS

- **Content** - The content of the box, where text and images appear
- **Padding** - Clears an area around the content. The padding is transparent
- **Border** - A border that goes around the padding and content
- **Margin** - Clears an area outside the border. The margin is transparent



Exercise 2

- <!DOCTYPE html>
- <html>
- <head>
- <style>
- div {
- background-color: lightgrey;
- width: 300px;
- border: 15px solid green;
- padding: 50px;
- margin: 20px;
- }
- </style>
- </head>
- <body>
- <h2>Demonstrating the Box Model</h2>
- This text is the content of the box. We have added a 50px padding, 20px margin and a 15px green border.
- </body>
- </html>

Division Tag

- The tag defines a division or a section in an HTML document.
- The tag is used as a container for HTML elements
- **The tag is easily styled by using the class or id attribute.**
- Any sort of content can be put inside the tag!

example

- <html>
- <body>
- ** **
- <h2>London</h2>
- London is the capital of England.
- ** **
- ** **
- <h2>Paris</h2>
- Paris is the capital of France.
- ** **
- </body>
- </html>

- The id attribute **specifies a unique id for an HTML element**. The value of the id attribute must be unique within the HTML document

- The difference between an ID and a class is that an ID can be used to identify one element, whereas a class can be used to identify more than one.

Class and ID Selectors

- You can also define your own selectors in the form of **class** and **ID** selectors.
- *The benefit of this is that you can have the same HTML element, but present it differently depending on its class or ID*

- In the CSS, a class selector is a name preceded by a **full stop** (“.”) and an ID selector is a name preceded by a **hash character** (“#”).

- Style the element with id="firstname"

```
<style>
#firstname {
  color: green;
}
</style>
```

Select and style all elements with class="intro"

```
<style>
.intro {
  background-color: yellow;
}
</style>
```

Note: An id name cannot start with a number!

Class and ID Selectors

The benefit of this is that you can have the same HTML element, but present it differently depending on its class or ID

Example code

```
<style>
#top
{ background-color: black;
  color: white;
  border: 2px solid black;}
.city {
  background-color: tomato;
  color: white;
  border: 2px solid black;}
</style> </head>
<body>
<div id="top">
<h2>London</h2>
<p>London is the capital of England.</p>
</div>
<div class="city">
<h2>Paris</h2>
<p>Paris is the capital of France.</p>
</div></body
```

Class and ID Selectors

```
<!DOCTYPE html>
<html>
<head>
<style>
#top {
    background-color: #ccc;
    padding: 20px
}
.intro {
    color: red;
    font-weight: bold;
}
</style>
</head>
<body>

<h1>Welcome to CSS Styles</h1>
<div id="top">
<h1>Chocolate curry</h1>
<p class="intro">This is my recipe for making curry with chocolate</p>
<p class="intro">Hello</p>
</div>
</body>
</html>
```

Class

- The class attribute is often used to point to a class name in a style sheet.

- In the following example we have three elements with a class attribute with the value of "city".

- All of the three elements will be styled equally according to the .city style definition in the head section:

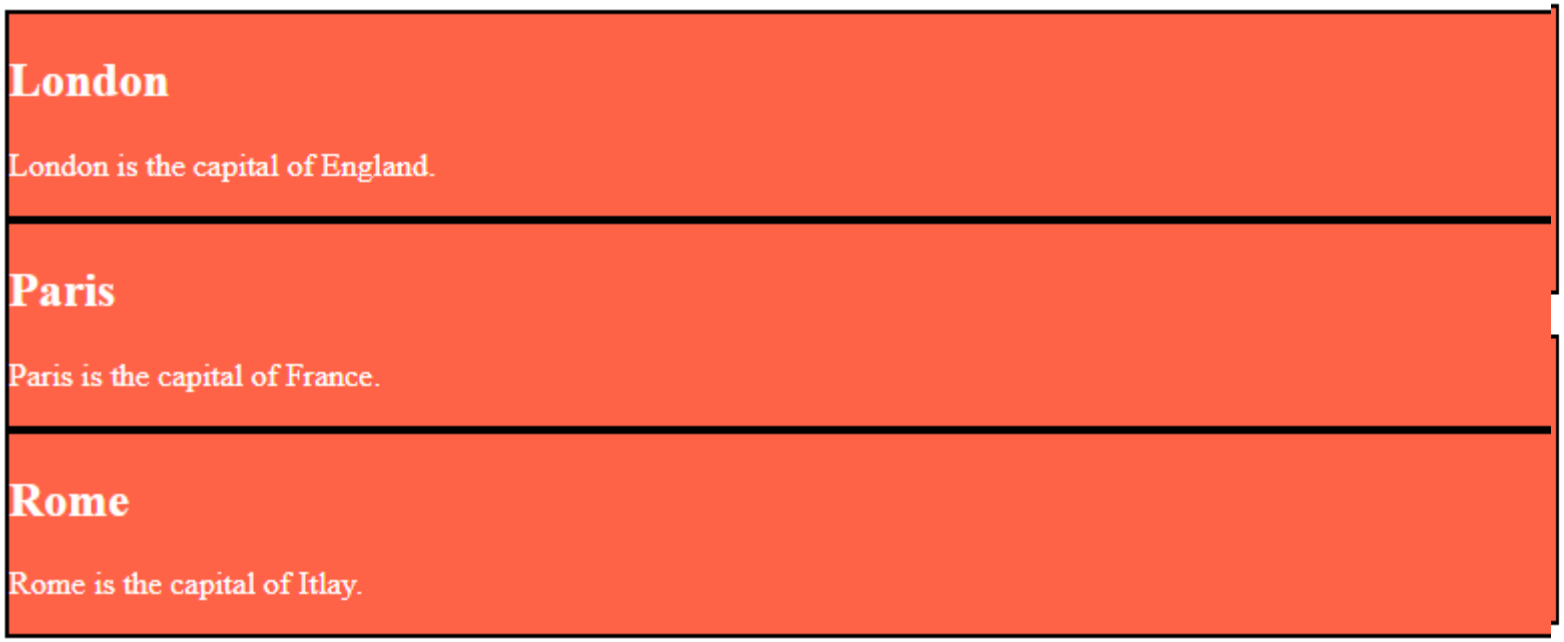
Class -example

```
<head>
<style>
.city {
  background-color: tomato;
  color: white;
  border: 2px solid black;
  margin: 20px;
  padding: 20px;
}
</style>
</head>
```

div and class

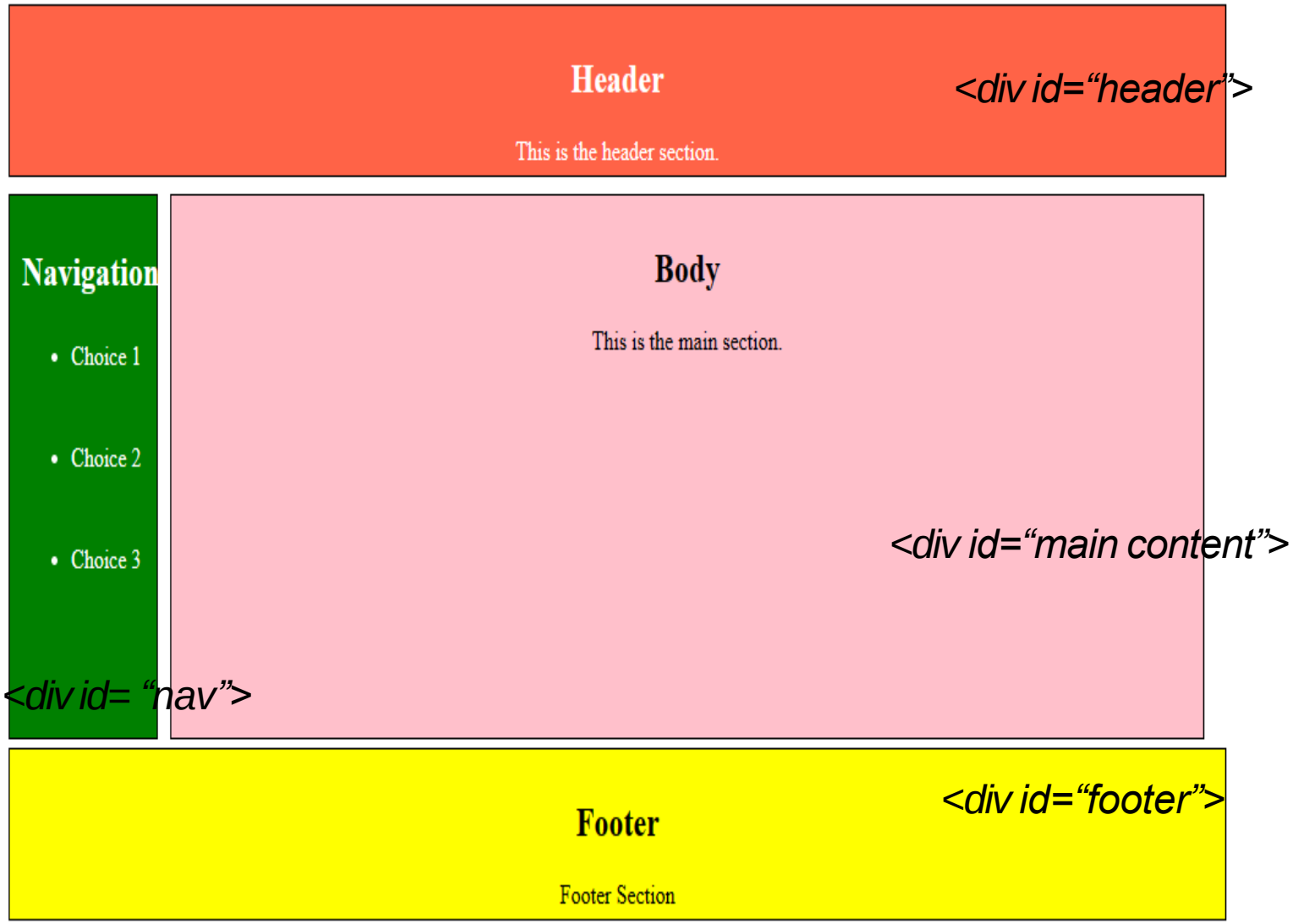
- <html>
- <head>
- <style>
- **.city {**
- **background-color: tomato;**
- **color: white;**
- **border: 2px solid black;**
- **margin: 20px;**
- **padding: 20px; }**
- </style>
- </head>
- <body>
-
- <h2>London</h2> London is the capital of England.
-
- <h2>Paris</h2> Paris is the capital of France.
-
- <h2>Rome</h2> Rome is the capital of Itlay.
- </body>
- </html>

Output


London
London is the capital of England.
Paris
Paris is the capital of France.
Rome
Rome is the capital of Itlay.

Example 1 on div and class

- We will create a web page with following sections.
  - Web page header
  - Web page navigation
  - Web page main content
  - Web page footer


Header
This is the header section.

Navigation
Choice 1
Choice 2
Choice 3
Body
This is the main section.

Footer
Footer Section

```
#header
{  text-align:center;
   padding:10px;
   Margin: 5px;
   background-color: tomato;
   color: white;
   border: 1px solid black;
   height:80px;
   }
#nav {
   line-height:30px;
   text-align:centre;
   height:300px;
   float:left;
   margin:5px;
   width:100px;
   padding:10px;
   background-color: green;
   color: white;
   border:1px solid black;
```

Html code and css

```html
<div id="header">
<h1>Page on div and class</h1>
</div>

<div id="nav">
  <ul>

    <li>Menu 1</li>
    <li>Menu 2</li>

  </ul>
</div>

<div id="main">
<h2>Main content</h2>

</div>


<div id="footer">
<p>Copyright &copy msrit.edu</p>
</div>
```

```css
#header {

    text-align:center;
    padding:10px;
    border: 1px solid;
    margin: 10px;

}
#nav {
    line-height:30px;
    border: 1px solid;
    height:300px;
    width:100px;
    float: left;
    padding:20px;
}
#main {
    border: 1px solid;
    width:350px;
    height: 300px;
    float: left;
    padding:20px;
    margin: 10px;
}

#footer {
    border: 1px solid;
    clear: both;
    text-align:center;

}
```

Generic Selectors

- A generic class can be defined if you want a style to apply to more than one kind of tag.
- A generic class must be named, and the name must begin with a period.
- The .date class selector will target all HTML elements that have the class="date" attribute. So, the following HTML elements will **all** be styled:

```
.date {
  color: red;
}
```

HTML

```
<p class="date">
  Saturday Feb 21
</p>
<p>
  The event will be on <em class="date">Saturday</em>.
</p>
```

RESULT

Saturday Feb 21

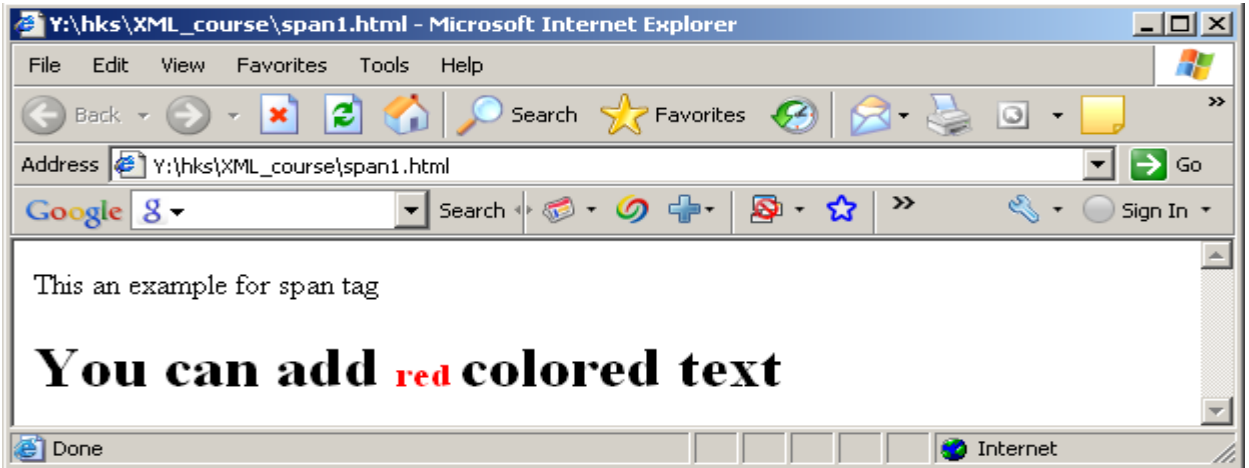
The event will be on *Saturday*.

Linking between sections

- You can link between the sections in the page using and <a> tags.
- The id provided in the tag for a section needs to be used in the "href" attribute of the <a>tag.
- Example:
  -
  - <a href="#section1">

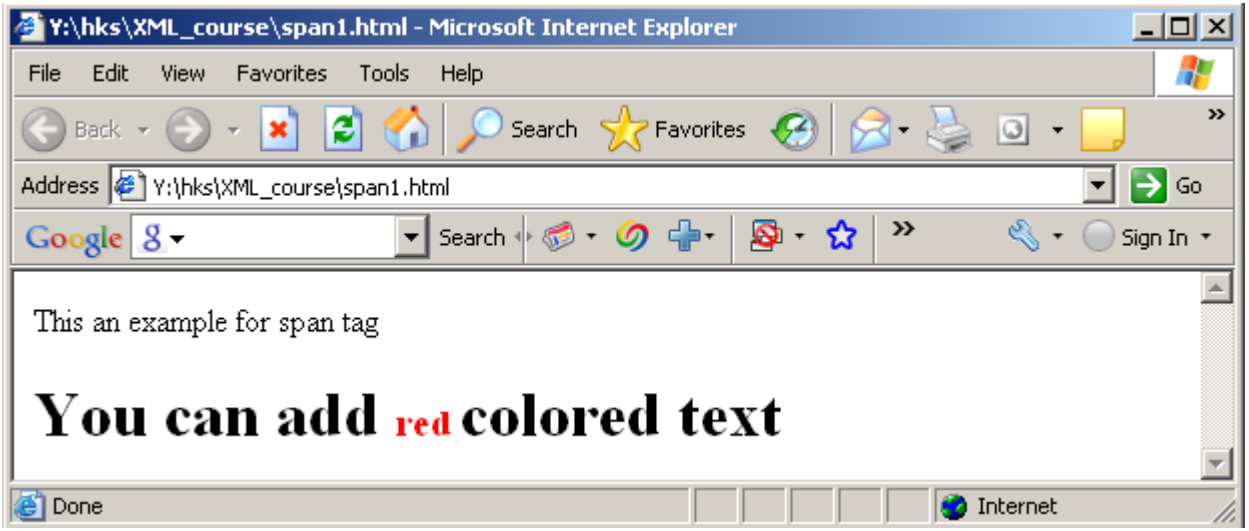
HTML tag

- The tag has very similar properties to the tag, in that it changes the style of the text it encloses.
- The difference is that span goes into a finer level, so we can span to format a single character if needed. There is no line feed after the tag.
- The tag won't change the enclosed items at without any style attributes.



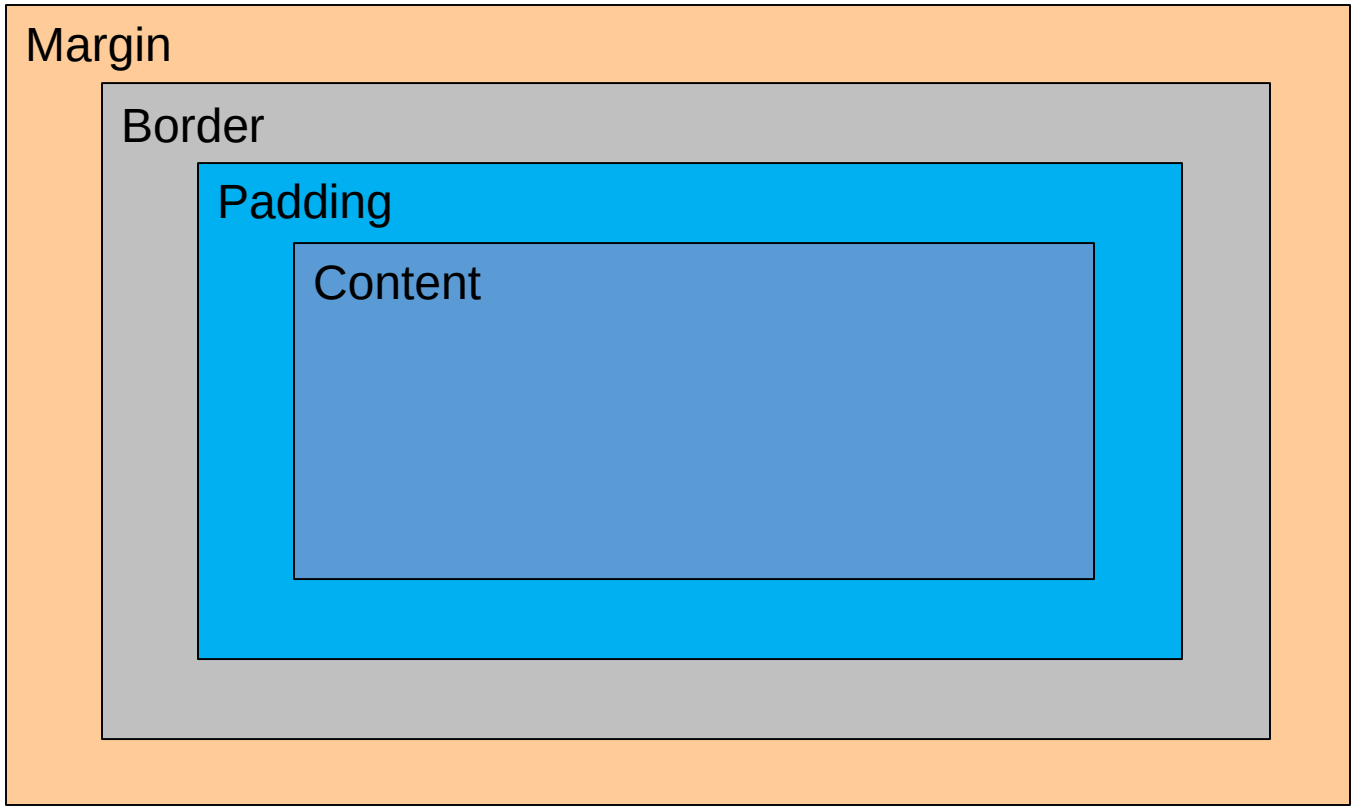
tag example-1

```
<html>
<body>
<p>This an example for span tag</p>
<h1>You can add <span style="color: red; font-size: 14pt">red </span>
  colored text</h1>
</body>
</html>
```



Box Components

Each element on the page has the following components:



The easiest way to understand these components is to use one of the most versatile tools available to us as web designers: the element.

Explanation of the different parts

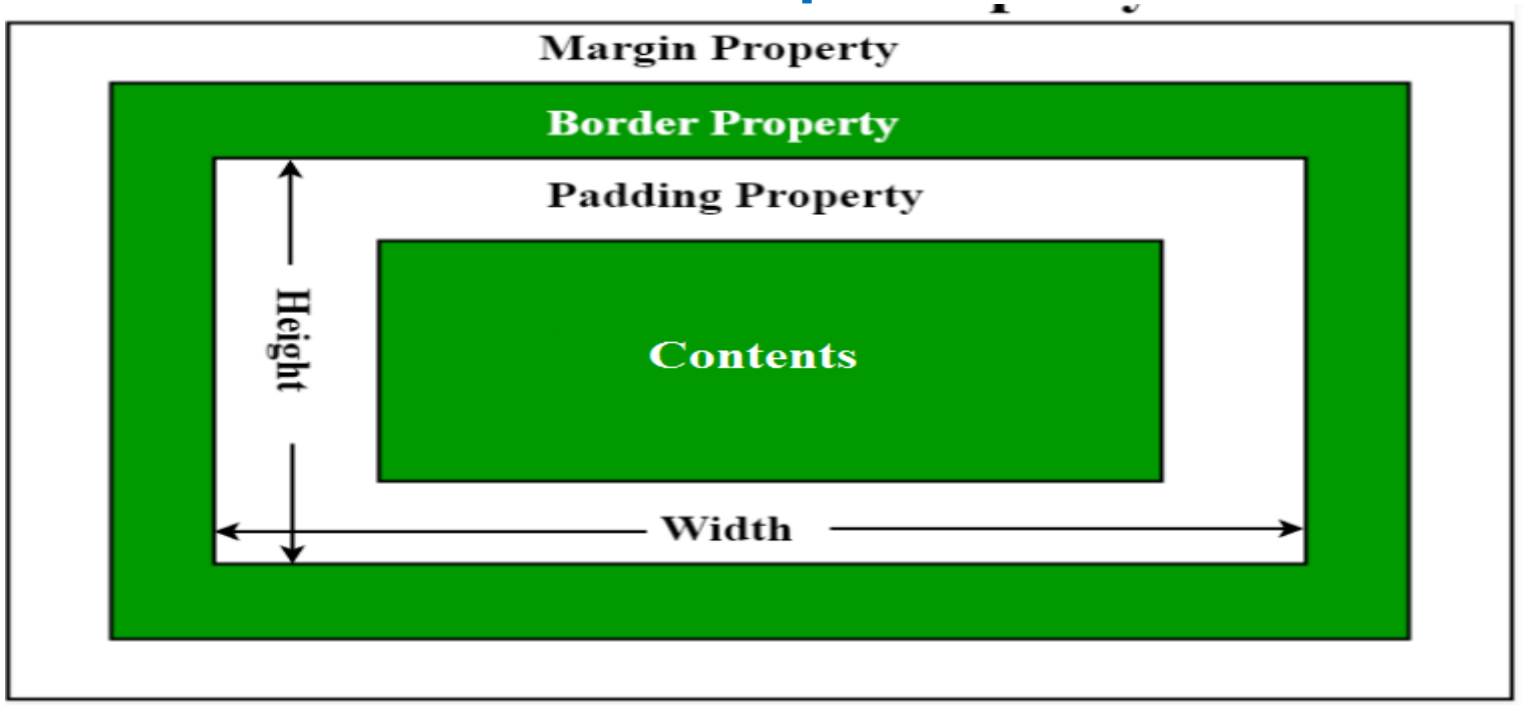
Margin - Clears an area around the border. The margin does not have a background color, it is completely transparent.

Border - A border that goes around the padding and content. The border is affected by the background color of the box.

Padding - Clears an area around the content. The padding is affected by the background color of the box.

Content - The content of the box, where text and images appear In order to set the width and height of an element correctly in all browsers, you need to know how the box model works.

Box Components



Property	Defines...
`margin`	Distance between the current box and those around it.
`padding`	Distance between the content in the box and the inner edge of its border.
`border`	The size and style of the border of an individual box.

The defaults for each property are for them to hold no value – you have to set the ones you wish to use.

Introducing the Element

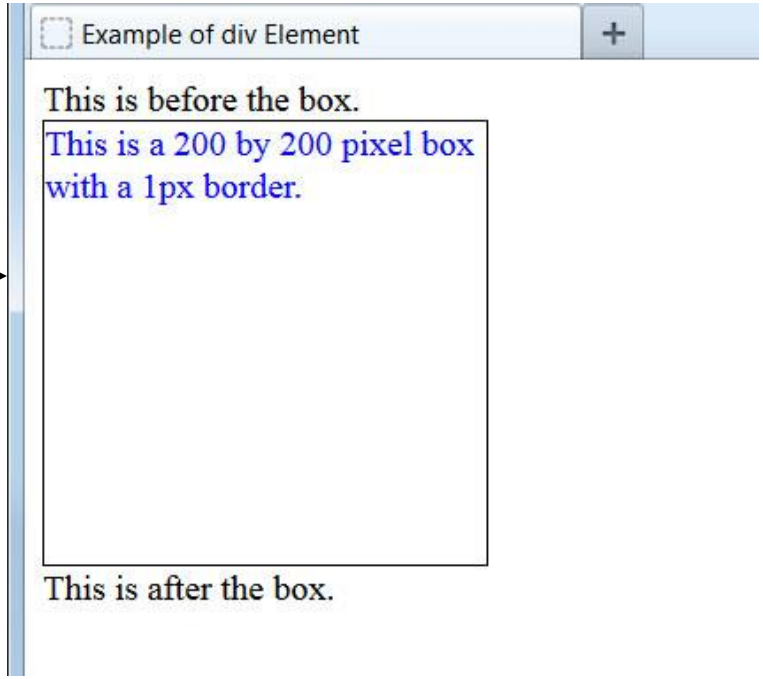
The ("division") element groups other elements on the screen.

- By setting the **width** and **height** attributes via CSS, we can reserve a precise amount of space on our page for specific content.
- The actual content is nested and contained within the opening and closing tags.
- When we apply CSS styling directly to the element, all the elements contained within that will inherit that style.
- By using multiple elements as building blocks, we can design an entire web page layout.

Example Element

Let's create a box on the screen and add a border around it:

```
<style type="text/css">
  .box200 {
    width: 200px;
    height: 200px;
    border: 1px solid black;
    color: blue;
  }
</style>
...
This is before the box.
  <div class="box200">
This is a 200 by 200 pixel box with
    a 1px border.
  </div>
This is after the box.
...
```



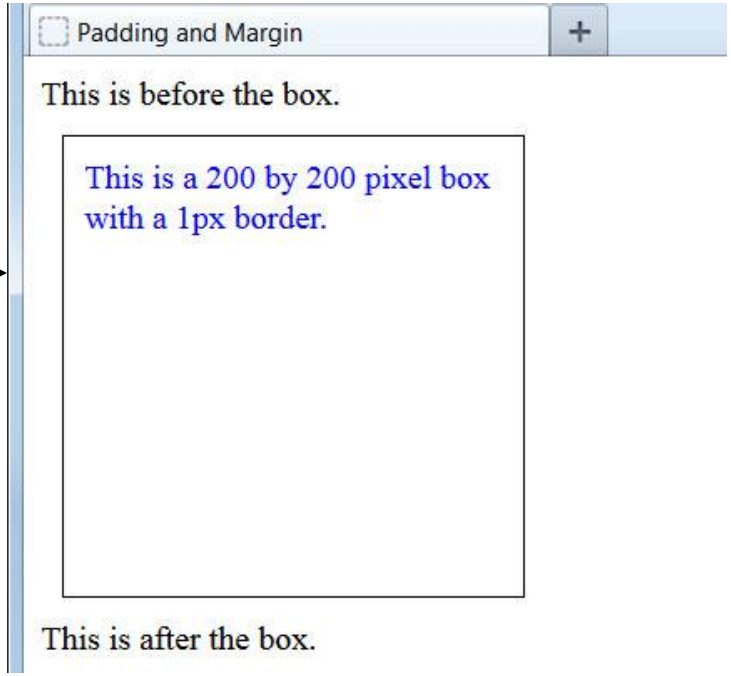
With the border set, we can see the exact space taken up on the page.

Notice that there is almost no space separating the text from the box border. Elements such as paragraphs, headers, and lists automatically insert padding and margins, but plain text does not do so.

Adding Padding and Margin

Let's create some space between elements by adding both padding and margin:

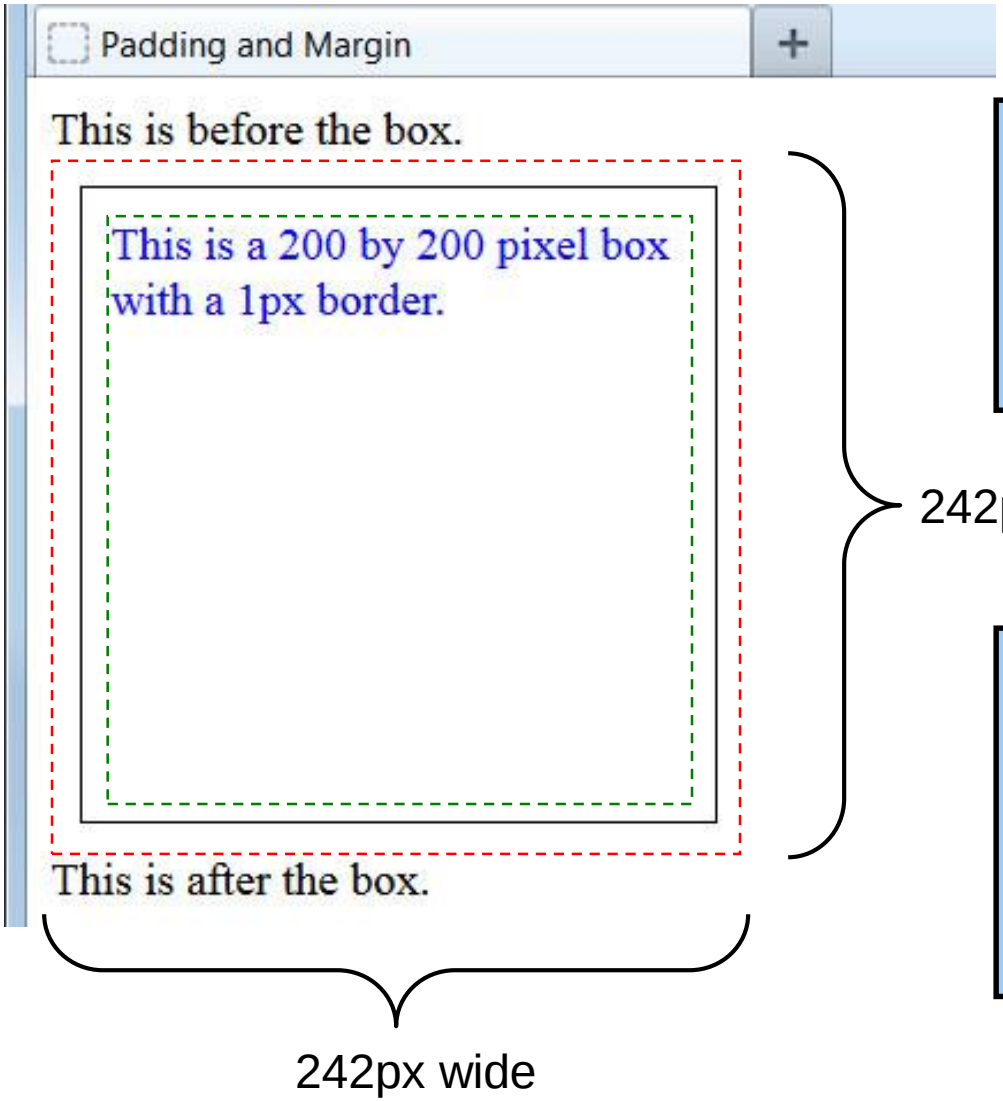
```
<style type="text/css">
  .box200 {
    width: 200px;
    height: 200px;
    border: 1px solid black;
    color: blue;
    padding: 10px;
    margin: 10px;
  }
</style>
...
```



The 10 pixel padding adds buffer space, on all four sides, between the content and border. The 10 pixel margin adds buffer space, on all four sides, between the border and surrounding elements.

Let's examine this a bit closer up to see exactly what is happening.

Padding and Margin Illustrated



The dotted red line shows the margin's outer boundary and the dotted green line shows the padding's inner boundary.

When we define the width and height of a element, these dimensions apply only to the actual content, not to the padding, border, or margin.

Calculating Total Dimensions

When we are planning our page, we have to calculate exactly how much screen space a or any other element will use. The formula is:

- Total element width = defined width + left padding + right padding + left border + right border + left margin + right margin.
- Total element height = defined height + top padding + bottom padding + top border + bottom border + top margin + bottom margin.

In our previous example:

- Total width = 200px + 10px + 10px + 1px + 1px + 10px + 10px = 242px.
- Total height = 200px + 10px + 10px + 1px + 1px + 10px + 10px = 242px.

Padding, borders, and margins do not have to be the same on all four sides, as they are in this example. Let's see how to set these individually.

Exercise

- Create a web page on “International yoga day celebrations” as given the files .
  - Let the page header be "YOGA DAY CELEBRATIONS".
  - Provide a navigations for "First International day of yoga" , "Origin" , "Event gallery"
  - Use sections and articles for each navigations appropriately with its titles and headings. You can also use some images wherever necessary.
  - Provide footer to the webpage saying as copyrighted by you.

Sample solution

International Yoga day

First International day of yoga Origin Event gallery

First Yoga day celebrations

International Yoga Day, June 21, was declared as the International Day of Yoga by the United Nations General Assembly on December 11, 2014.[1] Yoga is a physical, mental and spiritual practice or discipline that originated in India. The Indian Prime Minister Narendra Modi in his UN Address suggested the date to be June 21 as the International Day of Yoga as it is the longest day of the year (Summer Solstice) in the Northern Hemisphere and has special significance in many parts of the world.[2] From the perspective of yoga, the Summer Solstice marks the transition to Dakshinayana. The first full moon after Summer Solstice is known as Guru Poornima. Lord Shiva, the first yoga practitioner (Adi Yogi) is said to have begun imparting the knowledge of yoga to the rest of mankind on this day and became the first guru (Adi Guru).[3] Dakshinayana is also considered a time when there is natural support for those pursuing spiritual practices.[4] The declaration of this day came after the call for the adoption of 21 June as International Day of Yoga by Indian Prime Minister Narendra Modi during his address to UN General Assembly on September 27, 2014[5][6] wherein he stated:[7]

> "Yoga is an invaluable gift of India's ancient tradition. This tradition is 5000 years old. It embodies unity of mind and body; thought and action; restraint and fulfilment; harmony between man and nature; a holistic approach to health and well-being. It is not about exercise but to discover the sense of oneness with yourself, the world and the nature. By changing our lifestyle and creating consciousness, it can help us deal with climate change. Let us work towards adopting an International Yoga Day." -Narendra Modi, UN General Assembly

Example 2

- Let us see an example to create web page that tells about yourself. Create separate sections “About me”, “My interests”, “My movies”

Example of div and class

```
<div id="header">
<h1>About me</h1>
</div>

<div id="nav">
About me<br>
My interests<br>
My movies<br>
</div>

<div id="section">
<h2>About me</h2>
<p class="aboutme">
I am Srinidhi working as an Assistant professor in the department of CSE, MSRIT. <br>
</p>
<p class="aboutme">
    <h3>Subjects taught</h3>
  <ul>
    <li>Discrete mathematics</li>
    <li>Software Engineering</li>
  </ul>
</p>
</div>

<div id="footer">
Copyright &copy msrit.edu
</div>

</body>
```

Lets apply some css to the previous (use external css)

```css
#header {
    background-color:black;
    color:white;
    text-align:center;
    padding:5px;
}
#nav {
    line-height:30px;
    background-color:#eeeeee;
    height:300px;
    width:100px;
    float: left;
    padding:20px;
}
#section {
    width:350px;
    float: left;
    padding:10px;
}
#footer {
    background-color:black;
    color:white;
    clear: both;
    text-align:center;

}
```

div

class

```css

p.aboutme{

color: green;
}

li.aboutme{
    list-style: square;
}
```