

HTML

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Objectives and Competencies

Markup Languages

- Origin: *marking up* documents
- Syntactical distinguishable from the text
- Examples for markup languages
 - LaTeX
 - XML
 - HTML
 - JSON?

JSON

JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl, Python, and many others. These properties make JSON an ideal data-interchange language.¹

▶ Eventually, JSON is not a markup language.

HTML

- **H**ypertext **M**arkup **L**anguage
- Markup directives to describe content (structure, formatting)
- Declarative language
- Annotation using tags `< >`
- Case-insensitive

Example

```
<p>Hello World!</p>
```

Anatomy of HTML Tags

Opening tag Closing tag

`<p>Hello World</p>`

Content

Element

The diagram illustrates the structure of an HTML element. It shows the opening tag `<p>` and the closing tag `</p>` with brackets above them. The text 'Hello World' is placed between the tags. A bracket below 'Hello World' is labeled 'Content'. A larger bracket below the entire `<p>Hello World</p>` sequence is labeled 'Element'.

`<p class="notes">Hello World</p>`

Attribute

The diagram shows an HTML tag `<p class="notes">` with a bracket below the `class="notes"` part labeled 'Attribute'. The rest of the tag `>Hello World</p>` is not bracketed.

Special Character

Literal character	Character Reference Equivalent
<	<
>	>
"	"
'	'
&	&
nonbreaking space	

HTML Document

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>My HTML page</title>
  </head>
  <body>
    <p>Hello World!</p>
  </body>
</html>
```


Header

- Meta Tag

```
<meta charset="utf-8">
```

- Link Tag

```
<link rel="stylesheet" href="styles.css">
```

XHTML

- Extensible Hypertext Markup Language
- Extended from XML and HTML
- More restrictive than vanilla HTML
- Why?
 - Malformed HTML (e.g. missing closing tags)

XHTML Example

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
  <head>
    <title>My XHTML page</title>
  </head>
  <body>
    <p>Hello world!</p>
    <br />
  </body>
</html>
```

Basic XHTML Rules

- Every tag required a closing tag
- Shorthand form for `<p></p>` is `<p />`
- Quotes are required for
- `<html>`, `<head>`, `<title>`, and `<body>` are mandatory
- `<!DOCTYPE>` declaration is necessary at the top of the file
- No attribute minimization
- Elements and attributes must be in lowercases

DOCTYPE

- The `<!DOCTYPE>` declaration is **not** an HTML tag
- Tells the browser what to expect, each doctype
- HTML 4 and XHTML must refer to an DTD (Document Type Definition)
- HTML 5
 - `<!DOCTYPE html>`
- Different Doctypes allow different HTML tags

References