ĐẠI HỌC BÁCH KHOA HÀ NỘI
VIỆN CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG

Lesson 1-2. Introduction to HTML

Content

1. HTML Basic
2. Structured Document
3. DOM (Document Object Model)
4. Common HTML Elements

Content

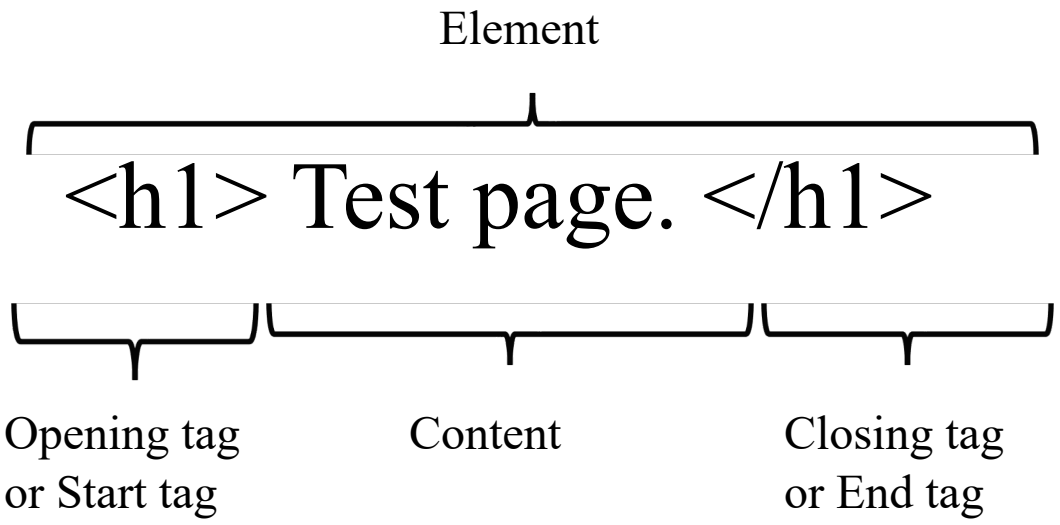
What is HTML? (review)

- Hypertext Markup Language
- Markup Language for web pages
  - Markup Language
    - a set of annotations to text that describe how something is to be structured
  - Hypertext
    - text with references (hyperlinks) to other text that the reader can immediately access, usually by a mouse click or key press sequence

HTML Example

```
<html>
    <head>
        <title>Test Page</title>
    </head>
    <body>
        <h1>Test Page</h1>
        <p>This is a test page.</p>
    </body>
</html>
```

Element and Tag



Attribute

- Most of elements can have attributes
- An attribute describes a property of an element

<h1 id=“title”>Test Page</h1>

Attribute name **Attribute value**

Hyperlink

- A link from a document to another document
- Anchor element with href attribute
  - href has a URI, an absolute path or a relative path
  - Example:

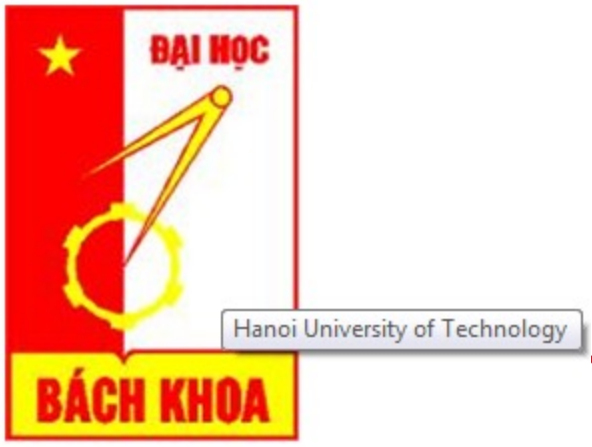
Yahoo!

Images

- Insert image
  - <img src= “image.ext”>
  - <img src= “folder/image.ext”>
  - E.g. <p><img src= “awards.jpg”>
- Add a border to the image
  - set attribute as <img src= “imag.ext” border=*n*>, where *n* means the thickness of the border in pixels

Images (2)

- Change the size of the images
  - <img src= “myImg.jpg” width=x height=y>, where x, y is in pixel
  - E.g. <p><img src=”folder1/award1.jpg” width=20 height=30> My awards here
- show the words over the image
  - <img src=hut.jpg alt= “Hanoi University of Technology”>



Content

1. HTML Basic
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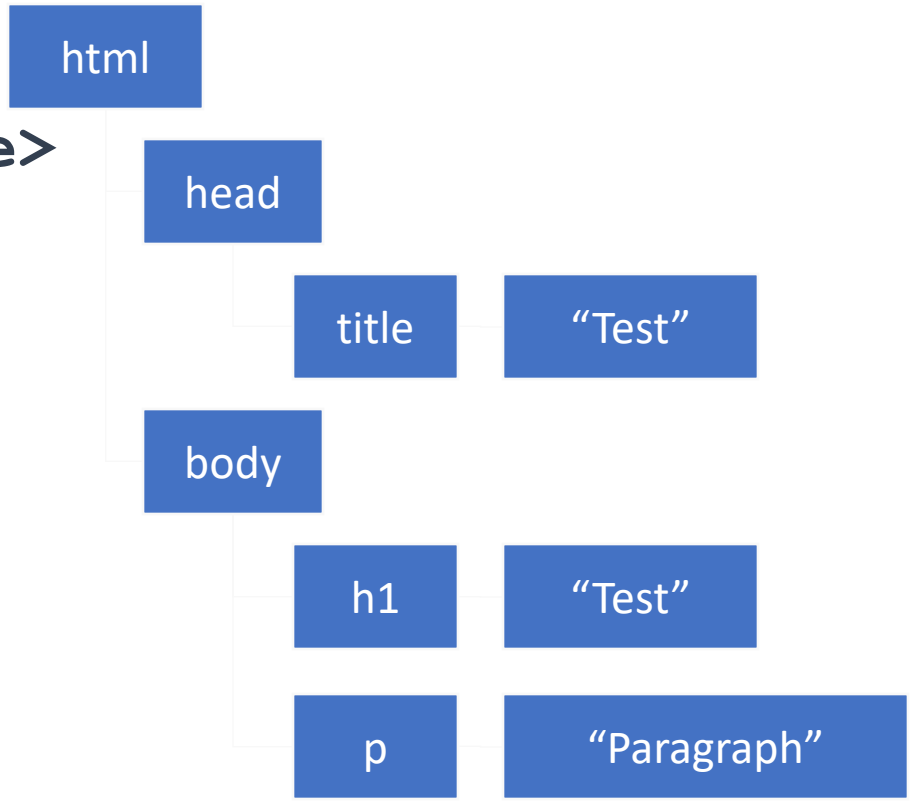
2. Structured Document

- Most of Documents have a structure
  - Article
    - Title, Part, Chapter, Section, Paragraph, …
  - CV
    - Name, Education, Work Experiences, Skills, …
- Markup Language is a way to express structured document
  - Nested Elements

2.1. Nested Elements

- Tree structure expressed by Markup Language

```
<html>
  <head>
      <title>Test</title>
  </head>
  <body>
      <h1>Test</h1>
      <p>Paragraph</p>
  </body>
</html>
```



2.1. Nested Elements (2)

- Rule of Nested Elements
  - Opening tags must be matched to closing tags
  - The latest opening tag must be closed before other opening tag
    - Correct example

    <head><title>Title</title></head>

    - Incorrect example

    <head><title>Title</head></title>

2.2. Global structure of HTML Document

- <html>
  - root of document
- <head>
  - meta information of document
    - title, meta, link,…
- <body>
  - content of document
    - h1-h6, p, address, …

```
<html>
  <head>
    <title>Test</title>
  </head>
  <body>
    <h1>Test</h1>
    <p>Paragraph</p>
  </body>
</html>
```

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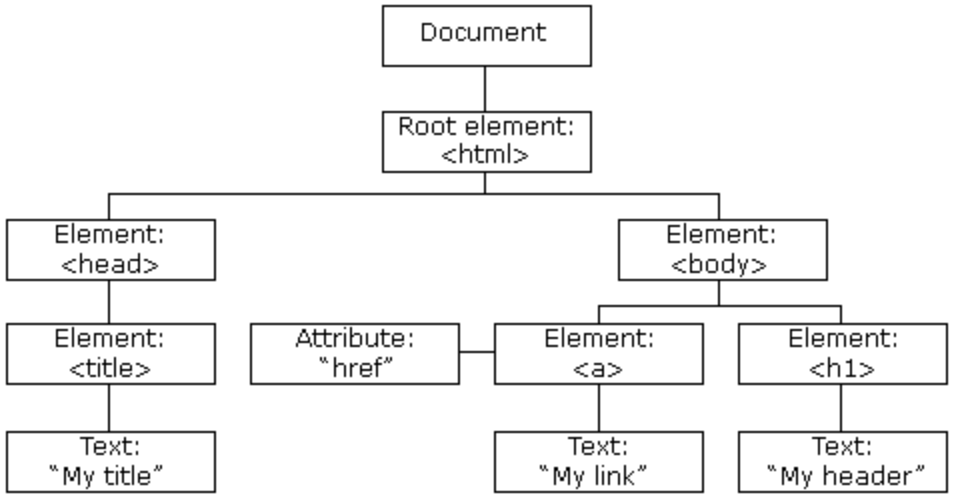
3. DOM (Document Object Model)

- API for HTML Documents
  - defines a standard way for accessing and manipulating HTML documents
  - Object Oriented
  - Supported by various programming languages
- DOM representation
  - Logical tree structure
  - Hierarchy of node objects
    - root: Document
    - Node: Element,

      Attr, Text,…



3. DOM (2)

- DOM in JavaScript
  - E.g. get all of paragraphs in the document and display the first one of them

```
var paragraphs =
  document.getElementsByTagName("p");
alert(paragraphs[0].nodeName);
```

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4. Structured HTML Elements

- List
- Table
- Emphasis

4.1. List

- Unordered List
- Ordered List
- Definintion List

Unordered List

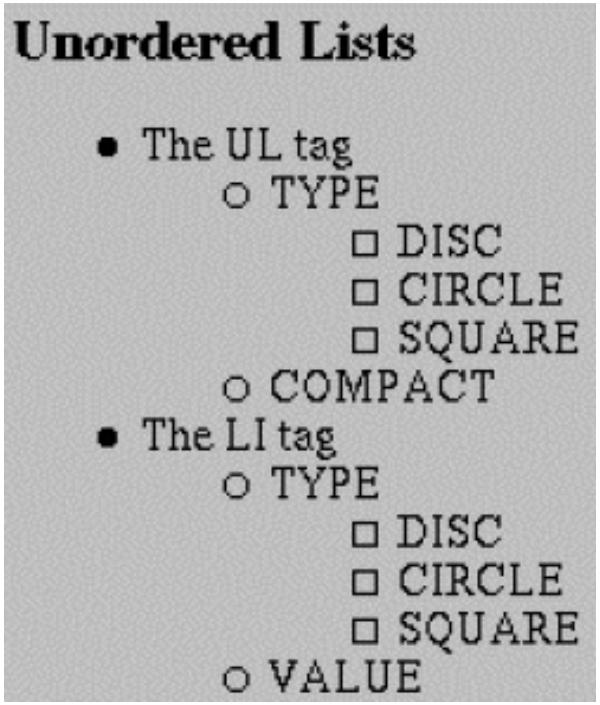
```
<ul>
  <li>Apple</li>
  <li>Banana</li>
  <li>Grape</li>
</ul>
```

- Apple
- Banana
- Grape

- Attributes: TYPE
  - TYPE is DISC, CIRCLE, or SQUARE

UL: Custom Bullets

```
<UL TYPE="DISC">
   <LI>The UL tag
      <UL TYPE="CIRCLE">
         <LI>TYPE
            <UL TYPE="SQUARE">
               <LI>DISC
               <LI>CIRCLE
               <LI>SQUARE
            </UL>
         <LI>COMPACT
      </UL>
  <LI>The LI tag
      <UL TYPE="CIRCLE">
         <LI>TYPE
            <UL TYPE="SQUARE">
               <LI>DISC
               <LI>CIRCLE
               <LI>SQUARE
            </UL>
         <LI>VALUE
      </UL>
</UL>
```



Ordered List

```
<ol>
  <li>One</li>
  <li>Two</li>
  <li>Three</li>
</ol>
```

1. One
2. Two
3. Three

Attributes: TYPE, START

- TYPE: 1, a, A, i, I
- START=1 or 2 … a or b …

Nested Ordered Lists

```
<OL TYPE="I">
    <LI>Headings
    <LI>Basic Text Sections
    <LI>Lists
        <OL TYPE="A">
          <LI>Ordered
              <OL TYPE="1">
                  <LI>The OL tag
                    <OL TYPE="a">
                      <LI>TYPE
                      <LI>START
                      <LI>COMPACT
                    </OL>
                 <LI>The LI tag
              </OL>
          <LI>Unordered
             <OL TYPE="1">
                <LI>The UL tag
                <LI>The LI tag
             </OL>
                <LI>Definition
                    <OL TYPE="1">
                      <LI>The DL tag
                      <LI>The DT tag
                      <LI>The DD tag
                    </OL>
        </OL>
    <LI>Miscellaneous
</OL>
```

I. Headings
II. Basic Text Sections
III. Lists
    A. Ordered
        1. The OL tag
            a. TYPE
            b. START
            c. COMPACT
        2. The LI tag
    B. Unordered
        1. The UL tag
        2. The LI tag
    C. Definition
        1. The DL tag
        2. The DT tag
        3. The DD tag
IV. Miscellaneous

Definition List

```
<dl>
  <dt>Apple</dt>
  <dd>A  fruit or a
      computer
      company</dd>
  <dt>Grape</dt>
  <dd>A juicy purple- or
      green-skinned
      fruit</dd>
</dl>
```

Apple
    A fruit or a computer company
Grape
    A juicy purple- or green-skinned fruit

4.2. Table

```
<table>
    <caption>Users</caption>
    <tr>
            <th>Name</th>
            <th>Email</th>
    </tr>
    <tr>
            <td>John Smith</td>
            <td>smith@example.org</td>
    </tr>
    <tr>
            <td>Amy Wine</td>
            <td>amy@yahoo.com</td>
    </tr>
</table>
```

Users

Name	Email
John Smith	smith@example.org
Amy Wine	amy@yahoo.com

4.2. Table (2)

- Adding a border
  - `<table border=10>`
- Changing the border color
  - `<table border=10 bordercolor=green>`
  - `<table border=10 bordercolorlight=green bordercolordark=red>`
- Setting the width of a cell or table
  - `<table border=0 width=320>`
  - `<table border=0 width=100%>`
  - `<td width=320> data </td>`
  - `<td width=30%> data </td>`

4.2. Table (3)

- Centering a table on a page
  - **`<table border=0 width=320 align=center>`**
- Aligning a cell's contents:
  - **`<td align=d1 valign=d2>;`**
    - d1: left, right or center
    - d2: top, bottom, middle or baseline
  - **`<td align=left valign=top>`**

4.2. Table (3)

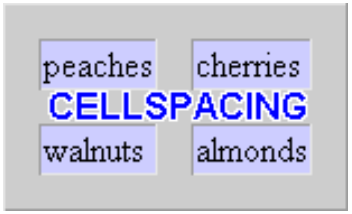
data 11	data 12
Data 21	Data 22

- Controlling space in and around cells
  - Cellpadding=m, where m is the number of pixels desired between the contents and the walls of the cell
    - **<table cellpadding=8>**

data 11	data 12
Data 21	Data 22

  - Cellspacing=n, where n is the number of pixels desired between each cell
    - **<table cellspacing=8>**

data 11	data 12
Data 21	Data 22



4.2. Table (4)

- Spanning a cell across columns -- <td colspan=*n*>

```
<table border= 2 bordercolor=green align=left>
   <tr> <!-- first row -->
      <td> data 11 </td> <td > data 12 </td>
   </tr>
   <tr> <!-- second row -->
      <td> Data 21 </td>
     <td> Data 22 </td>
   </tr>
   <tr> <!-- third row -->
      <td colspan=2> Data 3 – last row??? </td>
   </tr>
</table>
```

data 11	data 12
Data 21	Data 22
Data 3 – last row???	

4.2. Table (5)

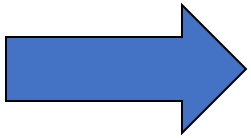
- Spanning a cell across rows -- <td rowspan=*n*>

```
<table border= 2 bordercolor=green align=left>
  <tr> <!-- first row -->
       <td> data 11 </td> <td > data 12 </td>
  </tr>
<tr> <!-- second row -->
       <td rowspan=2> Row 23 </td> <td> Data 21 </td>
</tr>
<tr> <!-- third row -->
       <td > Data 31 </td>
</tr>
</table>
```

data 11	data 12
Row 23	Data 21
	Data 31

4.3. Emphasis

```
<p>
  Here is an emphasized <em>paragraph</em>
</p>
<p>
  This is a strongly emphasized <strong>text</strong>
</p>
```

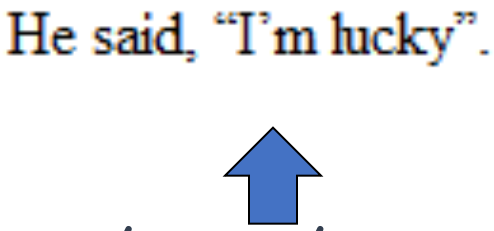


Here is an emphasized *paragraph*

This is a strongly emphasized **text**

4.4. Quote

- Short quote: **<q>**
  - includes only text
  - IE 8 doesn't support <q>

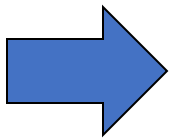


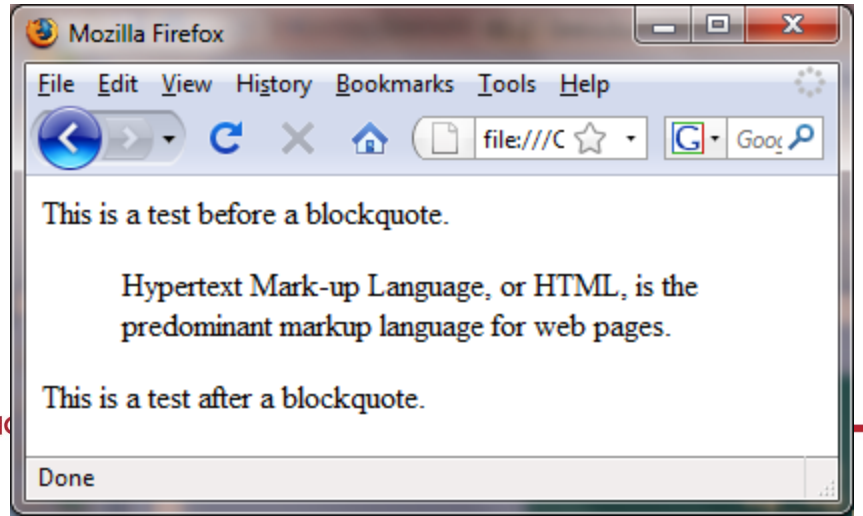

```
<p>He said, <q>I'm lucky</q>.</p>
```

- Long quote: **<blockquote>**
  - includes block-level elements like headings, lists, paragraphs or div's
  - inserts white space before and after a blockquote element

4.4. Quote (2)

```
This is a test before a blockquote.
<blockquote
  cite="http://en.wikipedia.org/wiki/HTML">
<p>Hypertext Mark-up Language - HTML, is the
  predominant markup language for web pages.</p>
</blockquote>
This is a test after a blockquote.
```





4.5. Other structuring of text

- dfn
- code
- samp
- kbd
- var
- cite
- br
- abbr
- accronym
- pre
- ins
- del
- sub
- sup