

Scripting & Computer Environments

Web Programming: XHTML

IIT-H

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...Previously & Today...

Previously:

- 1 Internet vs web, client-server interactions, key network protocols

e.g. IP, TCP, UDP, HTTP(s), DNS

- 2 HTML Basics

- Document Structure

- Block-level elements

`<h1>` to `<h6>`, `<p>`, ``,
``, `<hr>`, `<form>`, `<div>`
`<table>` ...

- Inline elements

``, `<i>`, ``, ``,
`<code>`, `<a>`, ``, `<td>`...

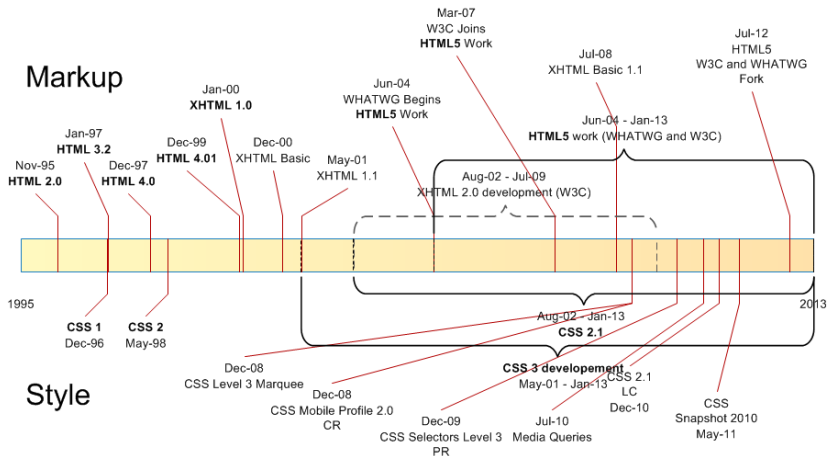
- Tables and Forms

- Layout Management

Today:

- EXtensible HyperText Markup Language (XHTML) + HTML 5

- What factors would you consider when designing a website?
- HTML vs XHTML



- EXtensible HyperText Markup Language.
- XHTML almost \sim HTML 4.01 (but stricter and cleaner)
- XHTML = HTML + XML (EXtensible Markup Language)
- XHTML is HTML redesigned as XML.
- XML designed to *carry and store* data; HTML to display data.
 - No predefined tags (unlike HTML).
 - Allows to define one's own tag or document structure.
 - Doesn't replace but complements HTML.
- XHTML is supported by major browsers:



HTML...

- Many “bad” HTML codes out there.
- Markup ambiguities → inconsistent rendering by browsers.
e.g. by mobile, small device, and braille browsers

XHTML...

- Inter-browser interoperability/compatibility
- Content-style separation
- XML eases addition of new elements/attributes. By extension ...
- Future-oriented standard

XHTML:

- Separation of content from presentation.
- Document structure (e.g. DOCTYPE declaration)
- Stricter element and attribute syntaxes
 - Case-sensitive element names
 - Quoting of attribute values
 - Tag closure
 - Proper nesting of tags

- Instruct the browser about the (X)HTML version of the page.
- Be the first line in your code.
- Common Document Type Definitions (DTDs) to ease the transition from HTML → XHTML:
 - ① **XHTML 1.0 Transitional**: compatible with HTML 4.01 but NO framesets, includes style + deprecated elements.
 - ② **XHTML 1.0 Frameset**: ~ XHTML 1.0 Transitional but allows framesets.
 - ③ **XHTML 1.0 Strict**: tighter control

XHTML 1.0 Transitional

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

XHTML 1.0 Frameset

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

XHTML 1.0 Strict

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

```
<!-- Mandatory DOCTYPE goes here -->
```

```
<!-- <html>, <head>, <title> & <body> also must be present -->
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
    <!-- xmlns specifies the xml namespace for a document-->
```

```
<head>
```

```
    <title> Document title goes here </title>
```

```
</head>
```

```
<body>
```

```
    The actual content goes here
```

```
</body>
```

```
</html>
```

Nest XHTML elements properly.

Example

```
<b><i>This text is bold and italic</b></i>
```



Example

```
<b><i>This text is bold and italic</i></b>
```



Always close non-empty XHTML elements/tags.

Example

```
<p> Here is a paragraph.  
<p> Here is another paragraph.
```



Example

```
<p> Here is a paragraph </p>  
<p> Here is another paragraph </p>
```



Close empty XHTML elements too.

Example

```
A break: <br>
A horizontal rule: <hr>

```



Example

```
A break: <br />
A horizontal rule: <hr />

```



XHTML elements & attributes be in lower case only (XML is case-sensitive).

Example

```
<TABLE WIDTH="80%">  
<TR>  
<TD> cell 1 </TD> <TD> cell 2 </TD>  
</TR>  
</TABLE>
```



Example

```
<table width="80%">  
<tr>  
<td> cell 1 </td> <td> cell 2 </td>  
</tr>  
</table>
```



Quote attribute values.

Example

```
<table width=100%>  
<td rowspan=3>  
<form action=example.php method=get>
```



Example

```
<table width="100%">  
<td rowspan="3">  
<form action="example.php" method="get">
```



Attribute minimization NOT allowed (attribute-value pairs must be written in full).

Example

```
<input checked>  
<input readonly>  
<input disabled>  
<option selected>
```



Example

```
<input checked="checked">  
<input readonly="readonly">  
<input disabled="disabled">  
<option selected="selected">
```




Input: HTML

Output: XHTML

1. Add the `<!DOCTYPE>` declaration to the first line.
2. Add the `xmlns` attribute to the `<html>` element.
3. Change all element and attribute names to lowercase
4. Close all empty + non-empty elements
5. Quote all attribute values

Visit [W3C's Markup Validator page](#).

 **Markup Validation Service**
Check the markup (HTML, XHTML, ...) of Web documents

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Validate by URI

Validate a document online:

Address:

[More Options](#)

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① Document Structure

- Mandatory XHTML DOCTYPE ✓
- Mandatory `xmlns` attribute in `<html>` ✓
- Mandatory `<html>`, `<head>`, `<title>`, and `<body>` ✓

② XHTML Elements

- Be properly nested ✓
- Always be closed ✓
- Be in lowercase ✓
- XHTML documents must have one root element ✓

③ XHTML Attributes

- Names be in lower case ✓
- Values be quoted ✓
- Attribute minimization is forbidden ✓

HTML



An Overview

- The new HTML standard (still work-in-progress).
- The previous version was HTML 4.01 (1999).
- Why the revision?
- Many latest browser versions support it.
- Device-independent, backward-compatible
- A response to the current web evolution

- New elements and attributes
- Aware of latest web technologies (e.g. full CSS3 support)
- Reduces the need for 3rd party plugins such as QuickTime/Flash.
e.g. the `<video>` and `<audio>` new elements
- 2D/3D Graphics (e.g. the `<canvas>` element for 2D)
- Local Storage of info (~ cookies but for larger info)
- Geolocation (e.g. for location-aware web apps)



2D Drawing:	canvas
Media:	audio video
Content-specific:	header footer nav section article
New form controls:	calendar email time url search



big center font	frame frameset blink
noframes strike	applet basefont marquee

`<input type="X">`

where X is one of:

X	Used For
search	search boxes
color	color pickers
tel	telephone numbers
email	email addresses
url	web addresses
date	calendar date pickers
datetime	date and time (with time zone)
datetime-local	local date and time
month	to select month + year
week	to select week + year
time	timestamps
range	range of numbers
number	numeric values

XHTML 1.0 Strict ...

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

HTML 5 ...

```
<!DOCTYPE html>
```

XHTML ...

```
<html xmlns="http://www.w3.org/1999/xhtml"
lang="en" xml:lang="en">
```

HTML 5 ...

```
<html lang="en" xml:lang="en">
```

XHTML ...

```
<meta http-equiv="Content-Type"  
content="text/html; charset=utf-8">
```

HTML 5 ...

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

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <title>This is title</title>
</head>
<body>
  <header>header of the document such as banner</header>
  <nav>navigation links go here</nav>
  <article>
    <section>
      An article may have many sections
    </section>
  </article>
  <aside>content aside from the main content</aside>
  <footer>footer of the document</footer>
</body>
</html>
```