



# CS 146: Intro to Web Programming and Project Development

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# Introduction to HTML



# HTML

**1**

What Is HTML and  
Where Did It  
Come from?

**2**

HTML Syntax

**3**

Semantic  
Markup

**4**

Structure of HTML  
Documents

**5**

Quick Tour of  
HTML Elements

**6**

HTML5 Semantic  
Structure  
Elements



# What Is HTML and Where Did It Come from?

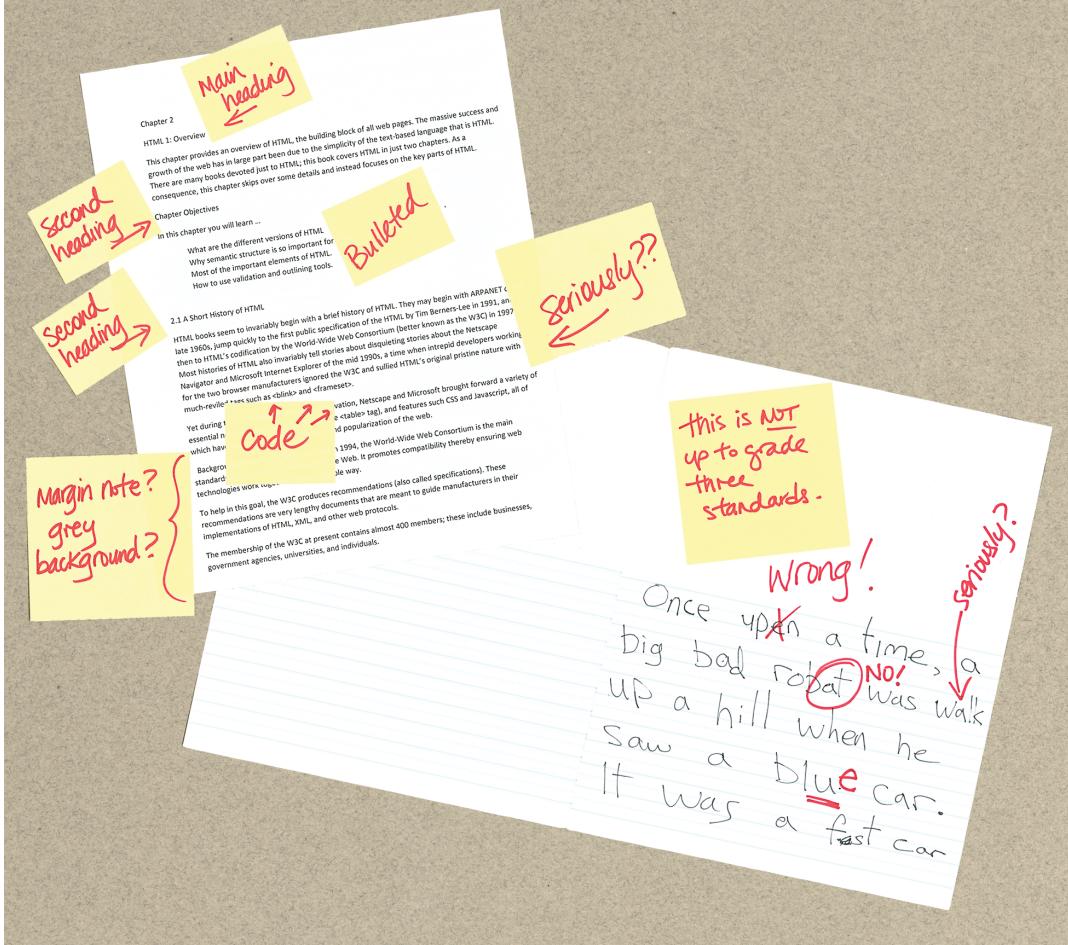
## HTML

- HTML is defined as a **markup language**.
- **markup** is a way to indicate information about the content that is distinct from the content
- HTML has been through many versions and branches, the details of which might matter if you ever see old HTML code.



# What Is HTML and Where Did It Come from?

## Markup





# What Is HTML and Where Did It Come from?

## XHTML and Validation

The image shows two web browser windows side-by-side. The left window is the 'W3C Markup Validation Service' at validator.w3.org. It has tabs for 'Validate by URI', 'Validate by File Upload', and 'Validate by Direct Input'. The 'Validate by URI' tab is selected. Below it is a form with a 'Address:' input field and a 'Check' button. A note below the form explains the validation process for various document types like RSS/Atom feeds and CSS stylesheets. The right window is 'Nu Html Checker' at nu.validator.org. It also has tabs for 'source', 'outline', 'image report', and 'Options...'. The 'source' tab is selected, showing an HTML document with various elements like DOCTYPE, head, title, body, p, ul, li, div, and a. At the bottom of the source code, there is an 'Error' message: 'An `img` element must have an `alt` attribute, except under certain conditions. For details, consult guidance on providing text alternatives for images.' A green arrow points from a callout box on the left towards this error message.

Validator provides feedback on markup's validity according to W3C specification

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# What Is HTML and Where Did It Come from?

## HTML 5

- Widely implemented in modern browsers
- The current W3C recommendation for web development
- Still relatively new (2014)



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# HTML Syntax

## Elements and Attributes

- **HTML documents** are composed of textual content and **HTML elements**
- **HTML element** encompasses
  - the **element name** within angle brackets (i.e., the **tag**) and
  - HTML elements can also contain **attributes**.
  - **the content** within the tag.





# HTML Syntax

## Elements and Attributes

An **empty element** does not contain any text content; instead, it is an instruction to the browser to do something.

- In XHTML, empty elements had to be terminated by a trailing slash.
- In HTML5, the trailing slash in empty elements is optional.

Example empty element ``

Element name      Trailing slash (*optional*)



# HTML Syntax

## Nesting HTML Elements

Correct nesting

```
<h1>Share Your <strong>Travels</strong></h1>
```



# HTML Syntax

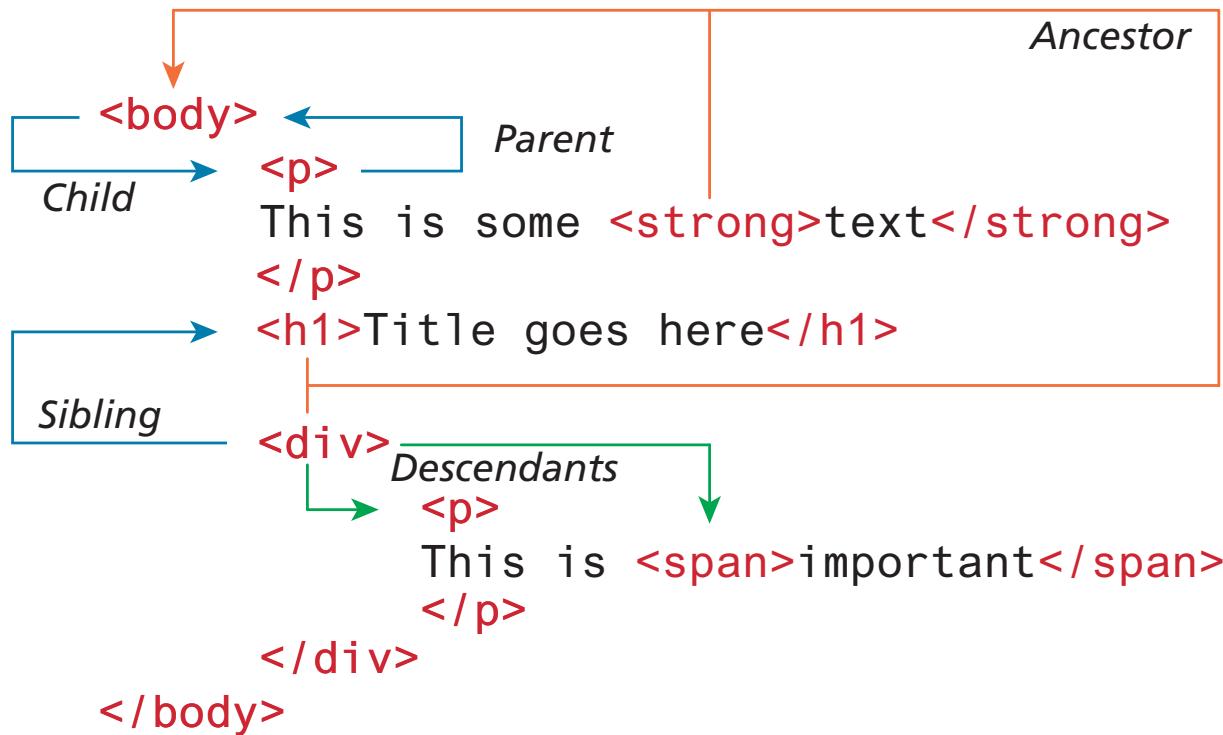
## Nesting HTML Elements

Incorrect nesting

```
<h1>Share Your <strong>Travels</h1></strong>
```

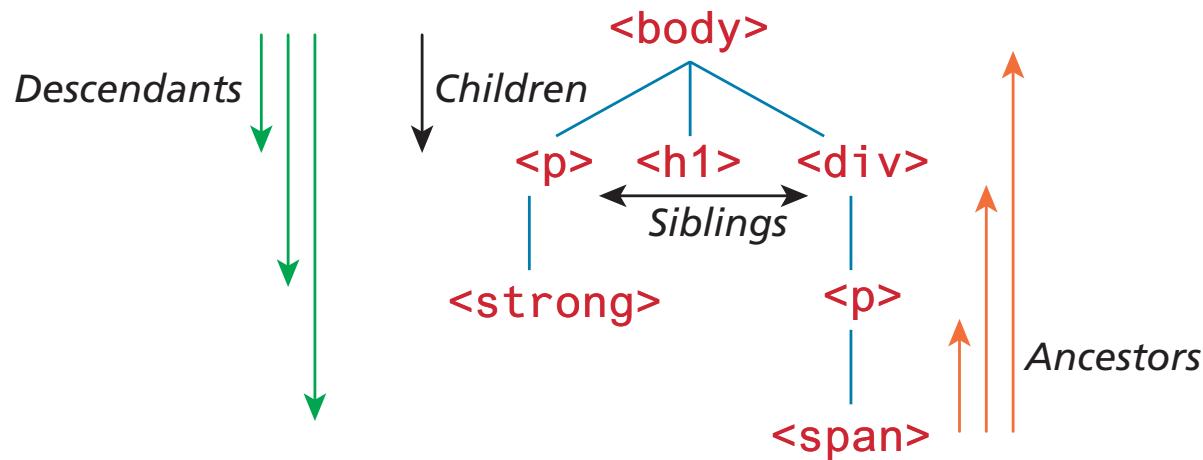
# HTML Syntax

## Nesting HTML Elements



# HTML Syntax

## Nesting HTML Elements





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# Semantic Markup

Focus on the structure of the document, not the visual

Advantages:

- Maintainability
- Performance
- Accessibility (<http://www.w3.org/WAI> )
- Search Engine Optimization



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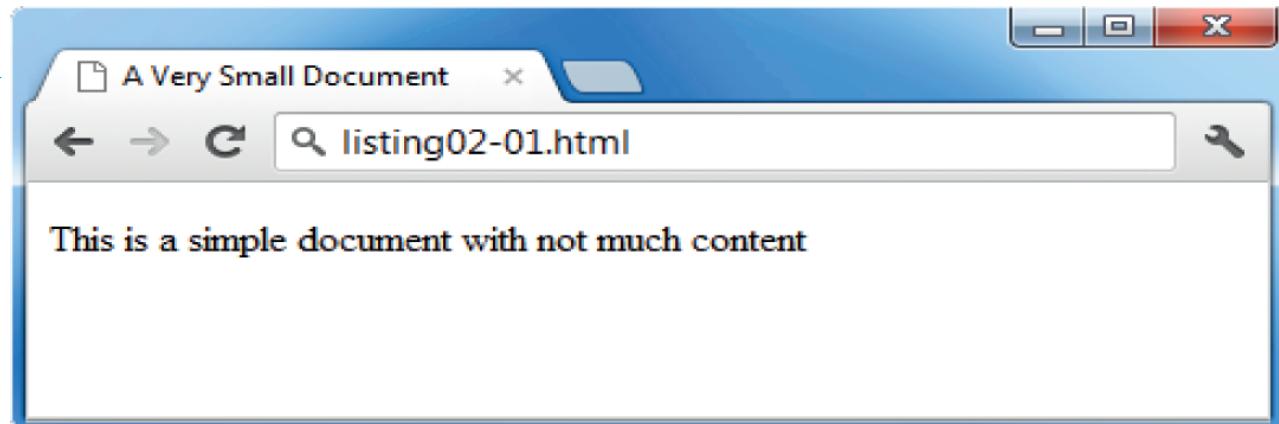
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# Structure of HTML Documents

A simple example

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```
<!DOCTYPE html>
<title>A Very Small Document</title>
<p>This is a simple document with not much content</p>
```





# Structure of HTML Documents

## DOCTYPE

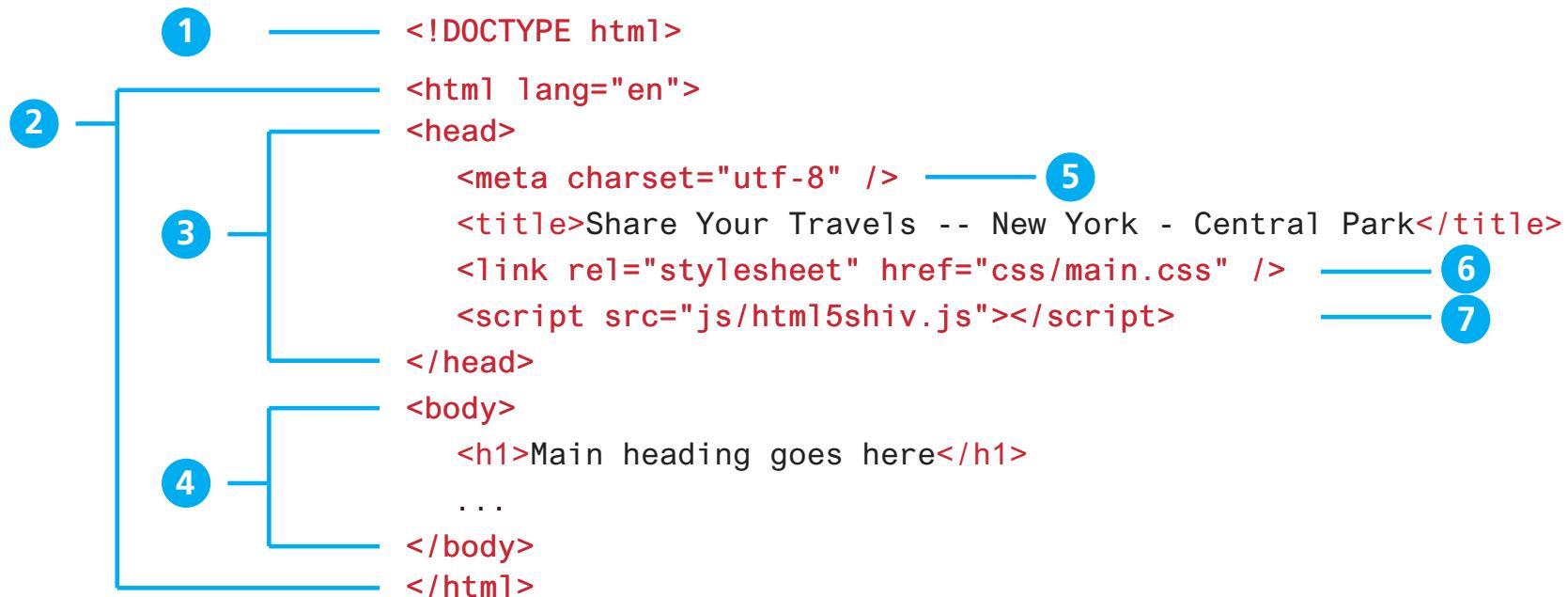
DOCTYPE Short for **Document Type Definition** tells the browser what type of document it is about to process

```
<!DOCTYPE html>
```



# Structure of HTML Documents

A slightly more complex document





# Structure of HTML Documents

## Head and Body

HTML5 does not require the use of the **<html>** , **<head>** , and **<body>** elements (but most developers continue to use them).

- **<html>** contains all the other HTML elements in the document (Item 2 in previous slide)
- **<head>** contains descriptive elements about the document, such (title, style sheets, JavaScript files etc.) (Item 3)
- **<body>** contains content to be displayed by the browser (Item 4)



# Structure of HTML Documents

Some more common elements

- The **<meta>** element (Item 5) declares that the character encoding for the document is UTF-8.
- Item 6 specifies an external CSS style sheet file with **<link>** that is used with this document.
- Item 7 references an external JavaScript file using **<script>**



# HTML Skeleton

how we start

```
<!DOCTYPE html>
<html lang="en">
.....
<head>

</head>
<body>

</body>
</html>
```