

Chapter 4 Introduction to Cascading Style Sheets (CSS)

簡廷因 Ting-Ying Chien

2021.10.14

Outline

- Introduction
- Inline Styles
- Embedded Style Sheets
- Conflicting Styles
- Linking External Style Sheets
- Positioning Elements: Absolute Positioning, z-index
- Positioning Elements: Absolute Positioning, span
- Backgrounds
- Element Dimensions
- Box Model and Text Flow

Outline

- Drop-Down Menus
- Media Types and Media Queries
- User Style Sheets

站在巨人的肩膀上

- Free CSS template
 - <http://www.templateemo.com/>
 - <http://www.oswd.org/>
 - <http://templated.co/>
 - <http://www.myfreecsstemplates.com/>
 - <http://www.free-css.com/>
 - <http://www.free-css-templates.com/>
 - <https://www.freewebtemplates.com/css-templates/>

Example

- Blogger

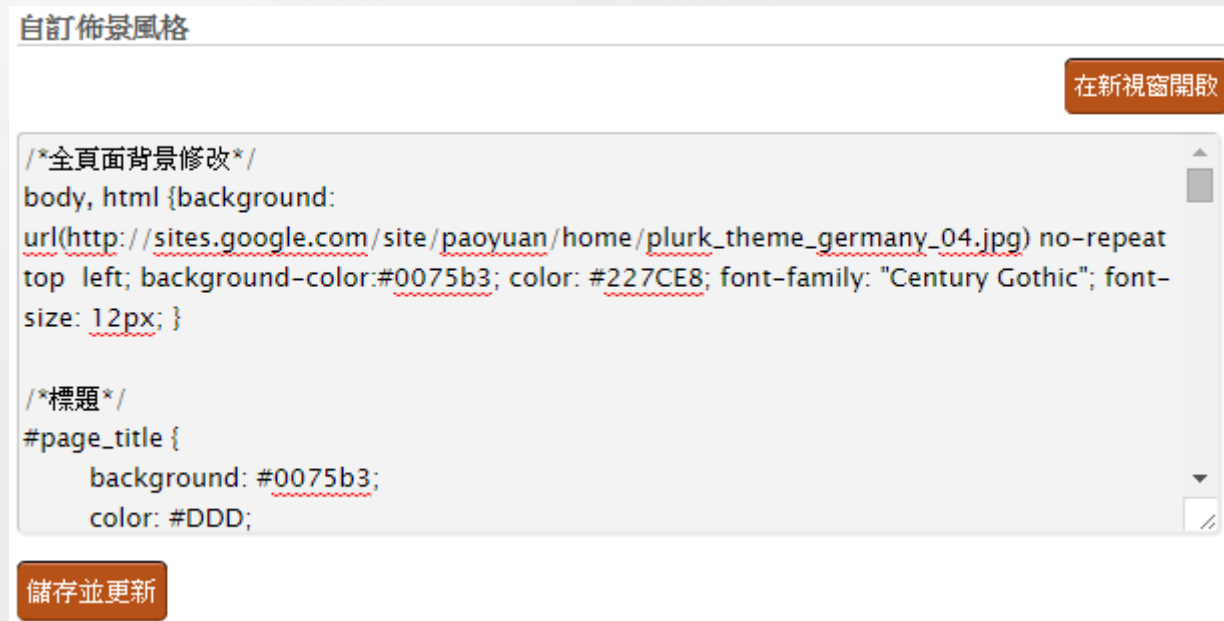
修改範本 HTML

編輯您的範本內容。

```
body {  
  margin: 0;  
  padding: 0;  
  font-family: Verdana, sans-serif;  
  font-size: small;  
  text-align: center;  
  color: #333;  
  background: #e0e0e0;  
}  
  
blockquote {  
  margin: 0 0 0 30px;  
  padding: 10px 0 0 20px;  
  font-size: 88%;  
  line-height: 1.5em;  
  color: #666;  
  background: url(http://www.blogblog.com/tictac_blue/quotes.gif) no-repeat top left;  
}  
  
blockquote p {  
  margin-top: 0;
```

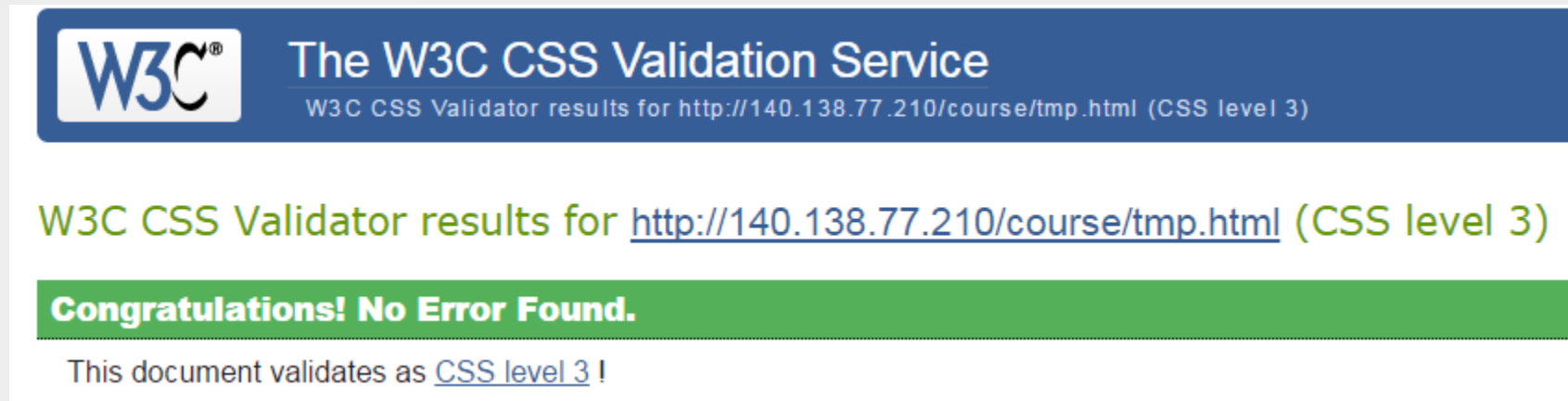
Example

- Plurk



Introduction

- Cascading Style Sheets 3 (CSS3)
 - Used to specify the presentation of elements separately from the structure of the document.
- CSS validator
 - <http://jigsaw.w3.org/css-validator/>



Inline Styles

- Inline style
 - declare an individual element's format using the HTML5 attribute `style`.
- Each CSS property is followed by a `colon (:)` and the value of the attribute
- Multiple property declarations are separated by a `semicolon(;)`

Inline Styles

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Inline Styles</title>
  </head>
  <body>
    <p>This text does not have any style applied to it.</p>
    <p style = "font-size: 20pt;">This text has the
      <em>font-size</em> style applied to it, making it 20pt.
    </p>
    <p style = "font-size: 20pt; color: deepskyblue;">
      This text has the <em>font-size</em> and
      <em>color</em> styles applied to it, making it
      20pt and deep sky blue.</p>
  </body>
</html>
```

This text does not have any style applied to it.

This text has the *font-size* style applied to it, making it 20pt.




















This text has the *font-size* and *color* styles applied to it, making it 20pt and deep sky blue.

Each CSS property is followed by a **colon (:)** and the value of the attribute

Multiple property declarations are separated by a **semicolon(;)**

Inline Styles

- **color** property sets text color
 - Color names and hexadecimal codes may be used as the color property value.

Named	Numeric	Color name	Hex rgb	Decimal
		<i>aliceblue</i>	#F0F8FF	240,248,255
		<i>antiquewhite</i>	#FAEBD7	250,235,215
		<i>aqua</i>	#00FFFF	0,255,255
		<i>aquamarine</i>	#7FFFD4	127,255,212
		<i>azure</i>	#F0FFFF	240,255,255
		<i>beige</i>	#F5F5DC	245,245,220
		<i>bisque</i>	#FFE4C4	255,228,196
		<i>black</i>	#000000	0,0,0
		<i>blanchedalmond</i>	#FFEBCD	255,235,205
		<i>blue</i>	#0000FF	0,0,255
		<i>blueviolet</i>	#8A2BE2	138,43,226
		<i>brown</i>	#A52A2A	165,42,42
		<i>burlywood</i>	#DEB887	222,184,135
		<i>cadetblue</i>	#5F9EA0	95,158,160
		<i>chartreuse</i>	#7FFF00	127,255,0
		<i>chocolate</i>	#D2691E	210,105,30
		<i>coral</i>	#FF7F50	255,127,80
		<i>cornflowerblue</i>	#6495ED	100,149,237
		<i>cornsilk</i>	#FFF8DC	255,248,220
		<i>crimson</i>	#DC143C	220,20,60
		<i>cyan</i>	#00FFFF	0,255,255

Inline Styles



Software Engineering Observation 4.1

Inline styles do not truly separate presentation from content. To apply similar styles to multiple elements, use embedded style sheets or external style sheets, introduced later in this chapter.

Embedded Style Sheets

- A second technique for using style sheets is embedded style sheets, which enable you to embed a CSS₃ document in an HTML₅ document's **head** section.

Embedded Style Sheets

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta charset = "utf-8">
```

```
    <title>Embedded Style Sheet</title>
```

```
    <style type = "text/css">
```

```
      em      { font-weight: bold;
                color: black; }
```

```
      h1      { font-family: tahoma, helvetica, sans-serif; }
```

```
      p       { font-size: 12pt;
                font-family: arial, sans-serif; }
```

```
      .special { color: purple; }
```

```
    </style>
```

```
  </head>
```

```
  <body>
```

```
    <h1 class = "special">Deitel & Associates, Inc.</h1>
```

```
    <p>Deitel Associates, Inc. is an authoring and corporate training organization
specializing in programming languages, Internet and web technology, iPhone and
Android app development, and object technology education.</p>
```

```
    <h1>Clients</h1>
```

```
    <p class = "special"> The company's clients include many <em>Fortune 1000 companies</em>,
government agencies, branches of the military and business organizations.</p>
```

```
  </body>
```

```
</html>
```

Deitel & Associates, Inc.

Deitel & Associates, Inc. is an authoring and corporate training organization specializing in programming languages, Internet and web technology, iPhone and Android app development, and object technology education.

Clients

The company's clients include many *Fortune 1000 companies*, government agencies, branches of the military and business organizations.

放在head內

em : emphasized
font-weight : 字體粗細
color : 字體顏色
font-family : 字型
font-size : 字體大小

Embedded Style Sheets

- The **style** Element and **MIME** Types
 - Styles that are placed in a style element use selectors to apply style elements throughout the entire document
 - style element type attribute specifies the **MIME** type (the specific encoding format) of the style sheet. Style sheets use text/css.

MIME type	Description
text/css	CSS documents
image/png	PNG images
text/javascript	JavaScript markup
text/plain	Plain text
image/jpeg	JPEG image
text/html	HTML markup

Embedded Style Sheets

- The style sheet's body declares the **CSS rules** for the style sheet.
- To achieve the separation between the CSS3 code and the HTML5 that it styles, we'll use a **CSS selector** to specify the elements that will be styled according to a rule.
- Each rule body in a style sheet is enclosed in curly braces (**{ and }**).

```
<style type = "text/css">
    em      { font-weight: bold;
              color: black; }
    h1      { font-family: tahoma, helvetica, sans-serif; }
    p       { font-size: 12pt;
              font-family: arial, sans-serif; }
    .special { color: purple; }
</style>
```


Embedded Style Sheets

- **font-weight** property specifies the "boldness" of text.
 - Possible values are
 - bold
 - normal (the default)
 - bolder (bolder than bold text)
 - lighter (lighter than normal text)
 - Boldness also can be specified with multiples of 100, from 100 to 900 (e.g., 100, 200, ..., 900). Text specified as normal is equivalent to 400, and bold text is equivalent to 700

Ref: http://www.w3schools.com/cssref/pr_font_weight.asp

Embedded Style Sheets

- **font-family** property specifies the name of the font to use.
- Generic font families allow authors to specify a type of font instead of a specific font, in case a browser does not support a specific font.
- The **font-family** property can hold several font names as a "fallback" system. If the browser does not support the first font, it tries the next font.

Generic font families	Examples
serif	times new roman, georgia
sans-serif	arial, verdana, futura
cursive	script
fantasy	critter
monospace	courier, fixedsys

Embedded Style Sheets

- **font-size** property specifies the size used to render the font.
- You can specify a point size or a relative value such as xx-small, x-small, small, smaller, medium, large, larger, x-large and xx-large.
- Relative font-size values are preferred over points, because an author does not know the specific measurements of each client's display.
- Relative values permit more flexible viewing of web pages.

Embedded Style Sheets

- font-style
 - specifies the font style for a text
 - none
 - italic
 - oblique

Normal	The five boxing wizards jump quickly.
Italic	<i>The five boxing wizards jump quickly.</i>
Oblique	<i>The five boxing wizards jump quickly.</i>

Ref : <https://css-tricks.com/almanac/properties/f/font-style/>

Embedded Style Sheets

- **Style-class** declarations are preceded by a **period** (.).
- They define styles that can be applied to any element.
- You can also declare id selectors.
 - If an element in your page has an **id**, you can declare a selector of the form **#elementId** to specify that element's style.

Embedded Style Sheets

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Embedded Style Sheet</title>
    <style type = "text/css">
      em      { font-weight: bold;
                color: black; }
      h1      { font-family: tahoma, helvetica, sans-serif; }
      p      { font-size: 12pt;
                font-family: arial, sans-serif; }
      .special { color: purple; }
      #tmp    { color: red; }
    </style>
  </head>
  <body>
    <h1 class = "special">Deitel & Associates, Inc.</h1>
    <p>Deitel Associates, Inc. is an authoring and corporate training organization
      specializing in programming languages, Internet and web technology, <i id = "tmp">
        iPhone and Android </i>app development, and object technology education.</p>
    <h1>Clients</h1>
    <p class = "special">The company's clients include many <em>Fortune 1000 companies</em>,
      government agencies, branches of the military and business organizations.</p>
  </body>
</html>
```

Deitel & Associates, Inc.

Deitel & Associates, Inc. is an authoring and corporate training organization specializing in programming languages, Internet and web technology, *iPhone and Android* app development, and object technology education.

Clients

The company's clients include many *Fortune 1000 companies*, government agencies, branches of the military and business organizations.

Embedded Style Sheets

- In many cases, the styles applied to an element (the **parent** or **ancestor** element) also apply to the element's nested elements (**child** or **descendant** elements).
- Multiple values of one property can be set or inherited on the same element, so the browser must reduce them to one value for that property per element before they're rendered.
- We discuss the rules for resolving these conflicts in the next section.

Table CSS

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8"><title>Table</title>
    <style type="text/css">
      table,th,td { border:1px solid black; }
      table { width : 100px ; height : 100px; }
      #table2 { border-collapse: collapse; }
    </style>
  </head>
  <body>
    <table id = "table1" >
      <tr>
        <td style = "text-align: center;">1</td>
        <td style = "vertical-align: bottom;">2</td>
      </tr>
      <tr>
        <td style = "background-color: yellow;">3</td>
        <td style = "color:red">4</td>
      </tr>
    </table>
    <p></p>
    <table id = "table2">
      <tr><td>1</td><td>2</td></tr>
      <tr><td>3</td><td>4</td></tr>
    </table>
  </body>
</html>
```

1	2
3	4

1	2
3	4

border
 1px: 寬度
 solid : 實線
 black : 黑色
width : 寬
height : 高
border-collapse: 邊框單/雙線
 collapse : 單線
text-align : 文字水平對齊
 right, center, left
vertical-align : 文字垂直對齊
 top, middle, bottom
background-color : 底色
color : 文字顏色

Exercise

color : blue	
	font-family: courier
	font-size : 18 pt
text-align : center	

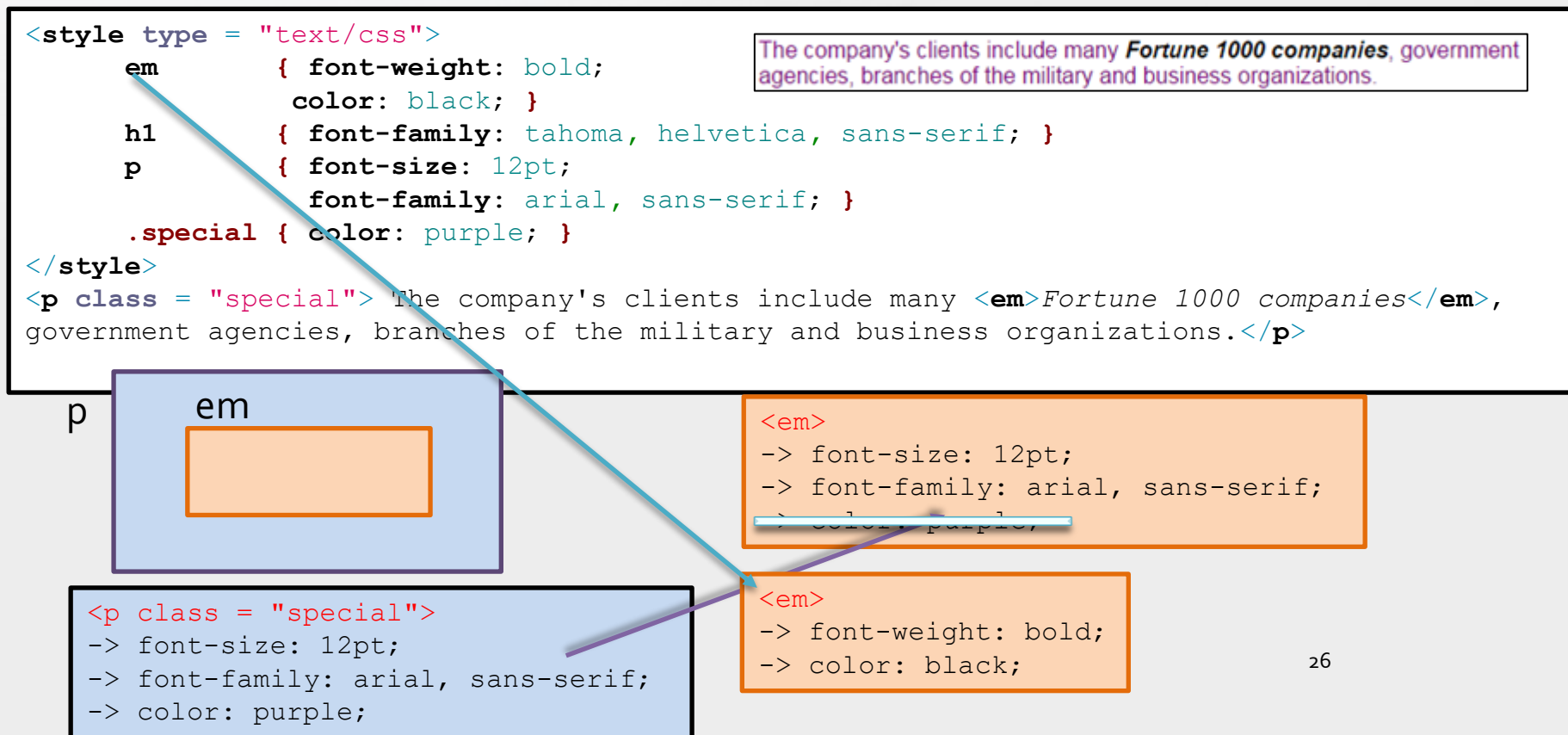
border-collapse: collapse

Conflicting Styles

- Styles may be defined by **a user, an author or a user agent**.
 - User style sheet
 - A user agent may also allow a user to create a customized set of styles to use by default, or for specific documents.
 - Author style sheets
 - that are linked to the document via a link element, specified using a style element within the document's head element, or specified within an element style attribute
 - User Agent (typically a web browser) style sheets
 - the default sets of declarations applied by the user agent
- Priority
 - author > user > user agent

Conflicting Styles

- Most styles defined for parent elements are also **inherited** by child (nested) elements.



Conflicting Styles

- Properties defined for child and descendant elements have a higher specificity than properties defined for parent and ancestor elements.
- Conflicts are resolved in favor of properties with a higher specificity, so the child's styles take precedence.

```

<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>More Styles</title>
    <style type = "text/css">
      body { font-family: arial, helvetica, sans-serif; }
      a.nodect { text-decoration: none; }
      a:hover { text-decoration: underline; }
      li em { font-weight: bold; }
      h1, em { text-decoration: underline; }
      ul { margin-left: 20px; }
      ul ul { font-size: .8em; }
    </style>
  </head>
  <body>
    <h1>Shopping list for Monday:</h1>
    <ul>
      <li>Milk</li>
      <li>Bread
        <ul>
          <li>White bread</li>
          <li>Rye bread</li>
          <li>Whole wheat bread</li>
        </ul>
      </li>
      <li>Carrots</li>
      <li>Yogurt</li>
      <li>Pizza<em>with mushrooms</em></li>
    </ul>
    <p><em>Go to the</em>
    <a class = "nodect" href = "http://www.deitel.com">Grocery store</a>
  </p>
</body>
</html>

```

Shopping list for Monday:

- Milk
- Bread
 - White bread
 - Rye bread
 - Whole wheat bread
- Carrots
- Yogurt
- Pizza *with mushrooms*

Go to the Grocery store

text-decoration : the decoration added to text

none

underline : 文字之下

overline : 文字之上

line-through : 文字之中

:hover 滑鼠移到該element才啟動

margin-left : 距左邊界 20 px

Conflicting Styles

- Pseudoclasses
 - A pseudo-class is used to define a special state of an element.
 - E.g :
 - a:link // unvisited links
 - a:visited // visited links
 - a:hover // on mouse over
 - a:active // the active link
 - Note : a:hover MUST come after a:link and a:visited, a:active MUST come after a:hover

Conflicting Styles

- Relative length measurements:
 - px
 - Pixels - size varies depending on screen resolution
 - em
 - 1em is equal to the current font size
 - usually the height of a font's uppercase M
 - ex
 - 1ex is the x-height of a font (x-height is usually about half the font-size)
 - %
 - Percentages of the font's default size

Conflicting Styles

- Absolute-length measurements (units that do not vary in size):
 - in (inches)
 - cm (centimeters)
 - mm (millimeters)
 - pt (points; 1 pt = 1/72 in)
 - pc (picas; 1 pc = 12 pt)

Conflicting Styles



Good Programming Practice 4.1

Whenever possible, use relative-length measurements. If you use absolute-length measurements, your document may not scale well on some client browsers (e.g., smartphones).

Linking External Style Sheets

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Linking External Style Sheets</title>
    <link rel = "stylesheet" type = "text/css" href = "styles.css">
  </head>
  <body>
    <h1>Shopping list for <em>Monday</em>:</h1>
    <ul>
      <li>Milk</li>
      <li>Bread
        <ul>
          <li>White bread</li>
          <li>Rye bread</li>
          <li>Whole wheat bread</li>
        </ul>
      </li>
      <li>Carrots</li>
      <li>Yogurt</li>
      <li>Pizza <em>with mushrooms</em></li>
    </ul>
    <p><em>Go to the</em>
      <a class = "nodec" href = "http://www.deitel.com"> Grocery store</a>
    </p>
  </body>
</html>
```

styles.css

```
/* styles.css */
body      { font-family: arial, helvetica, sans-serif; }
a.nodec   { text-decoration: none; }
a:hover   { text-decoration: underline; }
li em     { font-weight: bold; }
h1, em    { text-decoration: underline; }
ul         { margin-left: 20px; }
ul ul     { font-size: .8em; }
```

Linking External Style Sheets

- **link** element
 - Uses **rel** attribute to specify a relationship between two documents
 - **rel** attribute declares the linked document to be a stylesheet for the document
- **type** attribute specifies the MIME type of the related document
- **href** attribute provides the URL for the document containing the style sheet

Linking External Style Sheets

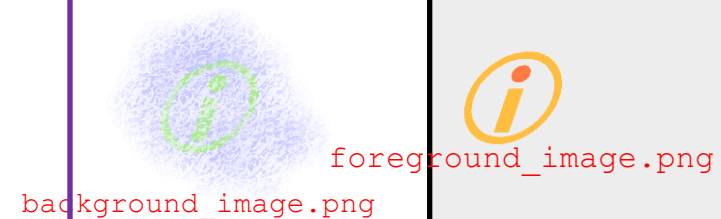
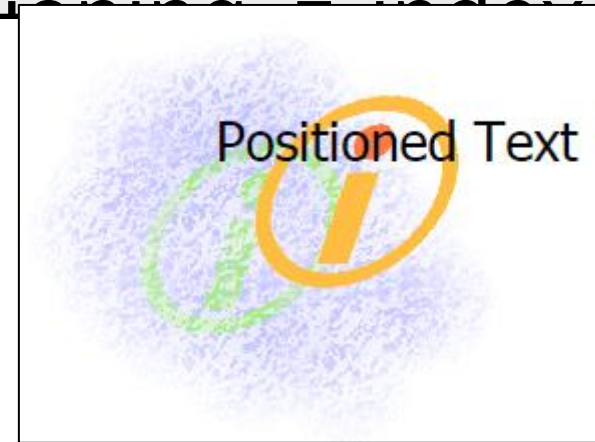
- External style sheets are separate documents that contain only CSS rules.
- Help create a uniform look for a website
- Separate pages can all use the same styles.
- Modifying a single style-sheet file makes changes to styles across an entire website (or to a portion of one).
- When changes to the styles are required, you need to modify only a single CSS file to make style changes across all the pages that use those styles. This concept is sometimes known as skinning.

Positioning Elements: Absolute Positioning, z-index

- CSS **position** property
 - Allows **absolute** positioning, which provides greater control over where on a page elements reside
 - Specifying an element's position as absolute removes it from the normal flow of elements on the page and positions it according to distance from the top, left, right or bottom margin of its parent element

Positioning Elements: Absolute Positioning - z-index

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Absolute Positioning</title>
    <style type = "text/css">
      .background_image { position: absolute;
        top: 0px;
        left: 0px;
        z-index: 1; }
      .foreground_image { position: absolute;
        top: 25px;
        left: 100px;
        z-index: 2; }
      .text { position: absolute;
        top: 25px;
        left: 100px;
        z-index: 3;
        font-size: 20pt;
        font-family: tahoma, geneva, sans-serif; }
    </style>
  </head>
  <body>
    <p><img src = "background_image.png" class = "background_image"
      alt = "First positioned image" /></p>
    <p><img src = "foreground_image.png" class = "foreground_image"
      alt = "Second positioned image" /></p>
    <p class = "text">Positioned Text</p>
  </body>
</html>
```



Position : position an element
Z-index : the stack order of an element

Positioning Elements: Absolute Positioning, z-index

- Position : position an element
 - static : positioned element is always positioned according to the normal flow of the page.
 - fixed: positioned relative to the browser window
 - relative: positioned relative to its normal position
 - absolute : positioned relative to the first parent element
- Z-index : the stack order of an element
 - An element with greater stack order is always in front of an element with a lower stack order.
 - If two positioned elements overlap without a z-index specified, the element positioned last in the HTML code will be shown on top.

Posi

span

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Relative Positioning</title>
    <style type = "text/css">
      p          { font-size: 1.3em;
                   font-family: verdana, arial, sans-serif; }
      span       { color: red;
                   font-size: .6em;
                   height: 1em; }
      .super     { position: relative;
                   top: -1ex; }
      .sub       { position: relative;
                   bottom: -1ex; }
      .shiftleft { position: relative;
                   left: -1ex; }
      .shiftright { position: relative;
                    right: -1ex; }
    </style>
  </head>
  <body>
    <p>The text at the end of this sentence
      <span class = "super">is in superscript</span>.</p>
    <p>The text at the end of this sentence
      <span class = "sub">is in subscript</span>.</p>
    <p>The text at the end of this sentence
      <span class = "shiftleft">is shifted left</span>.</p>
    <p>The text at the end of this sentence
      <span class = "shiftright">is shifted right</span>.</p>
  </body>
</html>
```

The text at the end of this sentence is in superscript .

The text at the end of this sentence is in subscript .

The text at the end of this sentence is shifted left .

The text at the end of this sentence is shifted right .

Positioning Elements: Relative Positioning, span

- Inline-level elements
 - Do not change the flow of the document
 - `img`, `a`, `em`, `strong`, `span`
- Block-level elements
 - Displayed on their own line
 - Have virtual boxes around them
 - `p`, `h1` ... `h6`, `div`

Exercise

- Hint :
 - position : relative
 - position : absolute
 - Font-size: 24px

TEST Normal
TEST absolute left:20px, top: 35px
TEST Left 20px
TEST right 20px

Backgrounds

- CSS can control the backgrounds of block-level elements by adding:
 - Colors
 - Images

Backgrounds

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Background Images</title>
    <style type = "text/css">
      body {background-image : url (logo.png);
            background-position: bottom right;
            background-repeat: no-repeat;
            background-attachment: fixed;
            background-color: LightGrey }
      p { font-size: 18pt;
          color: DarkBlue;
          text-indent: 1em;
          font-family: arial, sans-serif; }
      .dark { font-weight: bold; }
    </style>
  </head>
  <body>
    <p>
      This example uses the background-image, background-position and background-
      attachment styles to place the <span class = "dark">Deitel Associates, Inc.</span>
      logo in the bottom-right corner of the page. Notice how the logo stays in the proper
      position when you resize the browser window. The background-color fills in where
      there is no image.
    </p>
  </body>
</html>
```

This example uses the background-image, background-position and background-attachment styles to place the **Deitel & Associates, Inc.** logo in the bottom-right corner of the page. Notice how the logo stays in the proper position when you resize the browser window. The background-color fills in where there is no image.



text-indent: 首行縮排

Backgrounds

- **background-image**
 - Specifies the URL of the image, in the format url(fileLocation)
- **background-position**
 - Places the image on the page
 - top, bottom, center, left and right individually or in combination
 - position by using lengths
 - (horizontal position, vertical position)
 - The top left corner is 0 0
 - E.g : background-position: 50px 100px;



Backgrounds

- **background-repeat**
 - controls the **tiling** of the background image
 - repeat
 - both vertically and horizontally
 - repeat-x
 - only horizontally
 - repeat-y
 - only vertically
 - no-repeat
 - not be repeated

Backgrounds

- background-attachment
 - sets whether a background image is fixed or scrolls with the rest of the page
 - scroll
 - Scrolling the browser window will not move the image from its set position.
 - default
 - fixed
 - Fixes the image in the position specified by background-position.

Element Dimensions

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Box Dimensions</title>
    <style type = "text/css">
      p { background-color: LightSkyBlue;
          margin-bottom: .5em;
          font-family: arial, helvetica, sans-serif; }
    </style>
  </head>
  <body>
    <p style = "width: 20%;">Here is some
      text that goes in a box which is
      set to stretch across twenty percent
      of the width of the screen.</p>
    <p style = "width: 80%; text-align: center;">
      Here is some CENTERED text that goes in a box
      which is set to stretch across eighty percent of
      the width of the screen.</p>
    <p style = "width: 20%; height: 150px; overflow: scroll;">
      This box is only twenty percent of
      the width and has a fixed height.
      What do we do if it overflows? Set the
      overflow property to scroll!</p>
  </body>
</html>
```

Here is some text
that goes in a box
which is set to stretch
across twenty
percent of the width
of the screen.

Here is some CENTERED text that goes in a box which is set to stretch across eighty
percent of the width of the screen.

This box is only
twenty percent of
the width and has
a fixed height.
What do we do if it
overflows? Set the
overflow property
to scroll!

Element Dimensions

- Dimensions of elements on a page can be set with CSS by using properties **height** and **width**
 - Their values can be **relative** or **absolute**
- **overflow** Property and **Scroll** Bars
 - Problem with setting both vertical and horizontal dimensions of an element
 - Content might sometimes exceed the set boundaries, in which case the element must be made large enough for all the content to fit
 - Can set the overflow property to scroll, which adds scroll bars if the text overflows the boundaries set for it

Element Dimensions

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Box Dimensions</title>
    <style type = "text/css">
      p { background-color: LightSkyBlue;
          margin-bottom: 2em;
          font-family: arial, helvetica, sans-serif; }
    </style>
  </head>
  <body>
    <p style = "width: 20%; height: 150px; overflow: visible;">
      This box is only twenty percent ofthe width and has a fixe
      What do we do if it overflows? Set the overflow property to scro
    <p style = "width: 20%; height: 150px; overflow: hidden;">
      This box is only twenty percent ofthe width and has a fixe
      What do we do if it overflows? Set the overflow property to scro
    <p style = "width: 20%; height: 150px; overflow: scroll;">
      This box is only twenty percent ofthe width and has a fixe
      What do we do if it overflows? Set the overflow property to scro
    <p style = "width: 20%; height: 150px; overflow: auto;">
      This box is only twenty percent ofthe width and has a fixed height.
      What do we do if it overflows? Set the overflow property to scroll!</p>
  </body>
</html>
```

visible: 內容不會被刪除, 會超出元素外
hidden: 內容會被刪除, 元素保持設定大小
scroll: 支援scroll bar
auto: 需要時才會出現scroll bar

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

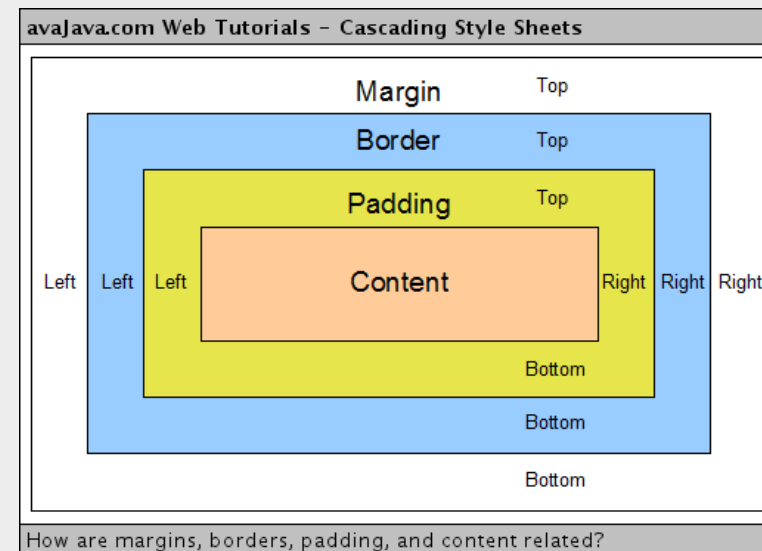
This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

This box is only twenty percent ofthe width and has a fixed height. What do we do if it overflows? Set the overflow property to scroll!

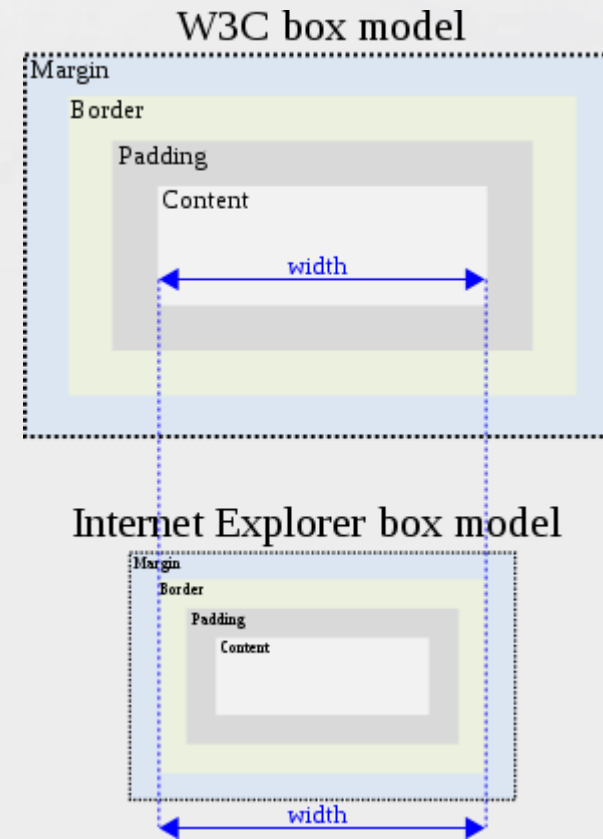
Box Model and Text Flow

- Block-level HTML5 elements have a virtual box drawn around them based on the box model
- When the browser renders an element using the box model, the content is surrounded by **padding**, a **margin** and a **border**.



Box Model and Text Flow

- Internet Explorer box model bug
 - Version :IE6-



Ref : http://en.wikipedia.org/wiki/Internet_Explorer_box_model_bug

Box Model and Text Flow

- **Padding**

- The padding property determines the distance between the content inside an element and the edge of the element
- Padding be set for each side of the box by using padding-top, padding-right, padding-left and padding-bottom

- **Margin**

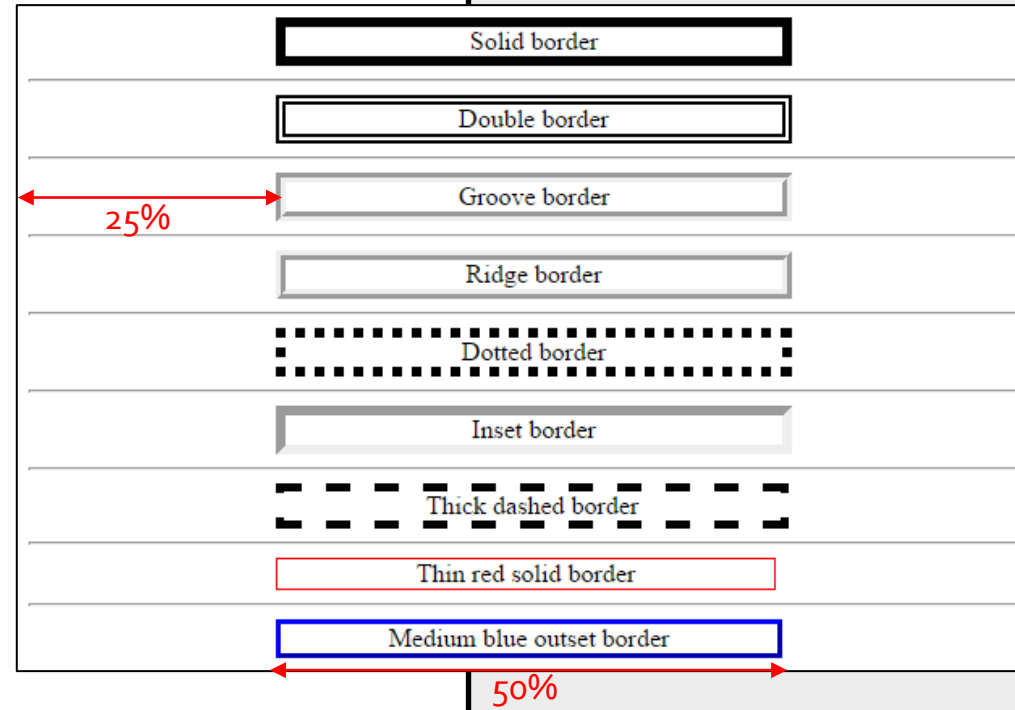
- Determines the distance between the element's edge and any outside text
- Margins for individual sides of an element can be specified by using margin-top, margin-right, margin-left and margin-bottom

Box Model and Text Flow

- **Border**
 - border-width
 - May be set to any of the CSS lengths or to the predefined value of thin, medium or thick
 - border-color
 - Sets the color used for the border
 - border-style
 - Options are: none, hidden, dotted, dashed, solid, double, groove, ridge, inset and outset
- CSS controls the border using three properties: **border-width, border-color and border-style.**

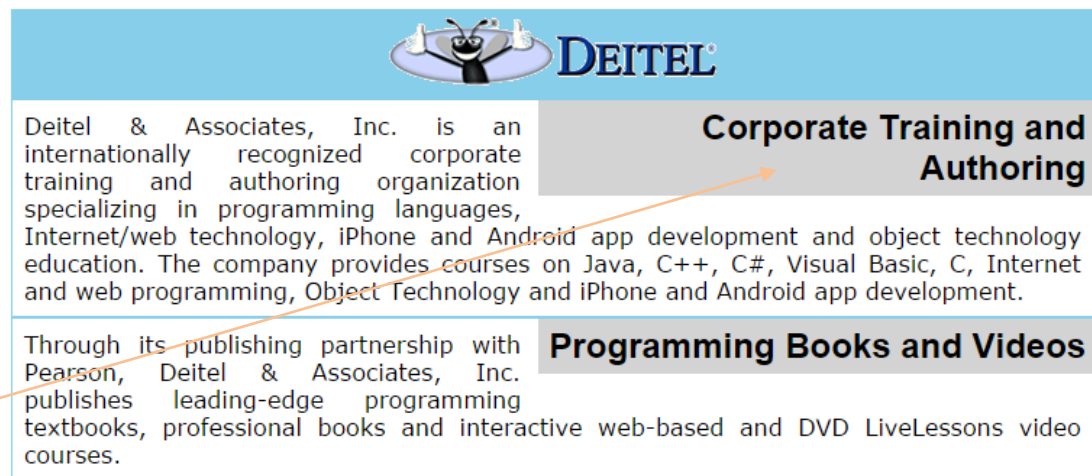
Box

```
!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Borders</title>
    <style type = "text/css">
      div { text-align: center;
            width: 50%;
            position: relative;
            left: 25%;
            border-width: 6px; }
      .thick { border-width: thick; }
      .medium { border-width: medium; }
      .thin { border-width: thin; }
      .solid { border-style: solid; }
      .double { border-style: double; }
      .groove { border-style: groove; }
      .ridge { border-style: ridge; }
      .dotted { border-style: dotted; }
      .inset { border-style: inset; }
      .outset { border-style: outset; }
      .dashed { border-style: dashed; }
      .red { border-color: red; }
      .blue { border-color: blue; }
    </style>
  </head>
  <body>
    <div class = "solid">Solid border</div><hr>
    <div class = "double">Double border</div><hr>
    <div class = "groove">Groove border</div><hr>
    <div class = "ridge">Ridge border</div><hr>
    <div class = "dotted">Dotted border</div><hr>
    <div class = "inset">Inset border</div><hr>
    <div class = "thick dashed">Thick dashed border</div><hr>
    <div class = "thin red solid">Thin red solid border</div><hr>
    <div class = "medium blue outset">Medium blue outset border</div>
  </body>
</html>
```



Box


```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Flowing Text Around Floating Elements</title>
    <style type = "text/css">
      header { background-color: SkyBlue;
                text-align: center;
                font-family: arial, helvetica;
                padding: .2em; }
      p { text-align: justify;
          font-family: verdana, geneva;
          margin: .5em; }
      h1 { margin-top: 0px; }
      .floated { background-color: LightGrey;
                  font-size: 1.5em;
                  font-family: arial, helvetica;
                  padding: .2em;
                  margin-left: .5em;
                  margin-bottom: .5em;
                  float: right;
                  text-align: right;
                  width: 50%; }
      section { border: 1px solid skyBlue; }
    </style>
  </head>
  <body>
    <header><img src = "deitel.png" alt = "Deitel" /></header>
    <section>
      <h1 class = "floated">Corporate Training and Authoring</h1>
      <p>Deitel Associates, Inc. is an internationally recognized corporate training and authoring organization specializing in programming languages, Internet/web technology, iPhone and Android app development and object technology education. The company provides courses on Java, C++, C#, Visual Basic, C, Internet and web programming, Object Technology and iPhone and Android app development.</p>
    </section>
    <section>
      <h1 class = "floated">Programming Books and Videos</h1>
      <p>Through its publishing partnership with Pearson, Deitel Associates, Inc. publishes leading-edge programming textbooks, professional books and interactive web-based and DVD LiveLessons video courses.</p>
    </section>
  </body>
</html>
```




```

<style type = "text/css">
  header { background-color: SkyBlue;
           text-align: center;
           font-family: arial, helvetica, sans-serif;
           padding: .2em; }
  p { text-align: justify;
      font-family: verdana, geneva, sans-serif;
      margin: .5em; }
  h1 { margin-top: 0px; }
  .floated { background-color: LightGrey;
            font-size: 1.5em;
            font-family: arial, helvetica, sans-serif;
            padding: .2em;
            margin-left: .5em;
            margin-bottom: .5em;
            float: right;
            text-align: right;
            width: 50%; }
  section { border: 1px solid skyBlue; }
</style>

```



Deitel & Associates, Inc. is an internationally recognized corporate training and authoring organization specializing in programming languages, Internet/web technology, iPhone and Android app development and object technology education. The company provides courses on Java, C++, C#, Visual Basic, C, Internet and web programming, Object Technology and iPhone and Android app development.

Through its publishing partnership with Pearson, Deitel & Associates, Inc. publishes leading-edge programming textbooks, professional books and interactive web-based and DVD LiveLessons video courses.

Corporate Training and Authoring

Programming Books and Videos

Box Model and Text Flow

- float
 - Floating allows you to move an element to one side of the screen; other content in the document then flows around the floated element.
 - none
 - left
 - right
 - Absolutely positioned elements ignores the float property!

Padding / Margin

- Padding
 - padding-top, padding-right, padding-left and padding-bottom
- Margin
 - margin-top, margin-right, margin-left and margin-bottom

```
padding: 20px;
```

```
/* 上下左右皆 20px */
```

```
padding: 16px 20px;
```

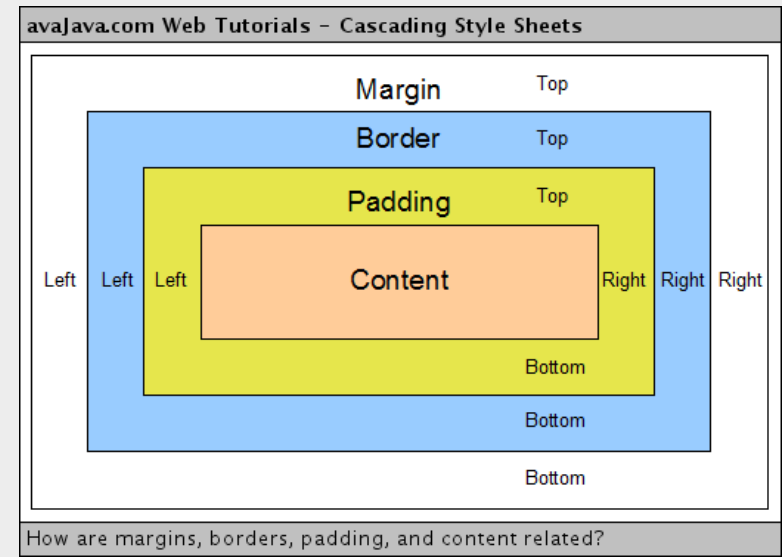
```
/* 上下 16px ，左右 20px */
```

```
padding: 10px 30px 20px;
```

```
/* 上 10px ，左右 30px, 下 20px */
```

```
padding: 10px 3px 30px 5px;
```

```
/* 依序圍上、右、下、左，順時針方向 */
```

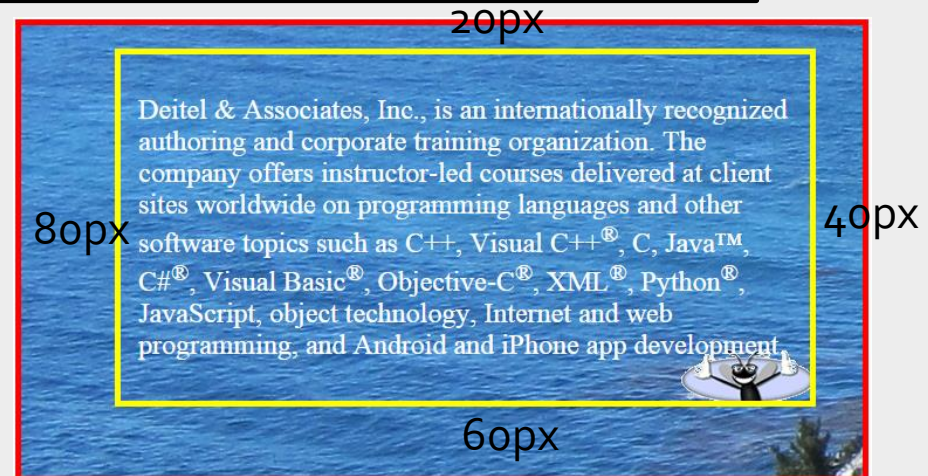


Padding / Margin

```
padding: 10px          /* 上下左右皆 10px */
padding: 10px 20px     /* 上下 10px 左右 20px */
padding: 10px 20px 30px /* 上 10px 左右 20px 下 30px */
padding: 10px 20px 30px 40px /* 上 10px 右 20px 下 30px 左 40px */
```

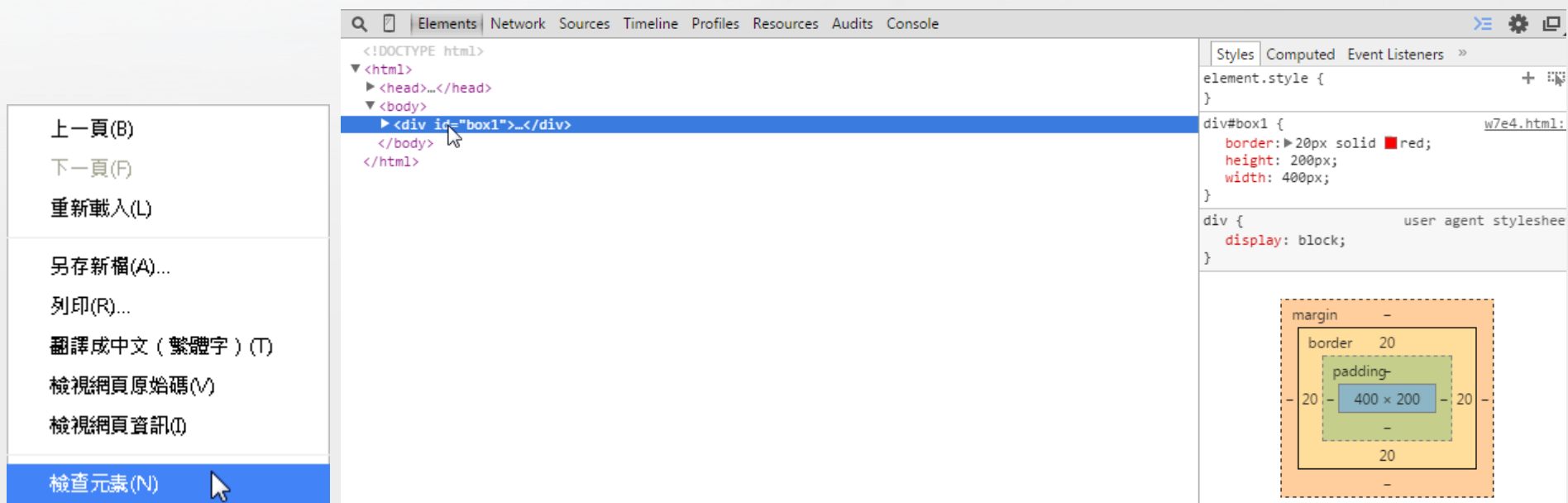
```
margin: 10px          /* 上下左右皆 10px */
margin: 10px 20px     /* 上下 10px , 左右 20px */
margin: 10px 20px 30px /* 上 10px 左右 20px 下 30px */
margin: 10px 20px 30px 40px /* 上 10px 右 20px 下 30px 左 40px */
margin: 10px auto     /* 上下 10px 左右由瀏覽器設定 */
margin: auto          /* 由瀏覽器設定 */
```

```
padding : 20px 40px 60px 80px;
```



Padding / Margin

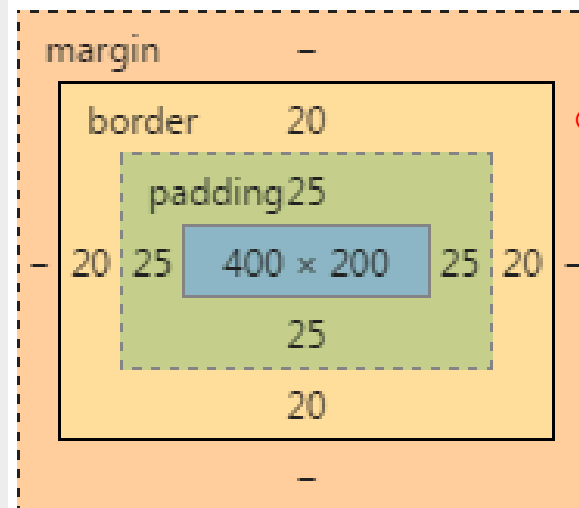
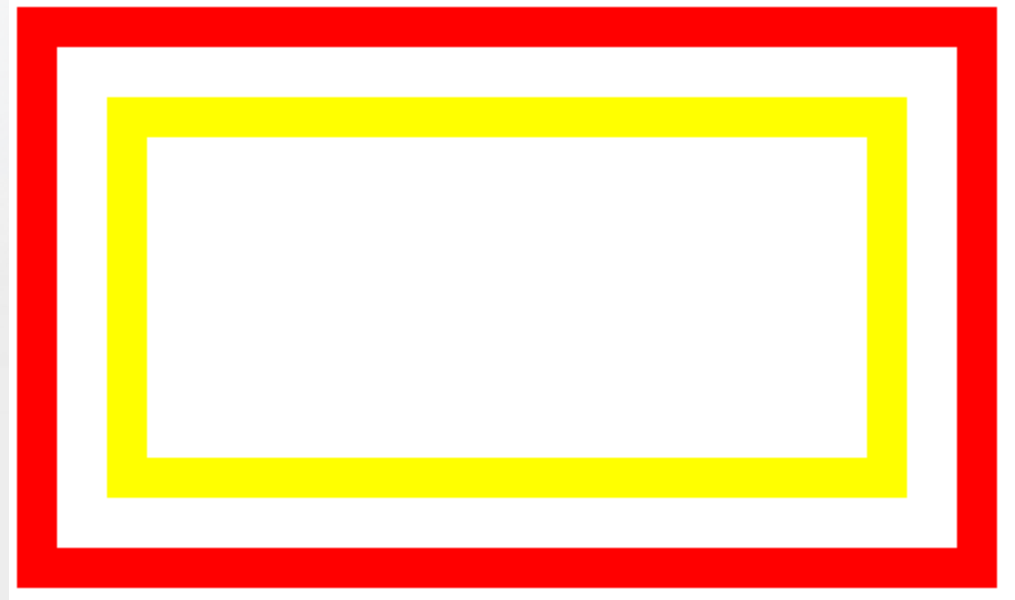
- Chrome



Padding / Margin

```
div#box1
{
  border: 20px solid red;
  height : 200px;
  width  : 400px;
  padding : 25px;
}
div#box2
{
  border: 20px solid yellow;
  height :...;
  width  : ...;
}
```

```
<div id = "box1">
  <div id = "box2">
    </div>
  </div>
```

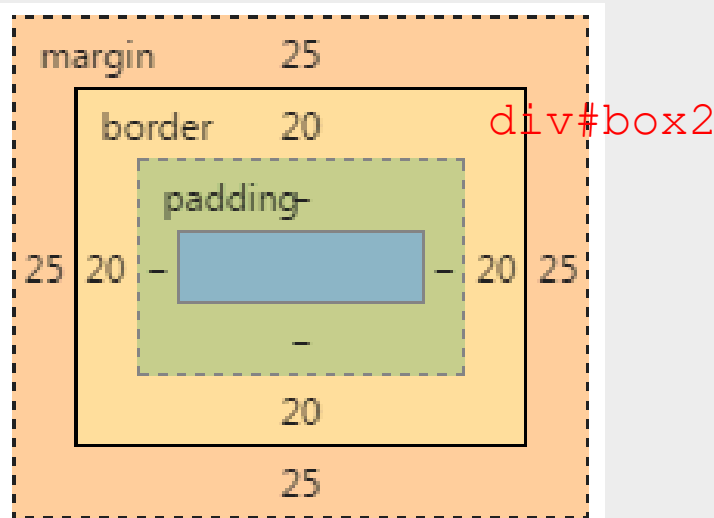


`div#box1`

Padding / Margin

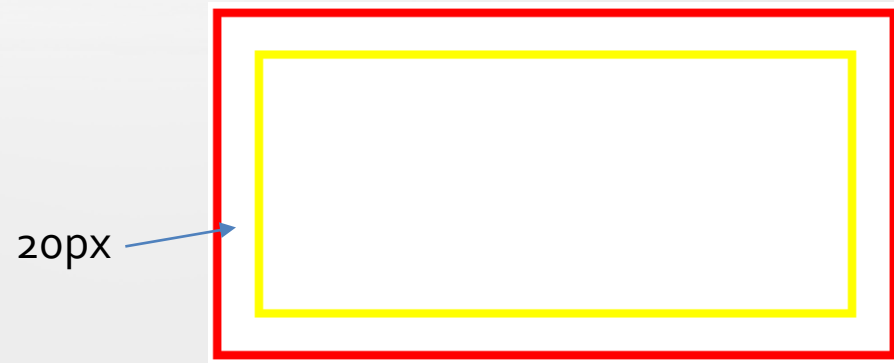
```
div#box1
{
  border: 20px solid red;
  height : 200px;
  width : 400px;
}
div#box2
{
  border: 20px solid yellow;
  margin: 25px;
  height : ...;
  width : ...;
}
```

```
<div id = "box1">
  <div id = "box2">
    </div>
  </div>
```

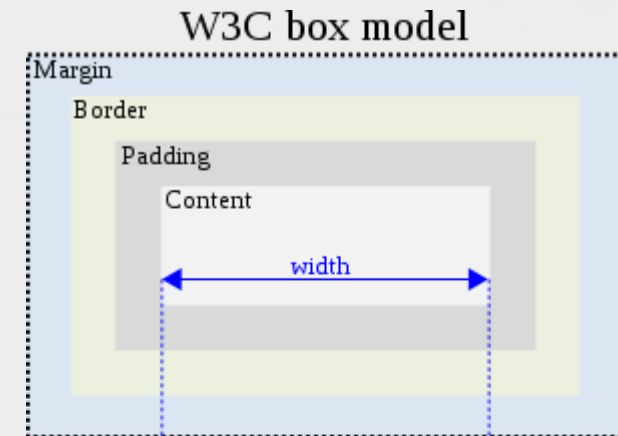


Exercise

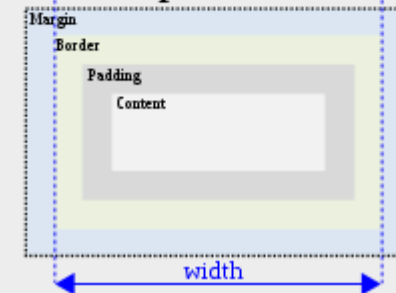
- Hint :
 - padding or margin
 - `<div id="box1"> <div id="box2"></div></div>`



```
box1 {  
    width : 400px;  
    height: 200px;  
    border : 5px solid red;  
    ...  
}  
box2 {  
    border : 5px solid yellow;  
    ...  
}
```

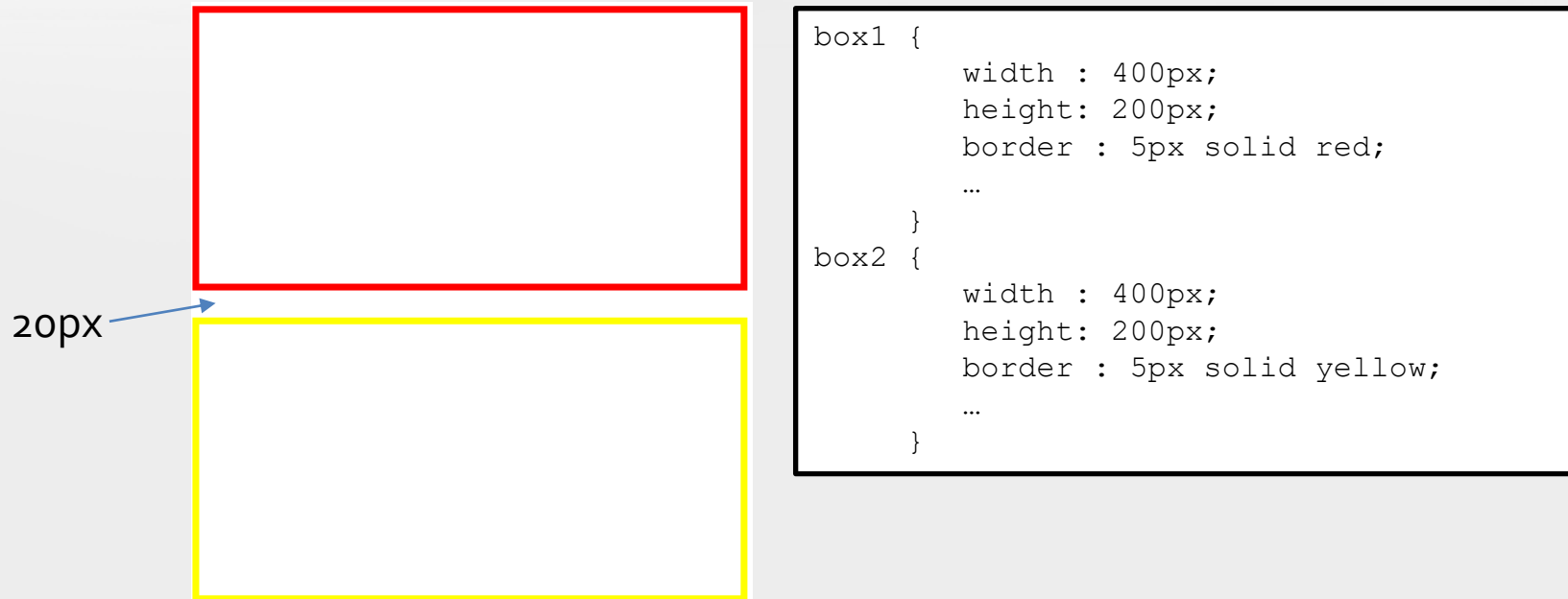


Internet Explorer box model



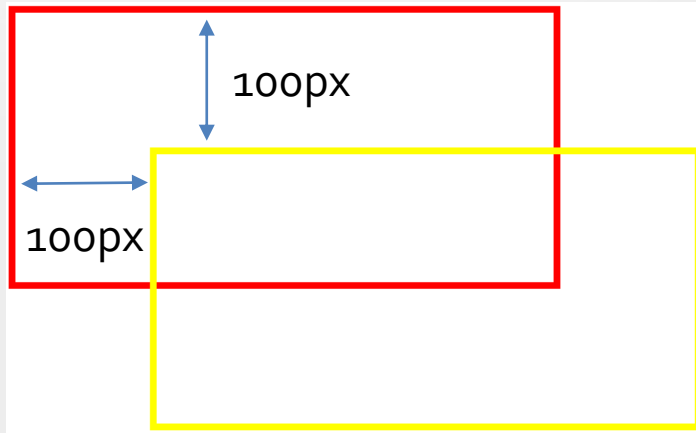
Exercise

- Hint :
 - padding or margin
 - `<div id="box1"></div><div id="box2"></div>`



Exercise

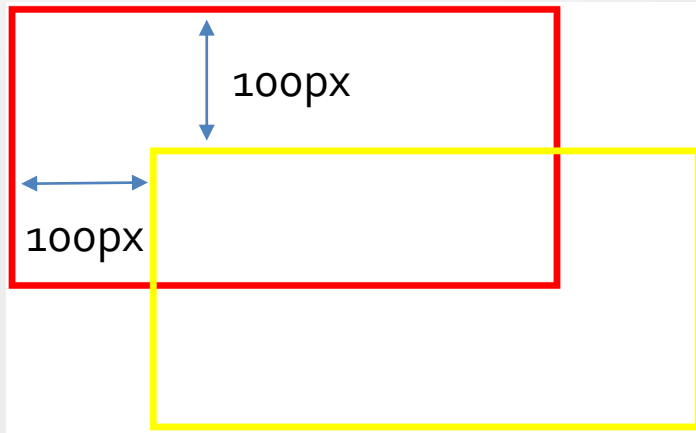
- Hint :
 - position
 - `<div id="box1"> </div><div id="box2"></div>`



```
box1 {  
    width : 400px;  
    height: 200px;  
    border : 5px solid red;  
    ...  
}  
box2 {  
    width : 400px;  
    height: 200px;  
    border : 5px solid yellow;  
    ...  
}
```

Exercise

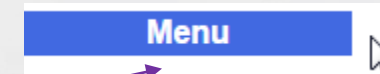
- Hint :
 - padding or margin
 - `<div id="box1"> </div><div id="box2"></div>`



```
box1 {  
    width : 400px;  
    height: 200px;  
    border : 5px solid red;  
    ...  
}  
box2 {  
    width : 400px;  
    height: 200px;  
    border : 5px solid yellow;  
    ...  
}
```

Drop

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Drop-Down Menu</title>
    <style type = "text/css">
      body      { font-family: arial, sans-serif }
      nav       { font-weight: bold;
                  color: white;
                  border: 2px solid RoyalBlue;
                  text-align: center;
                  width: 10em;
                  background-color: RoyalBlue; }
      nav ul    { display: none;
                  list-style: none;
                  margin: 0;
                  padding: 0; }
      nav:hover ul { display: block; }
      nav ul li { border-top: 2px solid RoyalBlue;
                  background-color: white;
                  width: 10em;
                  color: black; }
      nav ul li:hover { background-color: PowderBlue; }
      a         { text-decoration: none; }
    </style>
  </head>
  <body>
    <nav>Menu
      <ul>
        <li><a href = "#">Home</a></li>
        <li><a href = "#">News</a></li>
        <li><a href = "#">Articles</a></li>
        <li><a href = "#">Blog</a></li>
        <li><a href = "#">Contact</a></li>
      </ul>
    </nav>
  </body>
</html>
```

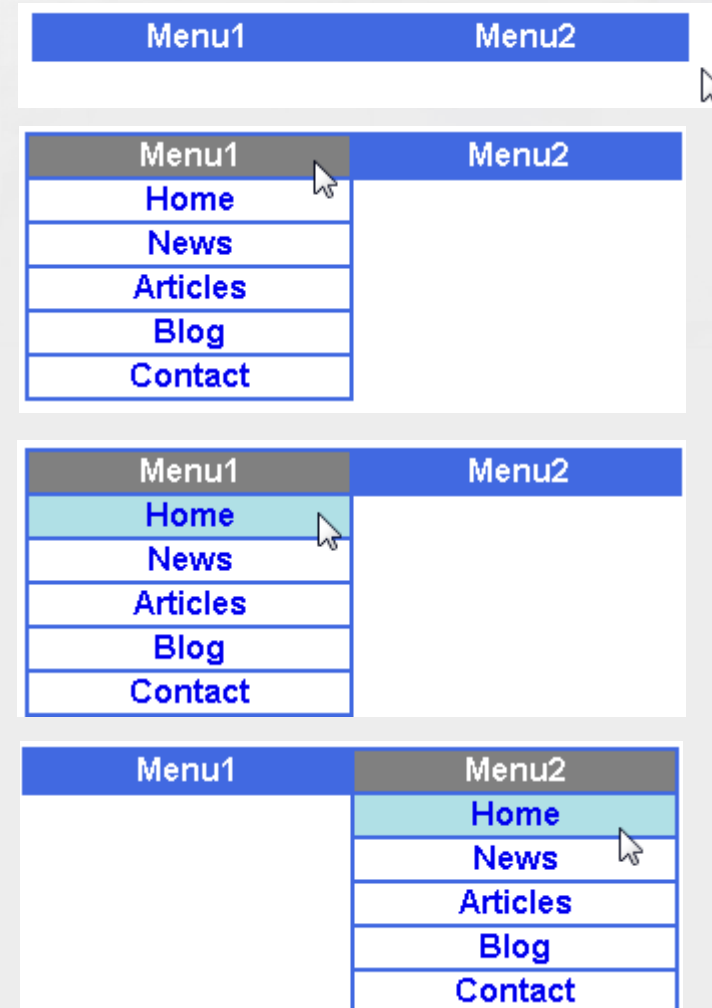


Drop-Down Menus

- **display** property
 - block
 - Displays an element as a block element (like <p>)
 - inline
 - Displays an element as an inline element (like)
 - none
 - The element will not be displayed at all

Exercise

- Hint :
 - float
 - a:hover
 - display



Media Types and Media Queries

- CSS media types
- allow you to decide what a page should look like depending on the kind of media being used to display the page
- Most common media type for a web page is the **screen** media type, which is a standard computer screen

Med

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Media Types</title>
    <style type = "text/css">
      @media all
      {
        body { background-color: SteelBlue; }
        h1    { font-family: verdana, helvetica, sans-serif;
                  color: PaleGreen; }
        p     { font-size: 12pt;
                  color: white;
                  font-family: arial, sans-serif; }
      } /* End @media all declaration. */
      @media print
      {
        body { background-color: white; }
        h1    { color: SeaGreen; }
        p     { font-size: 14pt;
                  color: SteelBlue;
                  font-family: "times new roman", times, serif; }
      } /* End @media print declaration. */
    </style>
  </head>
  <body>
    <h1>CSS Media Types Example</h1>
    <p>
      This example uses CSS media types to vary how the page appears in print and how it
      appears on any other media. This text will appear in one font on the screen and a
      different font on paper or in a print preview. To see the difference in Internet
      Explorer, go to the Print menu and select Print Preview. In Firefox, select Print
      Preview from the File menu.
    </p>
  </body>
</html>
```

CSS Media Types Example

This example uses CSS media types to vary how the page appears in print and how it appears on any other media. This text will appear in one font on the screen and a different font on paper or in a print preview. To see the difference in Internet Explorer, go to the Print menu and select Print Preview. In Firefox, select Print Preview from the File menu.

CSS Media Types Example

This example uses CSS media types to vary how the page appears in print and how it appears on any other media. This text will appear in one font on the screen and a different font on paper or in a print preview. To see the difference in Internet Explorer, go to the Print menu and select Print Preview. In Firefox, select Print Preview from the File menu.

Media Types and Media Queries

- **Media** Types
 - all
 - all media type devices
 - handheld
 - small or mobile Internet devices
 - print
 - printers
 - screen
 - standard computer screen

Media Types and Media Queries

- **Media** Types
 - speech
 - speech and sound synthesizers
 - braille
 - braille tactile feedback devices
 - embossed
 - paged braille printers
 - projection
 - projected presentations, like slides
 - tty
 - media using a fixed-pitch character grid, like teletypes and terminals
 - tv
 - television-type devices

Media Types and Media Queries



Look-and-Feel Observation 4.1

Pages with dark background colors and light text use a lot of ink and may be difficult to read when printed, especially on a black-and white-printer. Use the `print` media type to avoid this.




Look-and-Feel Observation 4.2

In general, sans-serif fonts look better on a screen, while serif fonts look better on paper. The `print` media type allows your web page to display a sans-serif font on a screen and change to a serif font when it's printed.

Media Types and Media Queries

- Allow you to format your content to specific output devices.
- Include a **media type and expressions** that check the media features of the output device.
- IE8- not supported

CSS3 Media Queries  - REC Global 97.24% + 0.01% = 97.25%

Method of applying styles based on media information. Includes things like page and device dimensions

Current aligned Usage relative Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Chrome for Android
			49						
		47	51			9.2		4.4	
8	13	48	52	9.1		9.3		4.4.4	
11	14	49	53	10	39	10	all	52	51
		50	54	TP	40				
		51	55		41				
		52	56						

Ref: <http://caniuse.com/#feat=css-mediaqueries>

Media

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Media Types</title>
    <style type = "text/css">
      @media screen
      {
        body { background-color: SteelBlue; }
        h1   { font-family: verdana, helvetica, sans-serif;
              color: PaleGreen; }
        p    { font-size: 12pt;
              color: white;
              font-family: arial, sans-serif; }
      } /*for PC*/
      @media screen and (device-width: 414px) and (device-height: 736px) and (-webkit-device-pixel-ratio: 3)
      {
        body { background-color: pink; }
        h1   { color: SeaGreen; }
        p    { font-size: 14pt;
              color: SteelBlue;
              font-family: "times new roman", times, serif; }
      } /* for iphone 6 plus*/
      @media screen and (device-width: 375px) and (device-height: 667px) and (-webkit-device-pixel-ratio: 2)
      {
        body { background-color: LightGrey ; }
        h1   { color: white; }
        p    { font-size: 14pt;
              color: DarkBlue;
              font-family: "times new roman", times, serif; }
      } /* for iphone 6*/
    </style>
  </head>
  <body>
    <h1>CSS Media Types Example</h1>
    <p>TEST STYLE</p>
  </body>
</html>
```

CSS Media Types Example

TEST STYLE

CSS Media Types Example

TEST STYLE

CSS Media Types Example

TEST STYLE

Media Types and Media Queries

- Common media features
 - **width / height** with max/min prefix
 - the width / height of the part of the screen on which the document is rendered, including any scrollbars
 - **device-width / device-height** with max/min prefix
 - the width / height of the screen of the output device
 - **orientation**
 - if the height is greater than the width, orientation is portrait, and if the width is greater than the height, orientation is landscape
 - **aspect-ratio** with max/min prefix
 - the ratio of width to height
 - **device-aspect-ratio** with max/min prefix
 - the ratio of device-width to device-height

Media Types and Media Queries

- **WebKit** is a layout engine software component for rendering web pages in web browsers. It powers [Apple's Safari](#) web browser and was previously used in [Google's Chrome](#) web browser.

Media Types and Media Queries

- Specific device
 - <http://nmsdvid.com/snippets/>
 - <http://cssmediaqueries.com/target/>
 - <http://stephen.io/mediaqueries/>
 - <https://css-tricks.com/snippets/css/media-queries-for-standard-devices/>
- An example for mobile :

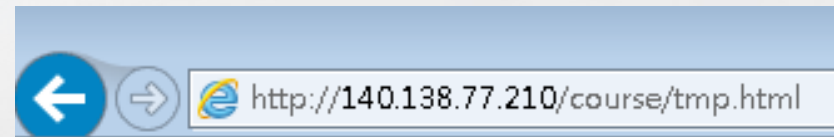
```
@media screen and (min-device-width: 200px) and (max-device-width: 600px)  
/* 200px < device-width < 600px */
```

Browser Detect

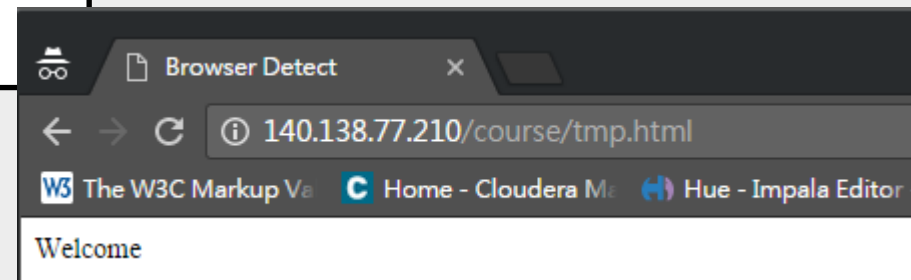
- Use Javascript
 - <http://www.quirksmode.org/js/detect.html>
- Use HTML
 - [https://msdn.microsoft.com/en-us/library/ms537512\(VS.85\).aspx#dlrevealed](https://msdn.microsoft.com/en-us/library/ms537512(VS.85).aspx#dlrevealed)

Browser Detect

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Browser Detect</title>
  </head>
  <body>
    <!--[if IE]> Don't use IE <![endif]-->
    <!--[if !IE]><!--> Welcome <!--<![endif]-->
  </body>
</html>
```



Don't use IE

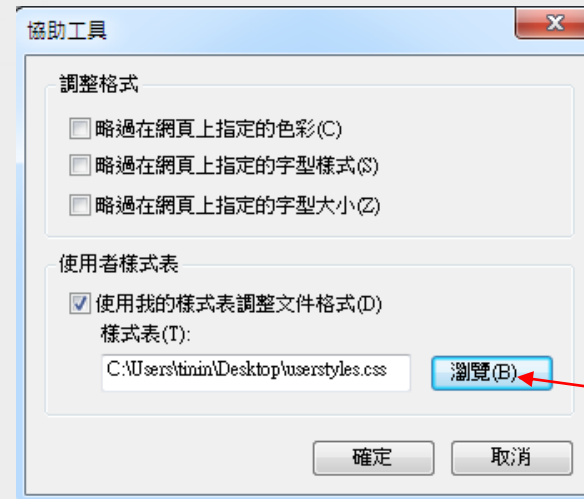
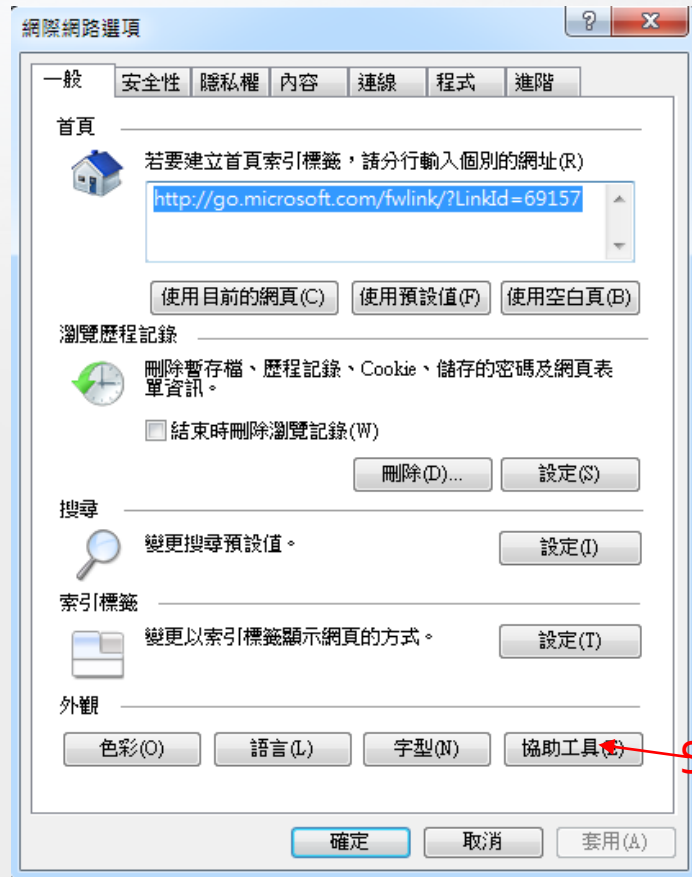


User Style Sheets

- Users can define their own user style sheets to format pages based on their preferences
- Absolute font size measurements override user style sheets, while relative font sizes will yield to a user-defined style
- User style sheets are not linked to a document; rather, they are set in the browser's options

User Style Sheets

- IE



User Style Sheets

- Firefox

The screenshot shows the Firefox 'about:support' page. A red annotation 'Step1: URL = about:support' points to the address bar. Another red annotation 'Step2: click' points to the '開啟資料夾' (Open Folder) button in the '設定檔目錄' (Profile Folder) row of the '應用程式一般資訊' (Application Information) table.

Firefox | about:support

Step1: URL = about:support

疑難排解資訊

此頁面包含技術資訊，可能可以幫您解決一些問題。如果您正在尋找關於 Firefox 的一些常見問題，請看看我們的 [支援網站](#)。

[將原始資料複製到剪貼簿](#) [將文字複製到剪貼簿](#)

還原 Firefox 至出廠狀態

若您遇到了一些沒有辦法解決的問題，您可以保留您最重要的資訊，然後將其他東西還原為出廠時的狀態。

[重設 Firefox...](#)

應用程式一般資訊

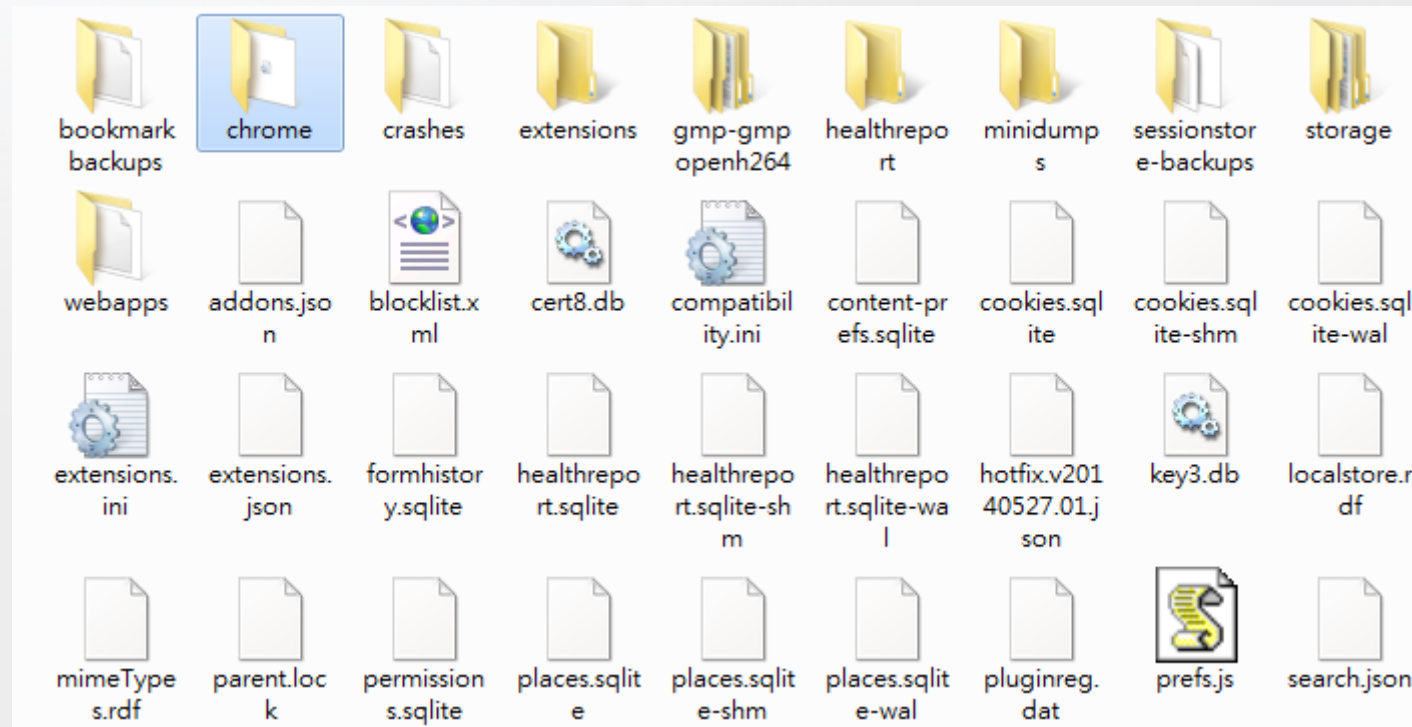
名稱	Firefox
版本	33.0
更新記錄	顯示更新記錄
使用者代理字串 (User Agent)	Mozilla/5.0 (Windows NT 6.1; WOW64; rv:33.0) Gecko/20100101 Firefox/33.0
設定檔目錄	開啟資料夾
已啟用的外掛程式	about:plugins
編譯組態	about:buildconfig
記憶體使用量	about:memory
多程序視窗	0/1

最近 3 天內的錯誤資訊報表

User Style Sheets

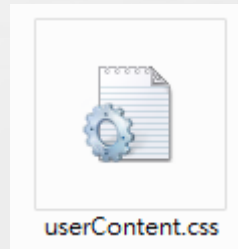
- Firefox

Step3: add the folder "chrome" and then open it



User Style Sheets

- Firefox
 - Step 4:
 - Edit your style sheets and name as "userContent.css"



- Step 5:
 - Reopen Firefox

User Style Sheets

- Chrome :
 - User style sheets support removed in Chrome 33+

User Style Sheets

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>User Styles</title>
    <style type = "text/css">
      .note { font-size: 9pt; }
    </style>
  </head>
  <body>
    <p>Thanks for visiting my website. I hope you enjoy it. </p>
    <p class = "note">Please Note: This site will be
      moving soon. Please check periodically for updates.</p>
  </body>
</html>
```

userstyle.css

```
body { font-size: 20pt;
       color: yellow;
       background-color: Navy; }
```

Thanks for visiting my website. I hope you enjoy it.

Please Note: This site will be moving soon. Please check periodically for updates.

Thanks for visiting my website. I hope you enjoy it.

Please Note: This site will be moving soon. Please check periodically for updates.

User Style Sheets

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>User Styles</title>
    <style type = "text/css">
      .note { font-size: .75em; }
    </style>
  </head>
  <body>
    <p>Thanks for visiting my website. I hope you enjoy it. </p>
    <p class = "note">Please Note: This site will be
      moving soon. Please check periodically for updates.</p>
  </body>
</html>
```

userstyle.css

```
body { font-size: 20pt;
       color: yellow;
       background-color: Navy; }
```

Thanks for visiting my website. I hope you enjoy it.

Please Note: This site will be moving soon. Please check periodically for updates.

Thanks for visiting my website. I hope you enjoy it.

Please Note: This site will be moving soon. Please check periodically for updates.

Q&A