

# Web Application Development

## CSS (Cascading Style Sheets) Basics

### Contents

- ☐ Introduction to CSS
- ☐ CSS - Classifications
- ☐ CSS - Selectors
- ☐ CSS - Layout

## Contents

- ❑ **Introduction to CSS**
- ❑ CSS - Classifications
- ❑ CSS - Selectors
- ❑ CSS - Layout

## Introduction to CSS

- ❑ **CSS** = *Cascading Style Sheets*
- ❑ Describe how HTML elements are to be displayed on screen, paper, or in other media
- ❑ Use similarly to the **TEMPLATE** format
- ❑ Separate contents (HTML) from presentation (Style)
- ❑ Control the layout of multiple web pages all at once (*cascading*)

**Do not use CSS**

```
<html>
<body>
  <p>
    <span style="font-size: 14pt; color: blue"><strong>
      Web Design : </strong></span>
    <em><span style="color: red">Photoshop, Macromedia Flash </span></em>
  </p>
  <p>
    <span style="font-size: 14pt; color: blue"><strong>
      Web Programming : </strong></span>
    <em><span style="color: red">ASP, PHP, JSP </span></em>
  </p>
  <p>
    <strong><span style="font-size: 14pt; color: blue">
      Debugger : </span></strong><em><span
        style="color: red">Zend, VS.PHP, VS.NET 2005 </span></em>
    </p>
</body>
</html>
```

**Use CSS**

```
<html>
<head>
  <style type="text/css">
    .classSubjet { color:#0000FF;
      font-weight: bold; font-size: 14px;}
    .classTool { font-style: italic;
      color: #FF0000; font-size: 12px;}
  </style>
</head>
<body>
  <p>
    <span class="classSubjet">Web Design : </span>
    <span class="classTool">Photoshop, Macromedia Flash </span>
  </p>
  <p>
    <span class="classSubjet">Web Programming : </span>
    <span class="classTool">ASP, PHP, JSP</span>
  </p>
  <p>
    <span class="classSubjet">Debugger : </span>
    <span class="classTool">Zend, VS.PHP, VS.NET 2005</span>
  </p>
</body>
</html>
```

Web Design : *Photoshop, Macromedia Flash*  
 Web Programming : *ASP, PHP, JSP*  
 Debugger : *Zend, VS.PHP, VS.NET 2005*

## Define Style

### □ Type 1

```
style
  "property1:value1;
  property2:value2;
  .....
  propertyN:valueN;"
```

#### Example:

```
<h1 style="
  color : blue;
  font-family : Arial;" > DHKHTN </h1>
```

### □ Type 2

```
SelectorName {
  property1:value1;
  property2:value2;
  .....
  propertyN:valueN;}
<tag class = "SelectorName">
  .....
</tag>
```

#### Example:

```
.Title1 {
  color: red;
  font-family: Verdana, sans-serif; }
<h1 class="Title1"> DHKHTN </h1>
```

## CSS Comment

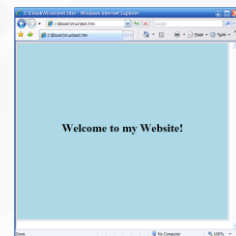
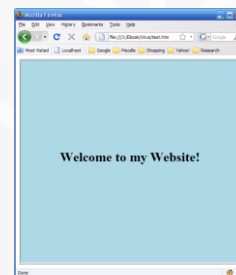
- ❑ Like C++
- ❑ Use `/* your comment */`

❑ Example :

```
❑ SelectorName {
    property1:value1;    /* comment 1*/
    property2:value2;    /* comment 2*/
    .....
    propertyN:valueN;}
```

## Define Style

```
1 <html>
2 <head>
3   <style type="text/css">
4     body{
5       margin-top: 0 px;
6       margin-left: 0 px;
7     }
8   </style>
9 </head>
10
11 <body>
12
13   <table border="1" width="100%" height="500px">
14     <tr>
15       <th bgcolor="lightblue"><h1>Welcome to my Website!</h1></th>
16     </tr>
17   </table>
18
19 </body>
20 </html>
```



8

## Lengths

- ❑ Many CSS properties take **length** values, such as **font-size**, **line-height**, **margin**, **padding**, etc.
  - ❑ **Length** is a **number** followed by a **length unit**, such as **10px**, **2em**, etc.
- ❑ There are two types of length units
  - ❑ Absolute Lengths
  - ❑ Relative Lengths

## Absolute Lengths

- ❑ The absolute length units are fixed and a length expressed in any of these will appear as exactly that size.
- ❑ Common units of absolute lengths:
  - ❑ px: pixels
  - ❑ pt: points ( $1\text{ pt} = 1/72\text{ in}$ )
  - ❑ cm: centimeters
  - ❑ mm: millimeters
  - ❑ in: inches
  - ❑ pc: picas ( $1\text{ pc} = 12\text{ pt}$ )

## Relative Lengths

- ❑ Relative length units specify a length relative to another length property.
- ❑ Common units of relative lengths:
  - ❑ %: Relative to the parent element
  - ❑ em: Relative to the font-size of the element
  - ❑ rem: Relative to font-size of the root element
  - ❑ vw: Relative to 1% of the width of the viewport
  - ❑ vh: Relative to 1% of the height of the viewport
  - ❑ ch: Relative to width of the '0' (zero)

## Contents

- ❑ *Introduction to CSS*
- ❑ **CSS - Classifications**
- ❑ CSS - Selectors
- ❑ CSS - Layout

## CSS classifications

- ❑ Based on the usage, CSS is categorized into 3 main types:
  - ❑ **Inline Style Sheet**
  - ❑ **Internal Style Sheet** (Embedded Style Sheet)
  - ❑ **External Style Sheet** (Linking Style Sheet)

## Inline Style Sheet

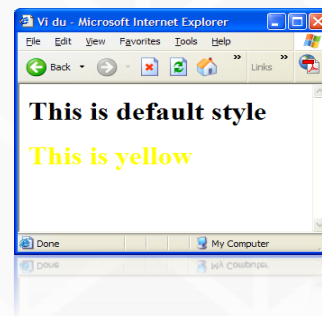
- ❑ Define style in the style attribute of each HTML tag.  
Define styles using syntax **type 1**.

```
<tag style = "property1:value1;...propertyN:valueN;"> ... </tag>
```

- ❑ Apply a unique style for a single element.

- ❑ Ex:

```
<H1 style="color: yellow">This is yellow</H1>
```

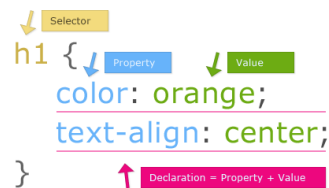


## Internal Style Sheet

- ❑ Also called **Document-Wide Style Sheet**
- ❑ All type definitions are located within the `<style>` tag of the HTML page. Apply the styles for the page (one page)
- ❑ Define styles using syntax **type 2**.
- ❑ Ex:

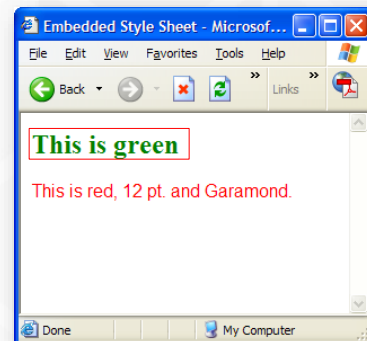
```
<head>
  <style type="text/css" media="all | print | screen" >
    <!--
      SelectorName {
        property1:value1;
        property2:value2;
        .....
        propertyN:valueN;}
    <!--
  </style>
</head>
```

Anatomy of a CSS Rule



## Internal Style Sheet - Example

```
<HTML>
<HEAD>
  <TITLE>
    Embedded Style Sheet
  </TITLE>
  <STYLE TYPE="text/css">
    P {color: red;
      font-size: 12pt;
      font-family: Arial;}
    H2 {color: green;}
  </STYLE>
</HEAD>
<BODY BGCOLOR="#FFFFFF">
  <H2>This is green</H2>
  <P>This is red, 12 pt. and Garamond.</P>
</BODY>
</HTML>
```





## External Style Sheet

- ❑ All styles are stored in files with the **\*.CSS** extension.
- ❑ CSS file: stores multiple styles using syntax **type 2**.
- ❑ In the HTML file: link using the **link** tag

```
<head>
  <link rel="stylesheet" href="URL" type="text/css">
</head>
```

```
<head>
  <style type="text/css" media="all | print | screen" >
    @import url(URL);
  </style>
</head>
```

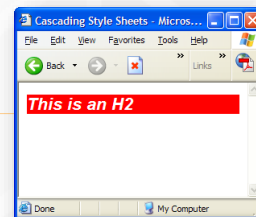
## External Style Sheet - Example

### MyStyle.CSS

```
H2
{
  FONT-WEIGHT: bold;
  FONT-SIZE: 16pt;
  COLOR: white;
  FONT-STYLE: italic;
  FONT-FAMILY: Arial;
  BACKGROUND-COLOR: red;
  font-color: white
}
```

### demo.html

```
<html>
<head>
  <title>Cass.....</title>
  <link HREF="MyStyle.css"
  REL="stylesheet" >
</head>
<body>
  <h2>This is an H2 </h2>
</body>
</html>
```



## Comparison

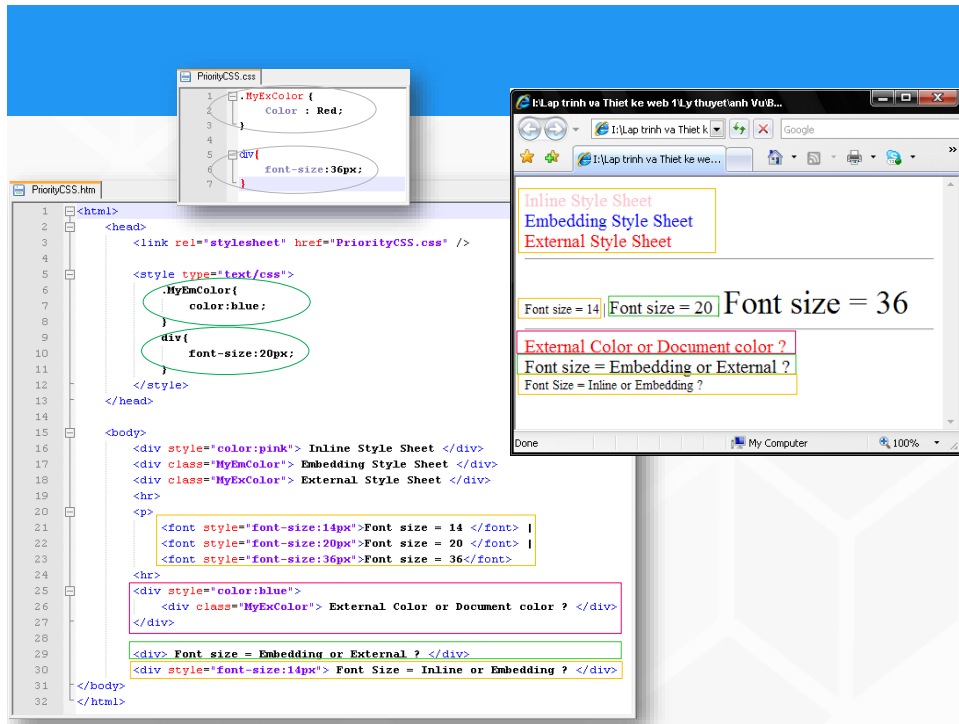
	Inline Style Sheet	Internal Style Sheet	External Style Sheet
Syntax	Type 1	Type 2	Type 2
Example	<pre>&lt;p style="color:red;"&gt;   Test &lt;/p&gt;</pre>	<pre>&lt;style type="text/css"&gt;   .Title1{color: red;} &lt;/style&gt; &lt;p class="Title1"&gt;   Test &lt;/p&gt;</pre>	<pre>&lt;link rel="stylesheet" " href="main.css" /&gt; &lt;p class="Title1"&gt;   Test &lt;/p&gt;</pre>
Advantages	<ul style="list-style-type: none"> <li>• Easy to manage Styles per HTML tag.</li> <li>• Has the highest priority</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to manage Styles per webpage.</li> <li>• No need to load additional pages for styles</li> </ul>	<ul style="list-style-type: none"> <li>• Can set Styles for multiple webpages.</li> <li>• Style information is cached by the browser</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• Need to manually re-declare style information in each HTML tag.</li> <li>• Difficult to update styles</li> </ul>	<ul style="list-style-type: none"> <li>• Need to re-declare style information for other web pages each time it's used</li> </ul>	<ul style="list-style-type: none"> <li>• Takes time to download *.css files and slows down web page compilation in the browser on first use</li> </ul>

## Priority

- ❑ The order of priority when applying formatting using CSS types (priority decreases):

1. Inline Style Sheet
2. Embedding Style Sheet
3. External Style Sheet
4. Browser Default





## Contents

- ☐ Introduction to CSS
- ☐ CSS - Classifications
- ☐ **CSS - Selectors**
- ☐ CSS - Layout

# Selector

- ❑ A CSS selector **selects** the **HTML element(s)** you want to style.
- ❑ Selector types:
  - HTML element selectors
  - Class selectors
  - ID selectors
  - ....

**Ex:**

```
.Title1 {
  color: red;
  font-family: Verdana, sans-serif; }

<h1 class="Title1"> DHKHTN </h1>
```

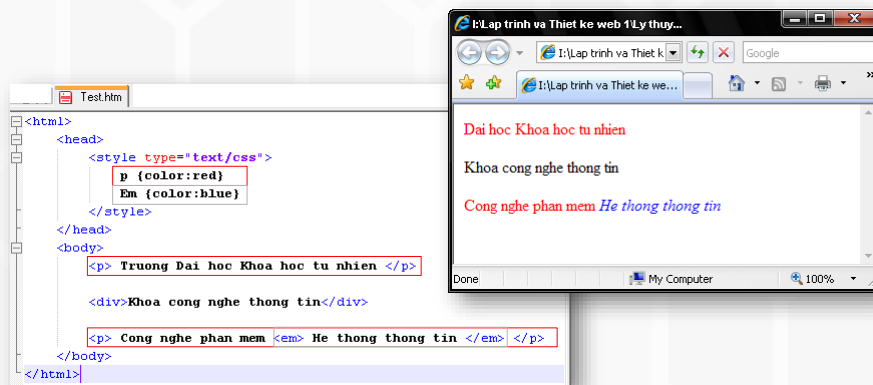
## CSS Selector Types

Type	Describe scope of influence	Example
<b>element</b>	Formatting applies to content of all <b>Elements</b> in the Web document	<b>h1 {color: red;}</b> /* the content of the <h1> tags is formatted with the text color being red */
<b>#id</b>	Formatting applies to content of all <b>Elements</b> with <b>id</b> attribute in Web document	<b>#test {color: green;}</b> /* the content of any tag with the attribute id='note' is formatted with the text color being green */
<b>.class</b>	Formatting applies to content of all tags with <b>class</b> attribute in Web document	<b>.note {color: yellow;}</b> /* the content of any tag with the attribute class='note' is formatted with the text color being yellow */
<b>element . class</b>	Formatting applies to content of <b>Elements</b> with corresponding <b>class</b> attribute	<b>h1.note {text-decoration: underline;}</b> /* the content of the <h1> tags with the attribute class='note' are all underlined */
<b>Grouping</b>	Formatting applies to content of a group of <b>Elements</b> in web document	<b>h1,h2,h3 {background-color: orange;}</b> /* the content of the <h1>, <h2>, and <h3> tags is all formatted with a background color of orange */

Type	Describe scope of influence	Example
<b>Combinators</b>	Formatting applies to content of tags nested within a parent tag	<code>p strong {color: purple;}</code> /* The content of the <strong> tags within the <p> tags is formatted with a text color of purple */
<b>Pseudo-class</b>	Formatting is applied based on state of Elements. (Not present in HTML code)	<code>h1:hover {background-color: orange;}</code> /* The content of the <h1> tags is formatted with an orange background color when the mouse hovers over them */
<b>Pseudo-element</b>	Formatting applies to a specific part of an Element	<code>p::first-line {color: red;}</code> /* The content of the first line within the <p> tags is formatted with a text color of red */
<b>Attribute Selectors</b>	Formatting applies to Elements with specific attributes	<code>p[class*="test"] {color: red;}</code> /* The content of the <p> tags with a class attribute containing the substring "test" (such as "atest", "htestm") is formatted with a text color of red */

## Selector - Element

- ❑ The element selector selects HTML elements based on the element name.



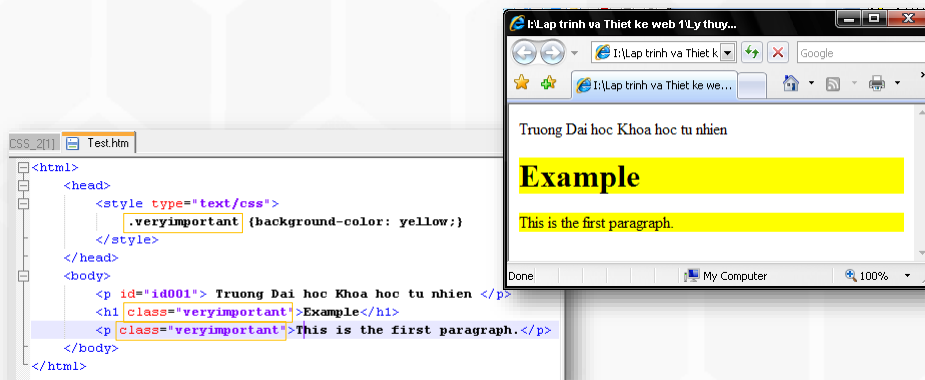
## Selector – ID rules

- ❑ The id selector uses the **id** attribute of an HTML element to select a specific element. The **id** of an element is unique within a page, so the id selector is used to select one unique element!

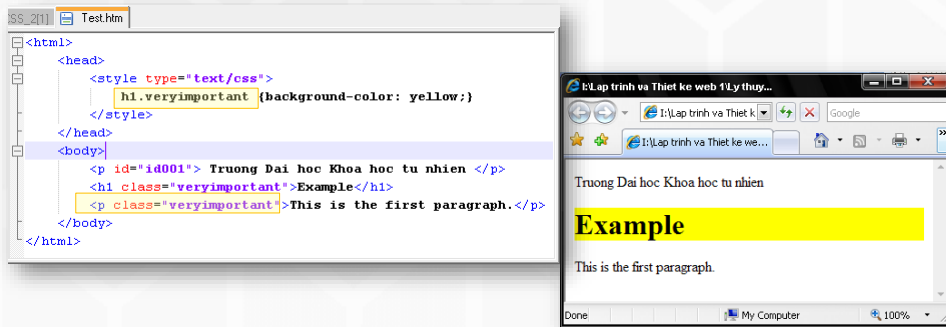


## Selector – Class rules

- ❑ The class selector selects HTML elements with a specific **class** attribute.

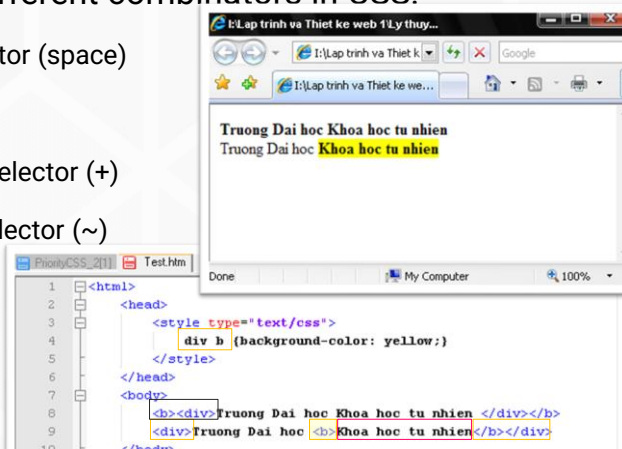


## Selector – Element.Class



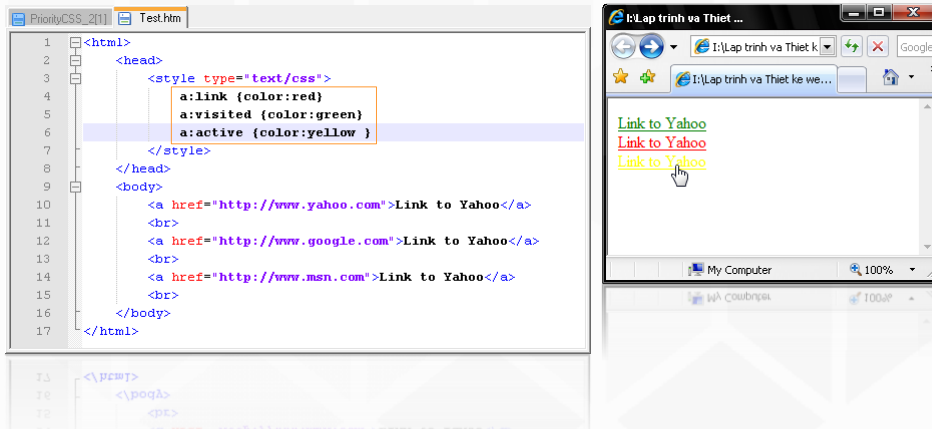
## Selector - Combinators

- ☐ Select elements based on a specific relationship between them
- ☐ There are four different combinators in CSS:
  - ☐ descendant selector (space)
  - ☐ child selector (>)
  - ☐ adjacent sibling selector (+)
  - ☐ general sibling selector (~)



## Selector – Pseudo Class

- ❑ A pseudo-class is used to define a special state of an element.



## Selector – Pseudo Element

- ❑ A CSS pseudo-element is used to style specified parts of an element
- ❑ `:first-letter`, `:first-line`





## Selector – Pseudo Element



## Selector – Attribute



## CSS Pseudo Class

Selector	Example	Example description
<b>:link</b>	a:link	Selects all unvisited links
<b>:visited</b>	a:visited	Selects all visited links
<b>:active</b>	a:active	Selects the active link
<b>:hover</b>	a:hover	Selects links on mouse over
<b>:focus</b>	input:focus	Selects the <input> element that has focus
<b>:first-child</b>	p:first-child	Selects every <p> elements that is the first child of its parent
<b>:not(selector)</b>	:not(p)	Selects every element that is not a <p> element
<b>:nth-child(n)</b>	p:nth-child(2)	Selects every <p> element that is the second child of its parent
<b>:required</b>	input:required	Selects <input> elements with a "required" attribute specified
<b>:lang(language)</b>	p:lang(it)	Selects every <p> element with a lang attribute value starting with "it"

## CSS Pseudo Element

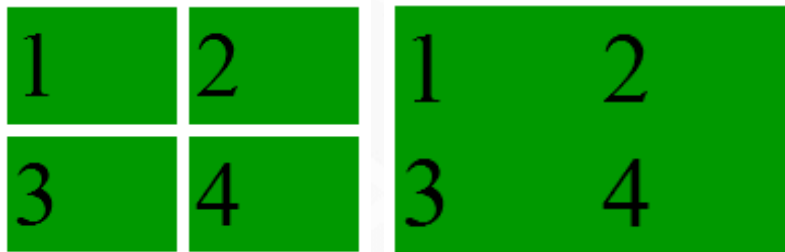
Selector	Example	Example description
<b>::after</b>	p::after	Insert content after every <p> element
<b>::before</b>	p::before	Insert content before every <p> element
<b>::first-letter</b>	p::first-letter	Selects the first letter of every <p> element
<b>::first-line</b>	p::first-line	Selects the first line of every <p> element
<b>::marker</b>	::marker	Selects the markers of list items
<b>::selection</b>	::selection	Selects the portion of an element that is selected by a user

## Contents

- ❑ *Introduction to CSS*
- ❑ *CSS - Classifications*
- ❑ *CSS - Selectors*
- ❑ **CSS - Layout**

## CSS Table

- ❑ Using **border-spacing** instead of **cellspacing**



1	2
3	4

1	2
3	4

```
table
{
    width: 100%;
}
```

```
table
{
    width: 100%;
    border-spacing: 0px;
}
```

## CSS Table Border-collapse

- ❑ The `border-collapse` property sets whether the table borders should be collapsed into a single border

```
table
{
  width: 100%;
  border: 1px solid Black;
  border-collapse: collapse;
  border-spacing: 5px;
}
td
{
  background-color: #009900;
  border: 1px solid Black;
}
```

1	2
3	4

39

## CSS Table Alignment

- ❑ Horizontal Alignment: `text-align`
- ❑ Vertical Alignment: `vertical-align`

```
td
{
  background-color: #009900;
  border: 1px solid Black;
  text-align: center;
  vertical-align: bottom;
  height: 30px;
}
```

1	2
3	4

40

## CSS Responsive Table

- ❑ A responsive table will display a horizontal scroll bar if the screen is too small to display the full content.
- ❑ Add a **container element** (like `<div>`) with `overflow-x:auto` around the `<table>` element to make it responsive

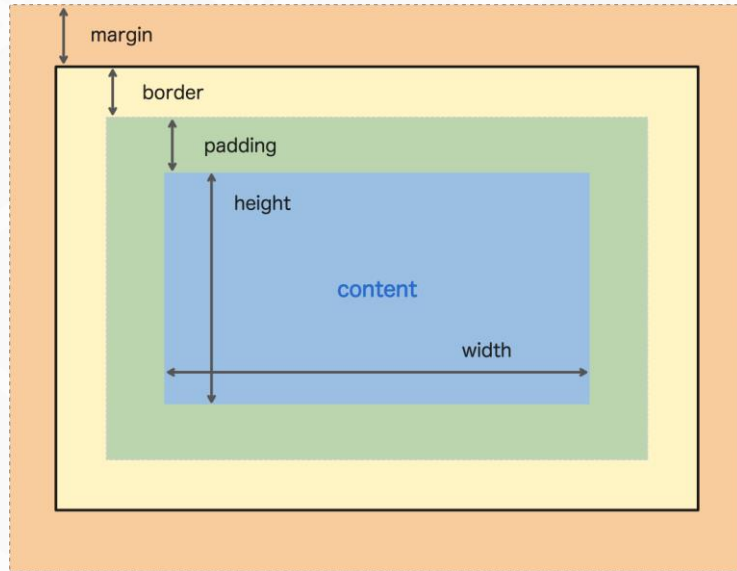
```
<div style="overflow-x: auto;">
  <table>
    <!--table content-->
  </table>
</div>
```

Product	Jan	Feb	Mar	Apr	May	Jun
Tab S8	800	800	800	800	750	750
Tab S9	1200	1200	1200	1100	1100	1100

## CSS Table Properties

Property	Description
<a href="#">border</a>	Sets all the border properties in one declaration
<a href="#">border-collapse</a>	Specifies whether or not table borders should be collapsed
<a href="#">border-spacing</a>	Specifies the distance between the borders of adjacent cells
<a href="#">caption-side</a>	Specifies the placement of a table caption
<a href="#">empty-cells</a>	Specifies whether or not to display borders and background on empty cells in a table
<a href="#">table-layout</a>	Sets the layout algorithm to be used for a table

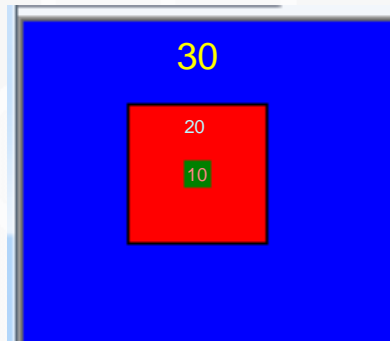
# CSS Box Model



43

## Example

```
<body style="background-color: Blue">
  <div style="width: 10px; height: 10px; padding: 20px; border: 1px solid black;
    margin: 30px; background-color: Red">
    <div style="width: 100%; height: 100%; background-color: Green">
      </div>
    </div>
  </div>
</body>
```



44

# Display and Visibility properties

## ❑ Hide an element

### ❑ `display: none`

```
<p>
  Đại học <span style="display: none">Khoa học</span> <span>tự nhiên</span>
</p>
```

Đại học tự nhiên

### ❑ `visibility: hidden`

```
<p>
  Đại học <span style="visibility: hidden">Khoa học</span> <span>tự nhiên</span>
</p>
```

Đại học      tự nhiên

45

# The Display Property

- ❑ Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is **block** or **inline**
  - ❑ **block**: A block-level element always starts on a new line and takes up the full width available. Ex: <h1>, <p>, <div>, etc.
  - ❑ **inline**: An inline element does not start on a new line and only takes up as much width as necessary. Ex: <a>, <span>, <b>, etc.
- ❑ As mentioned, every element has a default display value. However, you can override this.

```
li {display:inline;}
```

[HTML](#) [CSS](#) [JavaScript](#) [XML](#)

```
<ul>
  <li><a href="/html/default.asp" target="_blank">HTML</a></li>
  <li><a href="/css/default.asp" target="_blank">CSS</a></li>
  <li><a href="/js/default.asp" target="_blank">JavaScript</a></li>
  <li><a href="/xml/default.asp" target="_blank">XML</a></li>
</ul>
```

46

## CSS Position

- ❑ The position property specifies the type of positioning method used for an element

position	Affects layout	Description
static	✓	HTML elements are positioned static by default. Static positioned elements are not affected by the top, bottom, left, and right properties
fixed	✗	An element with <code>position: fixed;</code> is positioned relative to the viewport, which means it always stays in the same place even if the page is scrolled
relative	✓	An element with <code>position: relative;</code> is positioned relative to its normal position
absolute	✗	An element with <code>position: absolute;</code> is positioned relative to the nearest positioned ancestor.
sticky		An element with <code>position: sticky;</code> is positioned based on the user's scroll position. A sticky element toggles between relative and fixed, depending on the scroll position

## CSS Float


- ❑ The CSS `float` property specifies how an element should float.
- ❑ Elements following the floated element will move up to occupy the vacant space of that element.

```
<h1>Ví dụ về float: right</h1>

<p>
Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh. Trường đại học Khoa học Tự nhiên
- TP. Hồ Chí Minh. Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh. Trường đại
học Khoa học Tự nhiên - TP. Hồ Chí Minh. Trường đại học Khoa học Tự nhiên - TP.
Hồ Chí Minh. Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh. Trường đại học
Khoa học Tự nhiên - TP. Hồ Chí Minh. </p>
```

### Ví dụ về float: right

Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.  
 Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.  
 Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.  
 Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.  
 Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.  
 Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.  
 Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.





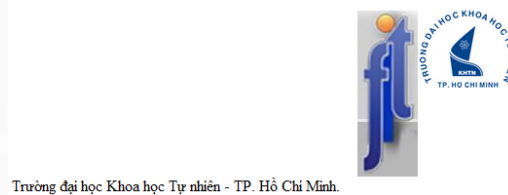
## CSS Float

- ❑ Use the '**clear**' property to prevent an element from occupying the remaining space of the previous **floated** element.

```
<h1>Ví dụ về float và clear</h1>


<p style="clear:both">Trường đại học Khoa học Tự nhiên - TP. Hồ Chí Minh.</p>
```

### Ví dụ về float và clear



49

## Align Block-level Elements

- ❑ Horizontal Center

```
.center
{
  margin-left: auto;
  margin-right: auto;
  width: 70%;
  background-color: #b0e0e6;
}
```

- ❑ Horizontal Right

```
.right
{
  position: absolute;
  right: 0px;
  width: 300px;
}
```

```
.right
{
  float:right;
  width:300px;
}
```

50

## Contents

- ☐ *Introduction to CSS*
- ☐ *CSS – Classifications*
- ☐ *CSS – Selectors*
- ☐ *CSS – Layout*
- ☐ **Exercises**

## Exercises



- ☐ Create an HTML page that displays as follows

