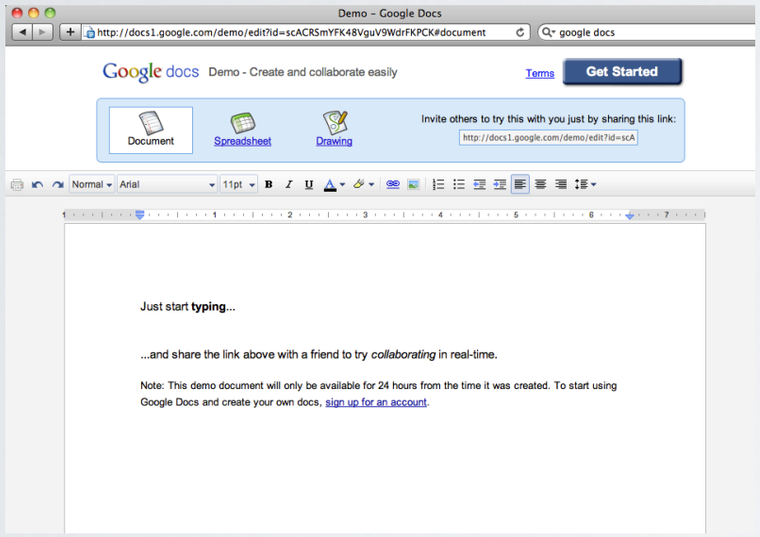
CSCC09
Programming on the Web

Thierry Sans

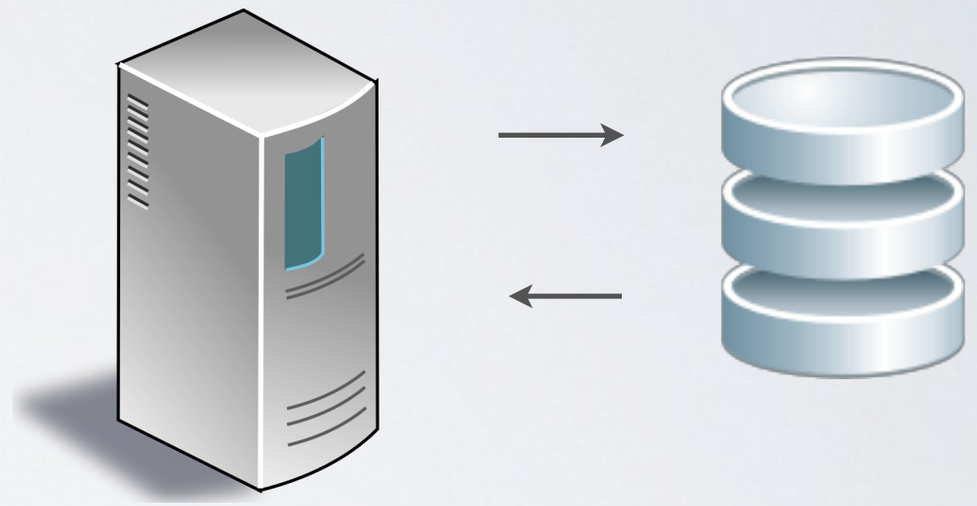
Architecture of a Web Application

Client Side

Server Side



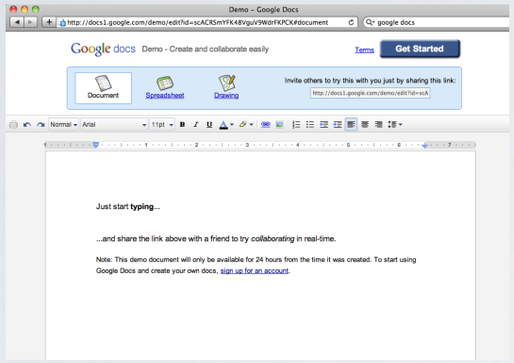
Web Browser

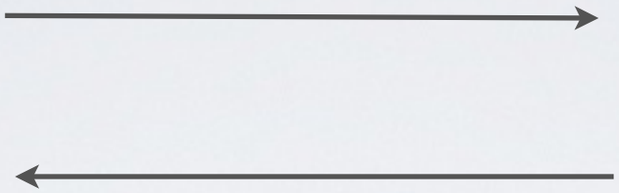


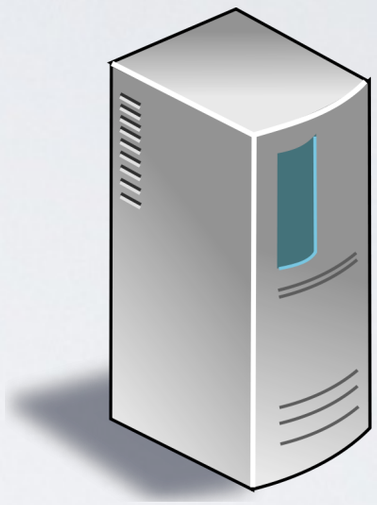
Web Server

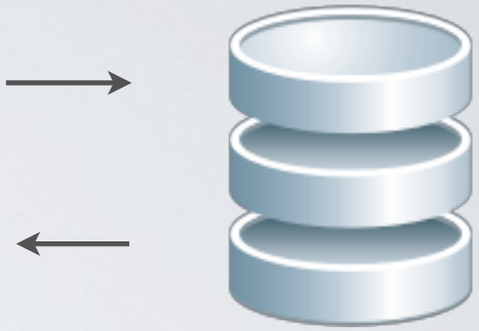
Database

Web Technologies





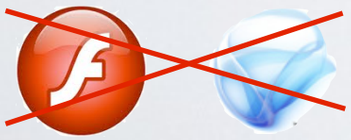




Content

Presentation

Client Side Processing



Multimedia

Resources management

The evolution of web applications

The Virtuous Circle

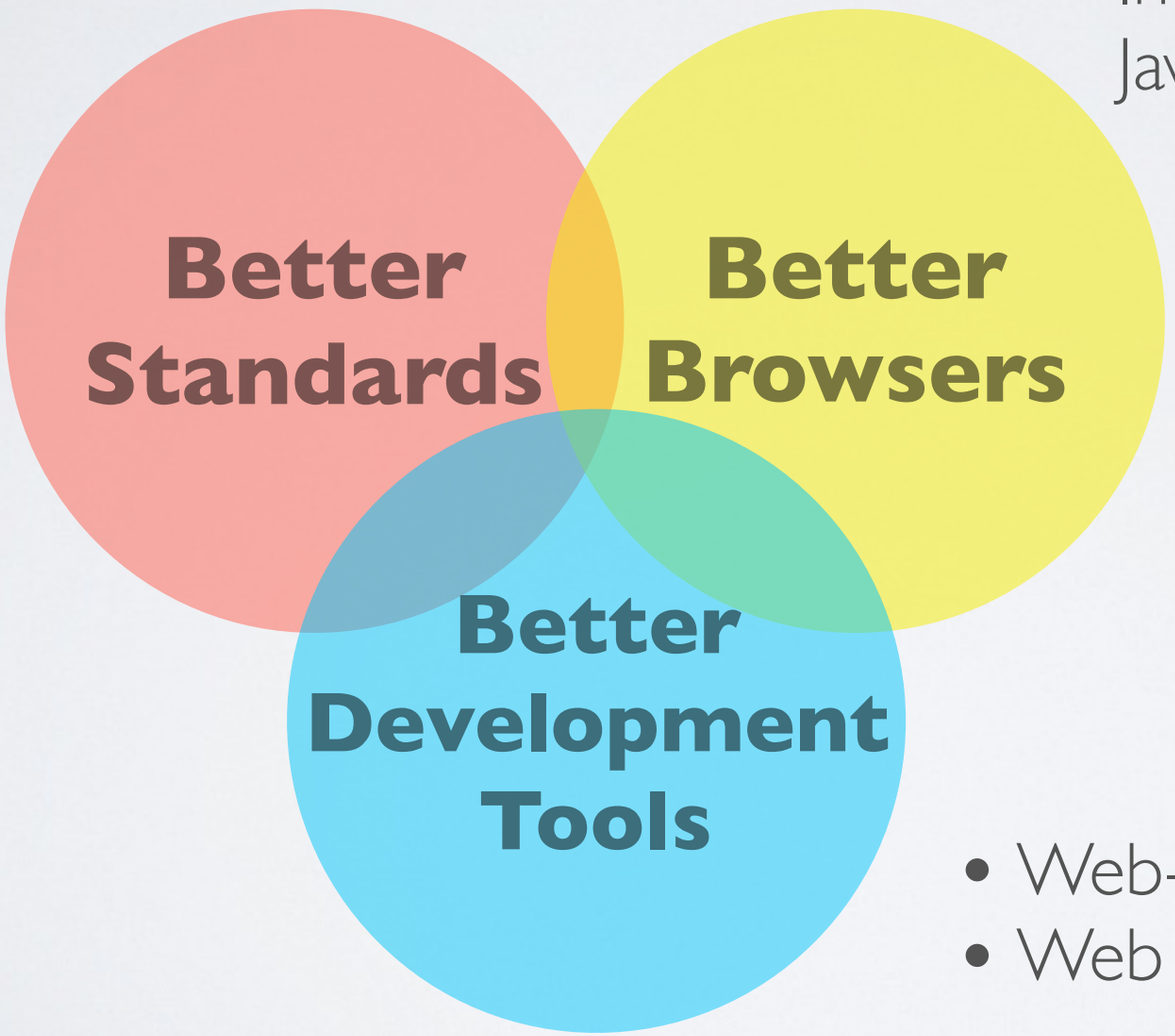
faster, better technology

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

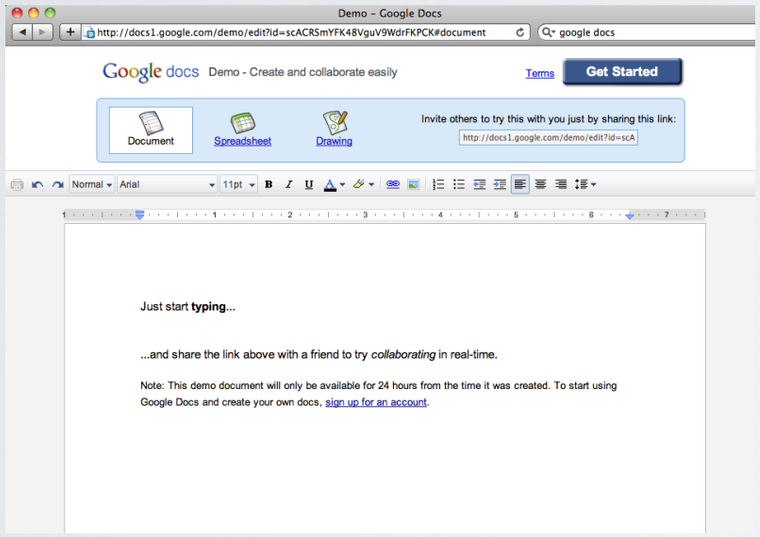
Consequence 1 (of 2)

➡ The application is moving from the server to the client

✓ Rich Content

Traditional Web Platform

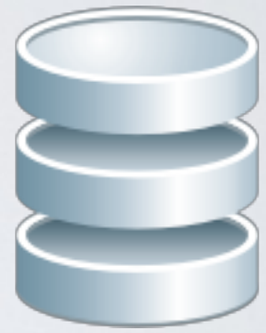
Client Side



Web Browsers

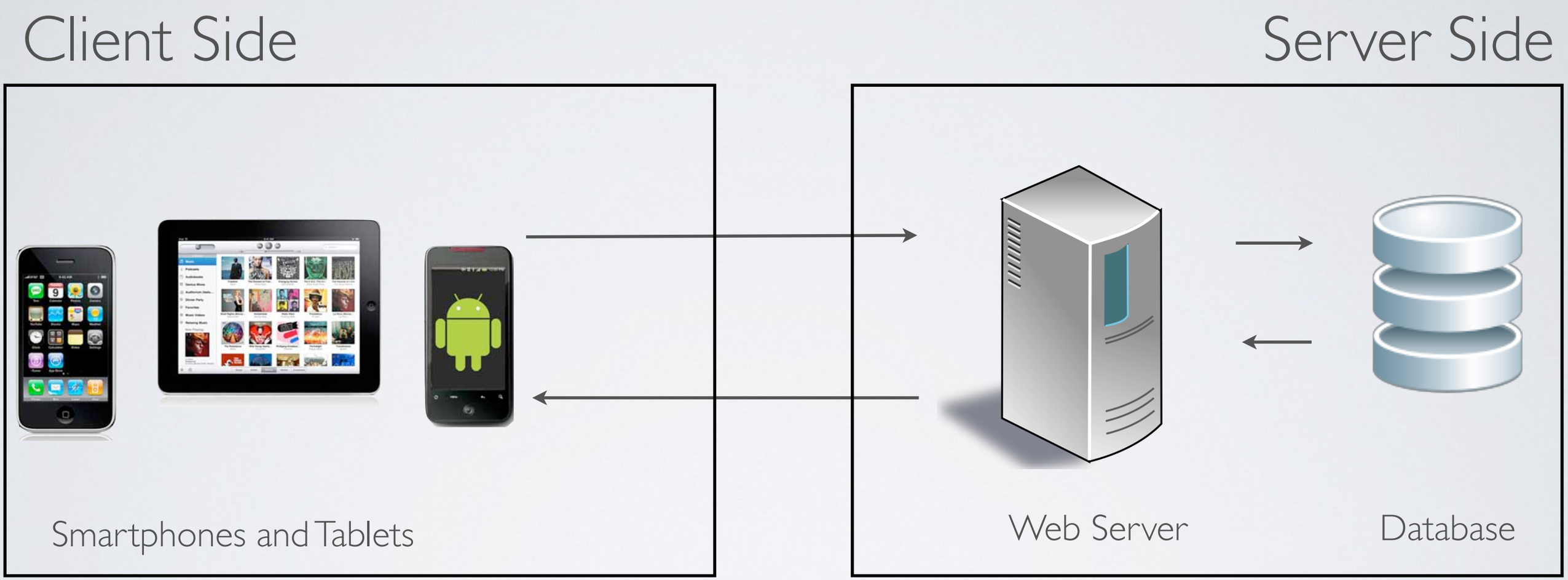
Server Side

Web Server



Database

Modern Web Platform



Consequence 2

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

- ◉ Cloud Computing

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

are BOOMING!

"More than 95% of organizations expect to maintain or grow their use of software as a service (SaaS)"

source *Gartner "User Survey Analysis: Software as a Service, Enterprise Application Markets, Worldwide, 2010"*

Customer Resources Management

Accounting and Billing

Collaboration

E-Learning

Web Portals

Content Management

Planning

E-Health

Where Web Applications are going

Rich Content

+

Cloud Computing

=

A new way to think about software

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

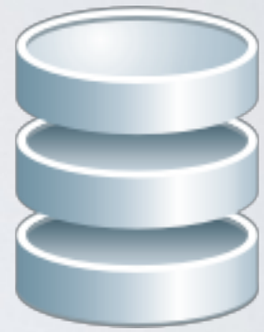
Emerging Web Platform

Client Side

Web-based Operating System

Server Side

Web Server



Database

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
- Debugging

About this course

What you will learn in this course?

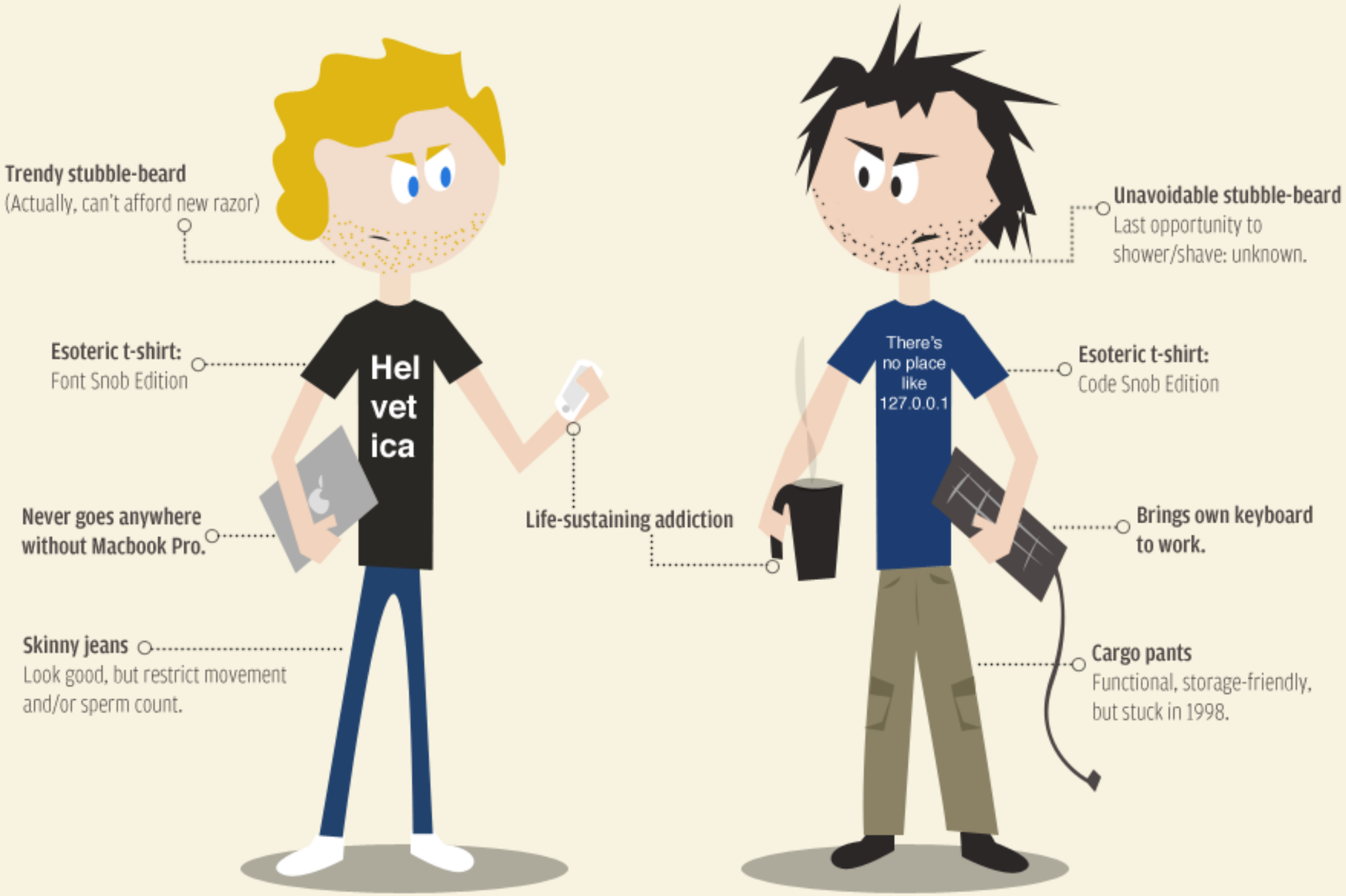
✓ Web development

- The foundations of web programming
- The new trend in web application development

◉ ~~Web design~~

CSCC10 Human-Computer Interaction by N*aureen Nizam*

WEB DESIGNERS VS WEB DEVELOPERS



Infographic by: *Shane Snow 2010*

$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

- Databases
- P.C.s
- Client revisions
- Fixed-price billing (versus hourly billing)
- Perl

What Web Programmers are afraid of

- Server crashes
- .EPS files
- Bosses who don't code
- Carpal Tunnel

- Women*

*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-w17/

How to succeed in this class?

- Come to class (fully awaken)
- Do not rely on the slides only
- Go beyond, be curious, experiment, get your hands dirty
- Start homework early
- Start thinking about your project **now**

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**

Ready to start?