Topic: Lists, Links, and Images

HTML LISTS
- Making information more accessible is the single most important quality of HTML.
- It helps you organize your information into documents readers can quickly understand, scan, and extract, possibly with automated browser agents.
- It shows specific information quickly and clearly.
    - Ordered lists <ol> or numbered list
    - Unordered list <ul> or bulleted list
    - Definition list <dl> or glossary list

- **Ordered Lists <OL>**
    - Are lists in which each item is numbered usually starting at 1.
    - It is used if you want to emphasize that the elements are ordered or has hierarchy.
    - Are good for set of instructions.
    - **SYNTAX:**
        ```
        <ol>
            <li> item 1</li>
            <li> item 2 </li>
        </ol>
        ```
    - **SYNTAX with CSS:**
        - **html**
            ```
            <ol>
             <li>Notebook</li>
             <li>Ballpen</li>
             <li>Yellow Paper</li>
            </ol>
            ```
        - **css**
            ```
            li {
            list-style-type: upper-roman;
            }
            ```
- Enhancement to Numbered List

list-style-type	Description
decimal	The list items will be numbered with numbers (default)
upper-alpha	The list items will be numbered with uppercase letters
lower-alpha	The list items will be numbered with lowercase letters
upper-roman	The list items will be numbered with uppercase roman numbers
lower-roman	The list items will be numbered with lowercase roman numbers

-
-          Attribute   Description
- type = "1"   Specifies that numerals should be used to numbered lists
- start   Specifies the beginning value to start the list
    - SYNTAX of START
        <ol type = "A" start = "5">
        (would start the numbering at letter E)

    Unordered List
    You need two elements to create an unordered list (bulleted) list:
- **
** The unordered lists element enables you to create the list

- **
** You specify individual items on the list with the list item element
  Example:
  <ul style="list-style-type:square">
   Notebook
   Ballpen
   Yellow Paper

  Specifying the type of bullet for the entire list

Value	Description
disc	Sets the list item marker to a bullet (default)
circle	Sets the list item marker to a circle
square	Sets the list item marker to a square
none	The list items will not be marked

Description Lists
- HTML also supports description lists.
- A description list is a list of terms, with a description of each term.
- The <dl> tag defines the description list, the <dt> tag defines the term (name), and the <dd> tag describes each term
  Example:
  <dl>
   <dt>Notebook</dt>
   <dd>- a small book with blank or ruled pages for writing notes in.</dd>
   <dt>Ballpen</dt>
   <dd>- is a pen that dispenses ink over a metal ball at its point</dd>
  </dl>

NESTED LIST
- Creating nesting list to organize information.
-
   Coffee
   Tea

     Black tea
     Green tea

   Milk

Horizontal List with CSS
- HTML lists can be styled in many different ways with CSS.
- One popular way is to style a list horizontally, to create a navigation menu:
  Insert to head tag
  <head>
  <style>
  ul {
     list-style-type: none;
     margin: 0;
     padding: 0;

```
      overflow: hidden;
      background-color: #333333;
    }
    li {
      float: left;
    }
    li a {
      display: block;
      color: white;
      text-align: center;
      padding: 16px;
      text-decoration: none;
    }
    li a:hover {
      background-color: #111111;
    }
    </style>
    </head>
```

Insert to body tag
- <body>

```
<ul>
  <li><a href="#home">Home</a></li>
  <li><a href="#news">News</a></li>
  <li><a href="#contact">Contact</a></li>
  <li><a href="#about">About</a></li>
</ul>

</body>
```

HTML LINKS / HYPERLINKS
- With links or hyperlinks, it is possible for the users / readers of the page to jump from one page to another page.
- Links can be in a form of some text that is highlighted, underlined or colored blue or red. It can be also a graphic image.

- Types of href Attribute Values

Types of href Attribute Values	Where the Link Jumps To
absolute URL	Find the resource on a different web server than the current web page.
relative URL	Find the resource on the same web server as the current web page. Specify the location of the resource by providing a path from the current web page's directory to the destination web page.
jump within current web page	Find the resource within the current web page. Specify the location of the resource by providing an id value for an element in the web page.

The <a> Tag
- <a> means anchor, is used to create links to other documents and to name anchors for fragment identifiers within documents.
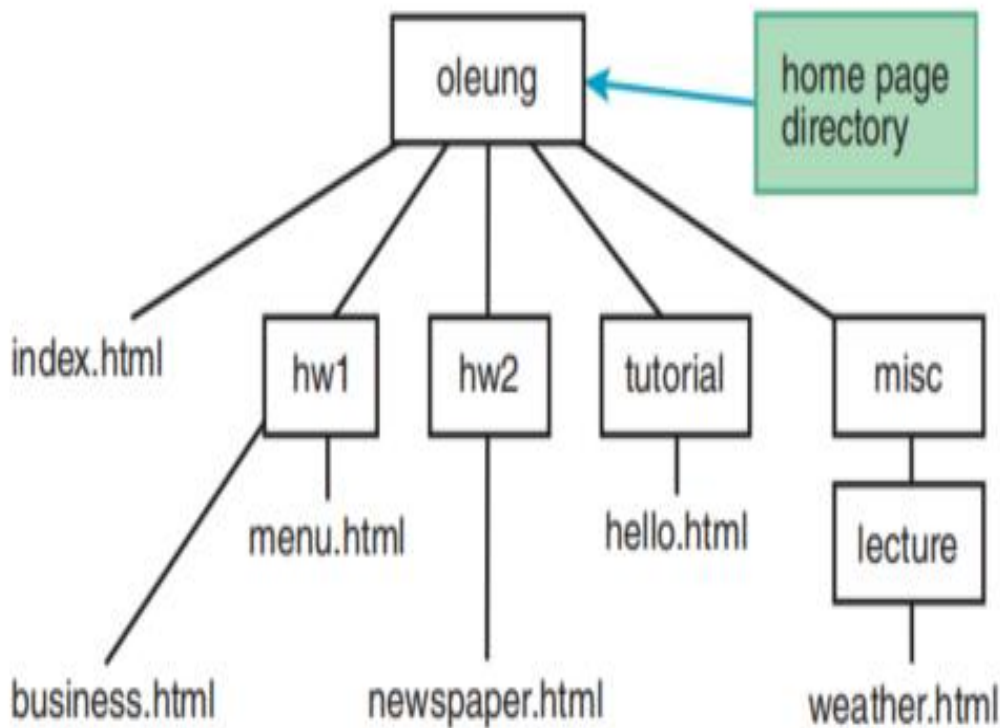
- **href** is an attribute which stands for "Hypertext Reference" is used to specifies the name or URL of the file where this link points.
- Sample:
   Back to HOME

Absolute and Relative Links

- Absolute Link – a link that links you to another website
  ex:
   Google
- Relative Link – a link that links you to pages within your site
  ex:
  **   template **

Relative URLs

- A directory tree structure is where files and directories are organized.
- The destination web page is the page that the user jumps to after clicking on the link.
- A home page is the default first page a user sees when the user visits a website.
- A subdirectory (also called a subfolder or a child folder) is a directory that is contained within another directory
- In forming a path for a relative URL value you'll need to follow these rules:
- **Use /'s to separate directories and files.**
- **Use ".." to go from a directory to the directory's parent directory**
- **Olivia's Home Page**
- **Business Page**

- **Example directory tree**

User Experience Design
- A Linear structure means the home page links to one other page, and that second page links to one other page, and so on.
- That type of strategy might be used for a website whose purpose is to present a long article.

FIGURE 6.3 **Website with a linear structure for its web pages**

- A hierarchical structure means the home page links to several other pages where those pages serve as pseudo-home pages for the different areas within the website.
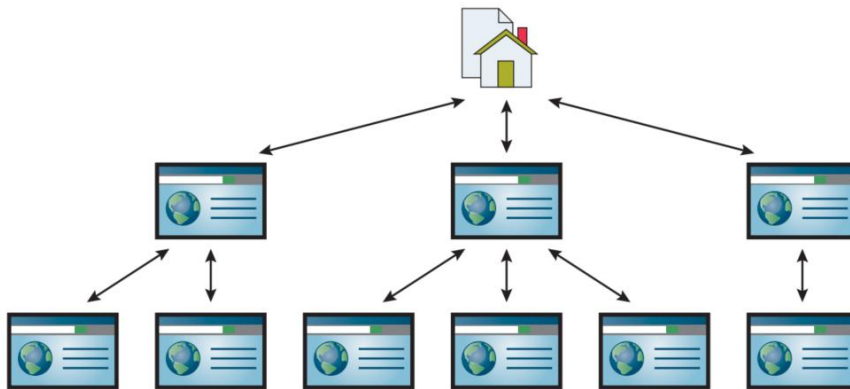
FIGURE 6.4 **Website with a hierarchical structure for its web pages**
-
- A mixed structure means there's a hierarchical structure for compartmentalizing the website's main areas, plus additional links that (1) connect from within the areas to other areas and (2) connect pages back to the website's home page.
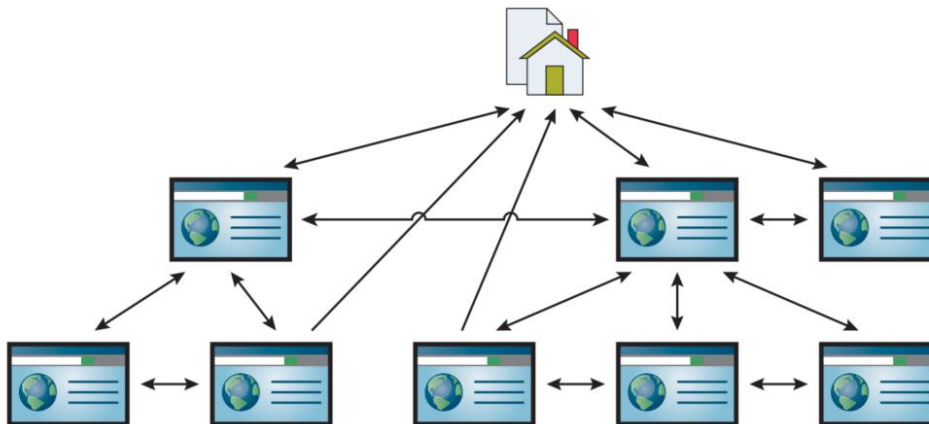
FIGURE 6.5 **Website with a mixed structure for its web pages**
-

- **Syntax for Internal Link**
- To jump to a designated location within the current web page, you need to use a value starting with # such that that value matches an id attribute's value for an element in the web page.

HTML Link Colors
- By default, a link will appear like this (in all browsers):
- An unvisited link is underlined and blue
- A visited link is underlined and purple
- An active link is underlined and red
- You can change the default colors, by using CSS.
- In addition, links can be styled differently depending on what state they are in.
- The four links states are:
- a:link - a normal, unvisited link
- a:visited - a link the user has visited
- a:hover - a link when the user mouse over it
- a:active - a link the moment it is clicked

The target Attribute
The target attribute specifies where to open the linked document.
The target attribute can have one of the following values:
- **_blank** - Opens the linked document in a new window or tab
- **_self** - Opens the linked document in the same window/tab as it was clicked (this is default)
- **_parent -** Opens the linked document in the parent frame
- **_top -** Opens the linked document in the full body of the window
- **framename** - Opens the linked document in a named frame

Example:
- Visit W3Schools!
- HTML5 tutorial!

HTML Links - Image as Link
-
   <img src="Rudolph.jpg" alt="rudolph" style="width:42px;height:42px;border:0;">

External Paths
- External pages can be referenced with a full URL or with a path relative to the current web page.
- **This example uses a full URL to link to a web page:**
   HTML Table
- **This example links to a page located in the html folder on the current web site:**
   IMAGES

IMAGES
Comparing Graphics formats
- Best graphic format suited for use on the Web
- **WebP**
  - pronounced "webpy"
  - Created by Google to replace JPEG,GIF and PNG
- **GIF (Graphics Interchange Format)**
  - Pronounced as "jiff"
  - Best for navigation buttons; clip arts, banners, drawings or anything that has large blocks of the same color
- **JPEG (Joint Photographic Experts Group)**
  - Pronounced as "jay-peg"

- Best for photos for the web
- **PNG (Portable Network Graphics)**
  - Pronounced as "ping"
  - Combines the best qualities of both GIF and JPEG but doesn't have very broad browser support.
-

Understanding Image Formats

- **GIF** Graphics Interchange Format (GIF)
  - was first developed for image transfer among users of the CompuServe online service.
  - Best used for flat line drawings containing solid tones and simple images such as clip art.
  - **Features:**
    - Its encoding is cross-platform.
    - GIF uses special compression technology that can significantly reduce the size of the image file for faster transfer over a network. GIF compression is "lossless"; none of an image's original data is altered or deleted, so the uncompressed and decoded image exactly matches its original. Also, GIF images can be easily animated.
  - The maximum number of colors in a GIF file is 256 .
  - The GIF images have a .gif file extension.
  - Two GIF versions: the original GIF87 and an expanded GIF89a, which supports several new features including transparent backgrounds, interlaced storage, and animation that are popular with web authors.
- Transparent GIF : images are great for any graphic that you want to meld into the document and not stand out as a rectangular block.
  - The browser simply ignores any pixel in the image that uses that background color, thereby letting the display window's background show through. By carefully cropping its dimensions and by using a solid, contiguous background color, you can make a transparent image seamlessly meld into or float above a page's surrounding content.
- Interlacing: interlaced GIFs open like a Venetian blind. That's because interlacing sequences every fourth row of the image. Users get to see a full image top to bottom, albeit fuzzy in a quarter of the time it takes to download and display the remainder of the image. The resulting quarter-done image usually is clear enough so that users with slow network connections can evaluate whether to take the time to download the remainder of the image file.
- Animation: special GIF-animation software utilities, you may prepare a single GIF89a file that contains a series of GIF images. The browser displays each image in the file, one after the other, special control segments between each image in the GIF file let you set the number of times the browser runs through the complete sequence (looping).

- **JPEG** Joint Photographic Experts Group (JPEG)
  - is a standards body that developed what is now known as the JPEG image-encoding format. Like GIFs, JPEG images are platform independent and specially compressed for high-speed transfer via digital communication technologies.
  - JPEG supports tens of thousands of colors for more detailed, photorealistic digital images.
  - JPEG is an excellent choice for photographs, it's not a particularly good choice for illustrations.
  - The JPEG format, usually designated by the *.jpg* (or *.JPG*) filename suffix

- **PNG** Portable Network Graphics (PNG)
  - PNG has a broader selection of color formats (24-bit true-color RGB, a grayscale and GIF-like 8-bit palette) and better lossless compression.
  - PNG's unique and attractive features include alpha channels which let you specify many more than GIF's one layer of transparency (more than 65,000, actually) and can simulate 3D imagery, gamma correction which controls cross-platform image brightness for more vivid graphics, and two-dimensional interlacing which provides for a finer progressively developing image.

    – PNG does not support animation.

- **WebP Web Picture format**
    - WebP is natively supported in Google Chrome, Safari, Firefox, Edge, the Opera browser, and by many other tools and software libraries. Developers have also added support to a variety of image editing tools.
    - Lossy and lossless compression: WebP can compress images using either lossy or lossless compression.
    - Transparency: WebP supports transparency, like PNG.

HTML Images
- Images can improve the design and the appearance of a web page.
    Images Syntax:
- In HTML, images are defined with the <img>tag.
- The <img> tag is empty, it contains attributes only, and does not have a closing tag.
- The src attribute specifies the URL (web address) of the image:
- <img src="*url*">

The alt Attribute
- The alt attribute provides an alternate text for an image, if the user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).
- The value of the alt attribute should describe the image.

 Example:
- <img src="grizzly.png" alt="grizzly">
- <img src="panda.png" alt="panda">
- <img src="polar.png" alt="ice">

Image Size - Width and Height
- You can use the style attribute to specify the width and height of an image.

Example:
    <img src="panda.png" alt="Panda Bear" style="width:500px;height:600px;">

Images in Another Folder
- If not specified, the browser expects to find the image in the same folder as the web page.
- However, it is common to store images in a sub-folder. You must then include the folder name in the src attribute.
    Example
- <img src="images/circle.jpg" alt="Circle" style="width:128px;height:128px;">

Images on Another Server
- Some web sites store their images on image servers.
- Actually, you can access images from any web address in the world.
- Example:
    <img src="https://www.ue.edu.ph/manila/main/misc/ccss.png" alt="UE-CCSS">

Image as a Link
To use an image as a link, put the <img> tag inside the <a> tag:

```
<a href="template.html">
  <img src="panda.png" alt="Lect1" style="width:42px;height:42px;border:0;">
</a>
```

Image Floating
- Use the CSS float property to let the image float to the right or to the left of a text:

Example
```
<p><img src="polar.png" alt="Ice bear face" style="float:right;width:42px;height:42px;">
The image will float to the right of the text.</p>
<p><img src="grizzly.png" alt="Grizzly face" style="float:left;width:42px;height:42px;">
The image will float to the left of the text.</p>
```

What is Image Map?
An **image map** is a way of defining "hot spot" links within an image on a Web page. This means that, rather than having the whole image behave as one link, you can have lots of different links within the one image.

The usemap attribute
- How do you turn an image into an image map?

To associate an image map with an image, simply add the *usemap* attribute to the *img* tag for the image.

The map tag
The other half of the image map is the map definition itself. In this definition, you tell the browser where the hot spots are in the image, and what the hot spots need to link to.

Syntax
```
<map name="map-name">
 <area   shape="area shape"
         coords="area coordinates"
         href="area hyperlink" or nohref="nohref"
         target="hyperlink target"
         title="area title"
   alt="alternate text"/>
 <area   shape="area shape" ...
 </map>
```

shape="rect | circle | poly | default"
Specifies the shape of the area. Possible values are:
- rect (a rectangular shape),
- circle (a circular shape),
- poly (an arbitrary polygon, with 3 or more points), or
- default (which represents the remaining area of the image not defined by any area tags).

coords="*area-coordinates*"
Specifies the coordinates that define the corners of the shape. The coordinates depend on the shape specified in the shape attribute:

Shape	Coordinates
rect	coords="x1,y1,x2,y2" (The top left and bottom right corners of the rectangle)
circle	coords="x,y,r"

	(The centre and radius of the circle)
`poly`	`coords="x1,y1,x2,y2,x3,y3,..."`(The corners of the polygon)

Note that all coordinate values are relative to the *top left* corner of the image. In other words, the top left corner always has coordinates (0,0).
Note also that the default shape type does not need any coordinates.

href="*area-hyperlink*"
      This is the URL that you'd like to link the hot spot to. It works just like a standard <a href=...> tag.

target="*hyperlink-target*"
      This is the optional target window or frame to open the linked URL in. Again, it works just like the target attribute in a standard <a href=...> tag.

title="*area-title*"
      This attribute allows you to give the area a title. When the mouse is rolled over this hot spot, the browser will usually pop up a tool tip displaying this title.

Background Image
      To add a background image on an HTML element, use the CSS property background-image:
Example:
      <body style="background-image:url('clouds.jpg')">
         <h2>Background Image</h2>
      </body>

References:
- Jenkins, S. (2013). Web Design All-in-One for Dummies. John Wiley & Sons.
- Parker, J. (2021). HTML for Beginners: A Complete Beginners Guide to Learn Html in 1 Hour and Master Your Web Designing.
- W3Schools online web tutorials. (n.d.). https://www.w3schools.com/
- Sklar, J. (2012). *Web Design Principles*.
- Castro, E., & Hyslop, B. (2013). *HTML and CSS: Visual QuickStart Guide*. Peachpit Press.