Chapter 4: CSS

Contents

- Stylesheet
- Accessibility
- Link CSS with HTML
- Syntax of CSS

Style sheet

- Style sheet describes how documents are presented on screens, in print, or perhaps how they are pronounced

- Separate structure and presentation

- W3C has actively promoted the use of style sheets since 1994.

- W3C recommends several stylesheets CSS1, CSS2, XPath, XSLT

- CSS especially is widely implemented in browsers.

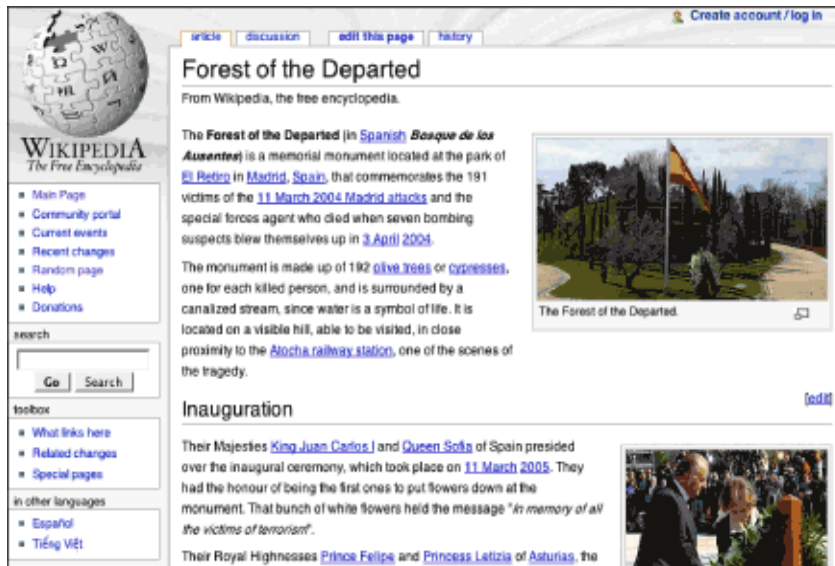# Advantage of StyleSheet

- **Simple management**
  - ☐ Separating of presentation result in well-organized content and simple structure.
  - ☐ Construction and maintenance of the site easier.
    - Change the apparence of the document easily without changing the HTML code
- **Consistency in the appearance of the site**
- Change style of a page easily
  - ☐ Switch from a style for the others
  - ☐ For handicap people and limited user-interface environment.

Example of page using stylesheet


```
H1 {
    display: block;
    font-size: 2em;
    margin: .67__qem 0 .67em 0;
    font-weight: bold; }

H2 {
    display: block;
    font-size: 1.5em;
    margin: .83__qem 0 .83em 0;
    font-weight: bold; }

p {
    display: block;
    margin: 1.0__qem 0px; }
```
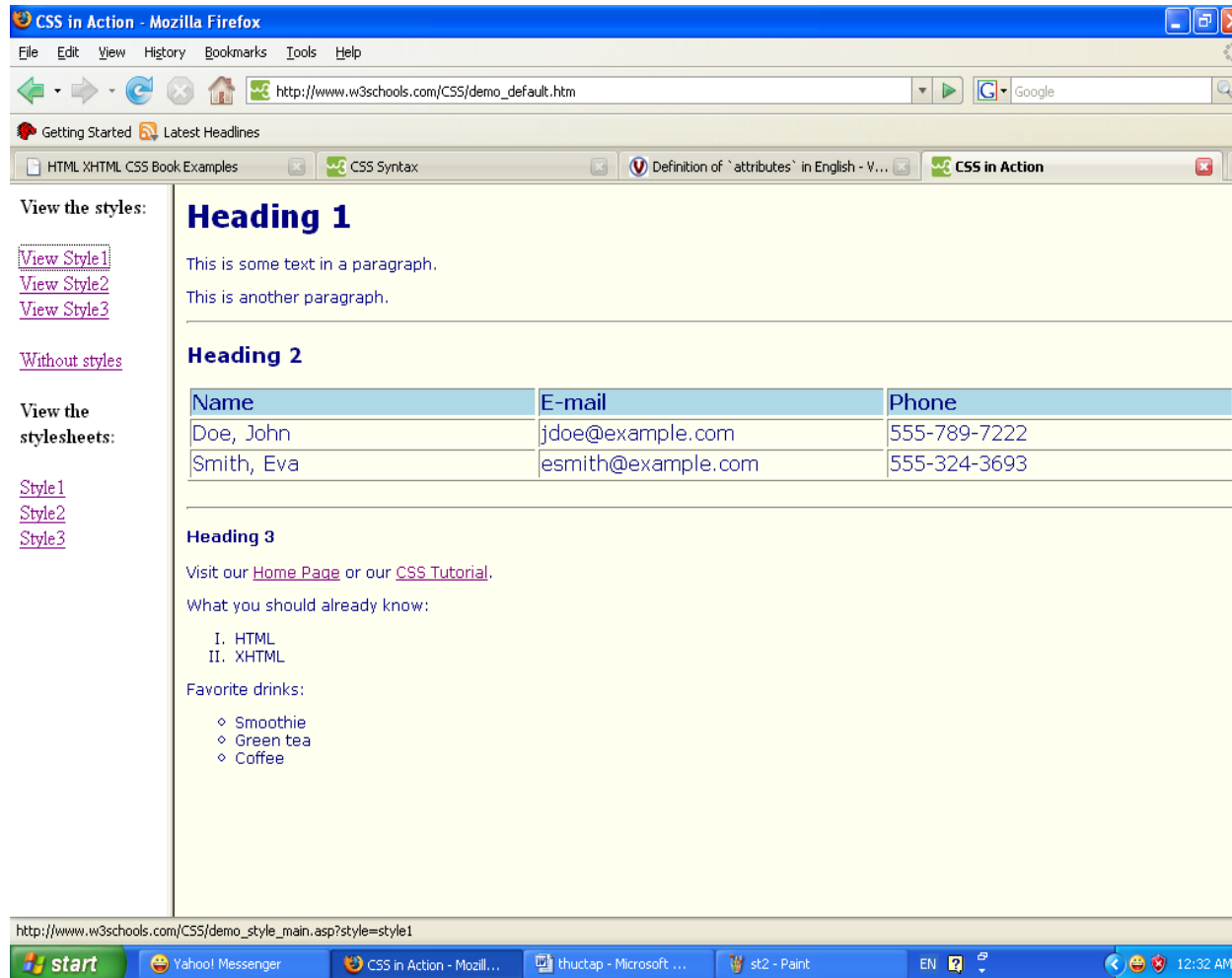
A document with different style

A document with different style
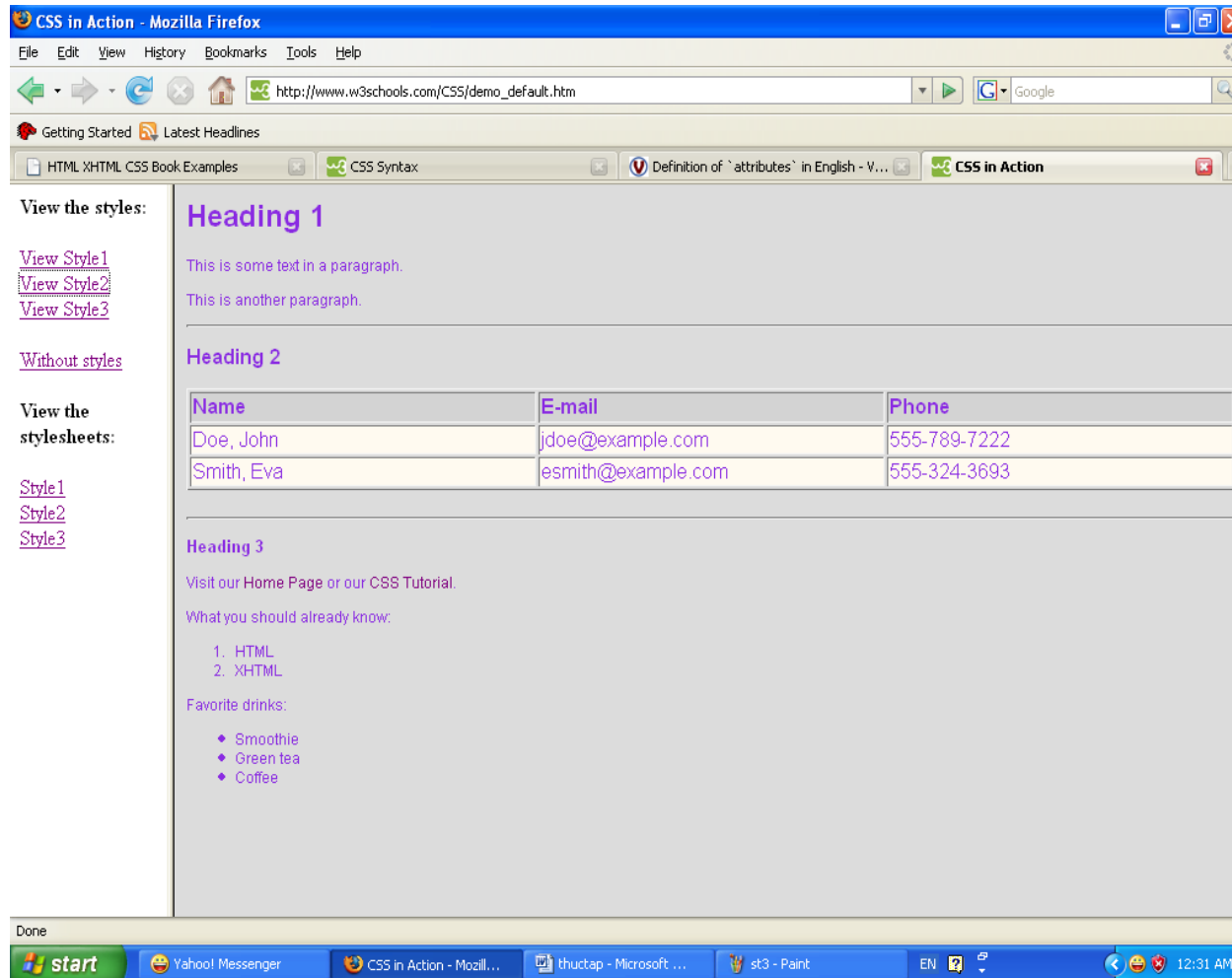
A document with different style
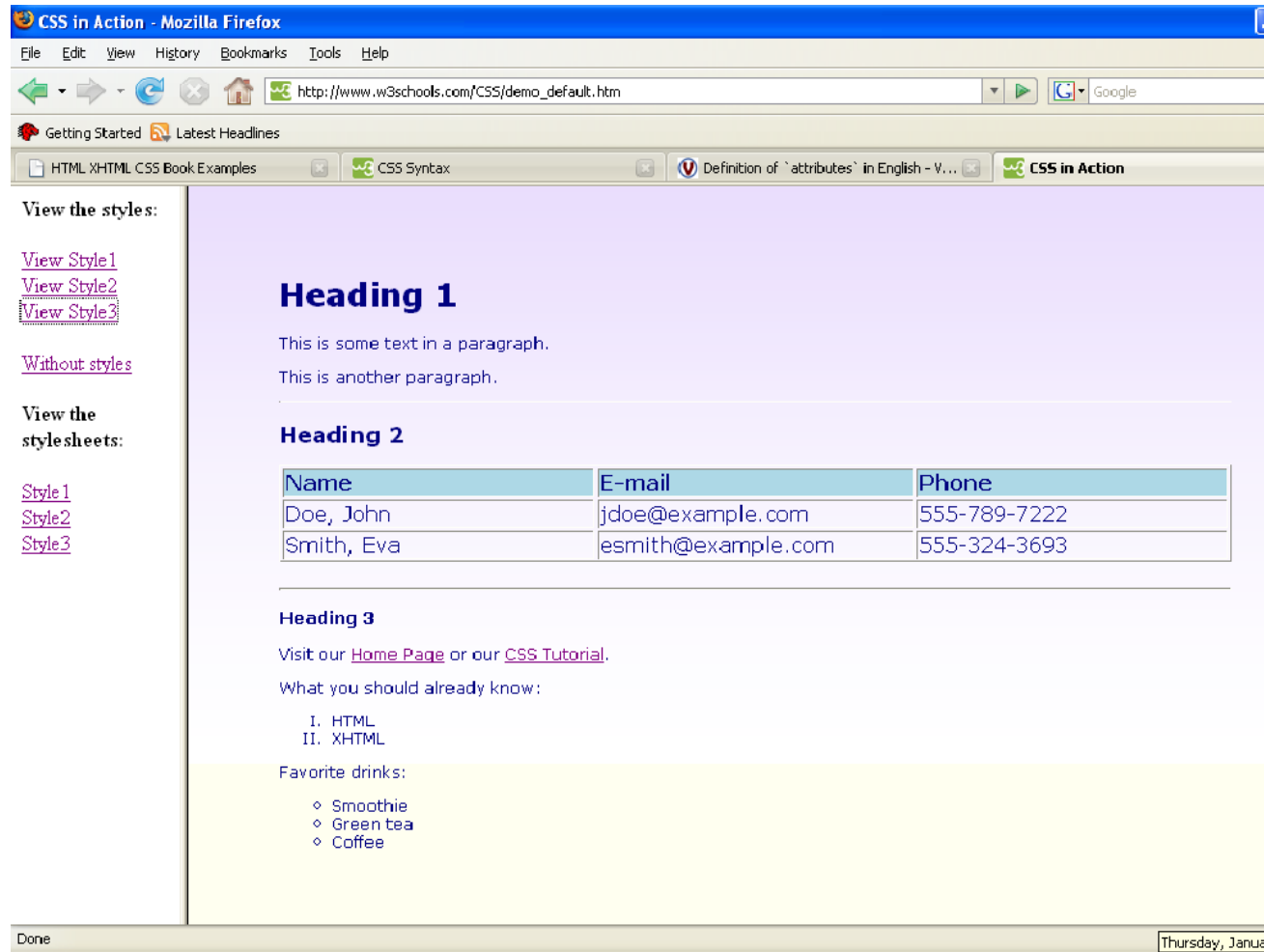
Document without style
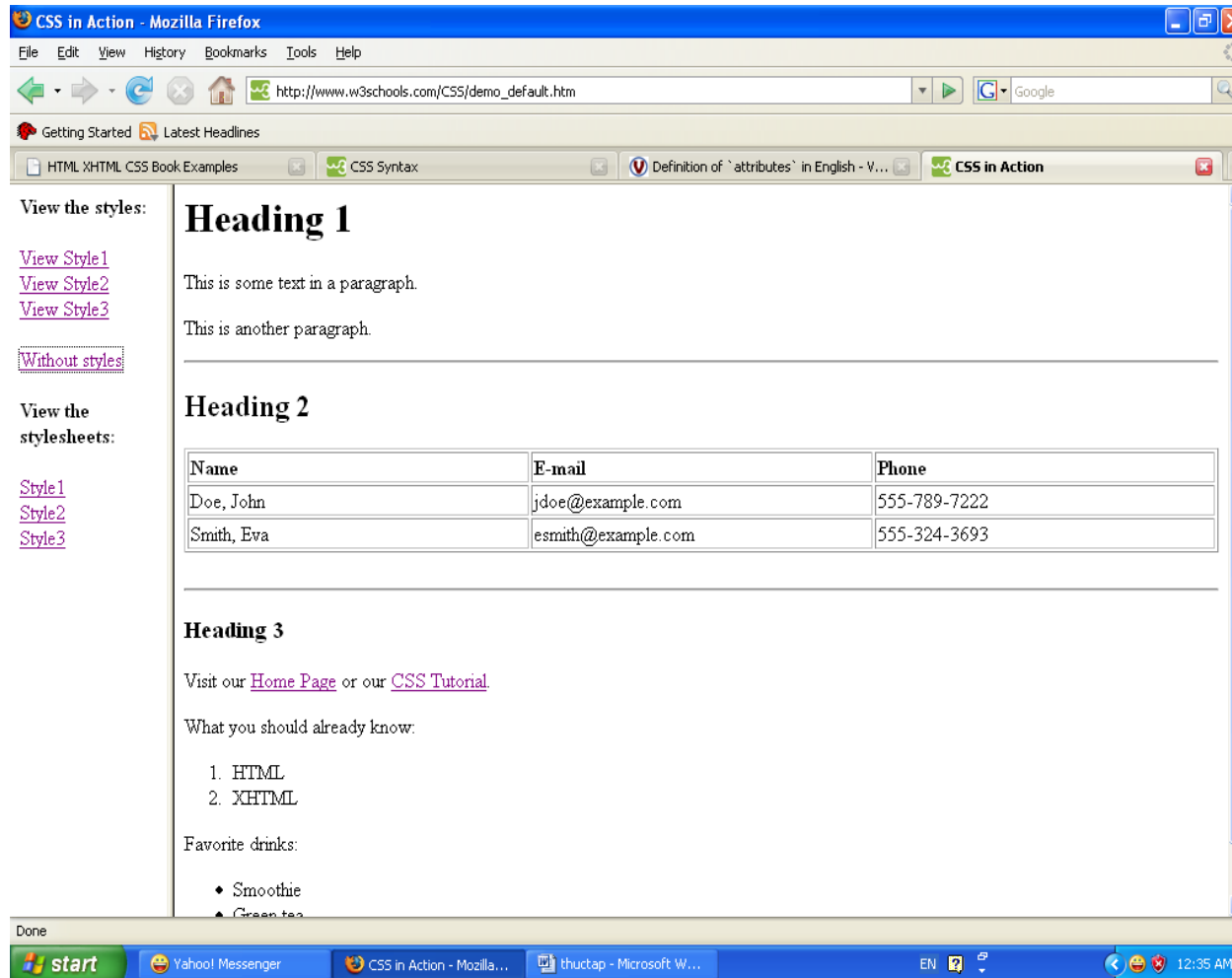
Link CSS with HTML

- HTML document contains content of a web page
- CSS document contains the presentation style
- 3 ways for defining a style for a HTML
  - Inline: writing styles mixing with the HTML tags
  - Internal: writing CSS in a style section in the HTML document
  - External: leaving CSS in a separate document and link it with the HTML document

Link CSS with HTML: Inline
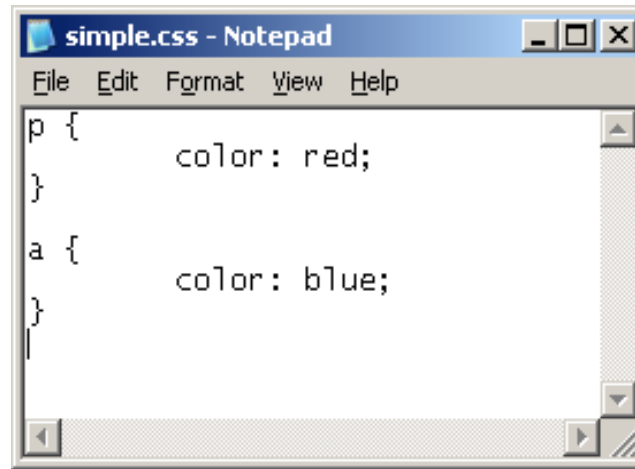
- **In-line** styles are plonked straight into the HTML tags using the style attribute.

- **<p style="color: red">text</p>**

- Style is applied only for the tags contaning it

- in-line styles make the HTML document presentation dependant ➔should be avoided

Link CSS with HTML: Internal

- **Internal** styles are used for the whole page.
- Styles are defined inside the head section, surrounded by **<style>** tags
- <html>
  <head>
  <style type="text/css">
      p {color: red;   }
      a {color: blue;   }
  </style>
  </head>.
  ….

- This will make all of the paragraphs in the page red and all of the links blue.
- Better than in-line styles, the styles and HTML code are more independent by still include in one document

Link CSS with HTML: External

CSS document

```
simple.css - Notepad
File  Edit  Format  View  Help

p {
        color: red;
}

a {
        color: blue;
}
```

HTML document

```
Source of: file:///C:/Documents%20and%20Settings/ttdlinh/Desktop/WIS_viet%...
File  Edit  View  Help

<html>
<head>
        <title>CSS Example</title>
        <link rel="stylesheet" type="text/css" href="simple.css" />
</head>
<body>
...
</body>
</html>
```

Syntax of CSS

- CSS contain rules that defines styles for HTML document

  - Rules define formats of information, data and presentation of the content

  - Rules are associated with HTML elements

  - Rules have a different syntax with HTML syntax

- It is recommended that the HTML tags serving for the presentation such as <font>, <b> , <i> should be not be used

Rules in CSS

- Rules in CSS contains
  - □ Selector: define the object that the style will be applied
    - A HTML tag, a class of HTML tag…
  - □ Style declaration:
    - Description of the style
  - □ Syntax

    ```
    selector {attribute1: value1;
              attribute2: value2;
                    …}
    ```

  - □ Example

    ```
    H1 { color: blue}
    ```

  - □ The selectors can be grouped together
    - h1,h2,h3 { font-weight:bold}

Example of rules in CSS

- body { background-color: white }

- h1 { font-family : sans-serif }

- h2, h3, h4 { font-family : cursive }

- h2, h4 { color : orange }

Different selectors in CSS

- Selector-type
- Selector-id
- Selector-class
- Selector universal
- Selector pseudo-class

Selector-type

- The selector is associated with a HTML tag
  - selector {attribute: value}
- Example
  - P   {font-size: large}
  - All characters in the paragraph are displayed in large size

Selector-id

- Selector-id
  - Rule CSS applies for all HTML element that have the given ID
- Syntax
  - #id_value {attribute: value}
- Ex:
  - CSS:
    #chapter1 { text-align: center }
  - HTML:
    <h1 id= chapter1> Tieu de chuong I </h1>
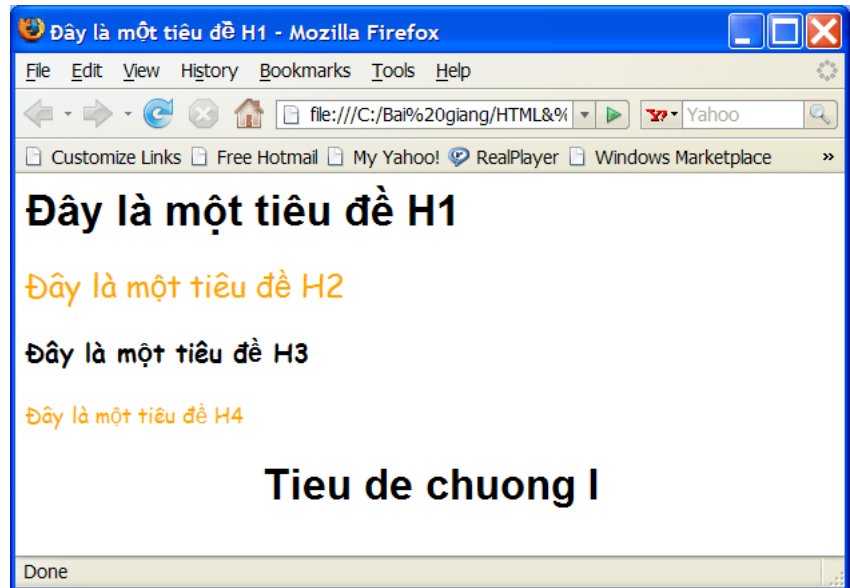
Selector-class

- Rule with selector class will be applied for all HTML object that has the given class
- Syntax:
    - .class { attribute: value}
- Example:
    - CSS:
        .important {color: red}
    - HTML:
        <h1 class="important"> Important title </h1>
        <p class="important">
                    This is an important paragraph.
        </p>
    - All characters in <h1> and <p> are in red.

Selector-type và class

- Selector-type and class together allows to defines rules for some tags with a given class attribute
- Syntax
  - `Tag.class { attribute: value}`
- Ex
  - CSS:
    p.important { color: red; }
    p.brazil {
           color: green;
           background-color: yellow;
           }
  - HTML:
    <h1 class="important> Tieu de quan trong </h1>
    <p class="important> Vi du mot doan quan trong. </p>
    <p class="brazil"> Mau co Brazil </p>
    <p> Day la mot doan khac </p>

Selector-universal

- Style with Selector-universal is applied for all objects

- Syntax

  - * {attribute: value; }

- Example

  - *{font-size: large;}

Selector Pseudo-class

- Pseudo-class is used to add special effects to a selector when there is user interaction
  - Syntax
    - selector:pseudo-class {attribute : value}
    - selector.class:pseudo-class {attribute : value}
  - Ex
    - a:visited {color: red} /* visited link */
    - Display in red all visited links.

Selector Pseudo-class

- Pseudo-class
  - :active
    - The pseudo-class that corresponds to the action when user click on the object given in the selector: button, link
  - :hover
    - The pseudo-class that corresponds to the action when users move th cursor over the selector
  - :link
    - selector is a link that have not visited
  - :visited
    - Selector is a link that is visited

Selector Pseudo-class

- Ex:

    a:link { color: red }

    a:visited { color: green }

    a:hover { background-color: yellow }

    a:active { background-color: pink }

Comment in CSS

- Chú thích trong code
- Begin with "/*" and end with "*/"
- Ex:
  - File CSS:

```
/* This is a comment */
p {
    text-align: center;
    /*This is another comment */
    color: black; font-family: arial
  }
```

CSS attributes for text

Property	Description	Values
color	Sets the color of a text	*color*
direction	Sets the text direction	ltr, rtl
line-height	Sets the distance between lines	normal, *number, length, %*
letter-spacing	Increase or decrease the space between characters	normal, *length*
text-align	Aligns the text in an element	left, right, center, justify
text-decoration	Adds decoration to text	none, underline, overline, line-through, blink
text-indent	Indents the first line of text in an element	*length, %*
text-shadow		none, *color, length*
text-transform	Controls the letters in an element	none, capitalize, uppercase, lowercase
unicode-bidi		normal, embed, bidi-override
white-space	Sets how white space inside an element is handled	normal, pre, nowrap
word-spacing	Increase or decrease the space between words	normal, *length*

CSS attributes for background

Property	Description	Values
background	A shorthand property for setting all background properties in one declaration	*background-color,* *background-image* *background-repeat background-attachment background-position*
background-attachment	Sets whether a background image is fixed or scrolls with the rest of the page	scroll fixed
background-color	Sets the background color of an element	*color-rgb* *color-hex* *color-name* transparent
background-image	Sets an image as the background	url(*URL*) none
background-position	Sets the starting position of a background image	top left, top center, top right, center left, center center, center right, bottom left, bottom center bottom right, *x% y%, xpos ypos*
background-repeat	Sets if/how a background image will be repeated	repeat, repeat-x, repeat-y, no-repeat

CSS attributes for font

Property	Description	Values
font	A shorthand property for setting all of the properties for a font in one declaration	*font-style, font-variant, font-weight, font-size/line-height, font-family,* caption, icon, menu, message-box, small-caption, status-bar
font-family	A prioritized list of font family names and/or generic family names for an element	*family-name, generic-family*
font-size	Sets the size of a font	xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger, *length, %*
font-size-adjust	Specifies an aspect value for an element that will preserve the x-height of the first-choice font	none *number*
font-stretch	Condenses or expands the current font-family	normal, wider, narrower, ultra-condensed, extra-condensed condensed, semi-condensed, semi-expanded, expanded, extra-expanded, ultra-expanded
font-style	Sets the style of the font	normal, italic, oblique
font-variant	Displays text in a small-caps font or a normal font	normal small-caps
font-weight	Sets the weight of a font	normal, bold, bolder, lighter, 100, 200, ..., 900

Example

```
<html>
<head>
<style type="text/css">
    p.normal {font-variant: normal}
    p.small {font-variant: small-caps}
</style>
</head>

<body>
<p class="normal">This is a
    paragraph</p>
<p class="small">This is a paragraph</p>
</body>

</html>
```
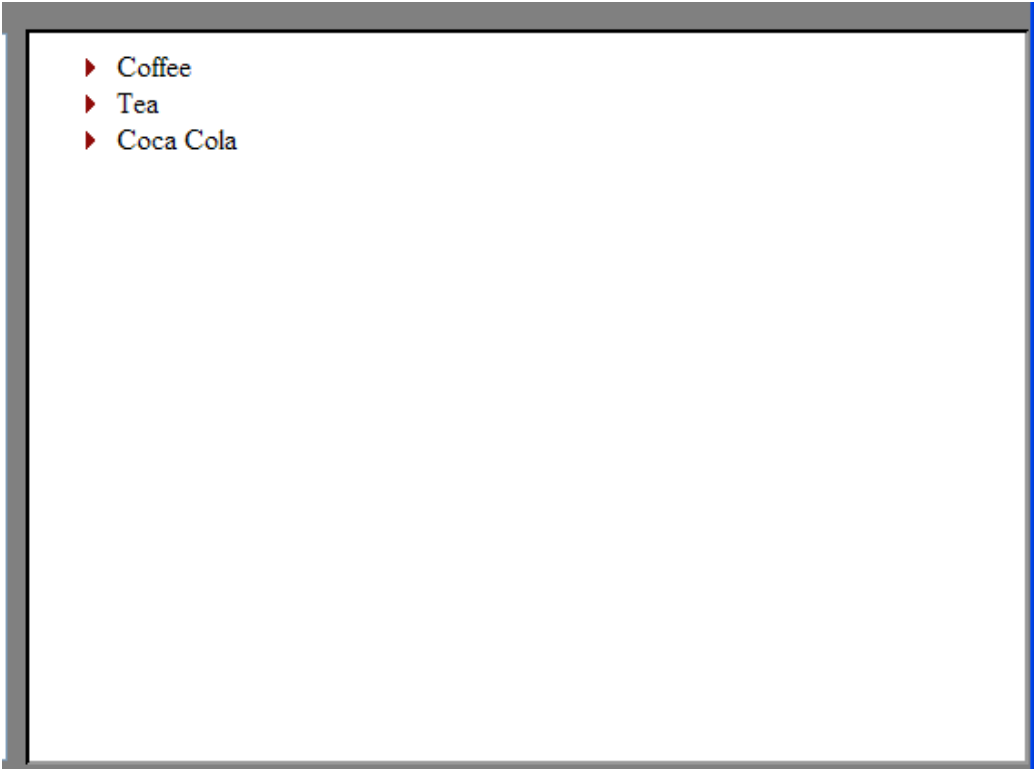
This is a paragraph

THIS IS A PARAGRAPH

CSS attributes for list

Property	Description	Values
list-style	A shorthand property for setting all of the properties for a list in one declaration	*list-style-type* *list-style-position* *list-style-image*
list-style-image	Sets an image as the list-item marker	none *url*
list-style-position	Sets where the list-item marker is placed in the list	inside outside
list-style-type	Sets the type of the list-item marker	none, disc, circle, square, decimal decimal-leading-zero, lower-roman upper-roman, lower-alpha upper-alpha, lower-greek lower-latin, upper-latin hebrew, armenian georgian, cjk-ideographic hiragana, katakana hiragana-iroha, katakana-iroha
marker-offset		auto, *length*

Example

```
<html>
<head>
<style type="text/css">
ul
{
    list-style-image: url('arrow.gif')
}
</style>
</head>

<body>
<ul>
    <li>Coffee</li>
    <li>Tea</li>
    <li>Coca Cola</li>
</ul>
</body>

</html>
```
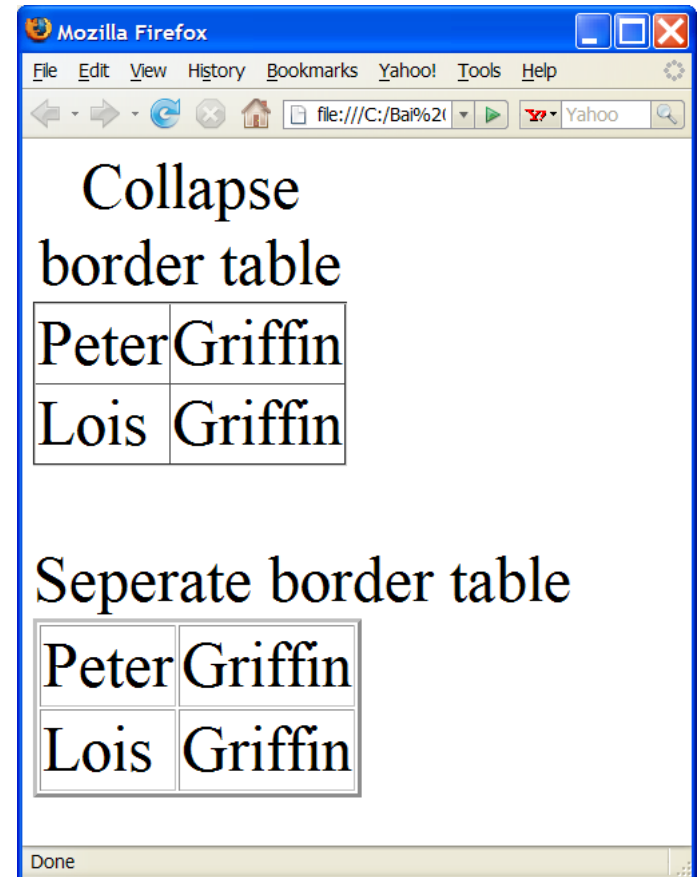
▶ Coffee
▶ Tea
▶ Coca Cola

CSS attributes for table

Property	Description	Values
border-collapse	Sets whether the table borders are collapsed into a single border or detached as in standard HTML	collapse, separate
border-spacing	Sets the distance that separates cell borders (only for the "separated borders" model)	*length length*
caption-side	Sets the position of the table caption	top, bottom left, right
empty-cells	Sets whether or not to show empty cells in a table (only for the "separated borders" model)	show, hide
table-layout	Sets the algorithm used to display the table cells, rows, and columns	auto, fixed

Example

```
<html>
<head>
    <style type="text/css">
    table.coll { border-collapse: collapse }
    table.sep { border-collapse: separate }
    </style>
</head>
<body>
    <table class="coll" border="1">
    <tr> <td>Peter</td> <td>Griffin</td> </tr>
    <tr> <td>Lois</td> <td>Griffin</td> </tr>
    </table>
    <br />
    <table class="sep" border="1">
    <tr> <td>Peter</td> <td>Griffin</td> </tr>
    <tr> <td>Lois</td> <td>Griffin</td> </tr>
    </table>
</body>
</html>
```
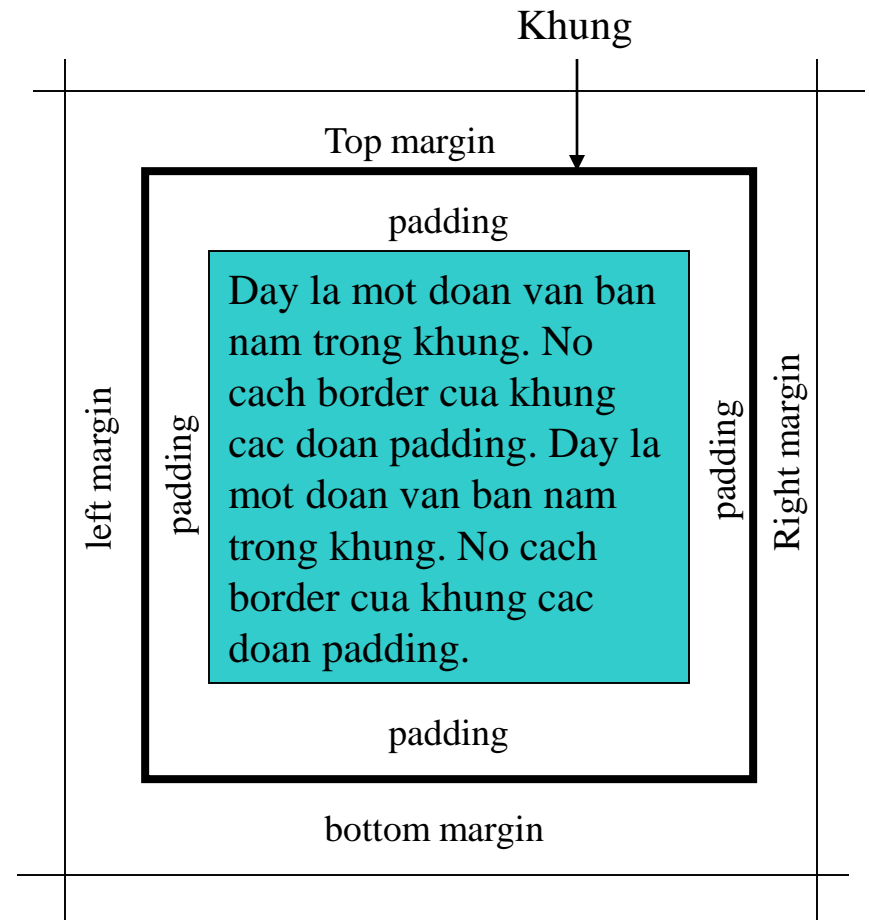
Frame model

- ■ Some HTML elements are displayed in a frame
  - ☐ H1, h2, p, ul, li, div

Khung

Top margin

padding

Day la mot doan van ban nam trong khung. No cach border cua khung cac doan padding. Day la mot doan van ban nam trong khung. No cach border cua khung cac doan padding.

left margin

padding

padding

Right margin

padding

bottom margin

Frame model- Border

- The border of the frame can be displayed with different color and style

- Characteristic of the border
  - Width : width of the border
    - thin,
    - medium,
    - thick
  - Style : style of the border
    - solid,
    - dashed,
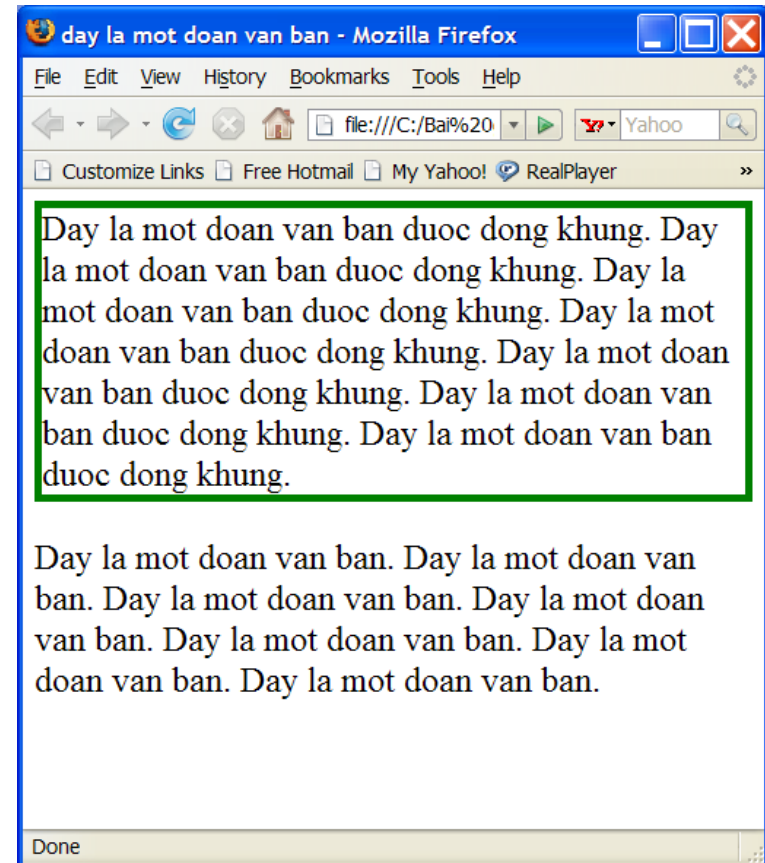   - dotted, etc
  - Color: color of the border

Frame model- Border

- Example
  - p.special

    {

    border: thick solid green;

    }

    width   style   color

Frame model- Border

- Characteristic of the border can be defined with different attribute:
    - border-width
    - border-style
    - border-color
- The previous example is equivalent with:

```
p.different
{
        border-width: thick;
        border-style: solid;
        border-color: green;
}
```

Frame model - Border

- Four edges of the border can be displayed differently
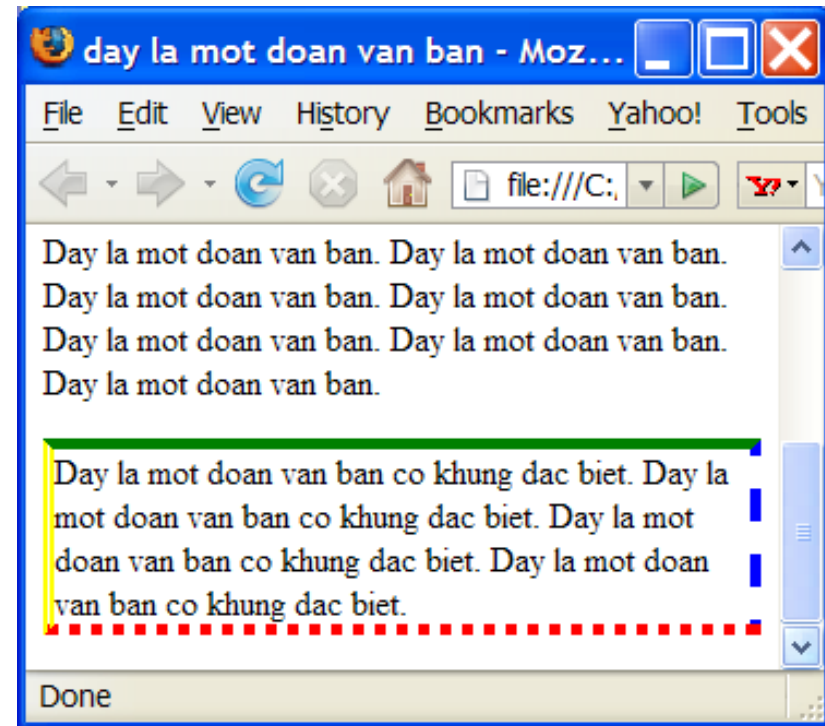- Each attributes have 4 values corresponding to 4 edges of the border
- Ex:

p.four_borders

{

border-width: thick;

border-style: solid dashed dotted double;
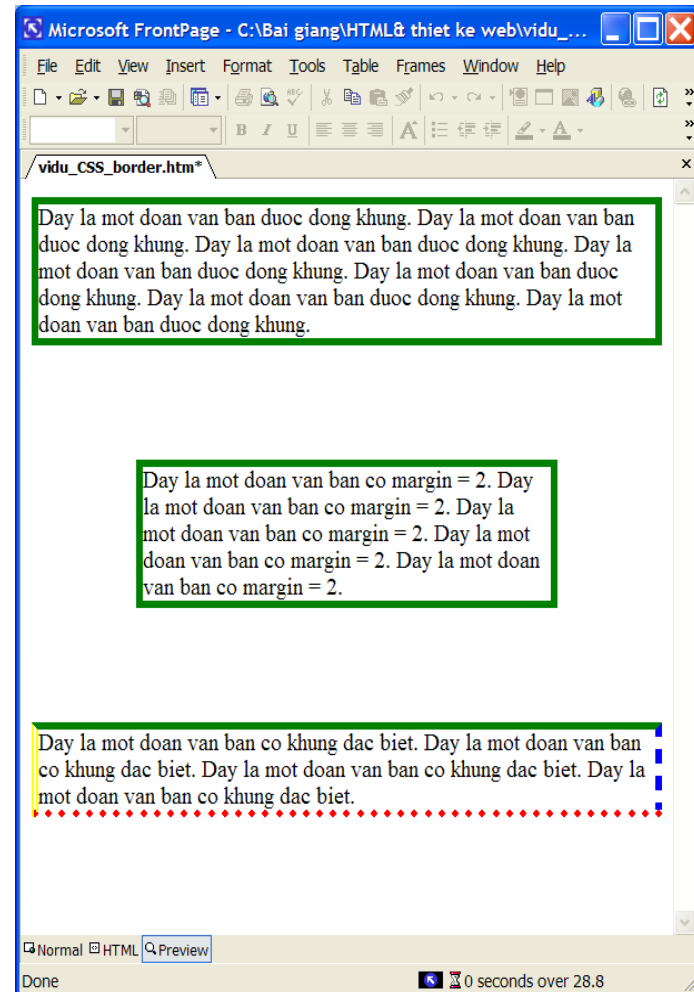
border-color: green blue red yellow;

}

Frame model- Margin

- p.conclu
{

    margin: 2cm 2cm 2cm 2cm;

}

This rule is equivalent with

- p.intro
{

    margin-top: 2cm;
    margin-left: 2cm;
    margin-right: 2cm;
    margin-bottom: 2cm;

}

- Default value of the margin is 0.
- Values of margin can be defined by %.

Frame model- Margin

- Values for margin can be <0, it makes text overlapping
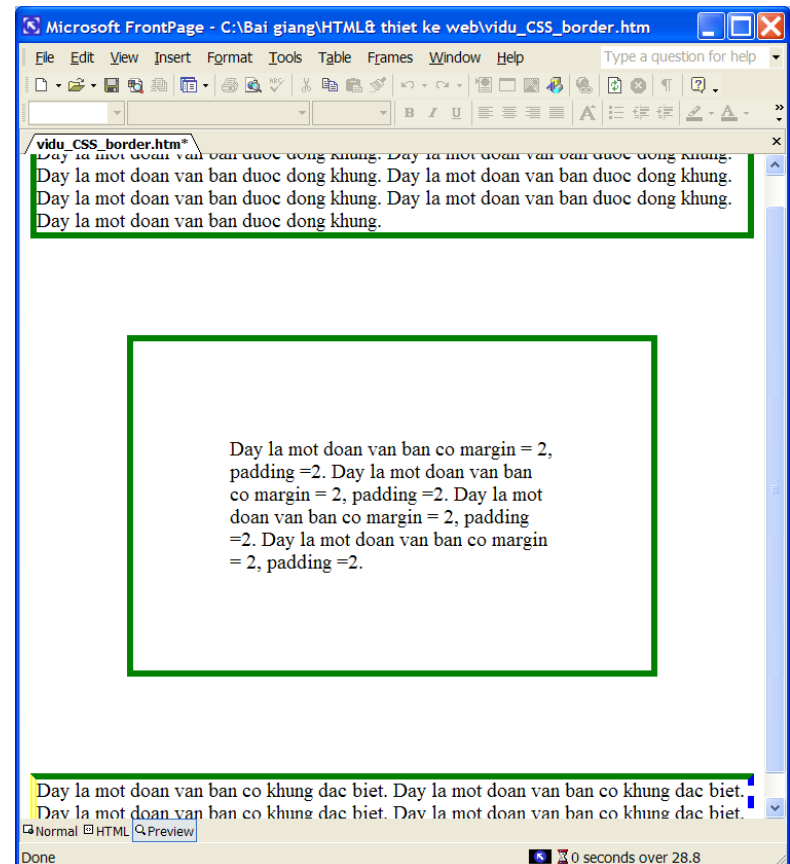- p { margin : 5px 10% -5px;}

Frame model - Padding

- Padding define the distance between the content and the border
- Attributes of padding are defined similarly to margin, howerverthe value cannot be negative
- p.intro

{

padding-top: 2cm;

padding-left: 2cm;

padding-right: 2cm;

padding-bottom: 2cm;

}

- Equivalent to:

p.conclu

{

padding: 2cm 2cm 2cm 2cm;

}

Frame model - Alignment

- Attribute text-align allows to align the text within a frame
- Text-align can be: left, right, center, justify
- Ex:

```
p.intro
{
    text-align: right;
}
p.conclu
{
    text-align: justify;
}
```

Frame model - Indentation

- Indentation attributes allow defining the right shift space at the beginning of the line
- Ex

  p
  {
  text-indent: 1cm
  }
  All paragraphs are 1cm right shift

Frame model- line-height

- line-height defines the height of a line including the height of its characters and the space with another line

- Ex:

```
p.p2
{
    line-height: 1.5;
}
```

Frame model – width, height

- Width and height define the width and the height of a frame

- Width and height can receive values in
  - Number of pixel: 300px
  - Cm : 5cm
  - %, relative values with the width or the height of browser window. Ex: 50%

Division

- <Div> define a regions of code in HTML file
- <div id ="…">

  ….
  </div>
- Tag <div> is used to divide a HTML file in zone for applying different styles for each zone later
- Ex:

<html>
<body>
    <div id = "modau"> …</div>
    <div id = "noidung">…</div>
    <div id ="ketluan">…</div>
</body>
</html>

Frame model: Float

- Float defines how a HTML element should be aligned in comparison with its parent.

- Ex:
  - CSS:

    ```
    #section2 {
        float: right;
        width: 300px;
        background-color: yellow;
    }
    ```
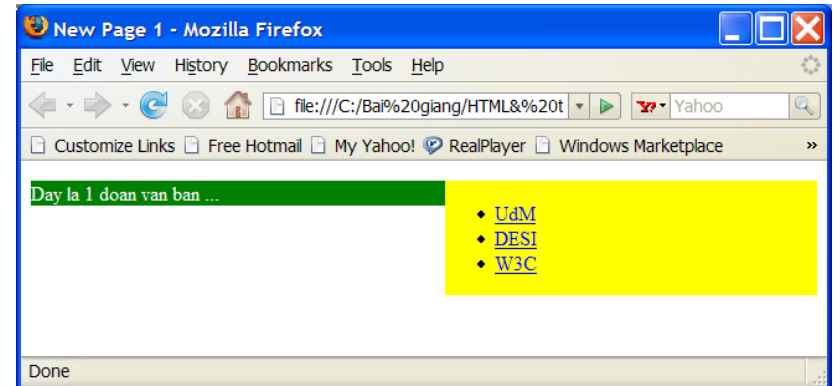
Frame model: Float

□ HTML:
```
<body>
<div id="section2">
  <ul>
  <li><a href="http://umontreal.ca"> UdM</a>
  </li>
  <li><a href="http://desi.umontreal.ca"> DESI</a>
  </li>
  <li><a href="http://w3.org"> W3C</a>
  </li>
  </ul>
  </div>
<div id="section1">
<p> Day la mot doan van ban. ...
</p>
</body>
```


■ section2 is aligned in the right of <body> and pushing the content to the left.

Page formatting

- Left column occupies 30% page width

```
#section1
{
    float:left;
    width: 30%;
}
#section2
{
    float:right;
    width: 70%;
}
```

- Head and foot sections are not floating and occupy all the page width

```
#foot, #header
{
    clear:both;
    width: 100%;
}
```