Scripting for Multimedia
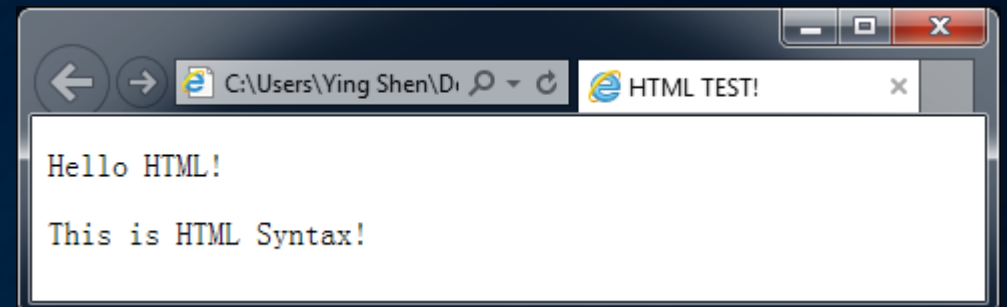
HTML

- An acronym for **Hypertext Markup Language**

- Basic language of WWW documents

- HTML documents consist of text, including tags that describe document structure

- Relationship with browsers: backward/forward compatibility

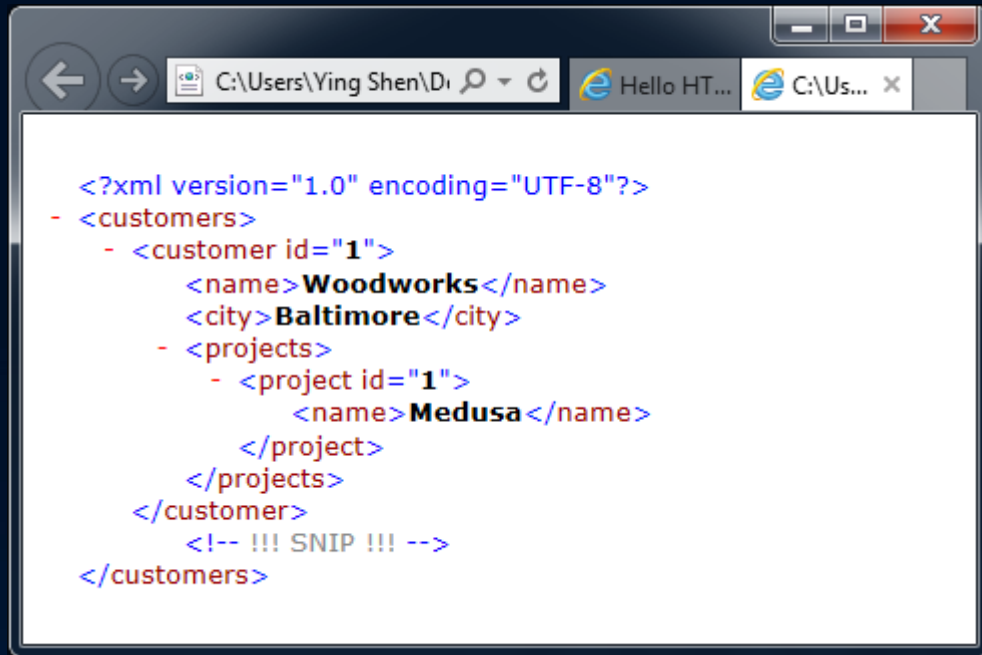# HTML Example

```
<!DOCTYPE html>
<html lang = "en">
      <head>
            <title>HTML TEST!</title>
      </head>
    <body>
        <p>Hello HTML!</p>
        <p>This is HTML Syntax!</p>
    </body>
</html>
```

C:\Users\Ying Shen\D;   HTML TEST!

Hello HTML!

This is HTML Syntax!

XML

- **eXtensible Markup Language**

- XML defines a generic syntax used to mark up data with simple, human-readable tags

- XML is designed to be customized

- Like HTML, XML was developed from the SGML markup language

- Differences with HTML
  - A starting tag should be paired with an end tag
  - Tag names are not predefined
  - XML Schema Definition (XSD)

XML
Example

```xml
<?xml version="1.0" encoding="UTF-8"?>
<customers>
    <customer id="1">
        <name>Woodworks</name>
        <city>Baltimore</city>
            <projects>
                <project id="1">
                    <name>Medusa</name>
                </project>
            </projects>
    </customer>
    <!-- !!! SNIP !!! -->
</customers>
```
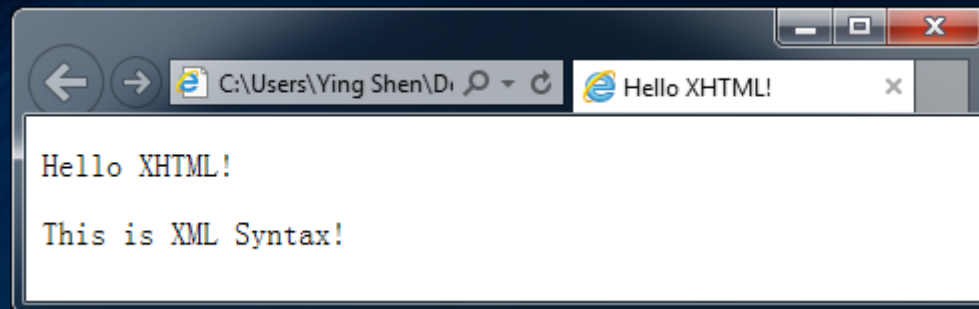
XHTML

- **eXtensible HyperText Markup Language**

- Version of HTML that is designed to adhere to XML rules
  - XHTML documents can be validated using XSD

- Stricter syntax than traditional HTML

- Adherence to XML rules allows greater extensibility

- Parsable as XML, so it can be manipulated in sophisticated ways by clients; you'll learn about this in more advanced CS classes

XHTML Example

```
<?xml version="1.0"?>
<!DOCTYPE  html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transition.dtd">
<html>
    <head>
        <title>Hello XHTML!</title>
    </head>
    <body>
        <p>Hello XHTML!</p>
        <p>This is XML Syntax!</p>
    </body>
</html>
```

C:\Users\Ying Shen\D   Hello XHTML!

Hello XHTML!
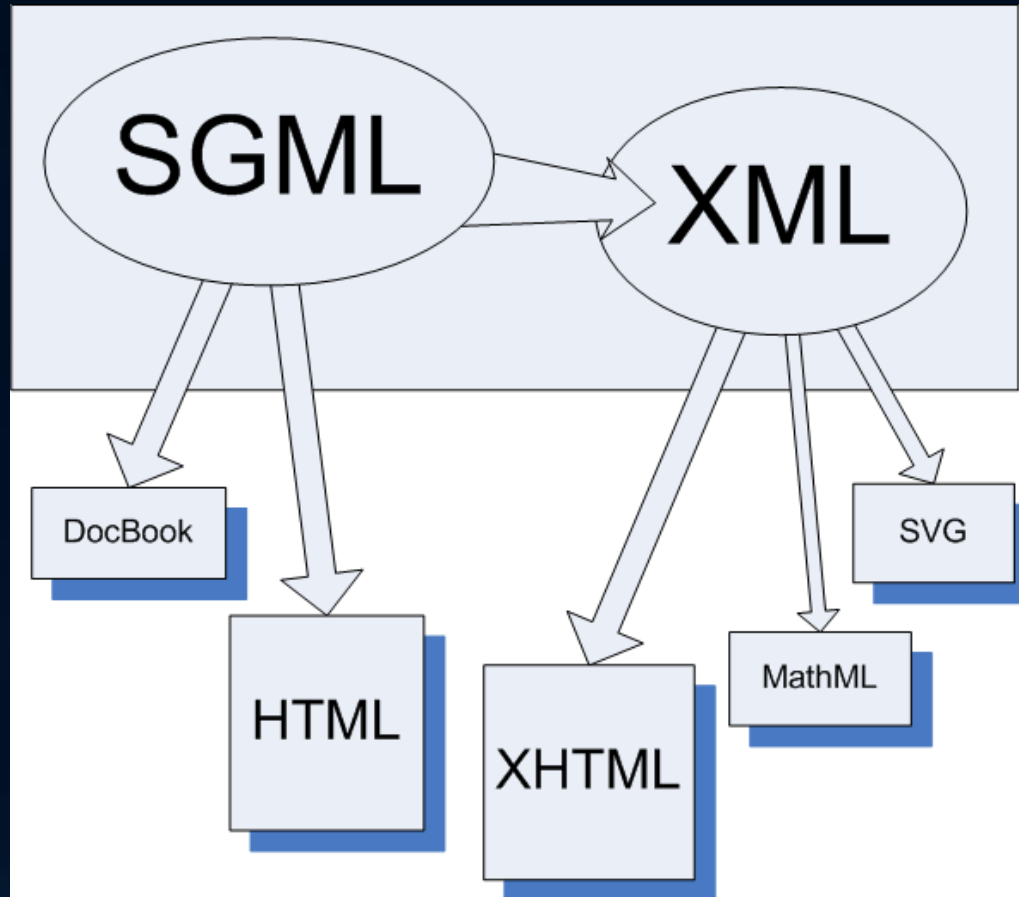
This is XML Syntax!

XHTML

- Some problems remain
  - Need for an increasing amount of multimedia
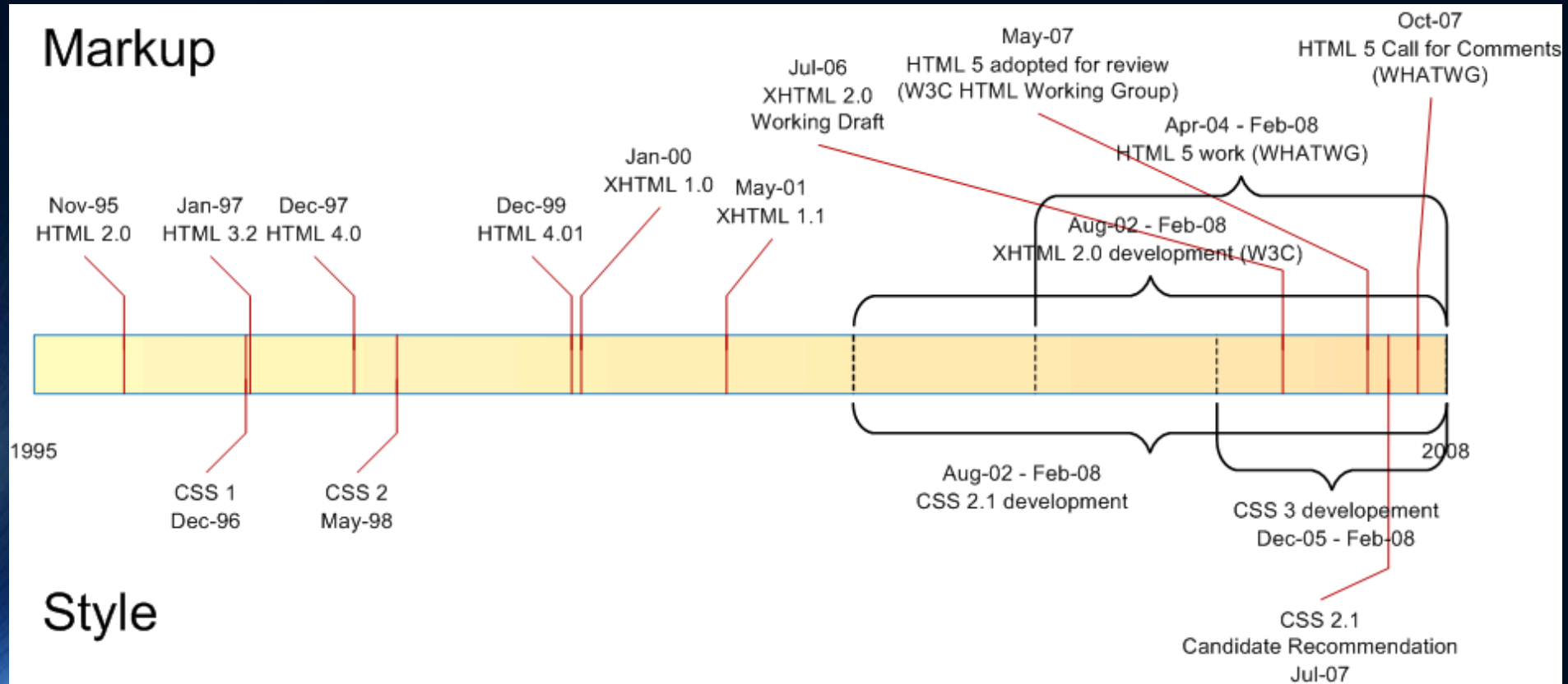 - Plug-ins

SGML, XML, HTML, and XHTML

HTML5

- Not originate from XHTML, but from HTML 4.01

HTML5

- This is the latest form of HTML, and is the standard form for this class

- Create rich, interactive websites

  - Support audio, video and animations

Semantic markup

- Tags provide meaning
  - not presentation
  - e.g. <b>, <i>: bold and italic?
- Cascading Style Sheet (CSS)

HTML elements

- An element is composed of
  - a beginning tag,
  - an ending tag,
  - and the content between the tags
- Example:

```
<div>

    The quick brown <b>fox</b> jumps over the lazy dog

</div>
```

Create a section in HTML doc

Some HTML elements

- HTML5 has more than 100 defined elements

- Some of them
  - `<a>`
  - `<b>`
  - `<body>`
  - `<br>`
  - `<button>`
  - `<div>`
  - `<em>`

  - `<embed>`
  - `<form>`
  - `<h1>`
  - `<h2>`
  - `<head>`
  - `<html>`
  - `<i>`

  - `<iframe>`
  - `<img>`
  - `<ol>`
  - `<option>`
  - `<scripts>`
  - `<table>`
  - `<video>`

  - …

Attributes

- An attribute is a **name="value"** or **name='value'** pair
  - Boolean attributes can have only name with no value

- Example

```
<div id="main" class='mainContent'><div>
```

Boolean attributes

- Presence of the attribute indicates an option

  - checked

  - selected

  - disabled

  - readonly

- Examples

```
<input type="checkbox" name="fruit" value="Apple" checked />

<input type="checkbox" name="fruit" value="Apple" checked='' />

<input type="checkbox" name="fruit" value="Apple" checked='checked' />
```

HTM5 global attributes

- accessky
- class
- contenteditable
- contextmenu
- dir
- draggable
- dropzone

- hidden
- id
- lang
- spellcheck
- style
- tabindex
- title

Self-closing tags

- A self-closing tag is a beginning tag and an ending tag in one
  -

- Using self-closing tags only for tags cannot have content
  -
 vs. <div></div>
  - A special tag: <script>
    <script type="text/javascript" ref="/Scripts/MyCode.js"></script>

Void elements

- Some elements **cannot** have content
  - E.g.
- Void elements in HTML5
  - <area>
  - <base>
  -
  - <col>
  - <command>
  - <hr>
  - <img>
  - <input>
  - <link>
  - <keygen>
  - <meta>
  - <param>
  - <source>
  - <wbr>

Expando attributes

- Expando attributes are attributes that **you** define

- May conflict with W3C-defined attribute name

- To solve this problem, assign a name prefixed with "data"

Comments

- Add comments to HTML source

```
<!--comment here -->
```

- Comments are not displayed on the rendered browser page but are sent to the browser

Creating an HTML document

- <!DOCTYPE html>
  - browser in **no-quirks** mode
- <html>
  - <head>
    - <meta>
    - <title>
  - <body>
- <title>
  - Displays in the browsers toolbar
  - Provides the default name for the page when added to favorites
  - Displays the title when the page is displayed in the search results

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8"/>
        <title>title here</title>
    </head>
    <body>
        content here
    </body>
</html>
```

Special characters

Display	Entity Name	Entity Number	Description
&	&	&	Ampersand
>	>	>	Greater-than sign
<	<	<	Less-than sign
"	"	"	Double quotation
©	©	©	Copyright
®	®	®	Registered trademark
™	™	™	Trademark
			Nobreaking space