

Part B: Introduction to HTML

I. Definition of HTML

- The World Wide Web (WWW) is a network frame-work to distribute/retrieve information resources. It relies on the following three elements:
 - A uniform naming scheme for locating resources on the Web (e.g., URIs).
 - An access protocols to named resources over the Web (e.g., HTTP).
 - A document standard to easily navigate among resources (e.g., HTML).
- New HTML Standard - HTML 5
 - Major differences comparing to HTML 4
 - **New Tags:** Like header, nav [for navigation], section, article, aside, and footer.
 - **Consistent Error Handling:** Strict rules are introduced to handle any errors.
 - **Multimedia Features:** It includes multimedia elements (<audio> and <video>). It can embed video on Web pages without using any special software like Flash.

■ Future of Web

- Semantic Web: The Semantic Web is to describe data with meaningful “meta tag”, which will enable computers to process the data in a more intelligent way (e.g., XML).
- Artificial Intelligence: To make computer programs more intelligent. So that they will be able to co-ordinate with human to perform tasks.
- Virtual World: A digital world can be created online.
- Mobile Applications: The trend is obvious now.
- Web Economy: Online business will play a major role in the future.
- Media Streaming: Online Video or Internet TV will be very popular.
- Personalization Web Service: The online service can be customized to each individual.
- More collaborative and Real-Time content (e.g., forum)

II. Document Structure

- HTML files are just normal text files.
- They usually have the extension of .htm, .html, or .shtml.
- HTML documents have two parts: the head and the body.
- The head of the document contains the document's title and similar information, and the body contains most everything else.

```
<html>  
<head>  
<title>My Homepage</title>  
</head>
```

```
<body>  
How are you?  
</body>  
</html>
```

III. The Common Tags

■ Heading Tags

- You will usually use a heading to tell what the following section of your page is about.
- The opening tag for a heading is `<h?>` and the closing tag is `</h?>` with ? being the size of the heading(from 1 to 6 , 1 being largest, and 6 being smallest).
- Example of Heading Tags

Bob fell over the chicken. [H1]

```
<h1>Bob fell over the chicken. [H1]</h1>
```

Bob fell over the chicken. [H2]

```
<h2>Bob fell over the chicken. [H2]</h2>
```

Bob fell over the chicken. [H3]

```
<h3>Bob fell over the chicken. [H3]</h3>
```

■ Horizontal Ruled Lines

- Horizontal Ruled Lines are used to separate different areas of a web page.
- The tag for a horizontal ruled line is `<hr>`.
- The horizontal ruled line does not have a closing tag.
- You may also add certain attributes to the `<hr>` tag, such as `width=n` (for fixed pixel width) or `width=n%` for a certain percentage of the screen wide, `size=n` to make the line a certain pixel amount thick, and `noshade` to turn the line's shading off.
- A plain `<hr>` with no attributes will make the line the full width of the screen.
- Example of Horizontal Ruled Lines

`<hr width=50>`



`<hr width=50%>`



`<hr size=7>`



`<hr noshade>`



`<hr width=50% size=10 noshade>`



■ Paragraph

- You will often use paragraphs in HTML.
- The opening tag for a paragraph is `<p>`, and the closing tag is `</p>`.
- Example of a paragraph

`<p>Tommy likes reading and chats with the people. ...</p>`

■ Text Formatting Properties

- If you had an entire web page without formatted text, it would look rather dull and boring.
- This is why we use text formatting tags. Some common text formatting tags are `` and `` for bold, `<i>` and `</i>` for italics, `<u>` and `</u>` for underlined, and `<tt>` and `</tt>` for typewriter.
- The `` and `` tags also come in handy.
- Example of font tags

Bob is a **Cool** Guy isn't he?

`Bob is <font`

```
size=+3>a</font> <font size=+2>Cool</font> <font  
size=+1>Guy</font> isn't <font size=-1>he?</font>
```

■ **ALIGN attributes**

- If you want something to be aligned from the left margin, from the center, or from the right margin.
- The ALIGN attribute is placed in the opening tag before the >.

Left Align

```
<h1 align=left>Left Align</h1>
```

Center Align

```
<h1 align=center>Center Align</h1>
```

Right Align

```
<h1 align=right>Right Align</h1>
```

■ The Line Break

- When your HTML document is viewed, normally the text will do a word-wrap at the end of a line.
- If you want to have the text BREAK (go to another line) you will use the `
` tag. This tag has no closing tag.

■ Example WITH line Break

Sentence One.

Sentence Two.

Sentence One. `
`

Sentence Two. `
`

■ The CENTER tag and DIV tag

- The opening center tag is <center> and the closing center tag is </center>.
- Whatever you put between will be centered on the current line!
- you use <div align="center">centered text</div> instead of the center tag. The neat thing about div is that you can align both left and right in addition to center.
- Example of CENTER tag

Hello here!

```
<center><h1>Hello here!</h1></center>
```

■ The BODY attributes

The BODY tag has many attributes

- BACKGROUND="location_of_image" - Background image for web page. Example: If you have kitten.jpg in the same directory as your HTML file, use <body background="kitten.jpg"> to load it as your background image.
- BGCOLOR="#hexadecimal_here" - Hexadecimal Color Code for Background Color
- LINK="#hexadecimal_here" - Hexadecimal Color Code for Links (if left blank, most browsers default to blue.)

- VLINK="#hexadecimal_here" - Hexadecimal Color Code for Links the User has Already Visited (if left blank, most browsers default to purple.)
- TEXT="#hexadecimal_here" - Hexadecimal Color Code for Text Color

Red	Green	Blue
#FF0000	#00FF00	#0000FF

■ Clean Code

Some common mistakes:

- Don't type special characters into your code, instead type their escape code. Many characters should NEVER be typed directly into HTML code (e.g., the "<", ">", the "©", "&", and the " itself). Instead, type &escape_code; (Ampersand, Escape Code for Character, then a semicolon).
 - For the < type <
 - For the > type >
 - For the © type ©
 - For the & type &
 - For the " type "

- Use quotes around values in attributes... For example, if you want a horizontal rule that is half of the screen width, type `<hr width="50%">` rather than `<hr width=50%>`, or if you want one that is size 5 type `<hr size="5">` rather than `<hr size=5>`. Isn't it ironic that I don't? `<g>`
- Don't overlap tags. Overlapping occurs when Tag A starts, Tag B starts, Tag A closes, then Tag B closes. This will cause errors in sensitive browsers.
- Examples:
 - **Wrong Way (Overlaps):**
`This is Bold and One Font Size Bigger`
 - **Right Way (Doesn't Overlap):**
`This is Bold and One Font Size Bigger`

■ The Comment Tag

- To write an HTML document, you may want to put a remark with your code.
- A comment will not appear in a web browser when the page is displayed.
- You should start commented text with `<!--` and end it with `-->`.

■ The UNORDERED LIST

- The Unordered List is the first of the three types of lists. This is probably the most common list you will use.
- Example
 - pencils
 - pens
 - erasers

Notice the Bullet Before each List Item. Now here is the HTML Code for the Unordered List Above...

```
<ul>
  <li>pencils
  <li>pens
```

```
<li>erasers  
</ul>
```

- The `` tag is the opening **Unordered List Tag**. Between these two tags you place **LIST ITEMS**, each one having an individual `` opening tag (If you want, you can use an optional `` closing tag, but it is not needed). There is no limit to the number of List Items you may have in a single list.

■ The **ORDERED LIST**

- The Ordered List, also known as the Numbered List, is very similar in structure to the unordered list, except each list item has a number in front of it, instead of a bullet.
- The opening tag for the list is `` instead of ``, and the closing tag is `` instead of ``.
- List Items within the list still use the same tags.
- Example of an Ordered List
 1. pencils
 2. pens
 3. erasers

Notice the Number Before each List Item. Now here is the HTML Code for the Ordered List Above.

```
<ol>
  <li>pencils
  <li>pens
  <li>erasers
</ol>
```

■ The Definition List

- This type of list is a little more complicated, but still very easy to use.
- This list starts with the <dl> opening tag, and ends with the </dl> closing tag.
- This has another tag known as <dt> for Definition Term, and <dd> for Definition-Definition. These two tags do not need closing tags.

- Example

alliance

A union, relationship, or connection by kinship, marriage, or common interest.

alligator

Large amphibious reptile with very sharp teeth, powerful jaws.

alliterate

To arrange or form words beginning with the same sound.

Now here is the HTML code for this Definition List:

```
<dl>
  <dt>alliance
  <dd>A union, relationship, or connection by
      kinship, marriage, or common interest.
  <dt>alligator
  <dd>Large amphibious reptile with very sharp
      teeth, powerful jaws.
  <dt>alliterate
  <dd>To arrange or form words beginning with the same sound.
</dl>
```

■ Extended Fonts

- The newest version of many browsers supports extended fonts, in which you can choose to have the document fonts be other than the normal one.

- This is accomplished by adding the **FACE="font_name"** attribute to the **** tag. The most commonly supported fonts are Verdana, Arial, Helvetica, Impact, Comic Sans MS, and a few others.
- It is not recommended to make your page font dependent, because the older versions of many browsers don't yet support this feature.

- Example

```
<font size=+2 face="Verdana">Verdana</font>
```

Verdana

```
<font size=+2 face="Arial">Arial</font>
```

Arial

```
<font size=+2 face="Helvetica">Helvetica</font>
```

Helvetica

```
<font size=+2 face="Impact">Impact</font>
```

Impact

```
<font size=+2 face="Comic Sans MS">Comic Sans MS</font>
```

Comic Sans MS

■ Text Color

- To change the color of the text, you can set the COLOR="font_color" attribute in the tag.
- The Color is usually set by using the hexadecimal system (#000000 black to #FFFFFF white) but can also be set in newer browsers by using the simple word of the color (e.g., red, blue, etc.)

- Example

```
<font color="Blue">Hey I'm Blue!</font>
```

Hey I'm blue!

```
<font size="+2" face="Impact" color="Green">Hey I'm green  
and in Impact Font!</font>
```

Hey I'm green and in Impact Font!

```
<font color="Red">Hey I'm red!</font>
```

Hey I'm red!

■ Hyper Links

- To add a link, you will use the `` opening tag and `` closing tag.
- Whatever appears between these two tags will become underlined and colored, and if you click on the underlined text it will send the browser to the location within the quotes.
- Example
Visit [United International College!](#)

Visit `United
International College!`

- Relative Link: If you are just linking to a page in the same directory as your current page, you don't need the domain, just the page name. If you have a page called `contactme.html`, you can use the code `Contact Me.`

■ In-line Images

- You may also add images (pictures) to your web page, as long as the image is in the .gif or .jpg (or .jpeg) file formats.
- You will not be able to use .bmp format files! The basic tag for in-line images is ``.
- It is also recommended to add HEIGHT and WIDTH attributes to the IMG tag, which will allow the image to take proper proportions on a browser that is not currently viewing images.
- You can use the ALT="what picture is" to tell a person what a picture is in case it is still loading.
- Example
``

■ Combining Links and Images

- You may want to have an image that is linked, so that if someone clicks the image, the person will be taken to another page.
- You just need to place the IMG tag within the A HREF tags ().
- Example

```
<a href="http://www.uic.edu.hk"></a>
```

■ Anchor Link: navigation within a document

- Anchor link is able for users to click a link and move to another area within the same page.
- To name the part of the document, go to the area you want to name, and place text, then to call a link to that place from somewhere else in the document, use text
- Example:

```
<a href="#section2">Go To Section 2</a><br>  
blah<br>
```

```
blah<br>
blah<br>
blah<br>
<a name="section2">Welcome To Section 2!</a>
```

[Go To Section 2](#)

blah

blah

blah

blah

Welcome To Section 2!

■ Tables

- Tables start with the <table> tag, and usually contain the border="n" attribute within the opening tag.
- If the border="0", then the table's border is invisible.
- Usually when you do not use the border attribute the table border will become invisible. This is useful when you want to align text in rows and columns, but don't want a table border around it.

- The table MUST end with a `</table>` tag

Heading A	Heading B	Heading C
Cell A & D	Cell B	Cell C
	Cell E	Cell F

```

<table border="2">
<tr>
    <th>Heading A</th>
    <th>Heading B</th>
    <th>Heading C</th>
</tr>
<tr>
    <td rowspan="2">Cell A & D</td>
    <td>Cell B</td>
    <td>Cell C</td>
</tr>
<tr>
    <td>Cell E</td><td>Cell F</td>
</tr>
</table>

```