Web Dev Workshop

With Sage and Dylan
Roadmap

1. Example sites
2. Setting up your website
3. Importing a template
4. Cooking with HTML (the basics)
Roadmap

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Example Sites

http://hci.stanford.edu/courses/cs147/2016/au/projects/MicroAdventure/TripIt/

http://hci.stanford.edu/courses/cs147/2016/au/projects/ArtandCulture/Allegro/

Roadmap

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1. Example sites
2. **Setting up your website**
3. Importing a template
4. Cooking with HTML (the basics)
Requirements

- Does not assume prior knowledge of site visitor
- **Relative links** to all assignments
- You are welcome to use a template

Grading Criteria

- Introduction
- Aesthetically Pleasing
- Documentation
- Prototypes
Where can I see my site?

http://web.stanford.edu/class/cs147/projects/mystudio/myproject

lowercasenospaces
How do I edit my site?

1. Open terminal
2. `ssh -y suid@myth.stanford.edu`
3. Enter Stanford password
4. `cd /afs/ir/class/cs147/WWW/projects/mystudio/myproject`

OR Use OpenAFS/Fetch
Recommendations

- Download Fetch or OpenAFS to directly edit files
- Use a template!
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Step 1: Google “free html templates”
HTML5 UP

... makes spiffy HTML5 site templates that are:

- Fully Responsive
- Built on intelligent HTML5 + CSS3
- Super Customizable
- 100% Free under the Creative Commons

Get notified when I release new stuff!

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Free CSS

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Free HTML CSS Website Templates

You may download free templates and use them for your websites. All templates are W3C standards-compliant HTML CSS layouts which are easy to modify or customize for your web projects. You can use Adobe Dreamweaver or any HTML editor to modify the templates. Thank you for visiting tooplate.

What is a website template?
It is a ready-made web design layout that you can put your own contents (text and images), and upload to your hosting. You can use it for any purpose.
step 2

Download one
Step 2

Download (51,839)
Modify some stuff
step 3

Modify some stuff
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Cooking with HTML (the basics)

1. HTML
2. CSS
3. JavaScript
Cooking with HTML (the basics)

1. HTML
2. CSS
3. JavaScript
WE BUILD NOT HOMES, WE BUILD YOUR DREAM PALACE

CREATE UNLIMITED PORTFOLIOS AND SHOWCASE THEM ANYWHERE

BUY THIS THEME
HTML: HyperText Markup Language

Concept: **Markup Language** - Include directives with content

Directives can dictate presentation or describe content

Idea from the 1960s: RUNOFF

Examples: `<i>italics word</i>`, `<title>Title words</title>`

**Approach**

1. Start with content to be displayed
2. Annotate it with **tags**

   HTML uses `< >` to denote tags

---

CS142 Lecture Notes - HTML
HTML tags

Tags can provide:

- Formatting information (\textit{for italic})
- Meaning of text:
  - \texttt{\textless h1\textgreater} means top-level heading
  - \texttt{\textless p\textgreater} means paragraph
  - \texttt{\textless ul\textless li\textgreater} for unordered (bulleted) list
- Additional information to display (e.g., \texttt{\textless img\textgreater})
- Tags can have tags inside (nesting supported)
Example of HTML - Start with raw content text

Introduction
There are several good reasons for taking CS142: Web Applications:
You will learn a variety of interesting concepts.
It may inspire you to change the way software is developed.
It will give you the tools to become fabulously wealthy.
Example of HTML - Annotate with tags

<h2>Introduction</h2>

There are several good reasons for taking <i>CS142: Web Applications</i>:

<ul>
  <li>You will learn a variety of interesting concepts.</li>
  <li>It may inspire you to change the way software is developed.</li>
  <li>It will give you the tools to become fabulously wealthy.</li>
</ul>
Browser doesn’t care but programmers do

<h2>Introduction</h2>

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</ul>
Example HTML - Browser output

Introduction

There are several good reasons for taking CS142: Web Applications:

- You will learn a variety of interesting concepts.
- It may inspire you to change the way software is developed.
- It will give you the tools to become fabulously wealthy.
QUESTIONS?

Go to →
www.w3schools.com
Cooking with HTML (the basics)

1. HTML
2. CSS
3. JavaScript
Driving problem behind CSS

What font type and size does `<h1>Introduction</h1>` generate?

   Answer: Some default from the browser (HTML tells what browser how)

Early HTML - Override defaults with attributes

   `<table border="2" bordercolor="black">`

**Style sheets** were added to address this:

   Specify style to use rather than browser default

   Not have to code styling on every element
Key concept: Separate style from content

Content (what to display) is in HTML files

Formatting information (how to display it) is in separate style sheets (.css files).

Use an element attribute named `class` to link (e.g. `<span class="test">`)  

Result: define style information once, use in many places

    Consider can you make all the text in the app slightly bigger?  
    Or purple is our new company color.

**DRY principle: Don't Repeat Yourself**
Style sheet contains one or more CSS Rules

Selector

body {
    font-family: Tahoma, Arial, sans-serif;
    color: black;
    background: white;
    margin: 8px;
}

Declaration Block

Property

Value
<table>
<thead>
<tr>
<th><strong>CSS Selector</strong></th>
<th><strong>CSS</strong></th>
<th><strong>HTML</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag name</td>
<td>h1 {</td>
<td>&lt;h1&gt;Today’s Specials&lt;/h1&gt;</td>
</tr>
<tr>
<td></td>
<td>color: red;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>}</td>
<td></td>
</tr>
<tr>
<td>Class attribute</td>
<td>.large {</td>
<td>&lt;p class=&quot;large&quot;&gt;...&lt;/p&gt;</td>
</tr>
<tr>
<td></td>
<td>font-size: 16pt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>}</td>
<td></td>
</tr>
<tr>
<td>Tag and Class</td>
<td>p.large {</td>
<td>&lt;p class=&quot;large&quot;&gt;...&lt;/p&gt;</td>
</tr>
<tr>
<td></td>
<td>...}</td>
<td></td>
</tr>
<tr>
<td>Element id</td>
<td>#p20 {</td>
<td>&lt;p id=&quot;p20&quot;&gt;...&lt;/p&gt;</td>
</tr>
<tr>
<td></td>
<td>font-weight: bold;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>}</td>
<td></td>
</tr>
</tbody>
</table>
Color - Properties: color & background_color

Must ultimately turn into red, green, and blue intensities between 0 and 255:

- Predefined names: red, blue, green, white, etc.
- 8-bit hexadecimal numbers for red, green, blue: #ff0000
- 0-255 decimal intensities: rgb(255, 255, 0)
- Percentage intensities: rgb(80%, 80%, 100%)

Example: h1: { color: red; }

CS142 Lecture Notes - CSS 8
CSS Box Model

Total element width:
width + left padding + right padding + left border + right border + left margin + right margin

Margin & Padding
Transparent
## CSS distance units

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td>2px</td>
<td>pixels</td>
</tr>
<tr>
<td>1mm</td>
<td>millimeters</td>
</tr>
<tr>
<td>2cm</td>
<td>centimeters</td>
</tr>
<tr>
<td>0.2in</td>
<td>inches</td>
</tr>
<tr>
<td>3pt</td>
<td>printer point 1/72 inch</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2em</td>
<td>2 times the element’s current font size</td>
</tr>
<tr>
<td>3rem</td>
<td>3 times the root element’s current font size</td>
</tr>
</tbody>
</table>
Size Properties - Element, pad, margin, border

width - Override element defaults
height
padding-top
padding-right
padding-bottom
padding-left
margin-top
margin-right
margin-bottom
margin-left

border-bottom-color
border-bottom-style
border-bottom-width
border-left-color
border-left-style
border-left-width
border-right-color
border-right-style
border-right-width
etc.

```
p {  
    border: 5px solid red;
}
```
Adding Styles to HTML

```html
<head>
  <link rel="stylesheet" type="text/css" href="myStyles.css" />
  <style type="text/css">
    body {
      font-family: Tahoma, Arial, sans-serif;
    }
  </style>
</head>
<body>
  <div style="padding:2px; ... ">
  </div>
</body>
```
CSS:

body {
  font-family: Tahoma, Arial, sans-serif;
  font-size: 13px;
  color: black;
  background: white;
  margin: 8px;
}

h1 {
  font-size: 19px;
  margin-top: 0px;
  margin-bottom: 5px;
  border-bottom: 1px solid black
}
.shaded {
  background: #d0d0ff;
}

HTML:

<body>
  <h1>First Section Heading</h1>
  <p>
    Here is the first paragraph, containing text that really doesn't have any use or meaning; it just prattles on and on, with no end whatsoever, no point to make, really no purpose for existence at all.
  </p>
  <div class="shaded">
    <h1>Another Section Heading</h1>
    <p>
      Another paragraph.
    </p>
  </div>
</body>
Example Output

**First Section Heading**
Here is the first paragraph, containing text that really doesn't have any use or meaning; it just prattles on and on, with no end whatsoever, no point to make, really no purpose for existence at all.

**Another Section Heading**
Another paragraph.
QUESTIONS?

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Cooking with HTML (the basics)

1. HTML
2. CSS
3. JavaScript
Good news if you know C - JavaScript is similar

```javascript
i = 3;
i = i * 10 + 3 + (i / 10);
while (i >= 0) {
    sum += i*i;  // Comment
    i--;
}
for (i = 0; i < 10; i++) {
}

if (i < 3) {
    i = foobar(i);
} else {
    i = i * .02;
}

Most C operators work:
* / % + - ! >= <= > < & & | | ? :

function foobar(i) { return i; }
continue/break/return
```

CS142 Lecture Notes - JavaScript Basics
function type

```javascript
var foobar = function foobar(x) { // Same as function foobar(x)
    if (x <= 1) {
        return 1;
    }
    return x*foobar(x-1);
}
typeof foobar == 'function'; foobar.name == 'foobar'
```

- Function definitions are hoisted (i.e. can use before define)
- Can be called with variable arguments
  - Array arguments variable (e.g. arguments[0] is first argument)
  - Unspecified arguments have value undefined
- All functions return a value (default is undefined)
Getting JavaScript into a web page

- By including a separate file:

  `<script type="text/javascript" src="code.js"></script>`

- Inline in the HTML:

  `<script type="text/javascript">
  //<![CDATA[
  Javascript goes here...
  //]]>
  </script>`
QUESTIONS?

Go to →

www.w3schools.com
QUESTIONS?

OR →

Stanford’s CS142