



HTML

ONE LOVE. ONE FUTURE.

Objectives

- Describe hypertext and HTML standards
- Understand HTML elements and markup tags
- Create the basic structure of an HTML file
- Learn HTML5 tags

1. Basic HTML

- hypertext
- tags & elements
- text formatting
- lists, hyperlinks, images
- tables

2. HTML5

- HyperText Markup Language (HTML) is the language for specifying the *static* content of Web pages (based on SGML, the Standard Generalized Markup Language)
- *hypertext*
 - refers to the fact that Web pages are more than just text
 - can contain multimedia, provide links for jumping within the same document & to other documents
- *markup* refers to the fact that it works by augmenting text with special symbols (tags) that identify the document structure and content type

Hypertext & HTML (cont.)

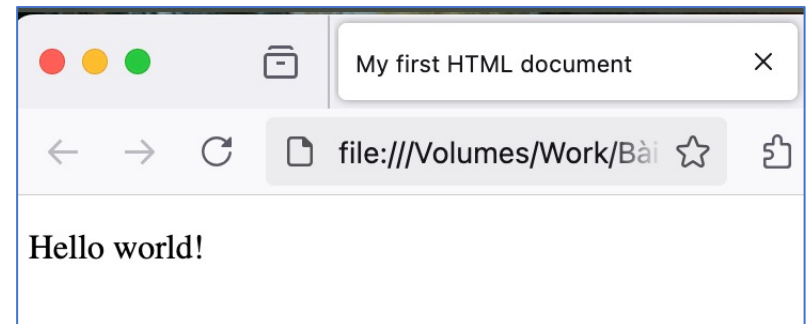
- HTML 1 (Berners-Lee, 1989): very basic, limited integration of multimedia in 1993, Mosaic added many new features (e.g., integrated images)
- HTML 2.0 (IETF, 1995): tried to standardize these & other features, but late in 1994-96, Netscape & IE added many new, divergent features
- HTML 3.2 (W3C, 1997): attempted to unify into a single standard but didn't address newer technologies like Java applets & streaming video
- HTML 4.0 (W3C, 1997): attempted to map out future directions for HTML, not just react to vendors
- HTML 5 (W3C, 2014): adds new tags and attributes

HTML Document Structure

An HTML document has two main structural elements

- **HEAD** contains setup information for the browser & the Web page
- **BODY** contains the actual content to be displayed in the Web page

```
<!DOCTYPE html>
<html>
  <head>
    <title>
      My first HTML document
    </title>
  </head>
  <body>
    <p>Hello world!</p>
  </body>
</html>
```



Try and view page at: [W3School](https://www.w3schools.com/)

<head> and <body> elements

- <head> element
 - Title
 - Cascading Style sheet information
 - Metadata, such as who authored the page, keywords
 - JavaScript code
- The <body> element
 - Paragraphs
 - Tables and lists
 - Images
 - JavaScript code
 - PHP code

Tags and Elements

- HTML specifies a set of *tags* that identify structure of the document and the content type
 - tags are enclosed in `< >`
 - `` specifies an image
 - most tags come in pairs, marking a beginning and ending
 - `<title>` **and** `</title>` enclose the title of a page
- An HTML *element* is an object enclosed by a pair (in most cases) of tags: `<tagname>Content</tagname>`
 - `<title>My Home Page</title>` is a TITLE element
 - `This text appears bold` is a BOLD element
 - `<p>Part of this text is bold</p>` is a PARAGRAPH element that contains a BOLD element

Text Layout

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>
```

This paragraph
contains a lot of lines
but the browser
ignores it.

```
</p>
```

```
<p>
```

This paragraph
contains a lot of spaces
in the source code,
but the browser
ignores it.

```
</p>
```

```
</body>
```

```
</html>
```

This paragraph contains a lot of lines but the browser ignores it.

This paragraph contains a lot of spaces in the source code, but the browser ignores it.

`<p>`: defines a paragraph.
A paragraph always starts on a new line, and browsers automatically add some white space (a margin) before and after a paragraph.

Text Layout

Tag	Description
<code><p></code>	Defines a paragraph
<code><hr></code>	Defines a thematic change in the content
<code>
</code>	Inserts a single line break
<code><pre></code>	Defines pre-formatted text

Text Layout

- `<h1>...</h1>`: a large, bold heading
- `<h2>...</h2>`: a slightly smaller heading
- ...
- `<h6>...</h6>`: a tiny heading

```
<!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

The Basic Web page – A Worked Example

```
<!DOCTYPE html>
<html>
  <head>
    <title>SOICT</title>
  </head>
  <body>
    <h1>SOICT</h1>
    <h2>Introduction</h2>
    <p>The educational philosophy is "Towards excellence in
digital age."
    </p>
    <hr/>
    <h2> Organizational structure</h2>
    <p> 02 Departments;
      04 Research Center;
      02 Support Training, Scientific Research and
Technology Transfer Center;
      01 Administration - office - Academic Affairs  </p>
    <hr/>
  </body>
</html>
```

The Basic Web page – A Worked Example

SOICT

Introduction

The educational philosophy is “Towards excellence in digital age.”

Organizational structure

02 Departments; 04 Research Center; 02 Support Training, Scientific Research and Technology Transfer Center; 01 Administration – office – Academic Affairs

Text Appearance

```
<!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>

<p><em>This text is italic
too</em></p>

</body>
</html>
```

This text is bold

This text is italic

This is _{subscript} and ^{superscript}

This text is italic too

- **... ** specify bold
- **<i>... </i>** specify italics
- **<big>... </big>** increase size
- **<small>... </small>** decrease size
- **...** put emphasis
- **...** put emphasis
- **_{...}** a subscript
- **^{...}** a superscript

```
<!DOCTYPE html>
<html>
<body>
<h2>An Unordered HTML List</h2>
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>

<h2>An Ordered HTML List</h2>
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

</body>
</html>
```

An Unordered HTML List

- Coffee
- Tea
- Milk

An Ordered HTML List

1. Coffee
2. Tea
3. Milk

- There are 3 different types:
- **...**: an ordered list
 - **** identifies each list item
- **...** unordered list
 - **** identifies each list item
- **<dl>...</dl>** a definition list
 - **<dt>** identifies each term
 - **<dd>** identifies its definition

Hyperlinks

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

<h2>Absolute URLs</h2>
<a href="https://www.w3.org/">W3C</a>
<br>
<a
href="https://www.google.com/">Google</a>

<h2>Relative URLs</h2>
<a href="html_images.asp">HTML Images</a>
<br>
<a href="/css/default.asp">CSS
Tutorial</a>

</body>
</html>
```

Absolute URLs

[W3C](https://www.w3.org/)
[Google](https://www.google.com/)

Relative URLs

[HTML Images](#)
[CSS Tutorial](#)

- `...`

Images

```

```

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

<h2>Image Size</h2>



</body>
</html>
```

Image Size



Images (cont.)

- **src** - specifies the file name (and can include a URL)
- **width** and/or **height** - dimensions in pixel
- **title** - displayed when the mouse is “hovered” over the picture
- **alt** - text that is displayed when the image is missing, can't be loaded

Tables

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

<table>
  <tr>
    <th>MSSV</th>
    <th>Lớp</th>
  </tr>
  <tr>
    <td>20202020</td>
    <td>KHMT 01</td>
  </tr>
  <tr>
    <td>20212021</td>
    <td>Việt Nhật 02</td>
  </tr>
</table>

</body>
</html>
```

MSSV	Lớp
20202020	KHMT 01
20212021	Việt Nhật 02

`<table>...</table>`: a table element

`<th>...</th>`: a header cell

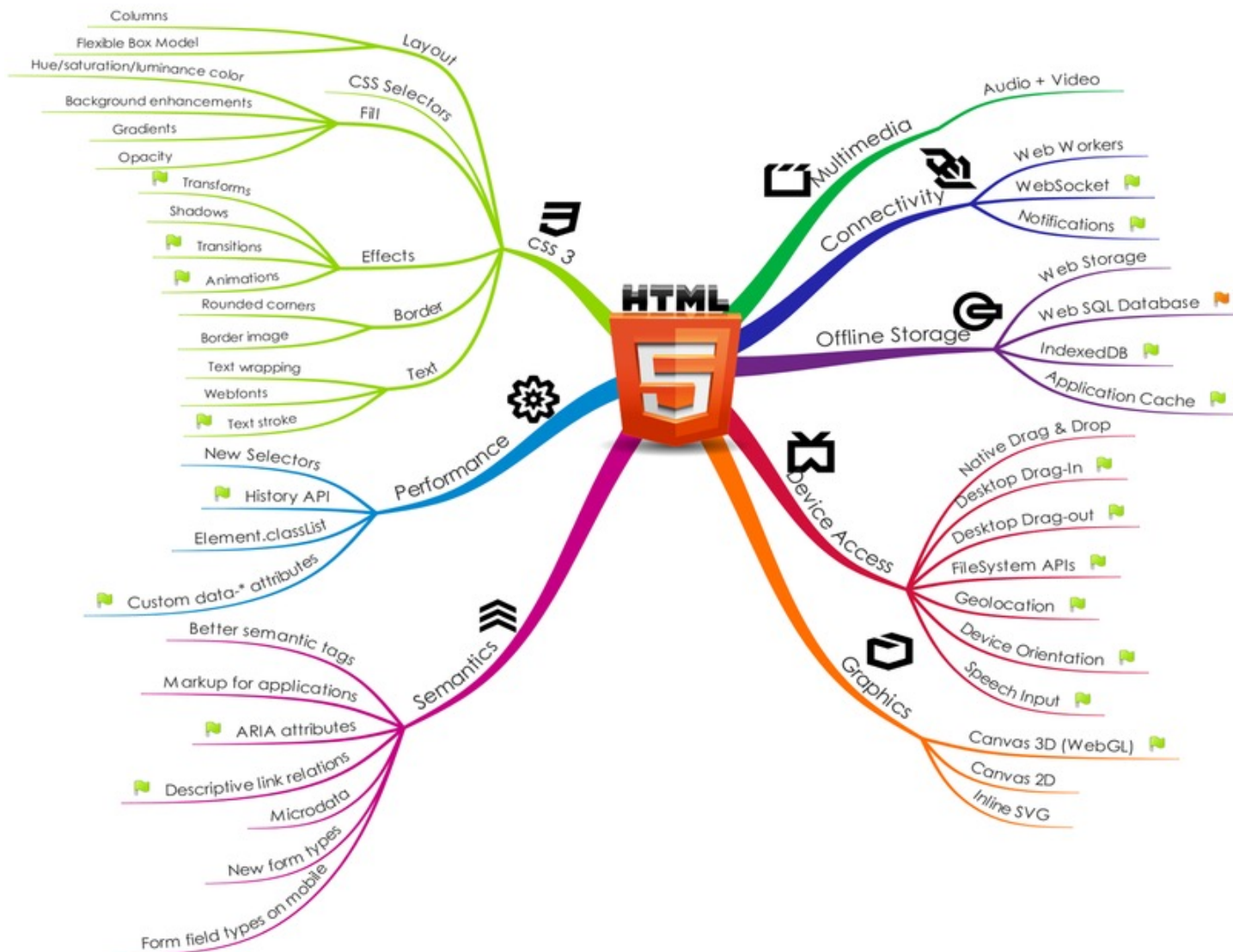
`<tr>...</tr>`: a row in the table

`<td>...</td>`: a cell

Outline

1. Basic HTML

2. HTML5

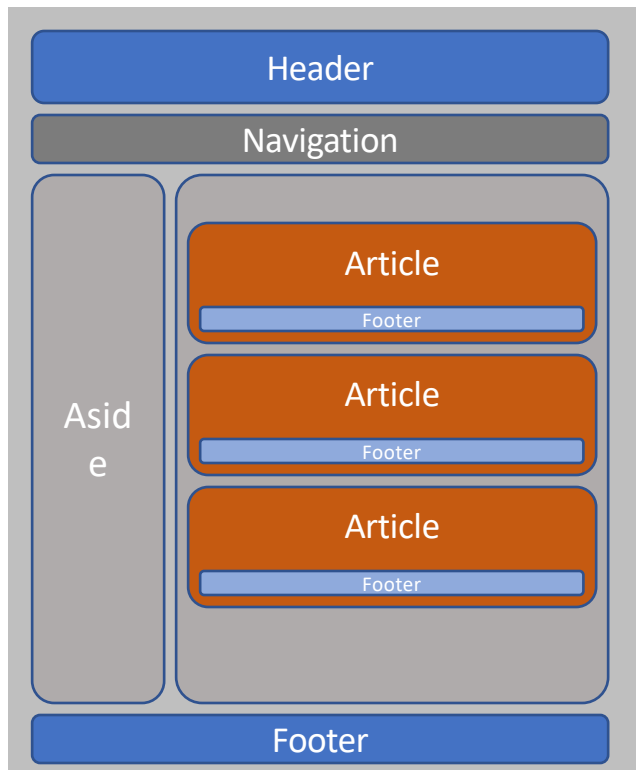


HTML5 New Tags

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>...</title>
  </head>
  <body>
    <header>...</header>
    <nav>...</nav>
    <article>
      <section>...</section>
    </article>
    <aside>...</aside>
    <figure>...</figure>
    <footer>...</footer>
  </body>
</html>
```

- HTML 5 DOCTYPE as follows: `<!DOCTYPE html>`
- Character Encoding as follows: `<meta charset="UTF-8">`
- New tags introduced in HTML5 for better structure
 - **header** – header of a section.
 - **footer** – footer for a section
 - **nav** – section of the document intended for navigation.
 - **dialog** – mark up a conversation.
 - **figure** – associate a caption together with some embedded content, such as a graphic or video.

HTML5 New Tags



- **section** – a generic document or application section. It can be used together with h1-h6 to indicate the document structure.
- **article** – an independent piece of content of a document, such as a blog entry or newspaper article.
- **aside** – a piece of content that is only slightly related to the rest of the page.

HTML5 New Tags

- HTML5 offers new elements for media content:

Tag	Description
<audio>	Defines sound content
<video>	Defines a video or movie
<source>	Defines multiple media resources for <video> and <audio>
<embed>	Defines a container for an external application or interactive content (a plug-in)
<track>	Defines text tracks for <video> and <audio>

```
<audio controls="true">  
  <source src="audiodemo.ogg" />  
  <source src=" audiodemo.mp3" />  
  <source src=" audiodemo.wav" />  
  Not supported.  
</audio>
```



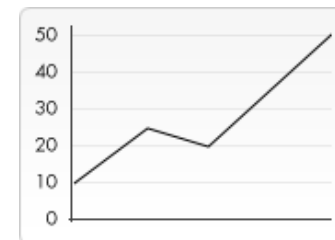
```
<video src="video.ogv" controls poster="poster.jpg" width="320" height="240">  
<a href="video.ogv">Download movie</a>  
</video>
```

HTML5 New Tags

- <canvas> element:

Tag	Description
<canvas>	Used to draw graphics, on the fly, via scripting (usually JavaScript)

```
function draw() {  
    var ctx =  
        document.getElementById('canvas').getContext('2d');  
    var img = new Image();  
    img.onload = function() {  
        ctx.drawImage(img, 0, 0);  
        ctx.beginPath();  
        ctx.moveTo(30, 96);  
        ctx.lineTo(70, 66);  
        ctx.lineTo(103, 76);  
        ctx.lineTo(170, 15);  
        ctx.stroke();  
    }  
    img.src = 'images/backdrop.png';  
}
```



HTML5 New Tags

- New input elements:

button
checkbox
color
date
datetime
datetime-local
email
file
hidden
image

month
number
password
radio
range
reset
search
submit
tel
text
time
url
week

- **Form**

Number:

Range:

Month:

DateTime:

 UTC

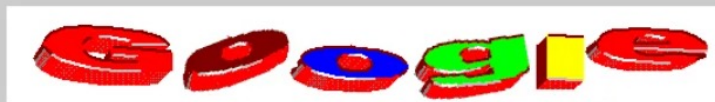
DateTime-Local:

Date:

May							2010
Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
17	26	27	28	29	30	1	2
18	3	4	5	6	7	8	9
19	10	11	12	13	14	15	16
20	17	18	19	20	21	22	23
21	24	25	26	27	28	29	30
22	31	1	2	3	4	5	6

Today None

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10 results

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Google page history



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School of Information and Communication Technology



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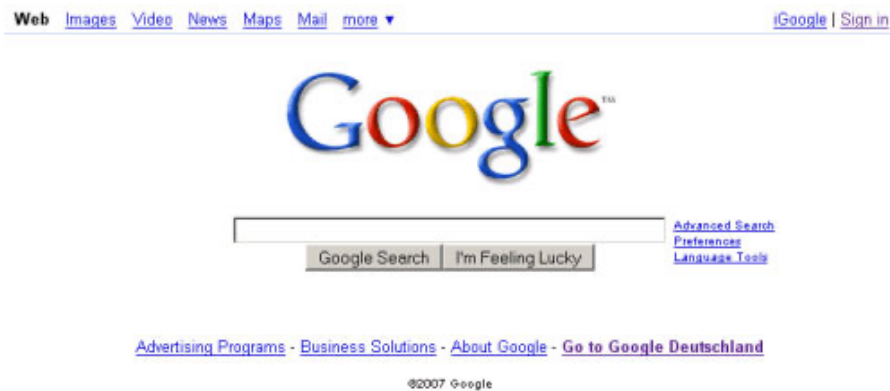
Google page history



2005



2006



2007



2025