

Web Technology

(1)

MAD 130



Elements of the Lecture

- World Wide Web Consortium (W3C).
- Programming Languages: HTML, CSS, HTML5.
- Web Browsers.

Overview of HTML

- Basic HTML syntax and Semantics.

World Wide Web Consortium (W3C)

World Wide Web Consortium (W3C)

The World Wide Web Consortium (W3C)

Is an international community that develops open standards to ensure the long-term growth of the Web.



World Wide Web Consortium (W3C)

What does W3C do?

W3C's primary activity is to develop protocols and guidelines that ensure long-term growth for the Web.

W3C's standards define key parts of what makes the World Wide Web work.

World Wide Web Consortium (W3C)

Where is W3C located?

W3C does not have a single physical headquarters. There are four institutions, however, that "host" W3C: MIT (in Cambridge, MA, [USA](#)), ERCIM (in Sophia-Antipolis, [France](#)), Keio University (near Tokyo, [Japan](#)), and Beihang University (in Beijing, [China](#)).

What is the difference between the Web and the Internet?

- The Internet is a global system of **interconnected computer networks** that interchange data by packet switching using the standardized Internet Protocol Suite (TCP/IP).
- Thus, the Internet is a network of networks, defined by the TPC/IP standards.
- The Web, on the other hand, is defined in W3C's Architecture of the World Wide Web, The World Wide Web (WWW, or simply Web) is an **information space** in which the items of interest, referred to as resources, are identified by global identifiers called Uniform Resource Identifiers (URI).
- Thus, the Web is an information space. The first three specifications for Web technologies defined URLs, HTTP, and HTML.

Programming Languages: HTML, CSS, HTML5

Programming Languages

- A **programming language** is a formal language, which comprises a set of instructions that produce various kinds of output. Programming languages are used in computer programming.
- Web programming languages can be used to define complex logical instructions and processes.
- Some of the most common programming languages when it comes to web design include **HTML**, **HTML5**, and **CSS**. Some are used with other languages to create a static or interactive website.

Programming Languages

- Web programming languages used to for **web development**.
- Web development requires a number of decisions to be made beforehand. For example, you need to consider whether you need to choose a good programming language.

Programming Languages

- What programming languages are especially good for use with the web?
- What are they used for?
- Which languages are the most versatile??

What is Hypertext Markup Language (HTML)?

- HTML has been around quite a while and is likely to be used for long time to come.
- **HTML** is one of many markup language. All of them rely on small snippets of called **tags** that are intermixed with the content being processed.
- **HTML tags** are the hidden keywords within a web page that define how your web browser must format and display the content.
- A document in pure HTML is static meaning it exists in a constant state.

What is Hypertext Markup Language (HTML)?

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

<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
<h4>This is heading 4</h4>
<h5>This is heading 5</h5>
<h6>This is heading 6</h6>

</body>
</html>
```

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

What is Hypertext Markup Language (HTML)?

- HTML is a relatively simple language. While it has some quirks, it should not intimidate anyone.
- HTML has changed since its initial inception to include functions and features that make it more **flexible** and **easier** to use for web application development.
- Generally, the most complex aspects of web page design come from integrating other language into the HTML code, such as **JavaScript** and Cascading Style Sheets (**CSS**).

Why Learn HTML?

- HTML is the lingua franca of the Web.
- It is the common tongue of the Web that is understood by all computers and devices on the planet. While it's true that other tools are available for creating Web pages, every website that you visit today is written in HTML.
- HTML is the most common language used in browser-based application development. It is platform independent. That means that no matter what type of platform a Web page was created on, the page can be rendered by any browser running on any operating system.

What Is HTML5?

- HTML5 is the latest version of Hypertext Markup.
- Language introduces a whole new set of structural elements that are more functional and meaningful. These elements are also more friendly to search engines and easily accessible to various user agents such as screen readers.

What Is HTML5?

- It's actually three kinds of code: HTML, which provides the structure; Cascading Style Sheets (CSS), which take care of presentation; and JavaScript, which makes things happen.
- can be used HTML5 to build complicated applications that run in your browser.

What Is Cascading Style Sheets(CSS)?

- CSS is a simple language that defines style constructs to format the appearance of a Web page.
- The style rules define a set of formatting instructions (one or more property-value pairs) that affect the HTML elements in a Web page.
- CSS is a **presentational language**, in contrast with HTML, which is a **semantic language**.

What Is Cascading Style Sheets (CSS)? (Cont.)

- CSS is a presentational language because it configures, formats, and styles the HTML elements to give the Web page its visual appearance.
- The CSS style rules and standards are set and maintained by the World Wide Web Consortium (W3C).
- There are several versions of CSS. Many new properties and rules have been gradually introduced.

What Is Cascading Style Sheets (CSS)? (Cont.)

	CSS Advantages	CSS Disadvantages
1	Makes website more flexible	Not uniformly supported by all browsers.
2	Easier to maintain	

Web browser

Web browser

What is Web browser ?

- A web browser (commonly referred to as a browser) is a software application for retrieving, presenting and traversing information resources on the World Wide Web.

Web browser

- **Web browser** is a program such as Google Chrome, opera, Microsoft Internet Explorer or Edge, or Mozilla Firefox.



Web browser

- It is designed as a generic Web page presenter, accepting complex streams of commands and data remote Web servers and composing them into visually appealing Web far the most common language is **HTML.**

Basic HTML syntax and Semantics

Basic HTML Syntax and Semantics

Syntax

- Syntax for HTML is a set of rules for how to structure HTML code.
- in HTML, all elements should have an opening tag (for example `<h1>`) and a closing tag (for example `</h1>`).

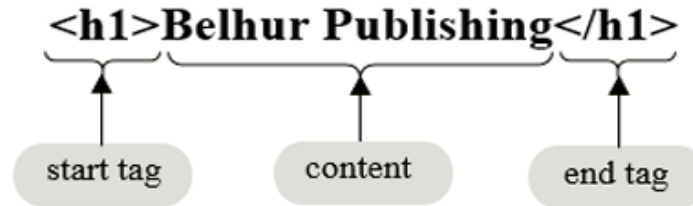
Semantics

- Semantics determines what the HTML code means
- In HTML, an element (for example, `<h1>This is a heading.</h1>`) also has a specific meaning based on the type of tag (`h1`) and the content inside the opening (`<h1>`) and closing (`</h1>`).

Basic HTML Syntax and Semantics

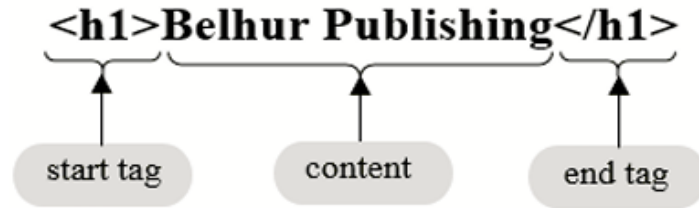
- Each HTML tag is enclosed in angle brackets, the less-than (<) and greater-than (>) signs.
- Most tags come in pairs: a start tag and an end tag. The content is encapsulated by the start and end tags.
- Tags that come in pairs are sometimes referred to as container tags . The syntax of a container tag looks like this:
<tagname>Content</tagname> The tagname is the name of the element, and Content is the content of the element.

Example (1)



- The `<h1>` tag is one of six heading tags .
- The `<h1>` is called the **start tag**, and the `</h1>` is called the **end tag** .
- The `<h1>` tag signals the browser that the text that follows appears larger and darker than the default text, as shown here: **Belhur Publishing**

Example (1) (cont.)



- The end tag always starts with a forward slash.
- The forward slash in the `</h1>` tag indicates that this tag ends the previous `<h1>` tag.
- Any content placed outside of these container tags will not be affected.

Basic HTML syntax and Semantics

HTML is a very flexible language and **not case-sensitive**. This means that even if you code your Web page with errors, the browser will still render and display the page correctly to the end user.

Nevertheless, we will follow the convention to use lowercase letters for all HTML tags (with the exception of `<!DOCTYPE html>`)

Tag Name	Description Tag
<code><html></code> <code></html></code>	The tag tells the web browser that everything in between is an HTML document.
<code><head></code> <code></head></code>	This section is usually not displayed in the browser window, although it contains other information that may help the browser know how to display the page.
<code><title></code> <code></title></code>	Everything in between the <code><title></code> and <code></title></code> is displayed in the title bar of the browser window.
<code></body></code> <code><body></code>	Everything in between the <code><body></code> and <code></body></code> is displayed body in the web page.

Example (2)

1. Open NotePad editor from Start Menu.

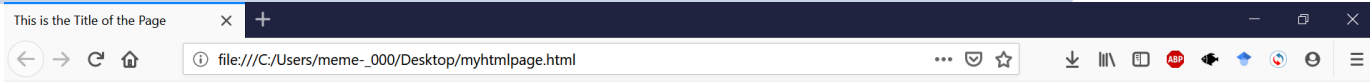
2. Type this text:

```
<html>
<head>
<title>Title of my HTML
page</title>
<body>
This is the Body of the page!
</body>
</head>
```

3. Save the file as "myhtmlpage.html"

4. Open a web browser like Internet Explorer or other web browser.

Example (2)



This is the Body of the Page

Anything within the body of a web page is displayed in the main browser window.