

Introduction to Web Development

Lecture 1
CGS 3066 Fall 2016

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Why learn Web Development?



Why learn Web Development?

- ▶ **Reach**

Today, we have around 12.5 billion web enabled devices.

- ▶ **Visual Medium**

It's easier to market your product if people can “see” it.

- ▶ The Social Nature of the web.

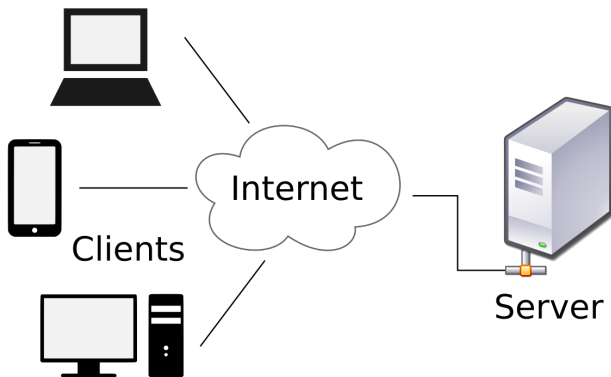
- ▶ It's fun. ;)

- ▶ It pays very well. \$\$

- ▶ You can market your own idea (as opposed to having a “technical co-founder” for your start-up).

- ▶ It's important to do it well.

How it works



What we'll learn in this course

- ▶ **HTML 5** - The current standard for the language that describes the contents of the webpage.
- ▶ **CSS** - Used to add styles to a plain HTML document.
- ▶ **JavaScript** - Makes the website dynamic. Responds to user.
- ▶ **PHP** - Scripting language used on the server side. Used to connect the website to other utilities.
- ▶ We'll be looking at several JavaScript frameworks including jQuery, Angularjs and React.js.
- ▶ As we progress through the course, elements of basic software engineering, content management, responsive design and Material Design will be introduced.

HTML

- ▶ HTML is a markup language. It tells the web browser what content to display.
- ▶ Separates content from presentation.
- ▶ Uses a pre-defined set of elements to identify content types.
- ▶ Elements contain one or more “tags”.
- ▶ Tags are surrounded by angle brackets, and the “closing” tag is prefixed by a forward slash.

HTML Page Structure

<html>

<head>

<title>Hello World </title>

</head>

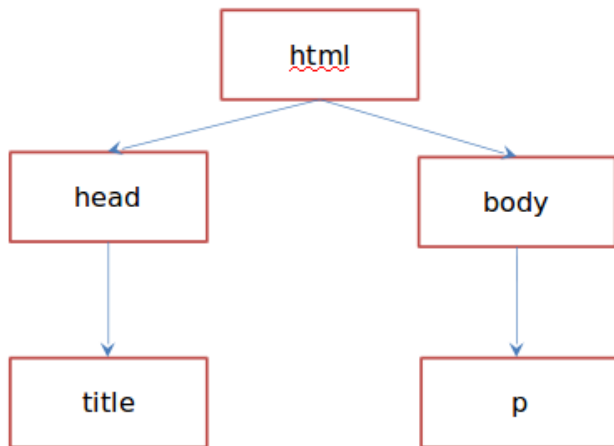
<body>

<p>Welcome to the World </p>

</body>

</html>

HTML Tree Structure



DOCTYPE

- ▶ The DOCTYPE is typically the first line of the HTML document.
- ▶ It specifies the version of HTML used on the page.
- ▶ HTML5 has a very simple DOCTYPE element.
`<!DOCTYPE html>`
- ▶ HTML4 DOCTYPE element -
`<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" >`

Basics of HTML 5

- ▶ Every HTML document (web page) consists of tags and character data.
- ▶ Tags are elements enclosed in angle brackets.
 - ▶ `<html>`, `<body>`, `<a>`, ``, `</body>`, `</html>`
 - ▶ Opening and ending tags must be used together.
- ▶ Character data is the content between an opening and closing tag.

`<title >Hello World </title >`

HTML Elements

- ▶ An element is a combination of a tag and its character data.
 - ▶ `<title>Hello World </title>`
 - ▶ `<body><p>Welcome to the world </p></body>`
 - ▶ `Google `
 - ▶ `
`
- ▶ It is possible to nest elements inside other elements.
- ▶ It is possible to have empty element (no content/character data).
- ▶ HTML tags are not case sensitive.
- ▶ By convention, tags are written in lowercase.

Attributes

- ▶ Attributes provide information about HTML elements.
- ▶ An element can have one or more attributes.
 - ▶ id
 - ▶ class
 - ▶ style
 - ▶ href
- ▶ Attributes come in name/value pairs.
`Go to Googles website `
- ▶ Some attributes can be used on any HTML element:
 - ▶ **class:** specifies one or more classnames for an element (refers to a class in a style sheet).
 - ▶ **id:** specifies a unique id for an element.
 - ▶ **style:** specifies an inline CSS style for an element.
 - ▶ **title:** specifies extra information about an element.

HTML Comments

- ▶ Comments can be added into the HTML code to make it readable and understandable.
- ▶ Browsers will not display any comments.
- ▶ Syntax: `<!-- -->`
E.g., `<!-- This is my comment -->`

Cascading Style Sheets

- ▶ CSS stands for Cascading Style Sheets.
- ▶ Current Version: CSS 3.
- ▶ Styles define how to display HTML elements.
- ▶ Styles were added to HTML 4.0 to solve a problem.
- ▶ The original purpose of HTML was to combine the structure and content of the page into one document.
- ▶ When presentation elements began to be included in the document, it increased the complexity and reduced readability.

The Solution



Why CSS?

- ▶ Separate the “style” elements from the documents and put it in a “style sheet”.
- ▶ Advantages:
 - ▶ Styles can be changed easily.
 - ▶ Document is more readable.
- ▶ 3 ways to do styling
 - ▶ **Inline Style** - Style elements are included as HTML attributes.
 - ▶ **Internal Style Sheets** - A `<style>` tag is used in the HTML document to specify the presentation elements. **External Style Sheets** - A separate “.css” file is used as a part of your set of documents. It contains all the styling elements.