HTML5

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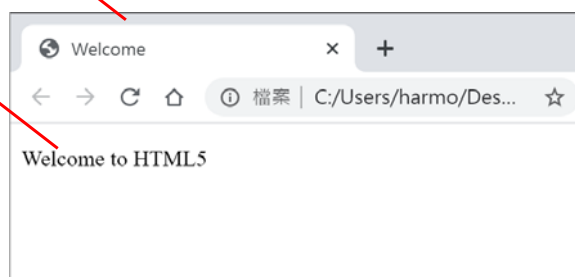sychien@nccu.edu.tw

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What is HTML?

- Hyper Text Markup Language
  - Specify the structure and content displayed in browsers
  - Save it with the.html or .htm filename extension
- HTML uses (markup) tags to describe web pages
  - Keywords surrounded: <html>
- HTML tags normally come in pairs:
  <body> and </body>, and , etc.
  - The 1st tag is the start tag (or opening tag)
  - The 2nd tag is the end tag (or closing tag)

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```
<!DOCTYPE html>
<html>
    <head>
        <mata charset = "utf-8">
        <title>Welcome</title>
    </head>

    <body>
        <p>Welcome to HTML5</p>
    </body>
</html>
```
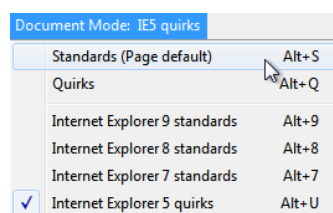
Welcome

← → C ⌂ ⓘ 檔案 | C:/Users/harmo/Des... ☆

Welcome to HTML5

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Document Type Declaration

<!DOCTYPE html>

- The document type declaration (DOCTYPE) is required in HTML5 documents so that browsers render the page in standards mode
    - First thing in HTML doc, before the <html> tag
- Some browsers operate in quirks mode to maintain backward compatibility with web pages that are not up-to-date with the latest standards

Document Mode: IE5 quirks

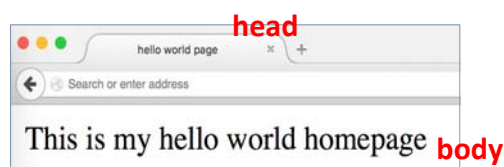|	
Standards (Page default)	Alt+S
Quirks	Alt+Q
Internet Explorer 9 standards	Alt+9
Internet Explorer 8 standards	Alt+8
Internet Explorer 7 standards	Alt+7
✓ Internet Explorer 5 quirks	Alt+U

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Comments

- Notes
- 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 -->

```
<!-- this is comments -->
<!-- first HTML5 example -->
```
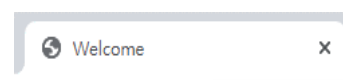
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Page Structure

- <html> tag at the beginning and the end
  - telling the browser where the document starts and where it stops
    - <html> and </html>
- HTML5 consists of a head and a body sections
  - The head is used for text and tags that do not show directly on the page
    - <head> </head>
  - The body is used for text and tags that are shown directly on the page
    - <body> </body>

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Head

```
<head>
    <meta charset="utf-8">
    <title>Welcome</title>
</head>
```

- Head section contains information about the HTML5
  - <head> *this is title* </head> (title bar of the browser)
  - Search engines use title: index purposes & display results
- <meta charset="utf-8">
  - <meta> tag provides metadata about the HTML page
  - Metadata won't be showed on the page (machine parsable)
    - <meta name="description" content="Free Web tutorials">
    - <meta name="keywords" content="HTML, CSS, JavaScript">
- Character set (utf-8): 8-bit Unicode Transformation Format (most common)
- Helps the browser determine how to display the content

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Body

- The body section contains the page's content
  - HTML5 markup contains: text, images, graphics, animations, audios, and videos
  - All kinds of information you see on the webpages

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

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HTML Nested Elements

- HTML elements: everything from the start tag to the end tag
- Nested HTML Elements
  - Most HTML elements can be nested (can contain other HTML elements)

<html>
      <body>
            <p>This is my first paragraph.</p>
      </body>
</html>   three elements nested...

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Paragraph Examples

- <p> </p> tags
  - Add a new paragraph
    - <p> This is a paragraph </p>
-
 tag
  - Add a new line without starting a new paragraph
    - This is <br> a paragraph
- <div> </div> tags
  - defines a division or a section in HTML document

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HTML Paragraph

- HTML paragraphs: <p> </p> tags
  - Add a new line

```
<!DOCTYPE html>
<html>
<body>
    <p>Hello World!</p>
    <p>Add a new line: 1</p>
    <p>Add a new line: 2</p>
</body>
</html>
```

Hello World!

Add a new line: 1

Add a new line: 2

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HTML Paragraph with no line breaks

- HTML Line Breaks: <br> tag
  - Add a *new line without starting a new paragraph*

```
<!DOCTYPE html>
<html>
<body>
    <p>Hello World!</p>
    <p>Add <br>a text<br> with line breaks</p>
    <p>Add a new line: 2</p>
</body>
</html>
```

Hello World!

Add
a text
with line breaks

Add a new line: 2

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HTML Paragraph - division

- <div> </div> tags
  - defines a division or a section in HTML document

```html
<!DOCTYPE html>
<html>
<body>

    <p> Paragraph outside the div element</p>
    <div>
        <p> Paragraph inside the div element</p>
    </div>

    <div style="color:#FF6347">
        <p> Paragraph inside the div element</p>
    </div>

    <div align="right">
        <p> Paragraph inside the div element</p>
    </div>

</body>
</html>
```

Paragraph outside the div element

Paragraph inside the div element

Paragraph inside the div element

Paragraph inside the div element

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HTML Headings

- HTML5 provides six heading elements for specifying the relative importance of info

- Headings are defined with the <h1> to <h6> tags

  ## <h1> defines the most important heading

  <h6> defines the least important heading

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Headings example

```
<!DOCTYPE html>
<html>
<body>

    <h1>Heading 1</h1>
    <h2>Heading 2</h2>
    <h3>Heading 3</h3>
    <h4>Heading 4</h4>
    <h5>Heading 5</h5>
    <h6>Heading 6</h6>

</body>
</html>
```

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

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HTML Text Formatting tags

- HTML uses tags like <b> for **bold** text or <i> for *italic* text
- These HTML tags are called formatting tags

```
<b>      - Bold text
<strong> - Important text
<i>      - Italic text
<em>     - Emphasized text
<mark>   - Marked text
<small>  - Smaller text
<del>    - Deleted text
<ins>    - Inserted text
<sub>    - Subscript text
<sup>    - Superscript text
```

Source: https://www.w3schools.com/html/html_formatting.asp

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Text formatting example

```
<!DOCTYPE html>
<html>
<body>

    <p><b>This text is bold</b></p>
    <p><i>This text is italic</i></p>
    <p>This is<sub> subscript</sub> and <sup>superscript</sup></p>

</body>
</html>
```

This text is bold

This text is italic

This is subscript and superscript

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Exercise 1

Create a html page that contains the following information:

- <p> </p> tags
-
 tag
- <div> </div> tags
- <h1> to <h6> tags (pick up two of tags)
- And the formatting tags, <i> </i>, , etc. (pick up three of the tags)

Your page should utilize HTML headings, paragraphs, line breaks and some HTML text formatting such as bold or italic.

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Exercise 1- Example

Hypertext Markup Language (HTML)

The standard markup language for documents designed to be displayed in a web browser. It can be assisted by **Cascading Style Sheets (CSS)** and *JavaScript*.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.
HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages.
With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page.

Source: https://en.wikipedia.org/wiki/HTML

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Exercise 1- Example (Code)

```
<!DOCTYPE html>
<html>
<body>
    <H1>Hypertext Markup Language (HTML)</H1> The standard markup language for documents designed to be displayed in a web browser.
    It can be assisted by <B>Cascading Style Sheets (CSS)</B> and <i>JavaScript</i>.
    <p>
    <!-- 2nd paragraph -->
    Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.
    <br> HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.
    <!-- 3rd paragraph -->
    <div style="color: #DD0000"> HTML elements are the building blocks of HTML pages. </div>
    <div style="color: #0000A0">With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page.</div>
    <!-- footnote -->
    <h6>Source: https://en.wikipedia.org/wiki/HTML</h6>
</body>
</html>
```

HTML Attributes

Attributes provide additional information about HTML elements

- HTML elements can have attributes to provide additional info about an element
- Attributes are always specified in the start tag
- Attributes come in **name** and **value** pairs, separated by an equals sign (=)
  - For example: name="value"
  - *src* attribute: specify the file location
  - *width or height* attribute: specify the width and height of an image
  - *alt* attribute: specify an alternative text to be used, if an image cannot be displayed

```
<img src="img_girl.jpg" width="500" height="600">

<img src="img_girl.jpg" alt="Girl with a jacket">
```

https://www.w3schools.com/html/html_attributes.asp

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Linking Attribute

NCCU Homepage

Link to a webpage

```
<!DOCTYPE html>
<html>
<body>
    <a href="https://www.nccu.edu.tw/">NCCU Homepage</a>
</body>
</html>
```

- *href* (hypertext reference) specifies a resource's location
  - a web page or location within a web page
  - a file, an e-mail address, etc.
- If the web server cannot locate a requested document, it returns an error message (404 Not Found)

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Linking (Cont.)

Hyperlinking to an E-Mail Address

- Link to an e-mail address using a mailto: recipient email address
  - Launch the default e-mail program

```html
<!DOCTYPE html>
<html>
<body>
    <p>Click <a href = "mailto:sychien@nccu.edu.tw">here</a>
    to launch the default e-mail program.
</body>
</html>
```

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Webpage

Click here to launch the default e-mail program.

Once
clicked

Mail app

| 格式 | 插入 | 繪圖 | 選項 | | 🗑 放棄 | ▷ 傳送 |

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寄件者: harmonics41@gmail.com

收件者: sychien@nccu.edu.tw;   👤 副本與密件副本

主旨

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HTML Images I

- The <img> tag contains attributes only and has no closing tag
  -
- src attribute: specify the image file location
- alt attribute: specify the alternate text for an image, if the image cannot be displayed
  - alt attribute makes web pages more accessible to users with disabilities, especially vision impairments (e.g., speech synthesizer software)
  - Width and height are optional attributes
    - If omitted, the browser uses the image's actual width and height
    - Images are measured in pixels

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```
<!DOCTYPE html>
<html>
  <body>
    <img src="google-icon.png" alt="google-icon" width="200" height="200">
    <img src="firefox-icon.png" alt="firefox-icon" width="200" height="200">
  </body>
</html>
```
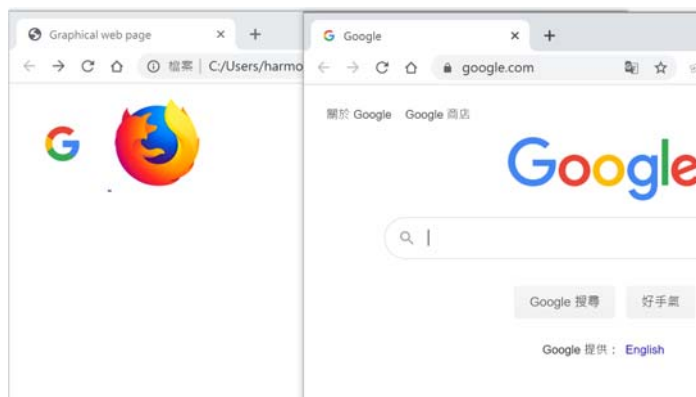

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```
<!DOCTYPE html>
<html>
  <body>
    <img src="google-icon.png" alt="google-icon" width="200" height="200">
    <img src="firefox-icon.png" alt="firefox-icon" width="200" height="200">
  </body>
</html>
```

google-icon firefox-icon

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HTML Images II

Using Images as the Hyperlinks

• Create graphical web pages that link to other resources

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```
<!DOCTYPE html>
<html>
  <head>
    <mata charset = "utf-8">
    <title>Graphical web page</title>
  </head>

  <body>
    <p>
      <a href = "https://www.google.com/">
        <img src = "google-icon.png"
             width = "100" height = "100" alt = "google.com">
      </a>
      <a href = "https://www.mozilla.org/zh-TW/firefox/new/">
        <img src = "firefox-icon.png"
             width = "100" height = "100" alt = "firefox">
      </a>
    </p>
  </body>
</html>
```

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Exercise 2

Modify the page you created in exercise 1

- Include a hyperlink to the w3schools
  https://www.w3schools.com/html/default.asp
- Add an image
  https://www.w3schools.com/images/w3schools_green.jpg
- Add an e-mail address test@test.com

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Exercise 2- Example
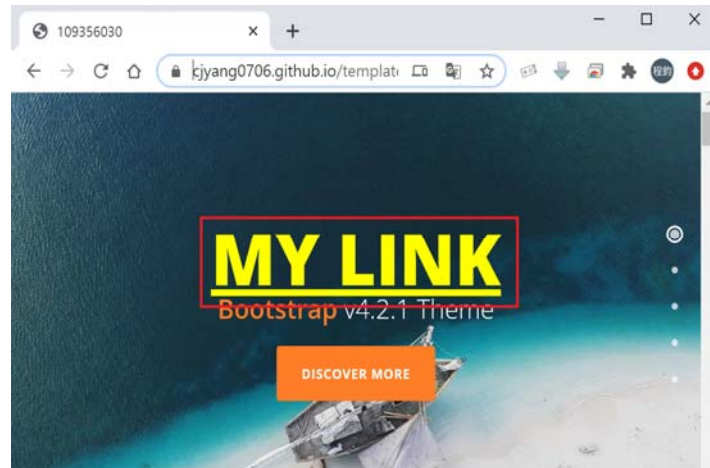

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Exercise 2- Example (Code)

```html
<!DOCTYPE html>
<html>
<body>
    <H1>Hypertext Markup Language (HTML)</H1> The standard markup language for documents designed to be displayed in a web browser.
    It can be assisted by <B>Cascading Style Sheets (CSS)</B> and <i>JavaScript</i>.
    <p>
    <!-- 2nd paragraph -->
    Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.
    <br> HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.
    <!-- 3rd paragraph -->
    <div style="color: #DD0000"> HTML elements are the building blocks of HTML pages. </div>
    <div style="color: #0000A0">With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page.</div>
    <!-- footnote -->
    <h6>Source: https://en.wikipedia.org/wiki/HTML</h6>
    <a href="https://www.w3schools.com/html/default.asp"> w3schools </a> <p>
        <img src="https://www.w3schools.com/images/w3schools_green.jpg"><p>
    <a href="mailto:"test@test.com"> sned an email </a>
</body>
</html>
```

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Homework (Due by Nov. 15 (sun), 11:59pm)

1. Create a web page to introduce yourself (intro.html)
   - Try the formatting attributes
2. On the intro page, create a link to connect to the template page
3. On the template page, create a link to connect to the intro page
4. Push the project to github
5. Submit the URL of your project to moodle (make sure it works)

Example: http://cjyang0706.github.io/template-main/example.html