Chapter 2 Introduction to HTML5

簡廷因 Ting-Ying Chien

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Outline

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Introduction

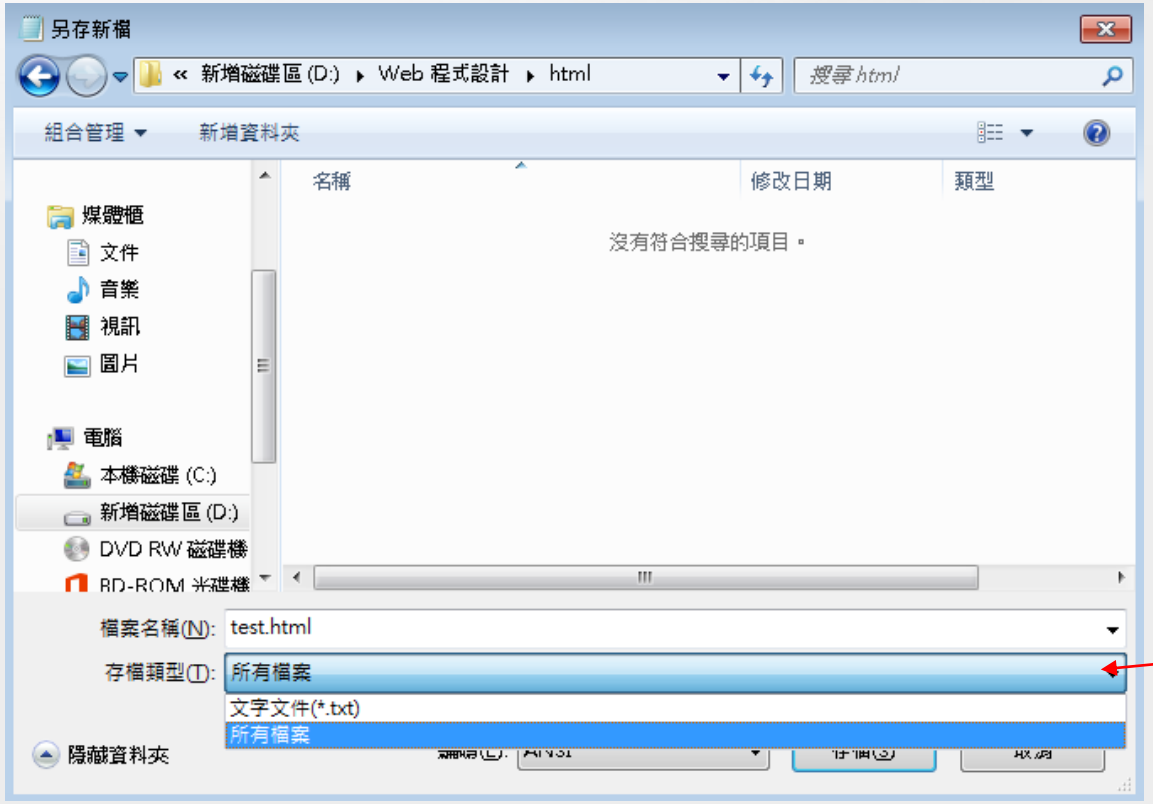
- HTML5 (HyperText Markup Language 5)
  - HTML5 is a markup language that specifies the *structure* and *content* of documents that are displayed in web browsers

Editing HTML5

- Text Editor
  - Free
    - notepad
    - notepad++
    - vim
    - emacs
    - eclipse
    - KompoZer
    - Google Web Designer
  - Commercial software
    - Dreamweaver
    - Ultraedit

Editing HTML5

- Saving it with the `.html` or `.htm` filename extension



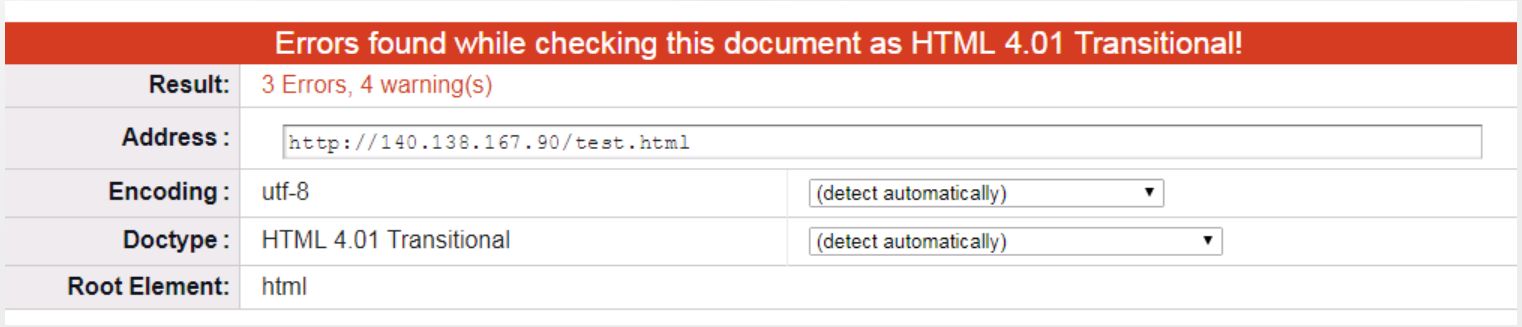
"存檔類型"要改成"所有檔案"

W3C HTML5 Validation Service

- http://validator.w3.org/
  - URL
  - File upload
  - Direct Input

W3C HTML5 Validation Service

- Test
  - http://YOURIP:PORT/test.html



W3C HTML5 Validation Service

- HTML5 documents that contain syntax errors may not display properly

Error-Prevention Tip 2.1

Most browsers attempt to render HTML5 documents even if they're invalid. This can lead to unexpected and undesirable results. Use a validation service, such as the W3C *MarkUp Validation Service*, to confirm that an HTML5 document is syntactically correct.

Another example

Example: main.html

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html lang = "en">
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```

Another example

Example: main.html

Document checking completed. No errors or warnings to show.

Example: test.html

1. **Warning** **Consider adding a `lang` attribute to the `html` start tag to declare the language of this document.**
   From line 1, column 1; to line 1, column 6
   `<html>↩ <h`
   For further guidance, consult Declaring the overall language of a page and Choosing language tags.
   If the HTML checker has misidentified the language of this document, please file an issue report or send e-mail to report the problem.
2. **Error** **Start tag seen without seeing a doctype first. Expected `<!DOCTYPE html>`.**
   From line 1, column 1; to line 1, column 6
   `<html>↩ <h`

Another example

Example: test.html

```
<html>
   <head>
      <meta charset = "utf-8">
      <title> Hello World </title>
   </head>
   <body>
      <p> Hello World!! </p>
   </body>
</html>
```

Example: main.html

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html lang = "en">
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```

DOCTYPE

- Document Type Declaration
  - The document type declaration (DOCTYPE) is required in HTML5 documents so that browsers render the page in standards mode.
  - HTML 5

```
<!DOCTYPE html>
```

  - HTML4

```
<!DOCTYPE HTML PUBLIC "-W3CDTD HTML 4.01 Transitional//EN"
 "http://www.w3.org/TR/html4/loose.dtd">
```

  - Others
    - http://www.w3schools.com/tags/tag_doctype.asp

Comments

- Insert comments in your HTML5 markup to improve readability and describe the content of a document.
- The browser ignores comments when your document is rendered.
- Comments start with <!-- and end with -->.

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html lang = "en">
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```

html, head and body Elements

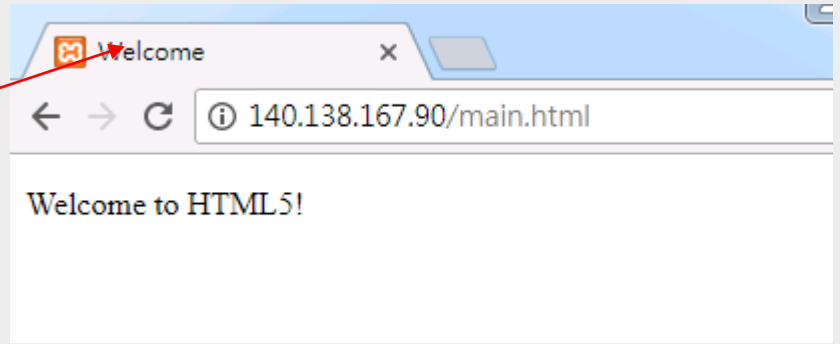
- The *html* element encloses the *head* section (represented by the *head* element) and the *body* section (represented by the *body* element).

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html lang = "en">
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```

html, head and body Elements

- The *head* section contains information about the HTML5 document, such as the character set (UTF-8, the most popular character-encoding scheme for the web) that the page use – which helps the browser determine how to render the content- and the *title*.

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html>
   <head lang = "en">
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```

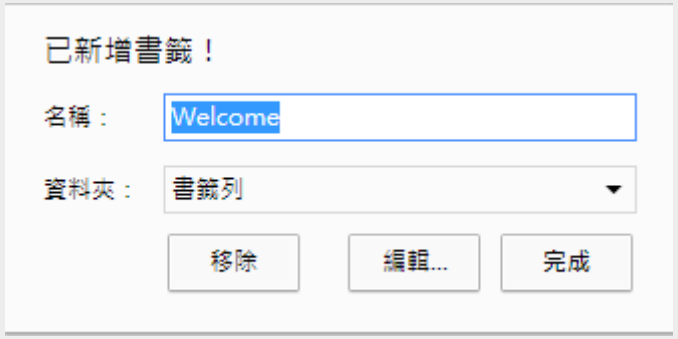


html, head and body Elements

- *Title* Element
  - The *title* element is called a nested element, because it's enclosed in the *head* element's start and end tags.
  - The *head* element is also a nested element, because it's enclosed in the *html* element's start and end tags.
  - The *title* element describes the web page.

html, head and body Elements

- *Title* Element
  - Titles usually appear in the title bar at the top of the browser window, in the browser tab on which the page is displayed, and also as the text identifying a page when users add the page to their list of Favorites or Bookmarks, enabling them to return to their favorite sites.
  - Search engines use the title for indexing purposes and when displaying results



html, head and body Elements

Good Programming Practice 2.1

Although HTML5 element and attribute names are case insensitive (you can use uppercase and lowercase letters), it's a good practice to use only lowercase letters.

Good Programming Practice 2.2

Indenting nested elements emphasizes a document's structure and promotes readability. We use three spaces for each level of indentation.

html, head and body Elements

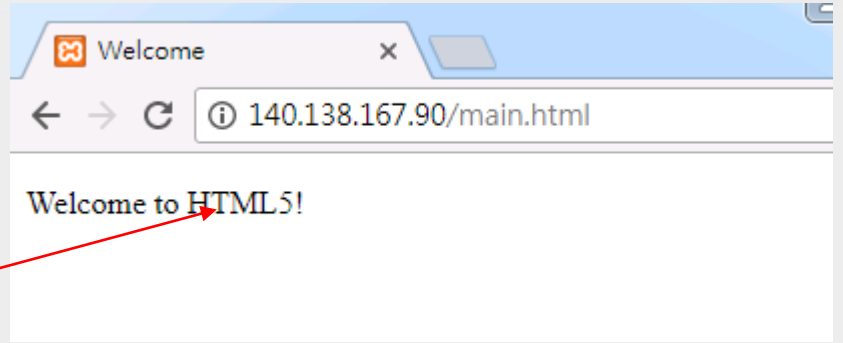
- The *head* section also can contain special document-formatting instructions called CSS3 style sheets and client-side programs called scripts for creating dynamic web pages.

```
<head>
  <meta charset = "utf-8">
  <title>Welcome</title>
  <link rel="stylesheet" type="text/css" media="all" href="test.css" />
  <script type="text/javascript" src="test.js"></script>
</head>
```

html, head and body Elements

- The *body section* contains the page's content, which the browser displays when the user visits the web page.

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```



Start Tags and End Tags

- HTML5 documents delimit most elements with a start tag and end tag.
  - A start tag consists of the element name in angle brackets
    - For example, <html>
  - An end tag consists of the element name preceded by a forward slash (/) in angle brackets
    - For example, </html>

Start Tags and End Tags

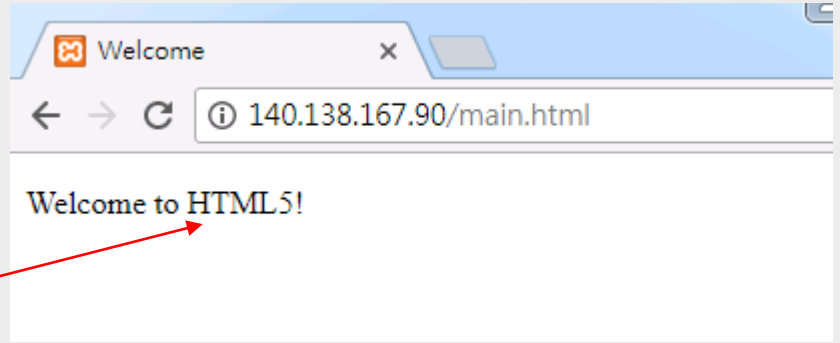
- There are several so-called "void elements" that do not have end tags.
  - Many start tags have attributes that provide additional information about an element, which browsers use to determine how to process the element.
  - Each attribute has a name and a value separated by an equals sign (=).

```
<img src = "buttons/links.jpg" width = "65"  height = "50" alt = "Links">
```

Paragraph Element

- *Paragraph* Element (…)
  - All text placed between the and tags forms one paragraph.

```
<!DOCTYPE html>
<!-- Fig. 2.1: main.html -->
<!-- First HTML5 example. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
   </head>
   <body>
      <p>Welcome to HTML5!</p>
   </body>
</html>
```



Headings

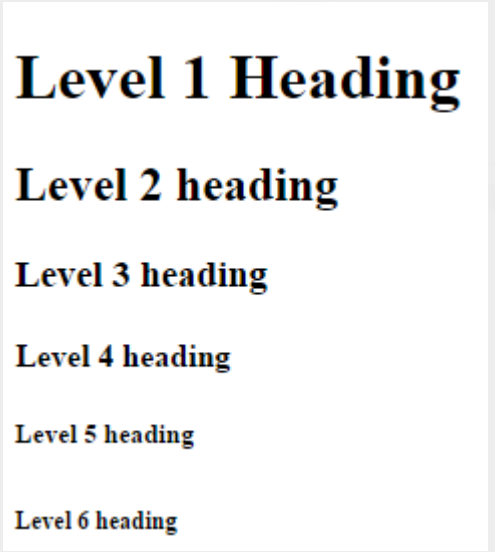
- HTML5 provides six *heading* elements (h1 through h6) for specifying the relative importance of information
  - Heading element h1 is considered the most significant heading and is rendered in the largest font.
  - Each successive heading element (i.e., h2, h3, etc.) is rendered in a progressively smaller font.

Portability Tip 2.1

The text size used to display each heading element can vary between browsers. In Chapter 4, we use CSS to control the text size and other text properties.

Headings

```
<!DOCTYPE html>
<!-- Fig. 2.2: heading.html -->
<!-- Heading elements h1 through h6. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Headings</title>
   </head>
   <body>
      <h1>Level 1 Heading</h1>
      <h2>Level 2 heading</h2>
      <h3>Level 3 heading</h3>
      <h4>Level 4 heading</h4>
      <h5>Level 5 heading</h5>
      <h6>Level 6 heading</h6>
   </body>
</html>
```



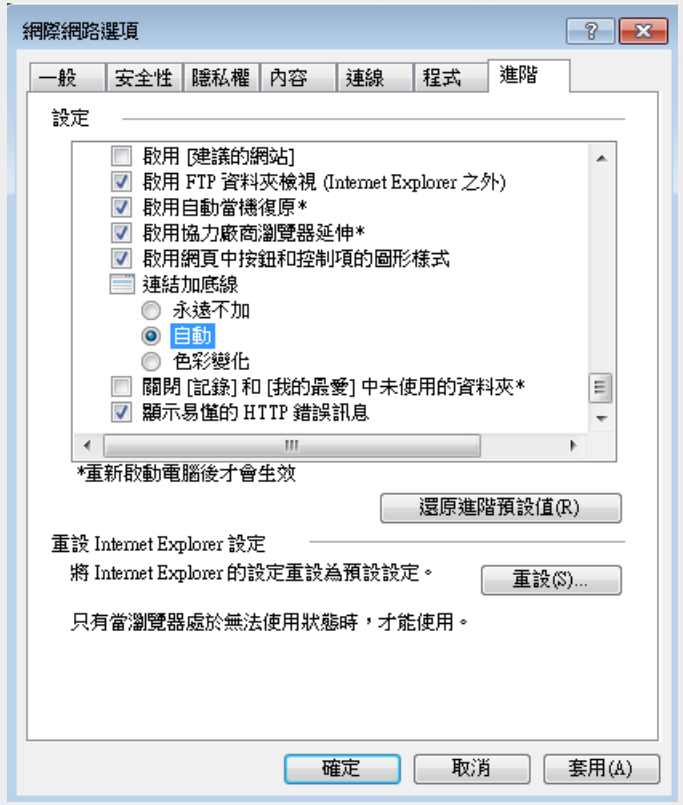
Headings

Look-and-Feel Observation 2.1

Placing a heading at the top of each page helps viewers understand the purpose of the page. Headers also help create an outline for a document and are indexed by search engines.

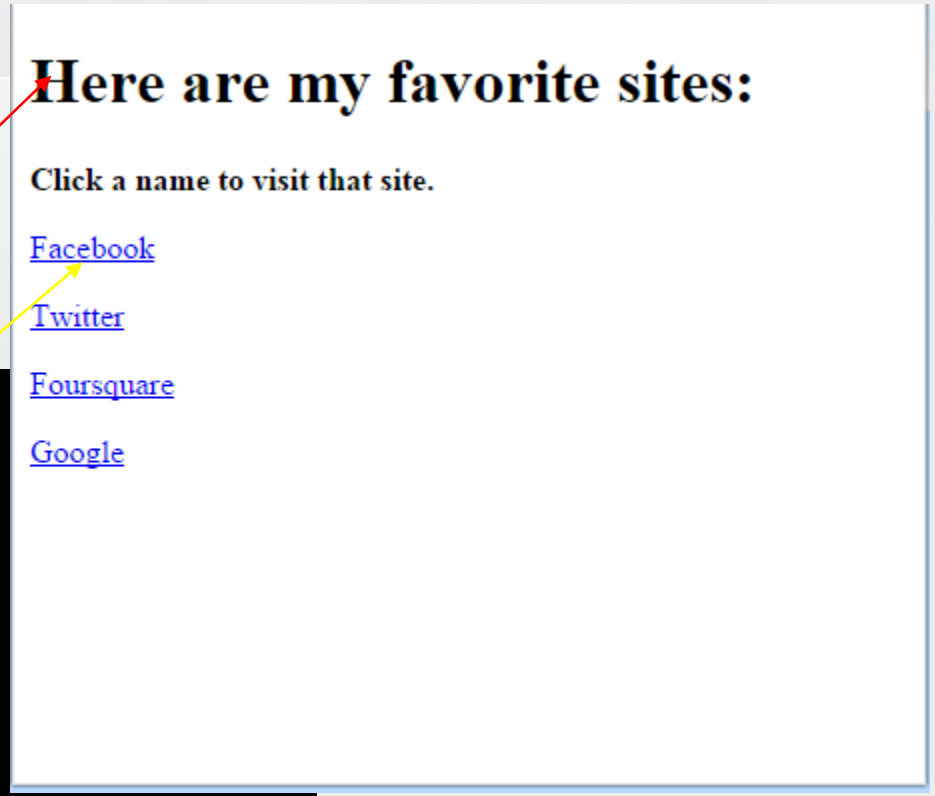
Linking

- A hyperlink references or links to other resources, such as HTML5 documents and images.
- Web browsers typically *underline* text hyperlinks and color them blue by default.



Linking

```
<!DOCTYPE html>

<!-- Fig. 2.3: links.html -->
<!-- Linking to other web pages. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Links</title>
   </head>
   <body>
      <h1>Here are my favorite sites:</h1>
      <p><strong>Click a name to visit that site.</strong></p>
      <!-- create four text hyperlinks -->
      <p><a href = "http://www.facebook.com">Facebook</a></p>
      <p><a href = "http://www.twitter.com">Twitter</a></p>
      <p><a href = "http://www.fourquare.com">Foursquare</a></p>
      <p><a href = "http://www.google.com">Google</a></p>
   </body>
</html>
```



Linking

- *strong* element
  - the content has high importance
  - Browsers typically render such text in a bold font
    - Note :
      - : emphasize
      - <b> : bold font
- *a (anchor)* element
  - Attribute href (hypertext reference) specifies a resource's location, such as
    - a web page or location within a web page
    - a file
    - an e-mail address

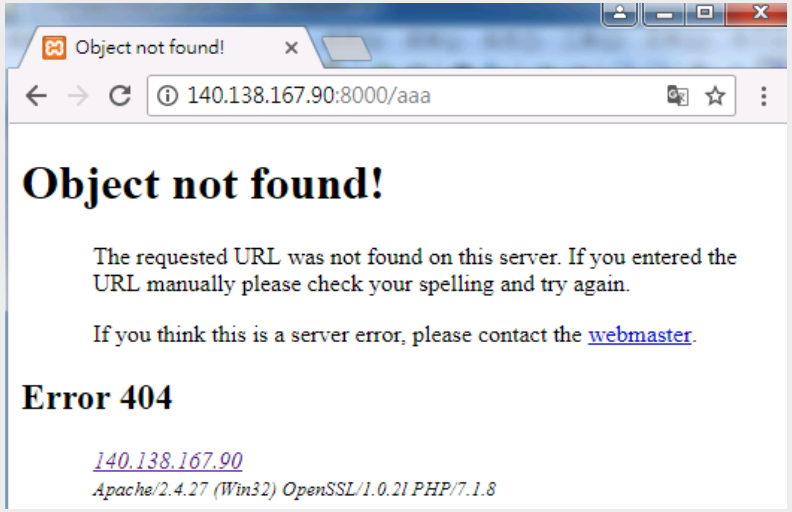
Linking

- When a URL does not indicate a specific document on the website, the web server returns a default web page. This page is often called index.html, but most web servers can be configured to use any file as the default web page for the site.
  - Linux
    - /etc/apache2/mods-enabled/dir.conf
  - Windows
    - INSTALL DIR/conf/httpd.conf

```
<IfModule dir_module>
    DirectoryIndex index.php index.pl index.cgi index.asp index.shtml index.html index.htm \
                   default.php default.pl default.cgi default.asp default.shtml default.html default.htm \
                   home.php home.pl home.cgi home.asp home.shtml home.html home.htm
</IfModule>
```

Linking

- If the web server cannot locate a requested document, it returns an error indication to the web browser (known as a 404 error), and the browser displays a web page containing an error message.



Linking

- Setup 404 Error
  - Windows (Xampp)
    - INSTALL DIR/apache/conf/httpd.conf
    - Add file : INSTALL DIR/htdocs/missing.html
  - Linux (apache)
    - /etc/apache2/conf-available/localized-error-pages.conf
    - Add file : /var/www/html/missing.html

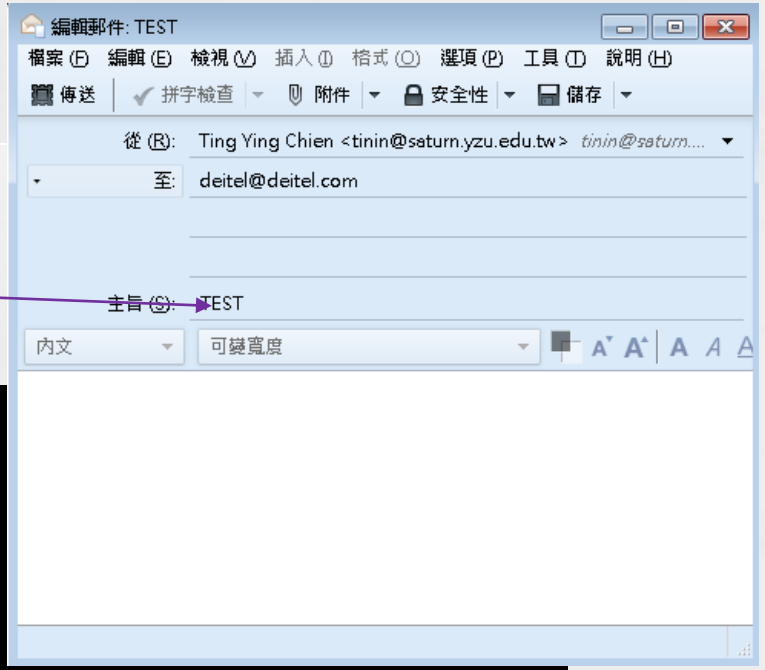
```
~~#ErrorDocument 404 /missing.html~~
ErrorDocument 404 /missing.html

(For XAMPP)
~~Include conf/extra/httpd-multilang-errordoc.conf~~
#Include conf/extra/httpd-multilang-errordoc.conf
```

Linking

- Hyperlinking to an E-Mail Address
  - Anchors can link to an e-mail address using a mailto: URL
    - Add subject : mailto:EMail?subject=TITLE
  - When a user clicks this type of anchored link, most browsers launch the default e-mail program (e.g., Mozilla Thunderbird, Microsoft Outlook or Apple Mail) to enable the user to write an e-mail message to the linked address.

Linking

To write to Deitel & Associates, Inc., click the link and your default email client will open an email message and address it to us.




```
<!DOCTYPE html>
<!-- Fig. 2.4: contact.html -->
<!-- Linking to an e-mail address. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Contact Page</title>
   </head>
   <body>
      <p>
         To write to <a href = "mailto:deitel@deitel.com?subject=TEST">
         Deitel & Associates, Inc.</a>, click the link and your default
         email client will open an email message and address it to us.
      </p>
   </body>
</html>
```

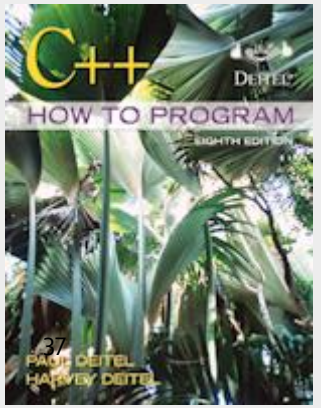
Images

- The most popular image formats used by web developers today are PNG (Portable Network Graphics) and JPEG (Joint Photographic Experts Group).

Images


```
<!DOCTYPE html>
<!-- Fig. 2.6: picture.html -->
<!-- Including images in HTML5 files. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Images</title>
   </head>
   <body>
      <p>
         <img src = "cpphtp.png" width = "92" height = "120"
            alt = "C++ How to Program book cover">
         <img src = "jhtp.png" width = "92" height = "120"
            alt = "Java How to Program book cover">
      </p>
   </body>
</html>
```

cpphtp.png



Images

- The *img* element's *src* attribute specifies an image's location
- Every *img* element must have an *alt* attribute, which contains text that is displayed if the client cannot render the image
- *Width* and *height* are optional attributes
  - If omitted, the browser uses the image's actual width and height
  - Images are measured in pixels

Images

Performance Tip 2.1

Always include the `width` and the `height` of an image in the `<img>` tag so that when the browser loads the HTML5 file, it will know how much screen space to provide and can lay out the page properly, even before it downloads the image. Including the `width` and `height` attributes in an `<img>` tag can help the browser load and render pages faster.

Look-and-Feel Observation 2.2

Entering new dimensions for an image that change its width-to-height ratio distorts the appearance of the image. To avoid distortion, if your image is 200 pixels wide and 100 pixels high, for example, any new dimensions should maintain the 2:1 width-to-height ratio.

Images

- *alt* Attribute
  - A browser may not be able to render an image.
  - Every *img* element in an HTML5 document must have an *alt* attribute.
  - If a browser cannot render an image, the browser displays the *alt* attribute's value.
  - The *alt* attribute is also important for accessibility—speech synthesizer software can speak the alt attribute's value so that a visually impaired user can understand what the browser is displaying. For this reason, the alt attribute should describe the image's contents.

Images

- *Void* Elements
  - Some HTML5 elements (called void elements) contain only attributes and do not mark up text (i.e., text is not placed between a start and an end tag).
  - You can terminate void elements (such as the *img* element) by using the forward slash character (/) inside the closing right angle bracket (>) of the start tag.

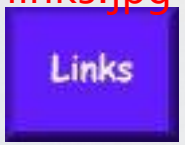
```
<img src = "jhtp.png" width = "92" height = "120"
             alt = "Java How to Program book cover" />
```

Images

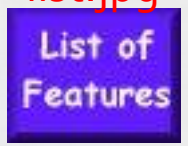
- Using Images as Hyperlinks
  - By using images as hyperlinks, you can create graphical web pages that link to other resources

Images

links.jpg



list.jpg



contact.jpg

table.jpg

form.jpg


```
<!DOCTYPE html>
<!-- Fig. 2.7: nav.html -->
<!-- Images as link anchors. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Navigation Bar</title>
   </head>
   <body>
      <p>
         <a href = "links.html">
            <img src = "links.jpg" width = "65" height = "50" alt = "Links">
         </a>
         <a href = "list.html">
            <img src = "list.jpg" width = "65" height = "50" alt = "List of Features">
         </a>
         <a href = "contact.html">
            <img src = "contact.jpg" width = "65" height = "50" alt = "Contact Me">
         </a>
         <a href = "table1.html">
            <img src = "table.jpg" width = "65" height = "50" alt = "Tables Page">
         </a>
         <a href = "form.html">
            <img src = "form.jpg" width = "65" height = "50" alt = "Feedback Form">
         </a>
      </p>
   </body>
</html>
```

Special Characters and Horizontal Rules

- HTML5 provides character entity references (in the form &code;) for representing special characters that cannot be rendered otherwise
- The code can be:
  - Word abbreviations
  - Numbers
    - Decimal
    - Hexadecimal

Special Characters and Horizontal Rules

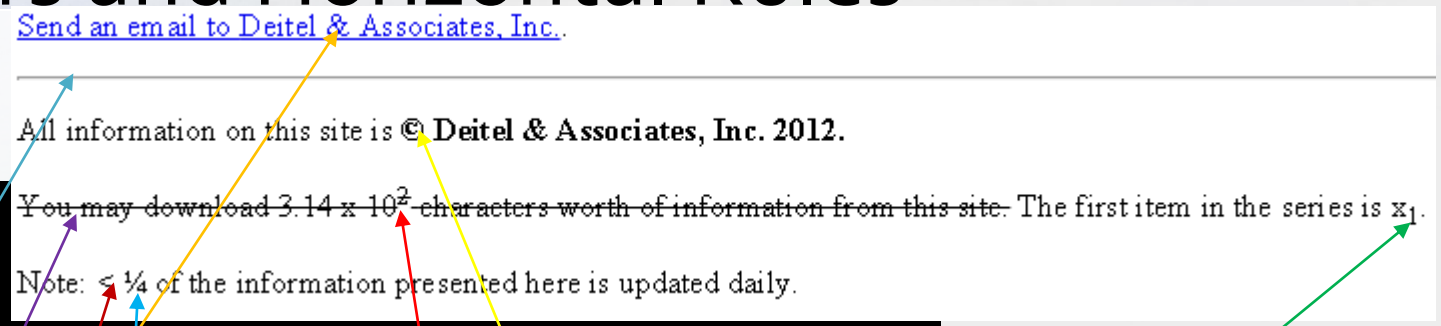
Symbol	Description	Character entity reference
HTML5 character entities		
&	ampersand	`&`
'	apostrophe	`&apos;`
>	greater-than	`>`
<	less-than	`<`
"	quote	`&quot;`
Other common character entities		
non-breaking space		` `
©	copyright	`&copy;`
—	em dash	`&mdash;`
–	en dash	`&ndash;`
¼	fraction 1/4	`&frac14;`
½	fraction 1/2	`&frac12;`

Special Characters and Horizontal Rules

- Ref:
  - http://www.w3.org/TR/REC-html40/sgml/entities.html

Symbol	Description	Character entity reference
¾	fraction 3/4	`&frac34;`
…	horizontal ellipsis	`&hellip;`
®	registered trademark	`&reg;`
§	section	`&sect;`
™	trademark	`&trade;`

Special Characters and Horizontal Rules




```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>Contact Page</title>
   </head>
   <body>
      <p>
         <a href = "mailto:deitel@deitel.com">Send an email to
         Deitel &amp;amp; Associates, Inc.</a>.
      </p>
      <hr>
      <p>All information on this site is <strong>&amp;copy;
         Deitel & Associates, Inc. 2012.</strong> </p>
      <p><del>You may download 3.14 x 10<sup>2</sup>
         characters worth of information from this site.</del>
         The first item in the series is x<sub>1</sub>.</p>
      <p>Note: &amp;lt; &amp;frac14; of the information
         presented here is updated daily.</p>
   </body>
</html>
```

<hr> 水平線
<del> 刪除線
<sup> 上標
<sub> 下標

Special Characters and Horizontal Rules

- A *horizontal rule*, indicated by the *<hr>* tag renders a horizontal line with extra space above and below it in most browsers.
- The *horizontal rule* element should be considered a legacy element and you should avoid using it.
- CSS can be used to add horizontal rules and other formatting to documents.

Lists

- Unordered list element *ul*
  - creates a list in which each item in the list begins with a bullet symbol (typically a disc)
  - Each entry is an *li* (list item) element. Most web browsers render these elements with a line break and a bullet symbol at the beginning of the line.

Lists

```
<!DOCTYPE html>
<!-- Fig. 2.10: links2.html -->
<!-- Unordered list containing hyperlinks. -->
<html>
   <head>
      <meta charset = "utf-8">
      <title>Links</title>
   </head>
   <body>
      <h1>Here are my favorite sites</h1>
      <p><strong>Click on a name to go to that page</strong></p>
      <!-- create an unordered list -->
      <ul>
         <!-- the list contains four list items -->
         <li><a href = "http://www.youtube.com">YouTube</a></li>
         <li><a href = "http://www.wikipedia.org">Wikipedia</a></li>
         <li><a href = "http://www.amazon.com">Amazon</a></li>
         <li><a href = "http://www.linkedin.com">LinkedIn</a></li>
       </ul>
   </body>
</html>
```

Lists

- Nested Lists
  - Lists may be nested to represent hierarchical relationships, as in a multi-level outline.
  - The ordered-list element *ol* creates a list in which each item begins with a number.

Lists

```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>Lists</title>
   </head>
   <body>
      <h1>The Best Features of the Internet</h1>
      <ul>
         <li>You can meet new people from countries around
            the world.</li>
         <li>
            You have access to new media as it becomes public:
            <ul>
               <li>New games</li>
               <li>New applications
                  <ol>
                     <li>For business</li>
                     <li>For pleasure</li>
                  </ol>
               </li>
               <li>Around the clock news</li>
               <li>Search engines</li>
               <li>Shopping</li>
               <li>Programming
                  <ol>
                     <li>XML</li>
                     <li>Java</li>
                     <li>HTML5</li>
                     <li>JavaScript</li>
                     <li>New languages</li>
                  </ol>
               </li>
            </ul>
         </li>
         <li>Links</li>
         <li>Keeping in touch with old friends</li>
         <li>It's the technology of the future!</li>
      </ul>
   </body>
</html>
```

The Best Features of the Internet

- You can meet new people from countries around the world.
- You have access to new media as it becomes public:
  - New games
  - New applications
    1. For business
    2. For pleasure
  - Around the clock news
  - Search engines
  - Shopping
  - Programming
    1. XML
    2. Java
    3. HTML5
    4. JavaScript
    5. New languages
- Links
- Keeping in touch with old friends
- It's the technology of the future!

Exercises

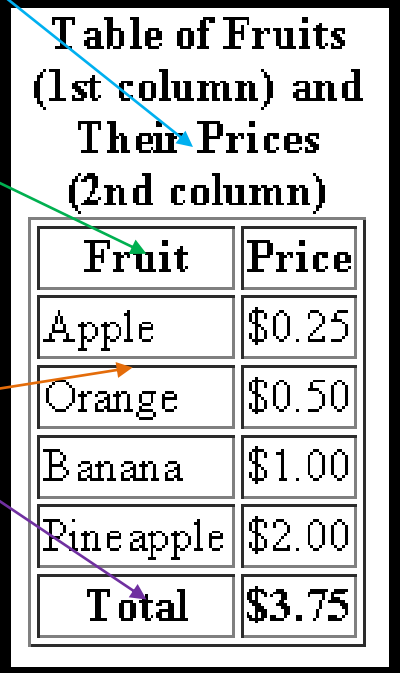
- https://validator.w3.org/

- 學歷
  1. xx國小
     - 20xx.09 ~ 20xx.06
  2. xx國中
     - 20xx.09 ~ 20xx.06
  3. xx高中
     - 20xx.09 ~ 20xx.06
  4. 元智大學
     - 20xx.09 ~ 20xx.06
- 經歷
  1. 2013.09 ~ 2013.12 xxxx
  2. 2014.01 ~ 2014.03 xxxx
  3. 2014.04 ~ 2014.06 xxxx

Tables

- Tables are frequently used to organize data into rows and columns.
- The *table* element defines an HTML5 table
- The *summary* attribute summarizes the table's contents and is used by speech devices to make the table more accessible to users with visual impairments.
- The *caption* element specifies a table's title.

```html
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>A simple HTML5 table</title>
   </head>
   <body>
      <table border = "1">
         <caption><strong>Table of Fruits (1st column) and Their Prices (2nd column)</strong></caption>
         <thead>
            <tr>
               <th>Fruit</th>
               <th>Price</th>
            </tr>
         </thead>
         <tfoot>
            <tr>
               <th>Total</th>
               <th>$3.75</th>
            </tr>
         </tfoot>
         <tbody>
            <tr>
               <td>Apple</td>
               <td>$0.25</td>
            </tr>
            <tr>
               <td>Orange</td>
               <td>$0.50</td>
            </tr>
            <tr>
               <td>Banana</td>
               <td>$1.00</td>
            </tr>
            <tr>
               <td>Pineapple</td>
               <td>$2.00</td>
            </tr>
         </tbody>
      </table>
   </body>
</html>
```



Tables

- A table can be split into three distinct sections:
  - Head (*thead* element)
    - Table titles
    - Column headers
  - Body (*tbody* element)
    - Primary table data
  - Table Foot (*tfoot* element)
    - Calculation results
    - Footnotes
    - Above body section in the code, but displays at the bottom in the page

Tables

- *tr* Element
  - Defines individual table rows
- *th* Element
  - Defines a header cell
  - Most Web browsers change the font weight to bold and center the content in a <*th*> cell.
- *td* Element
  - Contains table data elements

Tables

- Using *rowspan* and *colspan* with Tables
  - You can merge data cells with the *rowspan* and *colspan* attributes
    - The values of these attributes specify the number of rows or columns occupied by the cell.
    - Can be placed inside any data cell or table header cell.
  - The *br* element is render as a line break in most browsers - any markup or text following a *br* element is rendered on the next line.
    - Like the *img* element, *br* is an example of a void element.
    - Like the *hr* element, *br* is considered a legacy formatting element that you should avoid using
      - in general, formatting should be specified using CSS.

Tabl

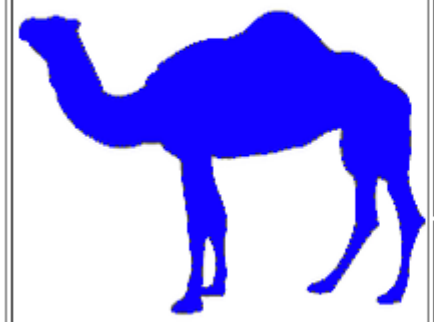
```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>Tables</title>
   </head>
   <body>
      <h1>Table Example: Spanning Rows and Columns</h1>
      <table border = "1">
         <caption>A more complex sample table</caption>
         <thead>
            <tr>
               <th rowspan = "2">
                  <img src = "camel.png" width = "205"
                     height = "167" alt = "Picture of a one-hump camel">
               </th>
               <th colspan = "4">
                  <strong>Camelid comparison</strong><br>
                  Approximate as of 6/2011
               </th>
            </tr>
            <tr>
               <th># of humps</th>
               <th>Indigenous region</th>
               <th>Spits?</th>
               <th>Produces wool?</th>
            </tr>
         </thead>
         <tbody>
            <tr>
               <th>Camels (bactrian)</th>
               <td>2</td>
               <td>Africa/Asia</td>
               <td>Yes</td>
               <td>Yes</td>
            </tr>
            <tr>
               <th>Llamas</th>
               <td>1</td>
               <td>Andes Mountains</td>
               <td>Yes</td>
               <td>Yes</td>
            </tr>
         </tbody>
      </table>
   </body>
</html>
```

2

4

Table Example: Spanning Rows and Columns

A more complex sample table



	Camelid comparison Approximate as of 6/2011			
	# of humps	Indigenous region	Spits?	Produces wool?
Camels (bactrian)	2	Africa/Asia	Yes	Yes
Llamas	1	Andes Mountains	Yes	Yes

Tables

- Merge
  - 4, 8
  - 6, 7, 10, 11
  - 12 , 16, 20
  - 13, 14

Step 1:
將表格從左至右、上至下編號

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20

Step 2:
紀錄合併的格子編號(按順序)

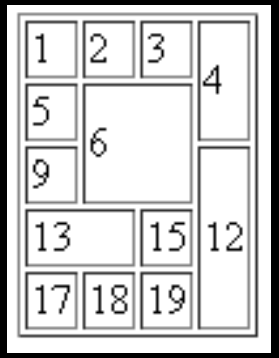
Step 3:
合併的格子保留最小編號

1	2	3	4
5	6		
9			12
13		15	
17	18	19	

Step 4:
從1開始編格子

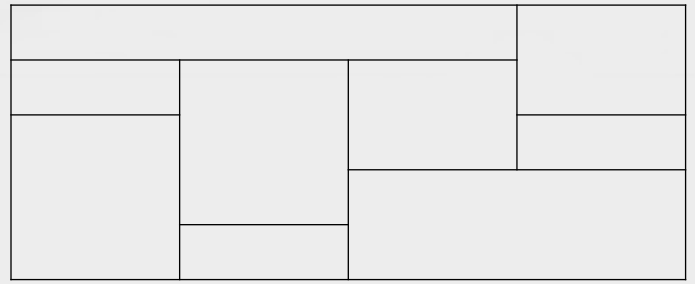
Step 5:
碰到合併的就設定
rowspan跟colspan

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Table</title>
  </head>
  <body>
    <table border = "1">
    <tr>
        <td>1</td>
        <td>2</td>
        <td>3</td>
        <td rowspan="2">4</td>
    </tr>
    <tr>
        <td>5</td>
        <td rowspan="2" colspan="2">6</td>
    </tr>
    <tr>
        <td>9</td>
        <td rowspan="3">12</td>
        </tr>
    <tr>
        <td colspan="2">13</td>
        <td>15</td>
    </tr>
    <tr>
        <td>17</td>
        <td>18</td>
        <td>19</td>
    </tr>
    </table>
  </body>
</html>
```



Exercises

- Hint :
  - `<table border = "1" width=400 height= 250>`



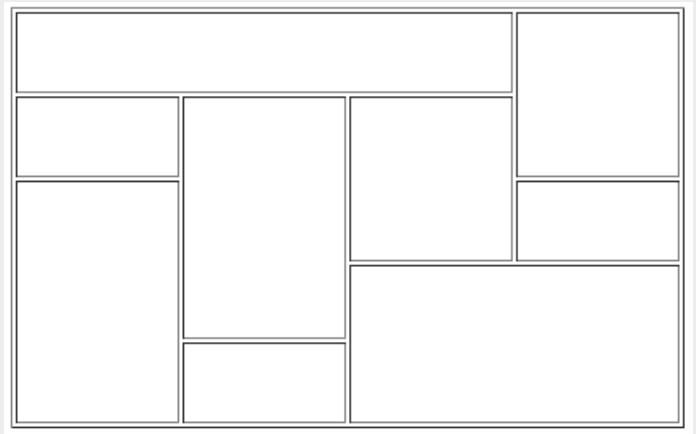
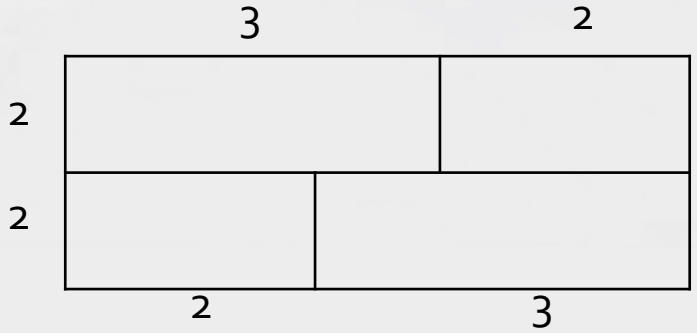
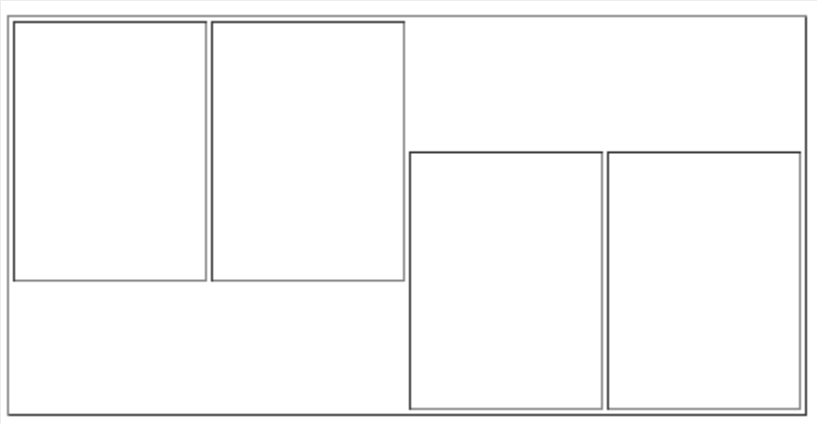


Table rowspan

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Table</title>
  </head>
  <body>
    <table border = "1" width=400 height= 200>
       <tr>
           <td rowspan = "2" colspan = "3" ></td>
           <td rowspan = "2" colspan = "2" ></td>
       </tr>
       <tr>
           <td rowspan = "2" colspan = "2" ></td>
           <td rowspan = "2" colspan = "3" ></td>
       </tr>
    </table>
  </body>
</html>
```



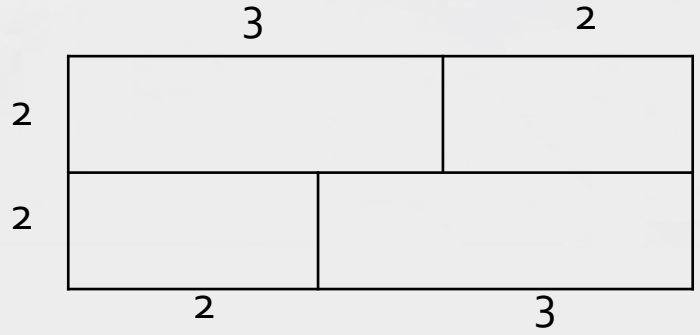


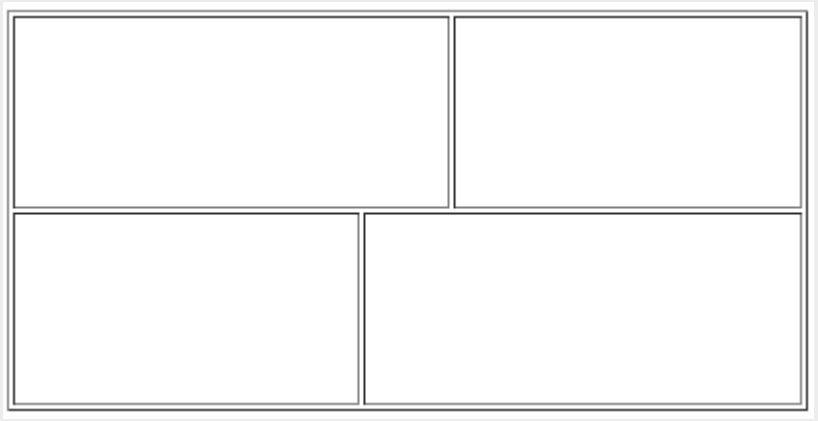
ERROR!! WHY?

Table rowspan

- How to fix ?

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Table</title>
  </head>
  <body>
    <table border = "1" width=400 height= 200>
       <tr>
           <td rowspan = "2" colspan = "3" ></td>
           <td rowspan = "2" colspan = "2" ></td>
       </tr>
       <tr></tr>
       <tr>
           <td rowspan = "2" colspan = "2" ></td>
           <td rowspan = "2" colspan = "3" ></td>
       </tr>
       <tr></tr>
    </table>
  </body>
</html>
```





Tables

- Merge
  - 1,2,3,6,7, 8
  - 4, 5, 9,10
  - 11,12,16,17
  - 13, 14, 15,18,19,20

Step 1:
將表格從左至右、上至下編號

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

Step 2:
紀錄合併的格子編號(按順序)

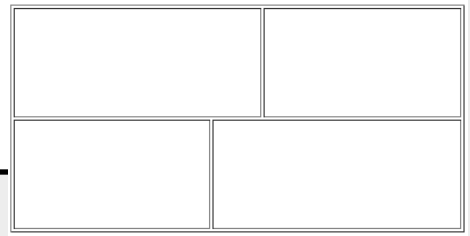
Step 3:
合併的格子保留最小編號

1		4
11		13

Step 4:
從1開始編格子

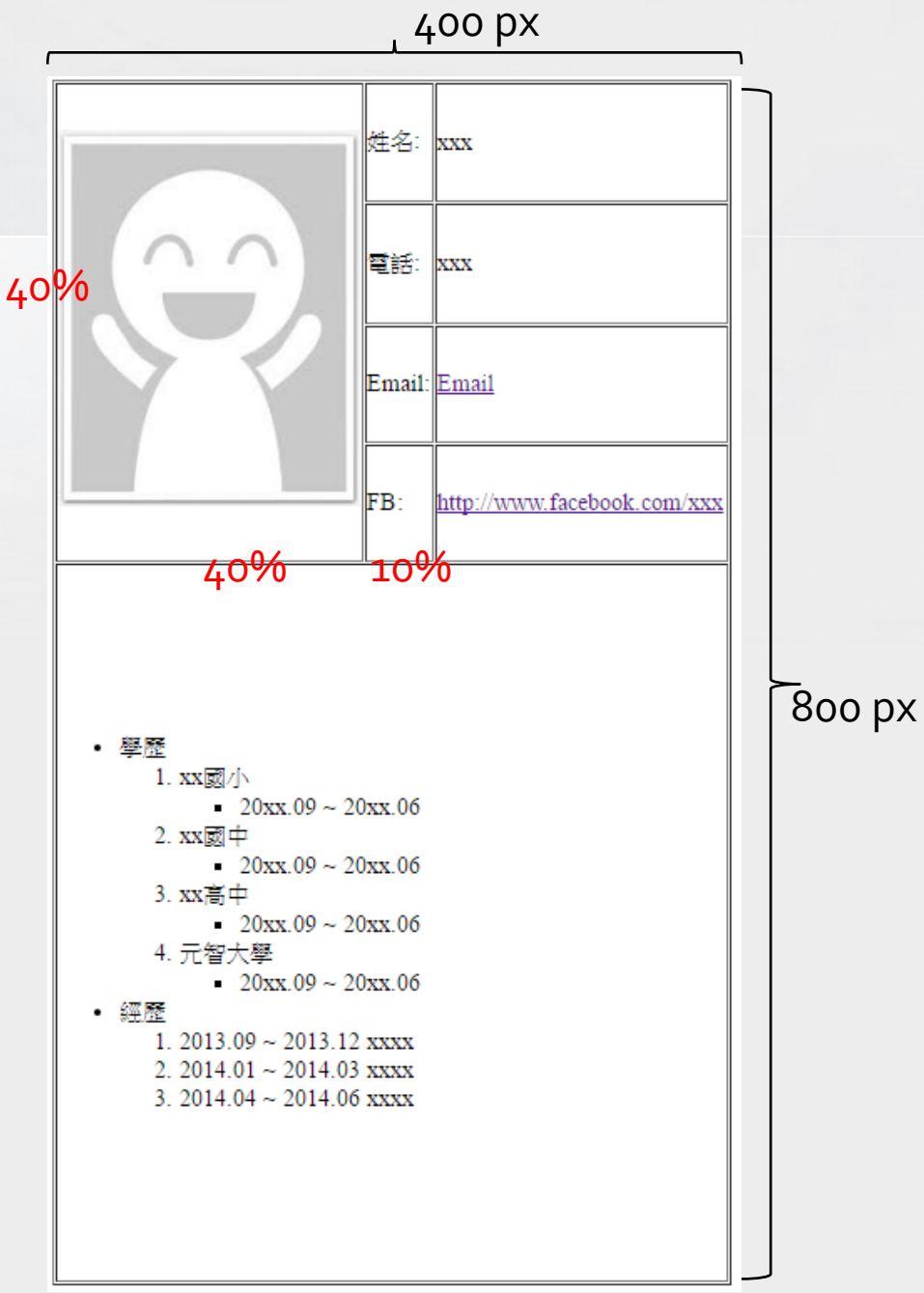
Step 5:
碰到合併的就設定
rowspan跟colspan

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Table</title>
  </head>
  <body>
    <table border = "1" width=400 height= 200>
        <tr>
            <td rowspan = "2" colspan = "3" ></td>
            <td rowspan = "2" colspan = "2" ></td>
        </tr>
        <tr></tr>
        <tr>
            <td rowspan = "2" colspan = "2" ></td>
            <td rowspan = "2" colspan = "3" ></td>
        </tr>
        <tr></tr>
    </table>
  </body>
</html>
```



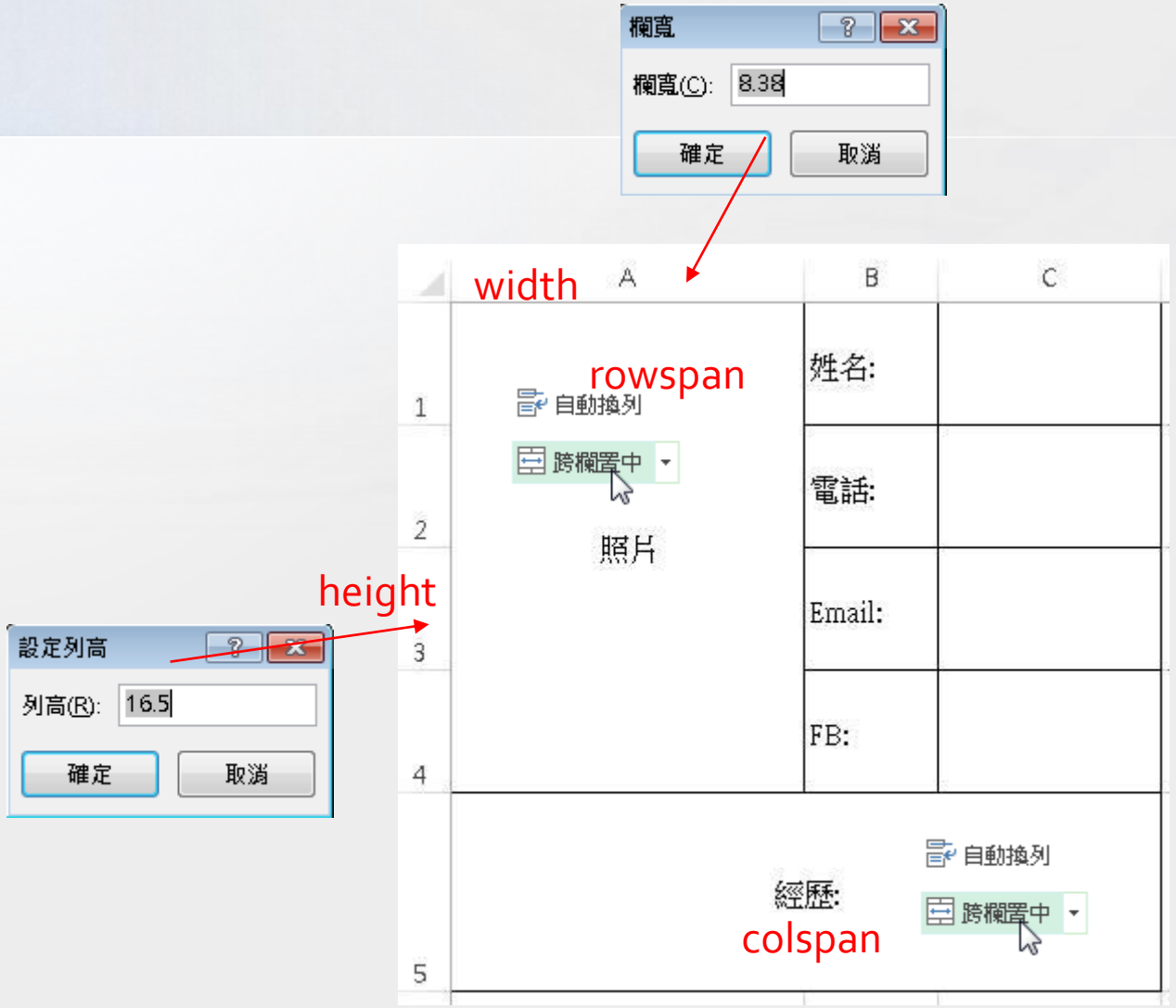
Exercise

- Curriculum Vitae



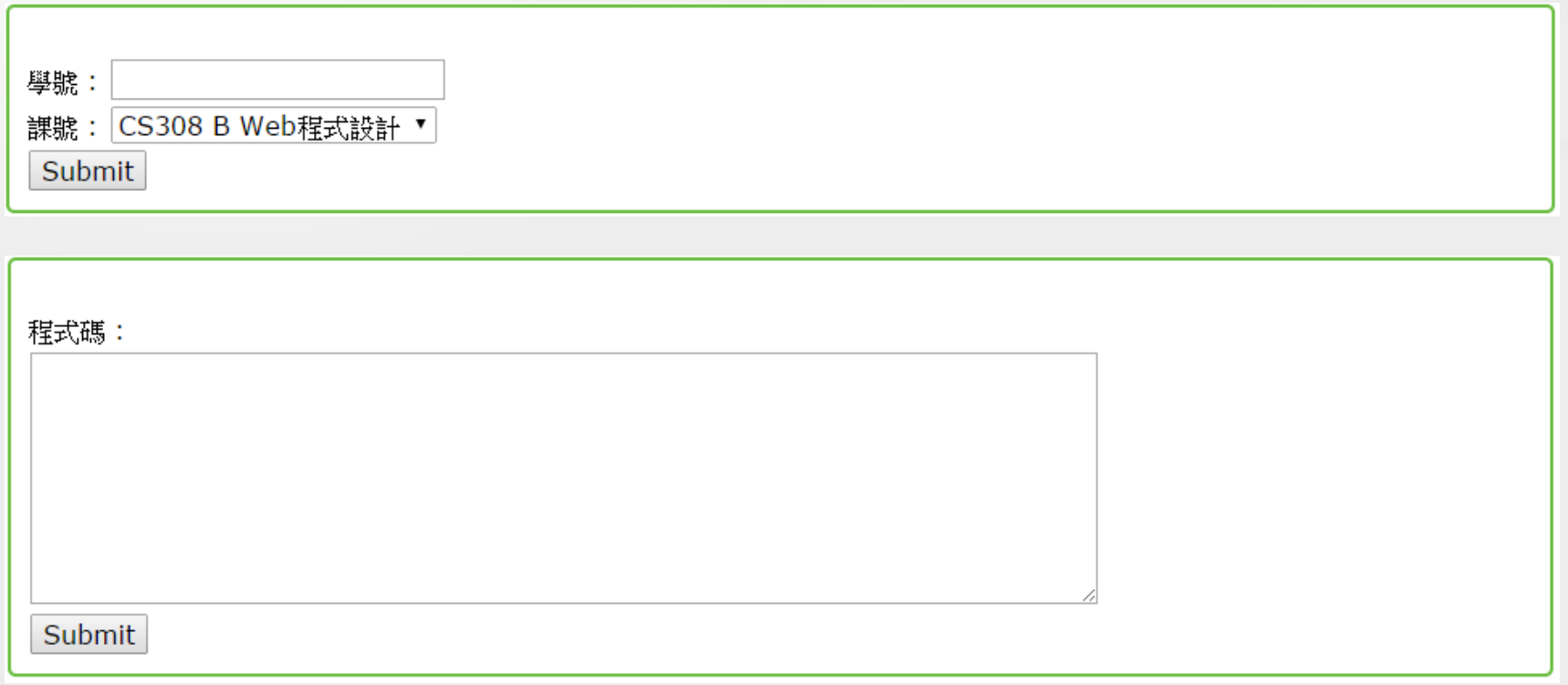
Exercise

- Curriculum Vitae
  - Hint:



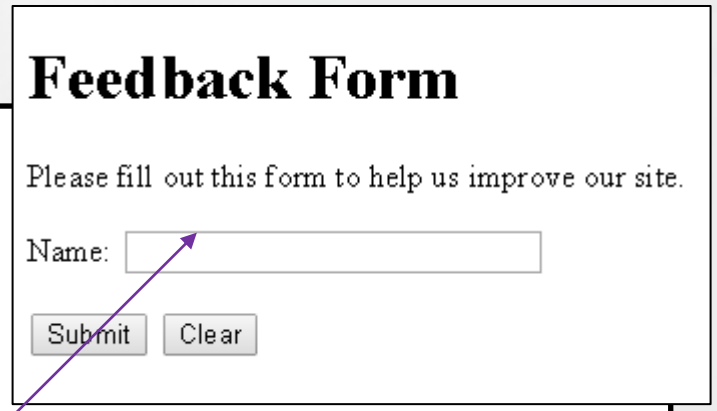
Form

- HTML5 provides *forms* for collecting information from users.



Form

```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>Forms</title>
   </head>
   <body>
      <h1>Feedback Form</h1>
      <p>Please fill out this form to help us improve our site.</p>
      <form method = "post" action = "http://www.deitel.com">
         <input type = "hidden" name = "recipient" value = "deitel@deitel.com">
         <input type = "hidden" name = "subject" value = "Feedback Form">
         <input type = "hidden" name = "redirect" value = "main.html">
         <p><label>Name:
            <input name = "name" type = "text" size = "25"
               maxlength = "30">
            </label></p>
         <p>
            <input type = "submit" value = "Submit">
            <input type = "reset" value = "Clear">
         </p>
      </form>
   </body>
</html>
```



傳值方式及接收位置

純粹傳值, 網頁上不顯示

送出表格

清除表格

Form

- A form is defined by a *form* element
  - Attribute *method* specifies how the form's data is sent to the web server.
  - Using method = "post" appends form data to the browser request, which contains the protocol (HTTP) and the requested resource's URL.
  - The other possible value, method = "get", appends the form data directly to the end of the URL of the script, where it's visible in the browser's Address field.
  - The *action* attribute of the form element specifies the script to which the form data will be sent

Form

- Ref:
  - http://www.wibibi.com/info.php?tid=235

	GET	POST
網址差異	網址會帶有 HTML Form 表單的參數與資料。	資料傳遞時，網址並不會改變。
資料傳遞量	由於是透過 URL 帶資料，所以有長度限制。	由於不透過 URL 帶參數，所以不受限於 URL 長度限制。
安全性	表單參數與填寫內容可在 URL 看到。	透過 HTTP Request 方式，故參數與填寫內容不會顯示於 URL。

https://portalx.yzu.edu.tw/PortalSocialVB/FMain/PostWall.aspx?Menu=User&UserAccount=xxxx

Form

- *input* elements that specify data to provide to the script that processes the form (also called the form handler).
- An input's type is determined by its type attribute.

```
<input type = "hidden" name = "recipient" value = "deitel@deitel.com">
<input type = "text" name = "name" size = "25" maxlength = "30">
<input type = "submit" value = "Submit">
<input type = "reset" value = "Clear">
```

Form

- *Hidden* Inputs
  - Forms can contain visual and nonvisual components.
  - Visual components include clickable buttons and other graphical user interface components with which users interact.
  - Nonvisual components, called *hidden* inputs, store any data that you specify, such as e-mail addresses and HTML5 document file names that act as links.

Form

- The *text* input inserts a text field into the form, which allows the user to input data.
- The *label* element provides users with information about the input element's purpose
- The *size* attribute specifies the number of characters visible in the text field.
- Optional attribute *maxlength* limits the number of characters input into a text field.

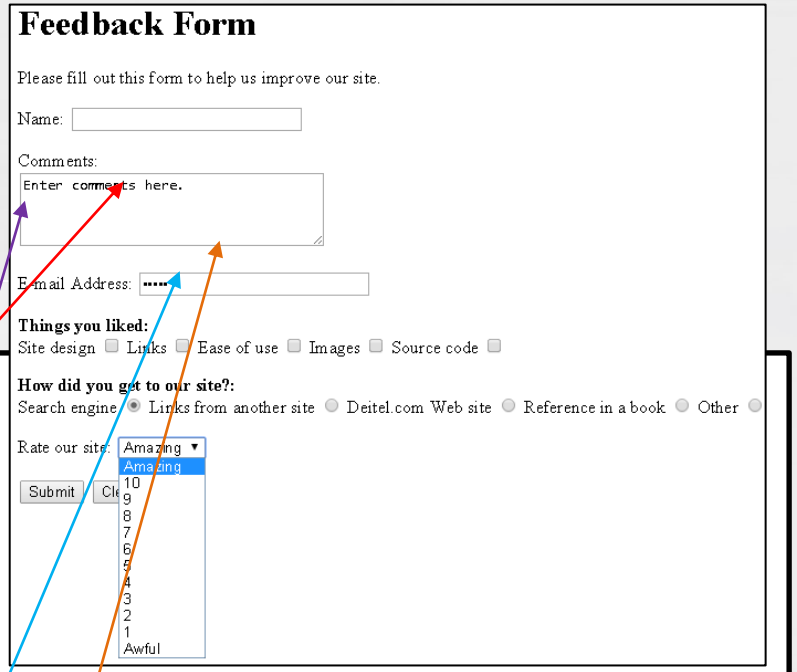
```
<label>Name:
<input name = "name" type = "text" size = "25" maxlength = "30">
</label>
```

Form

- The *submit* input element is a button.
  - When the submit button is pressed, the form's data is sent to the location specified in the form's action attribute.
  - The *value* attribute sets the text displayed on the button.
- The *reset* input element allows a user to reset all form elements to their default values.

```
<input type = "submit" value = "Submit">
<input type = "reset" value = "Clear">
```

Form

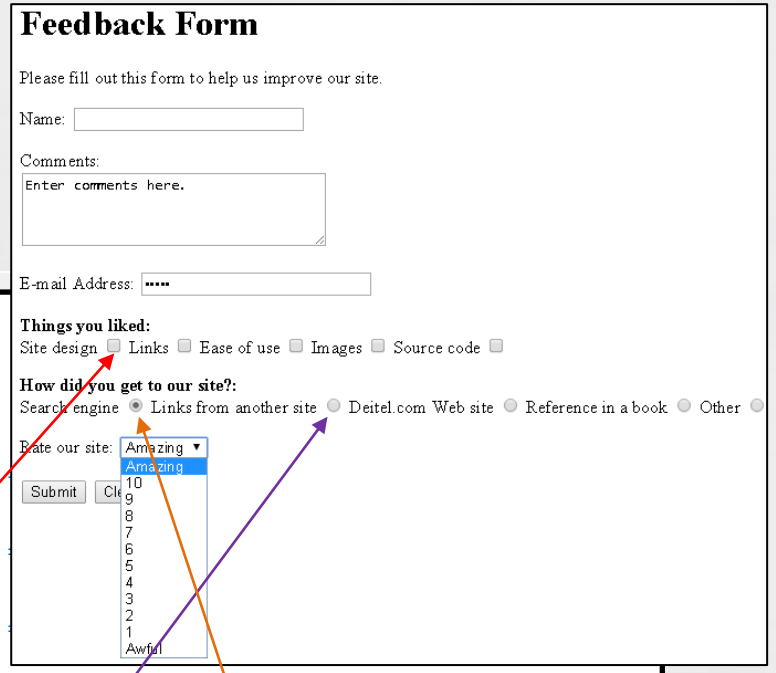



```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>More Forms</title>
   </head>
   <body>
      <h1>Feedback Form</h1>
      <p>Please fill out this form to help us improve our site.</p>

      <form method = "post" action = "http://www.deitel.com">
         <input type = "hidden" name = "recipient" value = "deitel@deitel.com">
         <input type = "hidden" name = "subject"  value = "Feedback Form">
         <input type = "hidden" name = "redirect" value = "main.html">

         <p><label>Name:
               <input name = "name" type = "text" size = "25">
            </label></p>

         <p><label>Comments:<br>
            <textarea name = "comments" rows = "4" cols = "36">Enter comments here.</textarea>
         </label></p>

         <p><label>E-mail Address:
            <input name = "email" type = "password"  size = "25">
         </label></p>
```

總共幾列, 一列幾個字

輸入的字變

Form



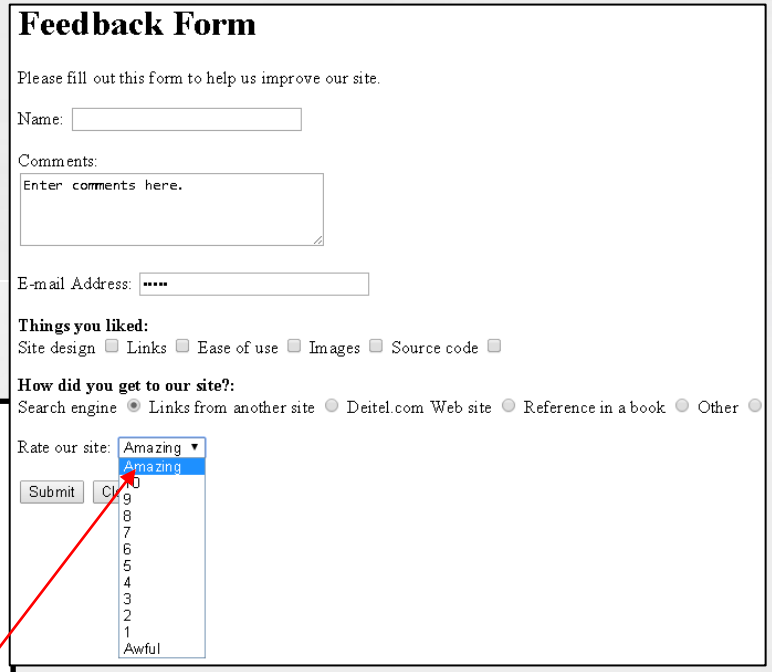

```
<p>
   <strong>Things you liked:</strong><br>

   <label>Site design
      <input name = "thingsliked" type = "checkbox" value
   <label>Links
      <input name = "thingsliked" type = "checkbox" value
   <label>Ease of use
      <input name = "thingsliked" type = "checkbox" value
   <label>Images
      <input name = "thingsliked" type = "checkbox" value = "Images"></label>
   <label>Source code
      <input name = "thingsliked" type = "checkbox" value = "Code"></label>
</p>

<p>
   <strong>How did you get to our site?:</strong><br>
   <label>Search engine
      <input name = "howtosite" type = "radio" value = "search engine" checked></label>
   <label>Links from another site
      <input name = "howtosite" type = "radio" value = "link"></label>
   <label>Deitel.com Web site
      <input name = "howtosite" type = "radio" value = "deitel.com"></label>
   <label>Reference in a book
      <input name = "howtosite" type = "radio" value = "book"></label>
   <label>Other
      <input name = "howtosite" type = "radio" value = "other"></label>
</p>
```

checkbox:多選
radio :單選
同group同name

預設值

Form

```
        <p>
            <label>Rate our site:
                <select name = "rating">
                    <option selected>Amazing</option>
                    <option>10</option>
                    <option>9</option>
                    <option>8</option>
                    <option>7</option>
                    <option>6</option>
                    <option>5</option>
                    <option>4</option>
                    <option>3</option>
                    <option>2</option>
                    <option>1</option>
                    <option>Awful</option>
                </select>
            </label>
        </p>
        <p>
            <input type = "submit" value = "Submit">
            <input type = "reset" value = "Clear">
        </p>
    </form>
  </body>
</html>
```



Form

- The *password* input inserts a password box into a form.
  - Allows users to enter sensitive information, such as credit card numbers and passwords, by "masking" the information input with another character, usually asterisks.
  - The actual value input is sent to the web server, not the asterisks that mask the input.

Form

- The *checkbox* input element enables users to select and option.
  - When the checkbox is selected, a check mark appears in the checkbox . Otherwise, the checkbox is empty
  - checkboxes can be used individually and in groups. checkboxes that are part of the same group have the same name
- *radio* buttons are similar to checkboxes, except that only one radio button in a group can be selected at any time.
  - All radio buttons in a group have the same name attribute but different value attributes.
- The *select* input provides a drop-down list of items.
  - The *name* attribute identifies the drop-down list.
  - The *option* element adds items to the drop-down list

Form

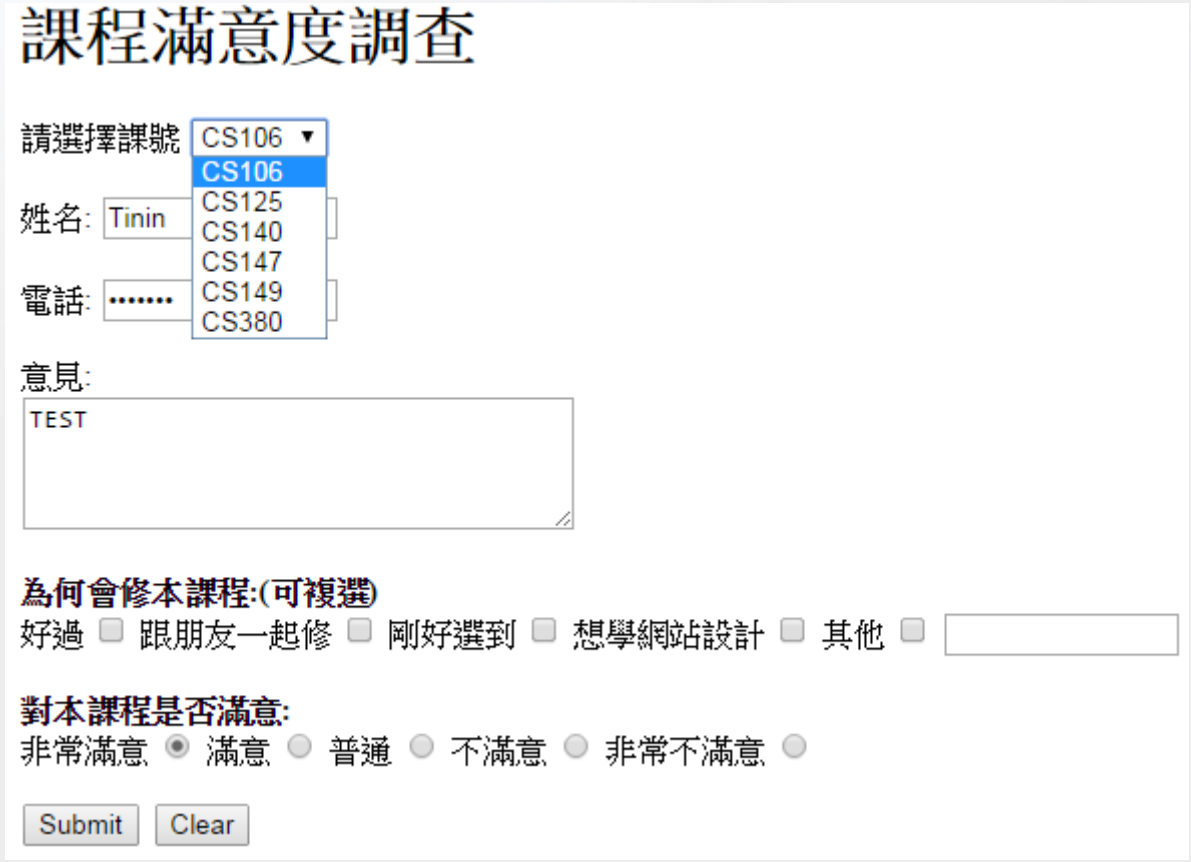
Common Programming Error 2.1

When your `form` has several `checkbox`es with the same `name`, make sure that they have different `values`, or the web server scripts will not be able to distinguish them.

Common Programming Error 2.2

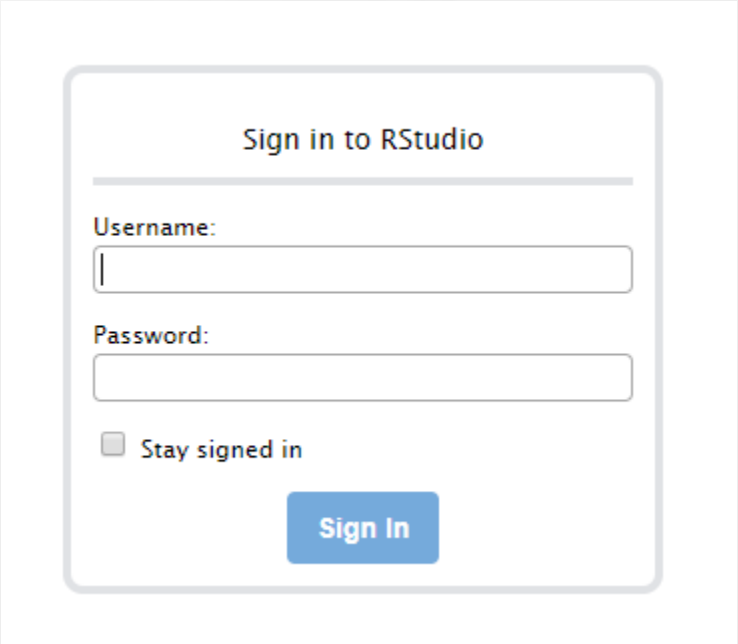
Not setting the `name` attributes of the `radio` buttons in a group to the same name is a logic error because it lets the user select all of the `radio` buttons at the same time.

Exercises


課程滿意度調查
請選擇課號
CS106
CS106
CS125
CS140
CS147
CS149
CS380
姓名:
Tinin
電話:
意見:
TEST
為何會修本課程:(可複選)
好過
跟朋友一起修
剛好選到
想學網站設計
其他
對本課程是否滿意:
非常滿意
滿意
普通
不滿意
非常不滿意
Submit
Clear

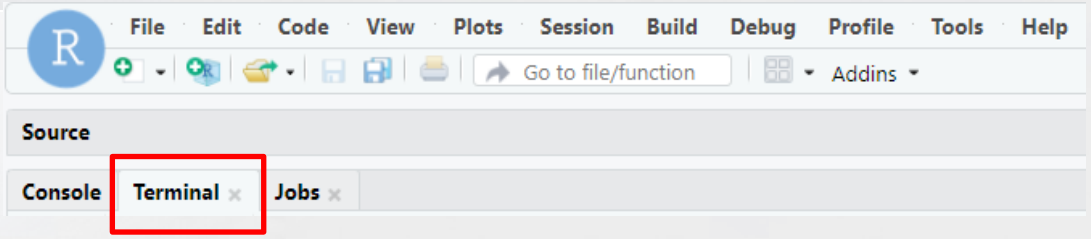
Login server

- Rstudio Server
  - http://140.138.77.70:8787



passwd

- Changing Password
  - at least 6 characters
  - can not too simple



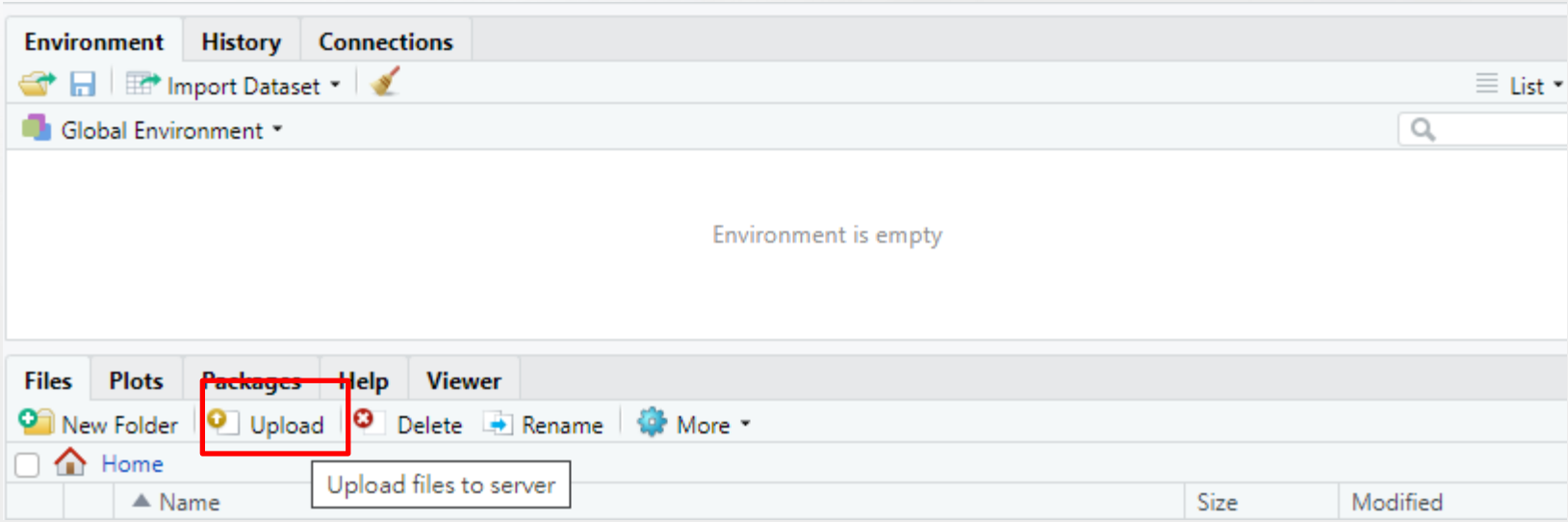

```
passwd
```

```
tinin@class:~$ passwd
Changing password for tinin.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
tinin@class:~$
```

upload file

- Step 1 : Open Filezilla
- Step 2 : Connect to server
  - Hostname : 140.138.77.70
  - Username : s+ STUDENT ID
  - Password : xxxxxx
  - Port : 22
- Step 3 :upload file (ex.tgz)
- Step 4: tar zxvf ex.tgz

upload file


Environment
History
Connections
Import Dataset
List
Global Environment
Environment is empty
Files
Plots
Packages
Help
Viewer
New Folder
Upload
Delete
Rename
More
Home
Upload files to server
Name
Size
Modified

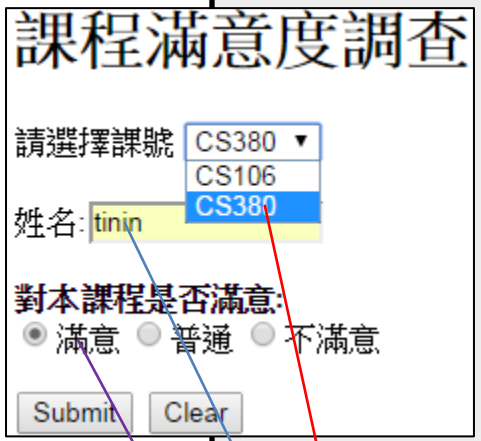
Form + PHP

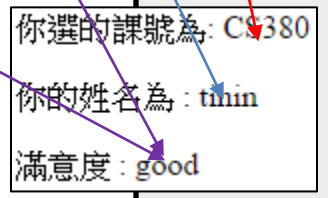
Form.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset = "utf-8">
<title>Forms</title>
</head>
<body>
<h1>課程滿意度調查</h1>
<form method = "post" action = "test.php">
    <p>
    <label>請選擇課號
        <select name = "class">
            <option selected>CS106</option>
            <option>CS380</option>
        </select>
    </label>
    </p>
    <p><label>姓名:<input name = "name" type = "text" size = "12"></label></p>
    <p>
    <strong>對本課程是否滿意:</strong><br>
    <label><input name = "rating" type = "radio" value = "good" checked>
    滿意</label>
    <label><input name = "rating" type = "radio" value = "normal">普通</label>
    <label><input name = "rating" type = "radio" value = "bad">不滿意</label>
    </p>
    <p>
    <input type = "submit" value = "Submit">
    <input type = "reset" value = "Clear">
    </p>
</form></body></html>
```

test.php

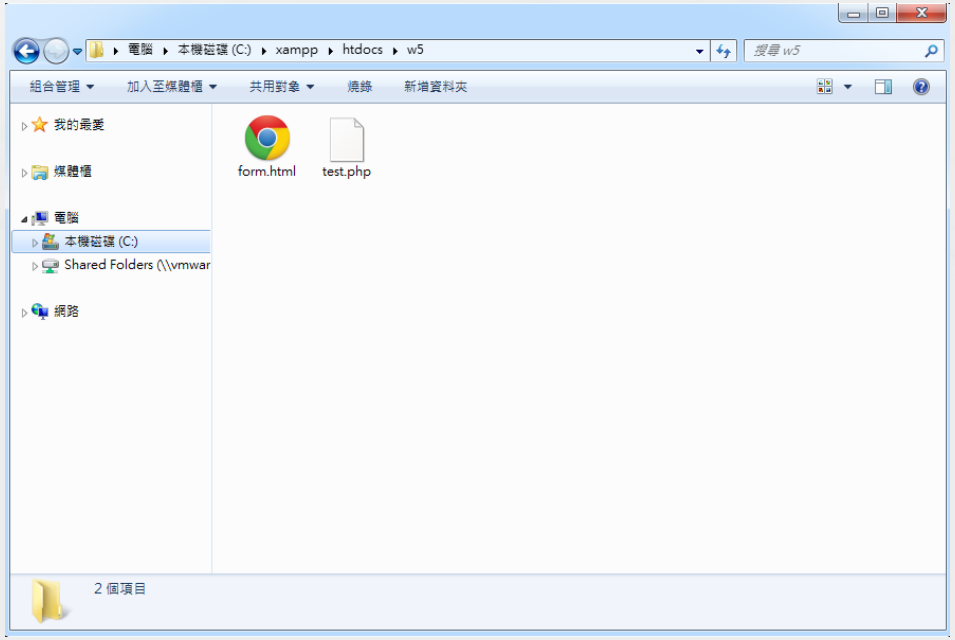
```
<?php
$class = $_POST['class'];
$name = $_POST['name'];
$rate = $_POST['rating'];
print ("<p>你選的課號為: $class</p>");
print ("<p>你的姓名為 : $name</p>");
print ("<p>滿意度 : $rate</p>");
?>
```





Form + PHP

- PHP需放至apache預設目錄下
  - Windows
    - C:/xampp/htodcs
  - Linux
    - ~/public_html




```
tinin@ubuntu:~/public_html$ ls
form.html  test.php
```

Form + PHP

test.php

```php
<?php
  $order = $_POST['order'];
  if(isset($order))
  {
    $n = count($order);
    echo("你選擇的餐點為: ");
    for($i=0; $i < $n; $i++)
    {
      echo($order[$i] . "號餐 ");
    }
  }
?>
```

Form.html

```html
<!DOCTYPE html>
<html>
<head>
<meta charset = "utf-8">
<title>Forms</title>
</head>
<body>
<h1>訂購單</h1>
<form method = "post" action = "test.php">
    <p>
    <strong>請選擇餐點:</strong><br>
    <label><input name = "order[]" type = "checkbox" value = "1"> 1號餐</label>
    <label><input name = "order[]" type = "checkbox" value = "2"> 2號餐</label>
    <label><input name = "order[]" type = "checkbox" value = "3"> 3號餐</label>
    </p>
    <p>
    <input type = "submit" value = "Submit">
    <input type = "reset" value = "Clear">
    </p>
</form></body></html>
```

編碼 (windows)

- Notepad++
  - 編碼->編譯成UTF-8碼(檔首無BOM)

編碼 (linux)

- Pietty
  - 選項->字元編碼->Unicode

  - Big5 to Unicode

```
iconv -f big5 -t utf-8 big5 infile.html -o outfile.html
```

Internal Linking

- The *a* tag can be used to link to another section of the same document by specifying the element's id as the link's href.
- To link internally to an element with its id attribute set, use the syntax *#id*.

Internal Linking

```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>Internal Links</title>
   </head>
   <body>
      <h1 id = "features">The Best Features of the Internet</h1>
      <p><a href = "#bugs">Go to <em>Favorite Bugs</em></a></p>
      <ul>
         <li>You can meet people from countries
            around the world.</li>
         <li>You have access to new media as it becomes public:
            <ul>
               <li>New games</li>
               <li>New applications
                  <ul>
                     <li>For Business</li>
                     <li>For Pleasure</li>
                  </ul>
               </li>
```

Internal Linking

```
                <li>Around the clock news</li>
                <li>Search Engines</li>
                <li>Shopping</li>
                <li>Programming
                   <ul>
                      <li>HTML5</li>
                      <li>Java</li>
                      <li>Dynamic HTML</li>
                      <li>Scripts</li>
                      <li>New languages</li>
                   </ul>
                </li>
             </ul>
          </li>
          <li>Links</li>
          <li>Keeping in touch with old friends</li>
          <li>It is the technology of the future!</li>
       </ul>
       <h1 id = "bugs">My 3 Favorite Bugs</h1>
       <p>
          <a href = "#features">Go to <em>Favorite Features</em></a>
       </p>
       <ol>
          <li>Fire Fly</li>
          <li>Gal Ant</li>
          <li>Roman Tic</li>
       </ol>
    </body>
</html>
```

meta Elements

- One way that search engines catalog pages is by reading the *meta* element's contents.
  - The *name* attribute identifies the type of *meta* element
  - The *content* attribute
    - Of a *keywords* meta element: provides search engines with a list of words that describe a page, which are compared with words in search requests
    - Of a *description* meta element: provides a three- to four-line description of a site in sentence form, used by search engines to catalog your site. This text is sometimes displayed as part of the search result

meta Elements

```
<!DOCTYPE html>
<html>
   <head>
      <meta charset = "utf-8">
      <title>Welcome</title>
      <meta name = "keywords" conten
         HTML5, tutorial, personal, help, index, form,
         contact, feedback, list, links, deitel">
      <meta name = "description" content = "This website will
         help you learn the basics of HTML5 and web page design
         through the use of interactive examples and
         instruction.">
   </head>
   <body>
      <h1>Welcome to Our Website!</h1>
      <p>We have designed this site to teach about the wonders
      of <strong><em>HTML5</em></strong>. <em>HTML5</em> is
      better equipped than <em>HTML</em> to represent complex
      data on the Internet. <em>HTML5</em> takes advantage of
      XML's strict syntax to ensure well-formedness. Soon you
      will know about many of the great features of
      <em>HTML5.</em></p>
      <p>Have Fun With the Site!</p>
   </body>
</html>
```

Q&A