6.148

FORMERLY 6.470

THE WEB PROGRAMMING COMPETITION
WELCOME!
6.148 is...

Class & Competition

2 Weeks of Lecture

Opportunities to interact with our corporate sponsors
Here you will...*

learn the essentials of building a modern, dynamic website

build a modern, dynamic website

have fun!

*hopefully
Course Staff

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Learning Resources

The Course Website mit.edu/6470

Office Hours
6.148-staff@mit.edu or websites@mit.edu

PIAZZA
This month...

week 1  introduction, lectures, ideation!

week 2  guest lectures, advanced topics, coding!

week 3  code, code, code!

week 4  CODE, CODE, CODE
        final submission, judging, awards!
This month...

week 1  introduction, lectures, ideation!

week 2  guest lectures, advanced topics, coding!

week 3  code, code, code!

week 4  CODE, CODE, CODE
        final submission, judging, awards!
        sleep!
Credit, Competition, Both?

**CREDIT**

- 6 unit of credit
- Complete the Milestones
- Submit a site by the end of IAP

**COMPETITION**

- Chance to win Cash
- Complete the Milestones
- Submit a site that fits this year’s theme by Tues, Jan 27, 2015 noon
Credit / Competition?

Check eligibility rules on the website, and contact 6.148-staff with questions!

Do it before Milestone 0!
Milestones

MILESTONE 0  GIT Setup
MILESTONE 1  Pitch Initial Idea
MILESTONE 2  Minimal Viable Product
FINAL SUBMISSION  Everything!
GIT Commits over IAP

Milestone 1

Milestone 2
Rookie Division

For those with little to no programming experience

Different prizes

No teams with > 50% Course 6 juniors, seniors, or grad students

Indicate division by Milestone 1!
Extended OH “Hackathon”

Extended office hours with tons of staff

Thurs. Jan 15, 7pm-1am, in 32-124

Get your milestone 2 done!

Tons of Food and Snacks!
Judging

**Functionality** - technical components of your the core features

**Usability** - ease-of-use of the site

**Aesthetics** - look-and-feel of the site

**Concept Execution** - the identified problem and provides a realistic solution
Things you must do...

Dynamic site supported by some back-end

Personalized experience based on user accounts

Original design and implementation

Use GIT & MIT’s Github
Things you can do...

Use **back-end frameworks** (e.g. Ruby on Rails, Django, node.js)

Use **front-end libraries/frameworks** (e.g. Twitter Bootstrap, LESS, Coffeescript, Backbone.js)
Things you **cannot** do…

- Use a CMS like Drupal or Wordpress
- Use a stock template
- Use a previous project (or a significant portion of a past project)
- Outsource your development
- Evil
THEME
Understanding the Web
What’s the difference between…

1. The Internet & The Web
2. Website & Web App
What is a website?

[web-sahyt]

a connected group of pages on the **World Wide Web**
What is the World Wide Web?

an information system on the Internet that allows documents to be connected to other documents
What is the Internet?

is a global system of interconnected computer networks
Sir Timothy John "Tim" Berners-Lee
Invented the World Wide Web
wrote the first web browser and server in 1990
Stata (32-G524)
pretty cool guy
What is Web Application?

websites are defined by **content** and **information**

web applications are defined by **interactions with the user**, typically **action-driven**
Google Maps?

web app

website
6148?

MIT's 6.148 (formerly 6.470) is a web programming class and competition that takes place over IAP.

we love web

web app

website
Facebook?

Sign Up
It's free and always will be.

First name
Last name
Email or mobile number
Re-enter email or mobile number
New password
Birthday
Month
Day
Year

Female
Male

By clicking Sign Up, you agree to our Terms and that you have read our Data Use Policy, including our Cookie Use.
Why a Web App?

Cross platform - user can be everyone

Less on-the-go, more thorough features

Expect users to stay on your app for longer
Server

a computer that **stores** and **serves** a website
Client

your computer (more specifically your browser)
Accessing a website

xkcd.com
Accessing a website

HTTP request: GET xkcd.com

HTTP response: web content (HTML, CSS, JavaScript)
Accessing a website
Anatomy of a website

HTML

```html
<header class="main-header">
  <h1>Google Calendar</h1>
</header>
<section class="home" id="home">
  <div class="content">
    <div class="logo">
      <video data-preload="" preload="metadata">
      </video>
    </div>
    <h1>Google Calendar</h1>
    <h2>
      <a href="https://www.youtube.com/watch?v=MSTmkvn060E" id="open-video" target="_blank">Watch the video</a>
    </h2>
  </div>
</section>
```
Anatomy of a website

HTML sets up the layout and provides the content of a website
Anatomy of a website

HTML
Anatomy of a website

CSS
provides the styling of a website
(makes things pretty)
Anatomy of a website

CSS

```css
h1 {
  border: 0;
  background: #ff9600;
  color: white;
  cursor: pointer;
  font-size: 1em;
  font-weight: 100;
  margin-top: 20px;
  padding: 10px 20px;
  transition: background 150ms ease;
  -webkit-transition: background 150ms ease;
  -moz-transition: background 150ms ease;
}
```
Anatomy of a website

CSS
Anatomy of a website

JavaScript
allows for interactions on the web page
Anatomy of a website

JavaScript

```javascript
$(document).ready(function() {
    $('.menu-icon').click(function() {
        $('.nav > ul').slideToggle();
    });
    $('.week').click(function(event) {
        event.preventDefault();
        var week = $(this).attr('href');
        $('html, body').animate({
            scrollTop: $(week).offset().top - 70
        }, 500);
    });
});
```
Anatomy of a website

JavaScript
Ideation!

http://6148ideas.meteor.com/

(Let’s hope the internet won’t fail us here)
After lunch...

Ideation and Wireframing