Web Development

DAVID LU

About Me

David Lu

Software Engineering @ University of Waterloo, class of 2020

Full Stack Developer @ Mattermost Inc.

Fun facts:
- My dream car is a F-150 pickup truck
- Dogs are adorable
- I drink way too much coffee

Course Outline

Building modern web applications using industry-standard technologies

Topics covered:
- HTML/CSS
- Git
- Bootstrap
- JavaScript
- Databases
- Meteor.js

Requirements:
- Basic computing knowledge
- Working laptop

Evaluations

Weekly Homework Assignments (Sundays)
◦ 3% each, 24% total
◦ Submitted to online

Bi-Weekly Quizzes (every odd Wednesday)
◦ 4% each, 16% total
◦ Submitted in class

Bi-Weekly Tests (every even Wednesday)
◦ 10% each, 40% total
◦ Submitted in class

Final Project
◦ 20%
◦ Submitted online

All feedback will be provided online

Notes/Homework/Discussion

olympiads-david.slack.com

Slack is a team-based messaging service

Notes will be posted in **#web-development** prior to each class

Homework must be submitted to **@homeworkbot** as a Direct Message

Discussion can occur in **#general-discussion** or **#web-development**

HTML5

Hyper Text Markup Language, version 5

A markup language used to structure and present content on the World Wide Web

Every website must use HTML in some form to describe their structure

Provides support for:
- Text/Images/Formatting
- User input (forms, buttons, etc.)
- Graphics (animations, games, etc.)
- Multimedia (videos, music, etc.)

Setup

Create your **Slack** account using your invite link

Download **Sublime Text 3** (or your favourite text editor) from #general

Create a directory on your computer for `web-development`

Create a folder for `class1`

Create and save a file as `dl_class1.html` in that folder
- (dl being your initials, David Lu in my case)

What is HTML?

HTML documents are made up of structured **elements**

Elements are indicated by **tags**, enclosed in angle brackets: <title>

Every **element** has a name, a **start tag** (<title>), and an **end tag** (</title>)

The text **content** (if any) is placed **between** the start and end tags
- An element with **no content** does not need an end tag

Building HTML

HTML tags represent many different things

These tags describe the **internal structure** of the page:
- `<html>` - Denotes the start of HTML
- `<head>` - Contains **metadata** (data about data), such as the title, styles, links, scripts, etc.
- `<title>` - Title of the document, what displays on a browser tab, belongs
- `<body>` - Contains all the **content** of the page

These tags describe the **format** of the content of the page
- `<h1> to <h6>` - Headings, `<h1>` being the biggest
- `<p>` - A paragraph of text
- `<a>` - A link
- `<br>` - A line break

A comment looks like this: `<!— THIS IS A COMMENT -->`

Your First HTML Page

Format a five-paragraph essay, it should have

- A title
- An introduction
- Three body paragraphs with subheadings
- A conclusion

The essay can be as long/short as you like

Attributes

All HTML elements can have **attributes**

Attributes provide **additional information** about an element

Always specified in **the start tag**

Must be in name/value pairs: `name="value"`

Examples
- `<html lang="en-US">`
- `<p title="Hello World!">`

Practice: Add titles to all your paragraphs

Hyperlinks

Hyperlinks are clickable objects to jump to somewhere else

HTML Hyperlinks are defined as such: `<a href=`"url"`>Link Here</a>`

`href` stands for Hyperlink Reference, the location of another document

`url` stands for Uniform Resource Identifier, we will learn about it in detail later

Hyperlinks can be a **bookmark**, **internal** or **external**
- Bookmark – within the current page
- Internal – within the current server/computer
- External – outside of the current server/computer

Today we will focus on **external** hyperlinks

External Hyperlinks

Hyperlinks to other websites

Uses **absolute** links: https://www.wikipedia.org/

In the format of:

`<a href=`https://www.Wikipedia.org/`>This is Wikipedia</a>`

The "http://" or "https://" part must be included

It tells your web browser you are going to another website

Practice

Add three links to your essay, using various styling

Hint: You can wrap <a> tags with <p> or <h1> tags to format them

Once completed, see `class1_ex1.html`

Text Formatting

These tags can format text just like a word processor
- `<b>` - Bold
- `<i>` - Italics
- `<u>` - Underline
- `<strong>` - Strong
- `<em>` - Emphasis
- `<mark>` - Marked text
- `<small>` - Small text
- `<del>` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript
- `<sup>` - Superscript
- `<q>` - Quotations

Many of these should be modified with your own styling.

Practice

Format your essay with at least 8 of these tags

Once completed, see `class1_ex2.html`

Images

Images are displayed using the `<img>` tag

All images you use should reside in the same folder as your HTML files (for now)

`<img src=`"`mountains.jpg`" `alt=`"`Mountain View`">

`src` stands for **source**, the location of the image relative to the HTML file

`alt` stands for **alternative text**, what is displayed if the image cannot be found

Web browsers do not resize images, you must do so yourself
◦ We will learn how to do this later

Practice

Place at least 3 images into your essay

Steps:
- Download your images from Google
- Rename them to more friendly names: e.g. `mountain.jpg`
- Insert the image using an `<img>` tag

Once completed, see `class1_ex3.html`

Next Class

1. Relative URLs

2. Lists

3. Tables

4. Blocks

5. Forms

6. Symbols

Homework

Submit to **@homeworkbot** with the tag **#webdev-class1**

See `1_webdev_homework1.pdf`