

CSCC09

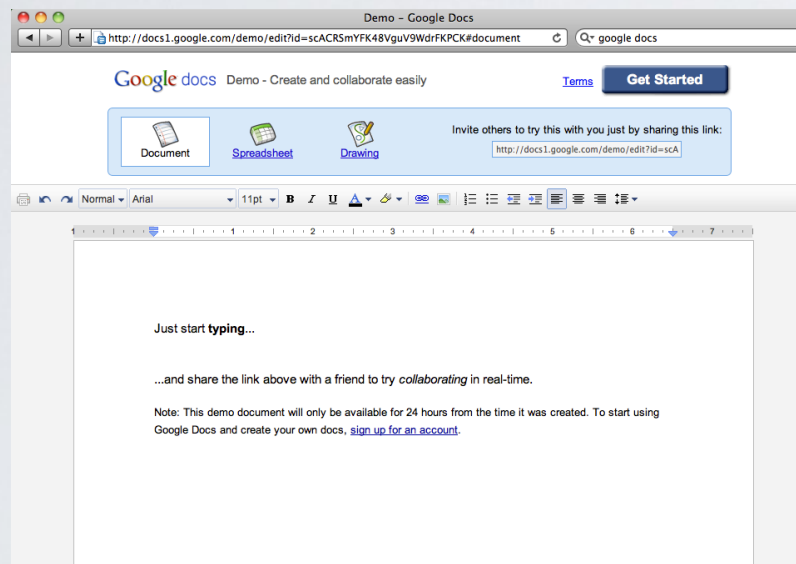
Programming on the Web

Thierry Sans

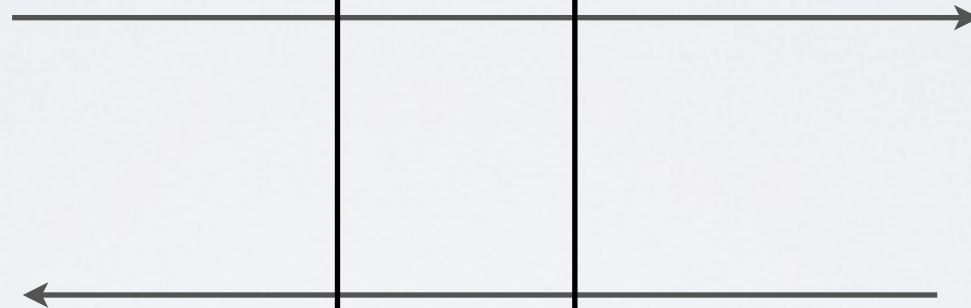
Architecture of a Web Application

Client Side

Server Side

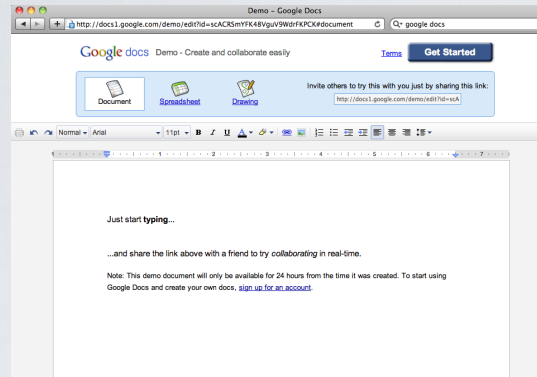


Web Browser



Web Server

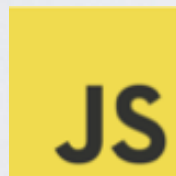
Web Technologies



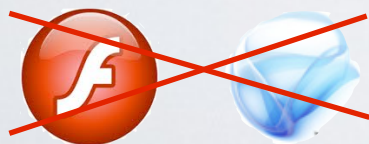
Content



Presentation



Client Side
Processing



Multimedia



Resources
management



The evolution of web applications

The Virtuous Circle

faster, better technology

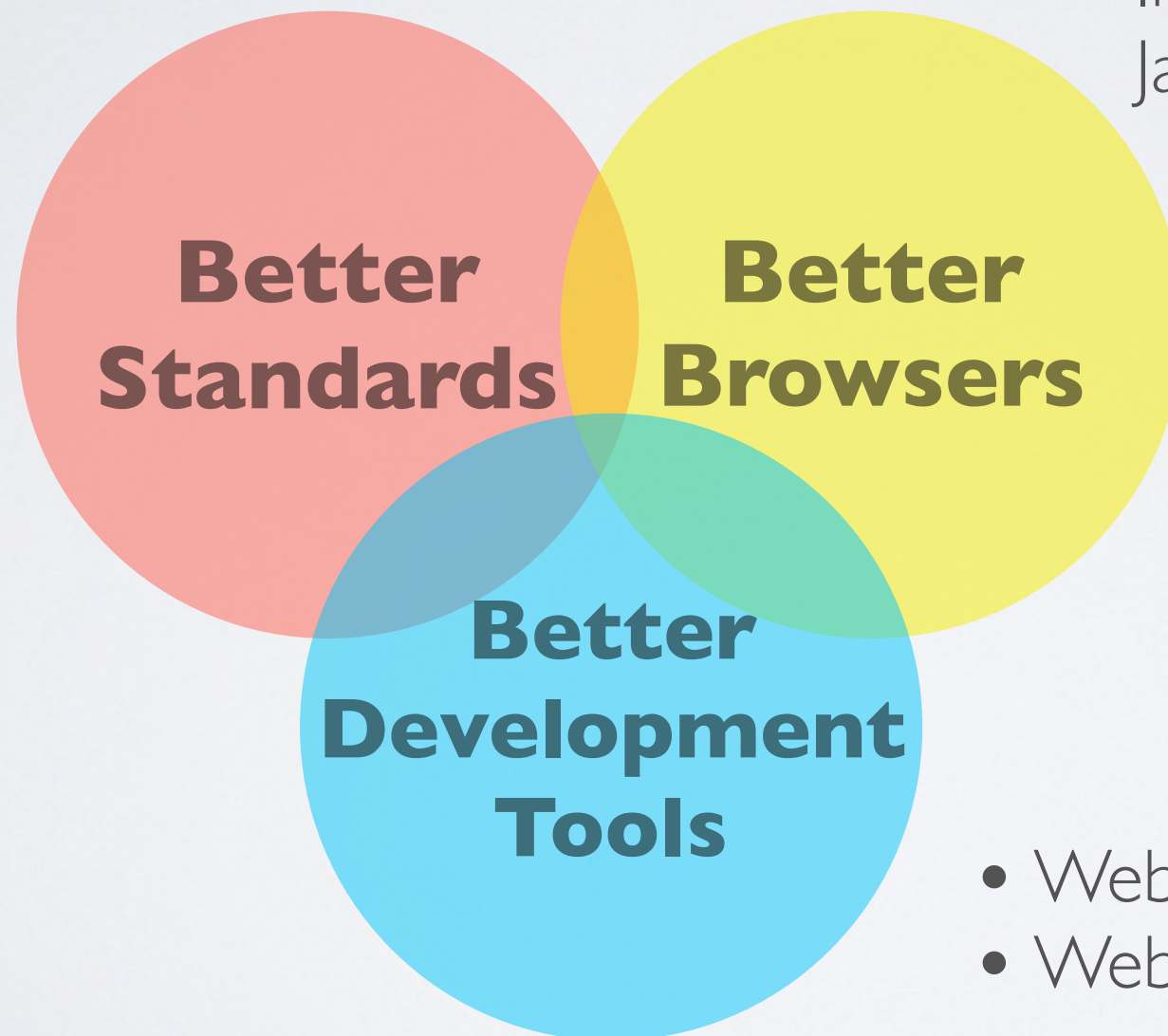


new usage

How web technologies have changed?

- Ajax (interactivity)
- HTML 5 (multimedia)

- Homogeneous implementation of the standards
- Increasing speed of rendering and Javascript engines



- Web-oriented languages
- Web frameworks

Consequence 1 (of 2)

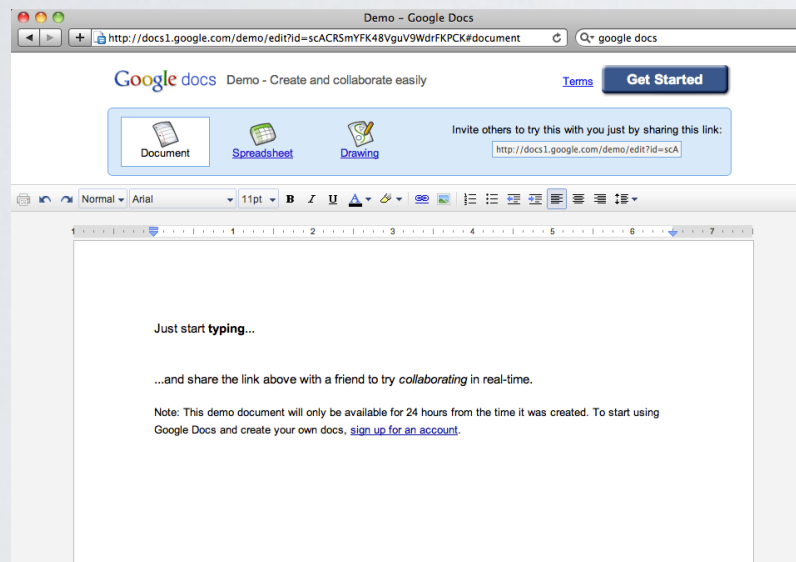
➡ The application is moving from the server to the client

✓ Rich Content

Traditional Web Platform

Client Side

Server Side



Web Browsers



Web Server

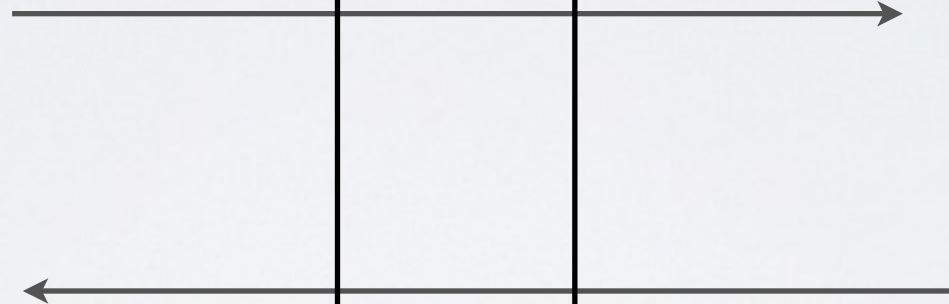
Modern Web Platform

Client Side

Server Side



Smartphones and Tablets



Web Server

Consequence 2

➔ Data storage and data processing are moving from the desktop to the cloud

● Cloud Computing

Customer Resources Management

Accounting and Billing

Collaboration

E-Learning

Web Portals

Content Management

Planning

E-Health

Where Web Applications are going

$$\begin{array}{c} \text{Rich Content} \\ + \\ \text{Cloud Computing} \\ = \end{array}$$

A new way to think about software

Web Technologies are **at the heart** of this change

- **Cloud computing**
and
Software as a Service (SaaS)
are BOOMING!

“By 2018, 50% of the applications hosted in the public cloud will be considered mission-critical by the organizations that use them”

“By 2020, 24% of the total addressable IT market will be cloud.”

source Gartner - *2017 Planning Guide for Cloud Computing*

Emerging Web Platform

Client Side



Web-based Operating System

Server Side



Web Server



Web applications from the developer's perspective

Why are web applications so popular?

- Easy to deploy
- Easy to maintain
- Fast and reliable technology (specially browsers)

What is challenging about web development

- A large collection of languages and framework
- Technology evolves fast
- Concurrent programming
- Asynchronous communication
- Debugging

About this course

What you will learn in this course?

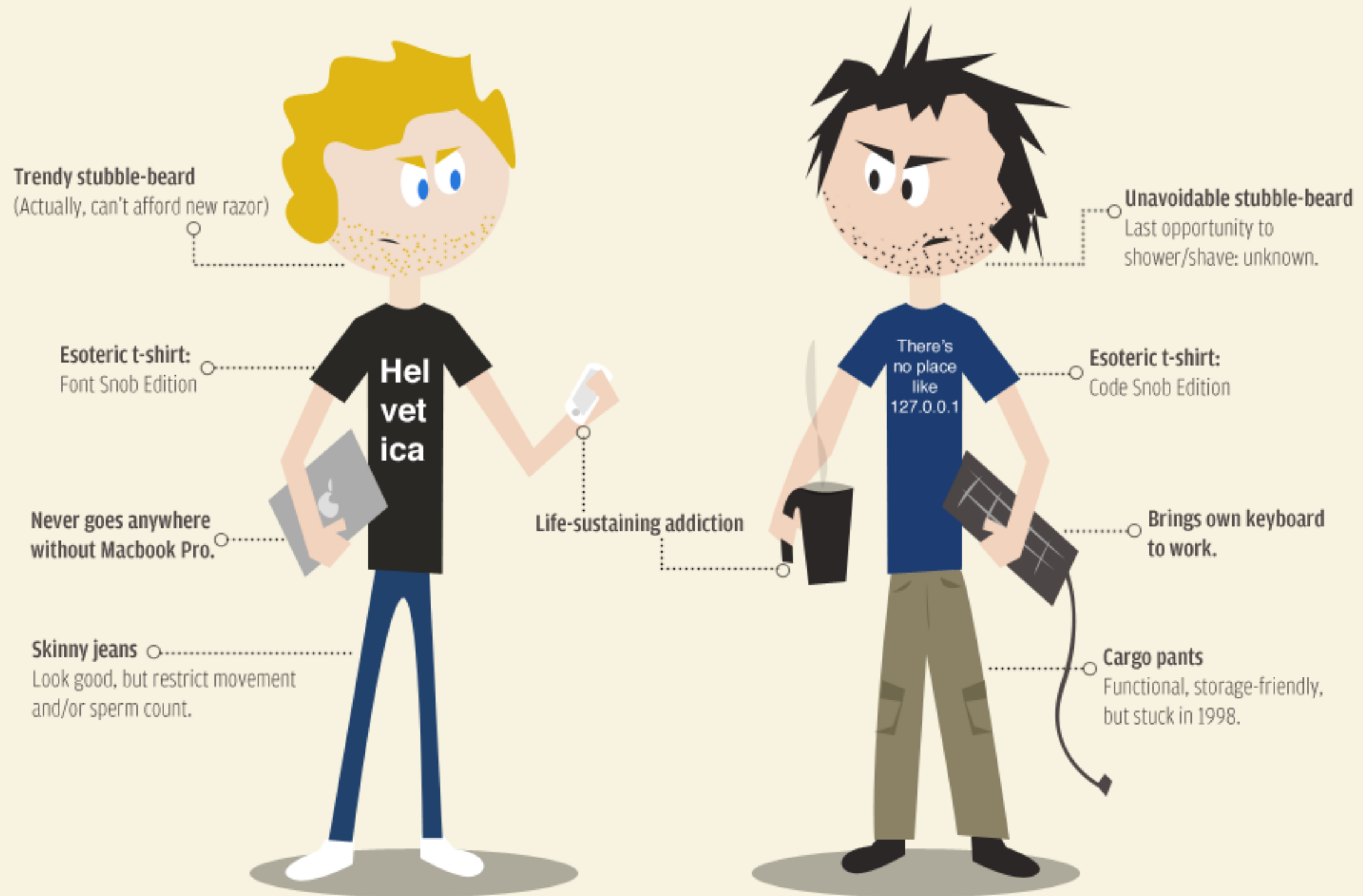
✓ Web development

- **The foundations of web programming**
- The new trends in web application development

⦿ ~~Web design~~

CSCC10 Human-Computer Interaction by *Naureen Nizam*

WEB DESIGNERS VS WEB DEVELOPERS



\$47,820



Web Designer
Median Salary

Number of U.S. Programming Jobs: 1,336,300



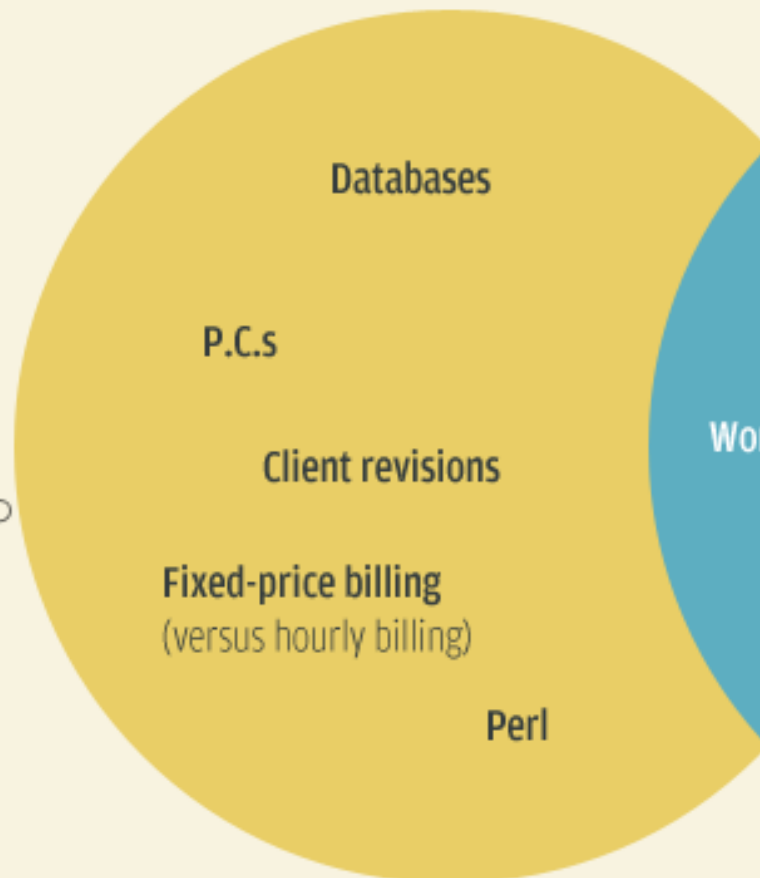
Number of U.S. Web Design Jobs: 200,870

\$85,430



Web Programmer
Median Salary

**What Web
Designers are
afraid of**



**What Web
Programmers
are afraid of**

*Yes, we know some designers and programmers are female. But the statement stands!

Salary and job information courtesy of BLS.gov

by@shanesnow for **WIX**.com

Infographic by: *Shane Snow* 2010

Course Syllabus

Let's look at the course webpage:

<https://thierrysans.github.io/CSCC09/>

How to succeed in this class?

- Come to the lectures, do not rely solely on the slides or code snippets
- Learn and gain experience by doing labs, homework and project
- Start thinking about your project now
- Start to work early,
web applications are hard to develop and hard to debug
- Use resources on the web extensively
- Go beyond, be curious, experiment, get your hands dirty

Web Development tools

- **Chrome** (recommended) or Firefox
- **Code editor** with syntax highlighting for HTML, CSS, Javascript
- Web Accounts
 - **Github**
 - **Piazza**
- Command Line Tools
 - **Git**
 - **NodeJS and NPM**