

The background features a dark blue gradient with a series of curved, glowing lines that create a sense of depth and movement. On the right side, there is a prominent grid pattern that appears to be part of a larger, curved structure, possibly representing a tunnel or a futuristic architectural element. The overall aesthetic is clean, modern, and tech-oriented.

# Scripting for Multimedia

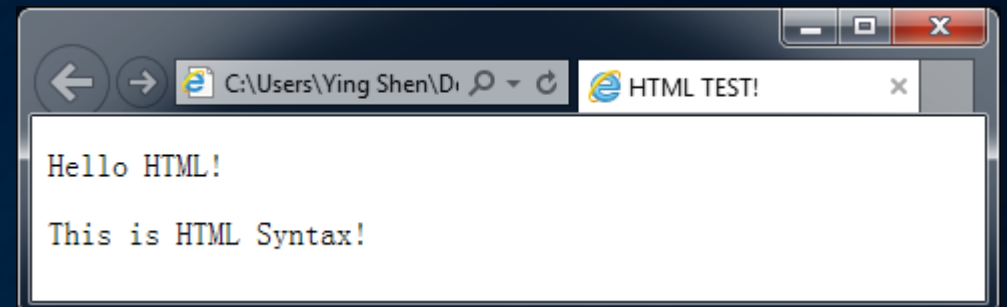
LECTURE 1: INTRODUCING HTML5

# 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

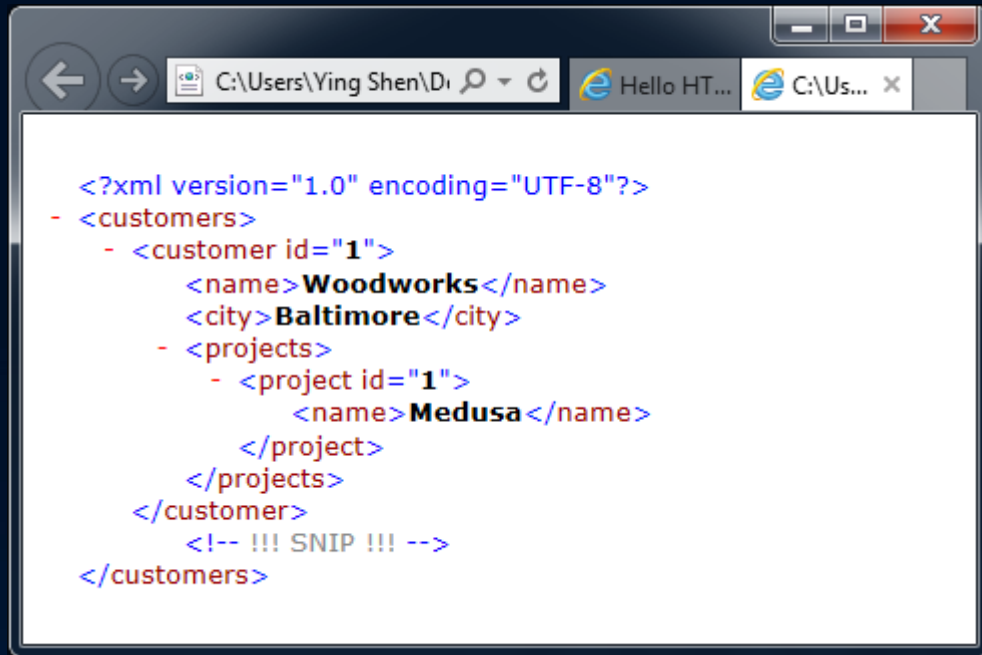
# HTML Example

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



# 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)



A screenshot of a web browser window. The address bar shows the file path C:\Users\Ying Shen\Di... and the page title is Hello HT... The main content area displays XML code with syntax highlighting. The code is as follows:

```
<?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>
```

# XML Example

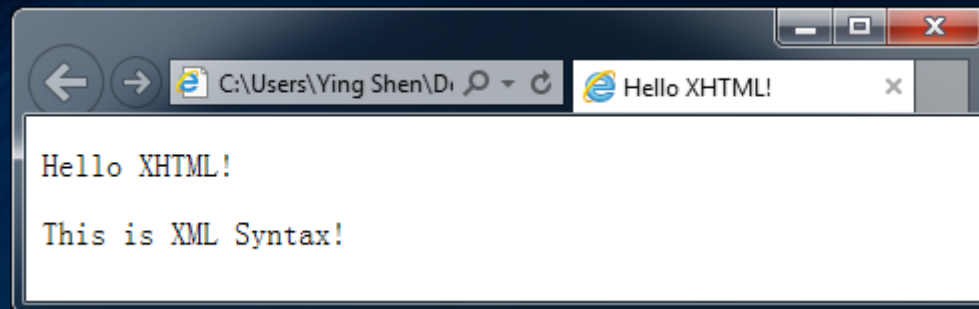
```
<?xml version="1.0" encoding="UTF-8"?>
<customers>
  <customer id="1">
    <name>Woodworks</name>
    <city>Baltimore</city>
    <projects>
      <project id="1">
        <name>Medusa</name>
      </project>
    </projects>
  </customer>
  <!-- !!! SNIP !!! -->
</customers>
```

# 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>
```

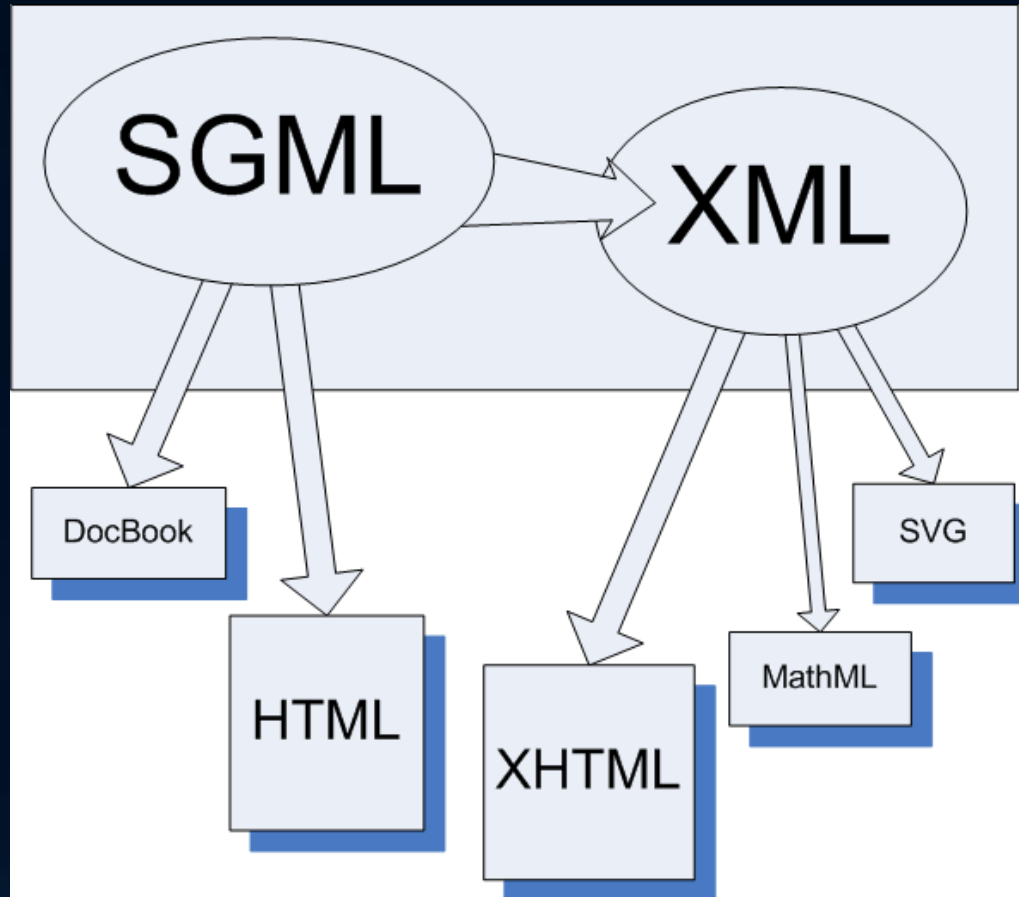


# XHTML

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

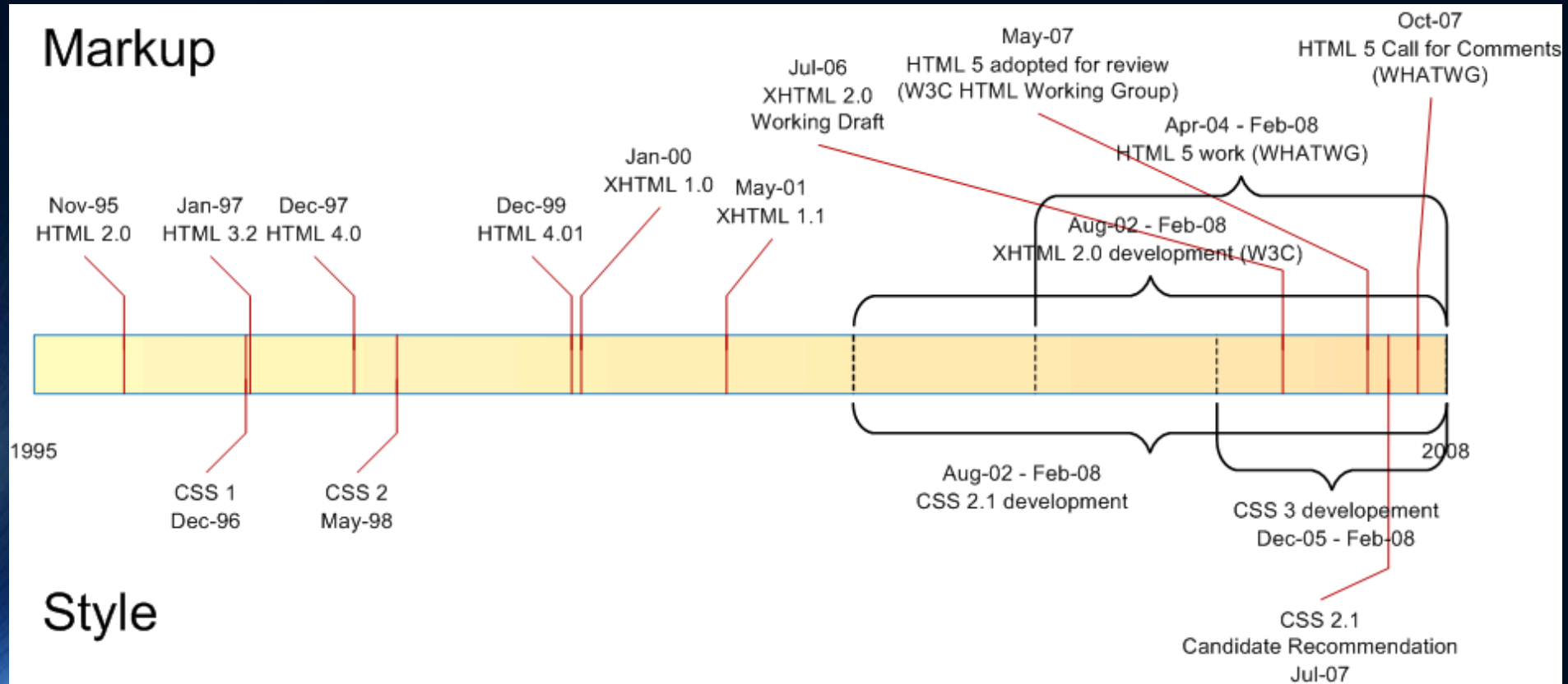


# SGML, XML, HTML, and XHTML



# 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>`
  - `<embed>`
  - `<iframe>`
  - ...
  - `<b>`
  - `<form>`
  - `<img>`
  - `<body>`
  - `<h1>`
  - `<ol>`
  - `<br>`
  - `<h2>`
  - `<option>`
  - `<button>`
  - `<head>`
  - `<scripts>`
  - `<div>`
  - `<html>`
  - `<table>`
  - `<em>`
  - `<i>`
  - `<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' />
```



## ✓ Quick check

What is the best way to disable <button> element when page is loaded?



# HTML5 global attributes

- accesskey
- 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
  - `<br />`
- Using self-closing tags only for tags cannot have content
  - `<br />` 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. `<br>`
- Void elements in HTML5
  - `<area>`
  - `<base>`
  - `<br>`
  - `<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"

## ✓ Quick check

You have a webpage with a `<span>` element that contains the customer's name. Along with the name, you want to include the customer number on the `<span>` element, but you don't want to display the customer number. How can you write the `<span>` element for a customer called Contoso Ltd with customer number 123?



# 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
&	&amp;	&#38;	Ampersand
>	&gt;	&#62;	Greater-than sign
<	&lt;	&#60;	Less-than sign
"	&quot;	&#34;	Double quotation
©	&copy;	&#169;	Copyright
®	&reg;	&#174;	Registered trademark
™	&trade;	&#8482;	Trademark
	&nbsp;	&#160;	Nobreaking space