

WELCOME TO JAVASCRIPT DEVELOPMENT

Please write your name on your
whiteboard and say hello
to your new classmates.

Wi-fi: GA-Guest
pw: yellowpencil

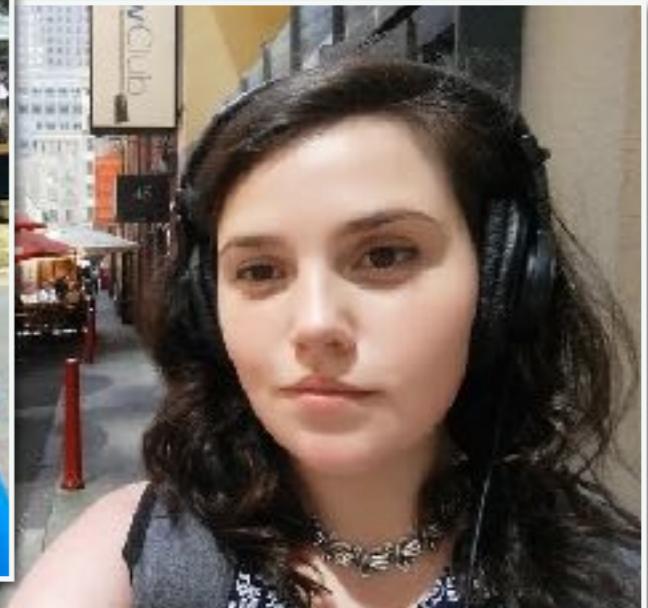
YOUR INSTRUCTIONAL TEAM



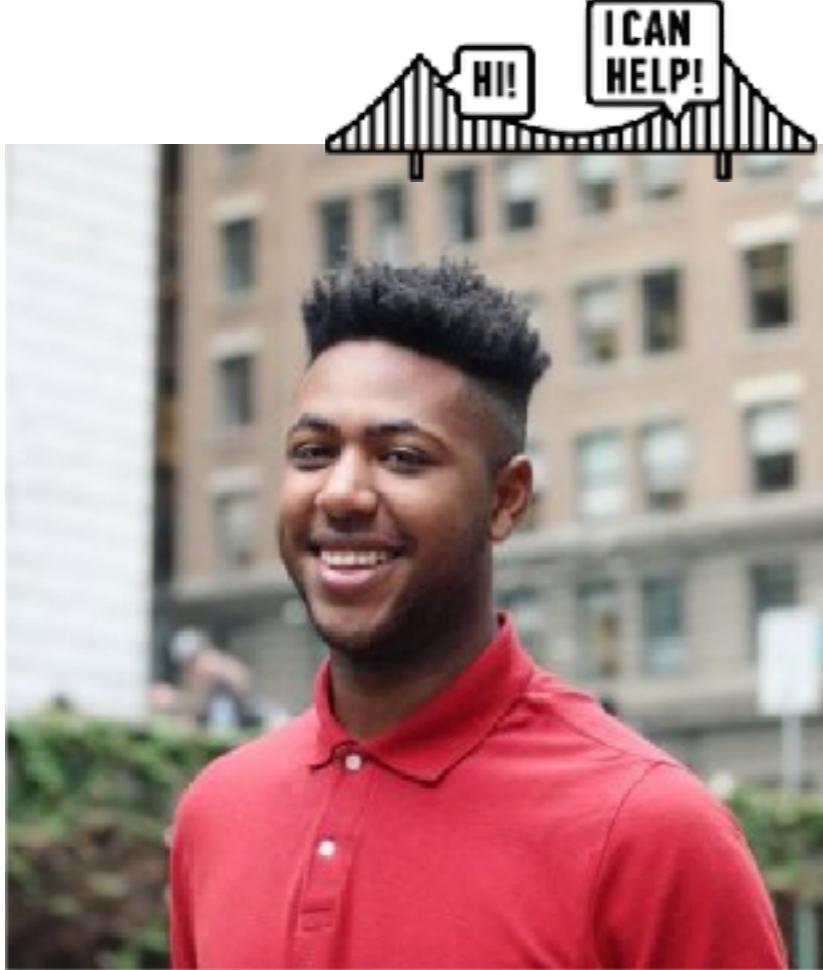
SASHA



NICOLE



Student Services at studentservicesSF@google.com



- Course logistics
 - Access to tools
 - Feedback about the course
 - Enrollment and finances
 - Graduation certificates
- Campus questions
 - GA Facilities
 - GA events outside of class
 - Discounts for other courses

Others you may see



EMILY PEEK
Instructor Coach



JESSICA REPAS
Front Lines Lead



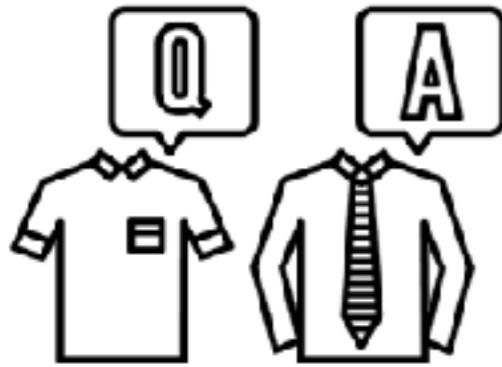
TJ THOMANDER
Education Programs
Producer



VANESSA OHTA
Education Programs
Manager

Let's get to know each other

STRUCTURE



PAIRS

INTROS: 2 MIN
SHARING: 15 MIN



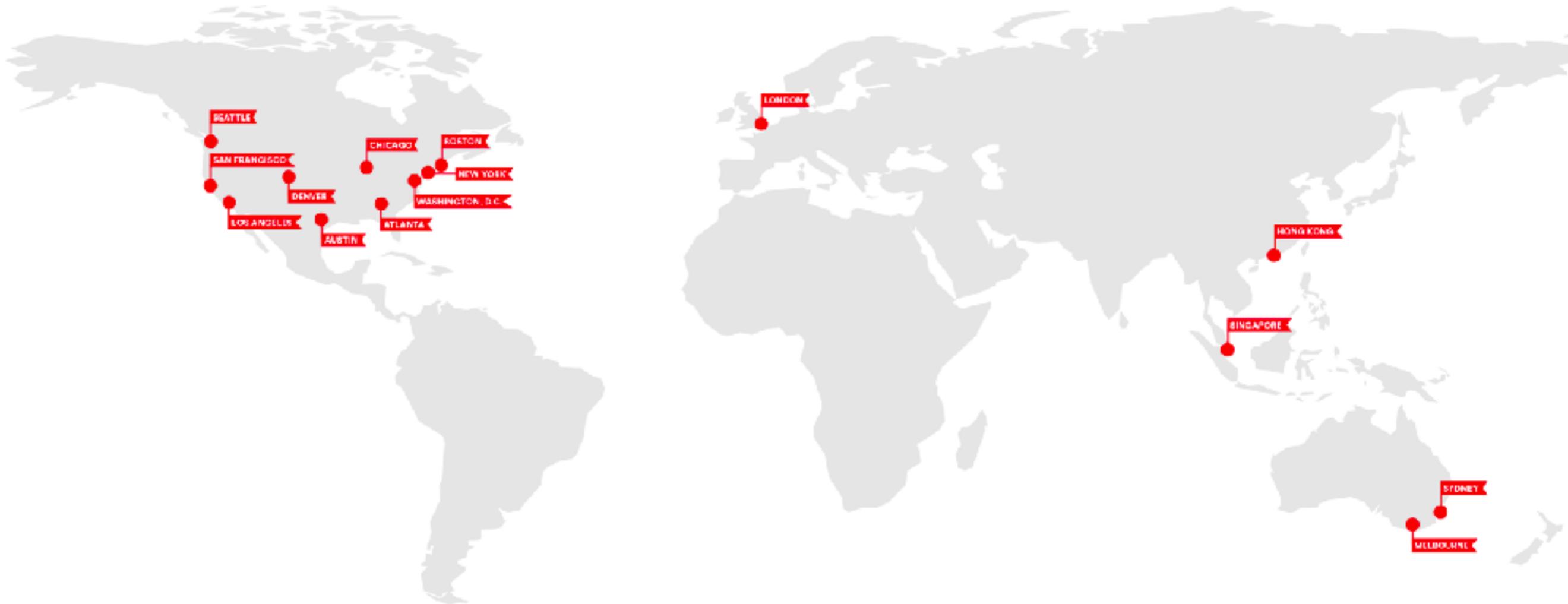
OBJECTIVES

1. Take 5 minutes to get to know your neighbor by finding out:
 - a. Their name
 - b. Why they are taking this course
 - c. A guilty pleasure
2. Be prepared to introduce your neighbor to the rest of the room

WHAT IS GENERAL ASSEMBLY?



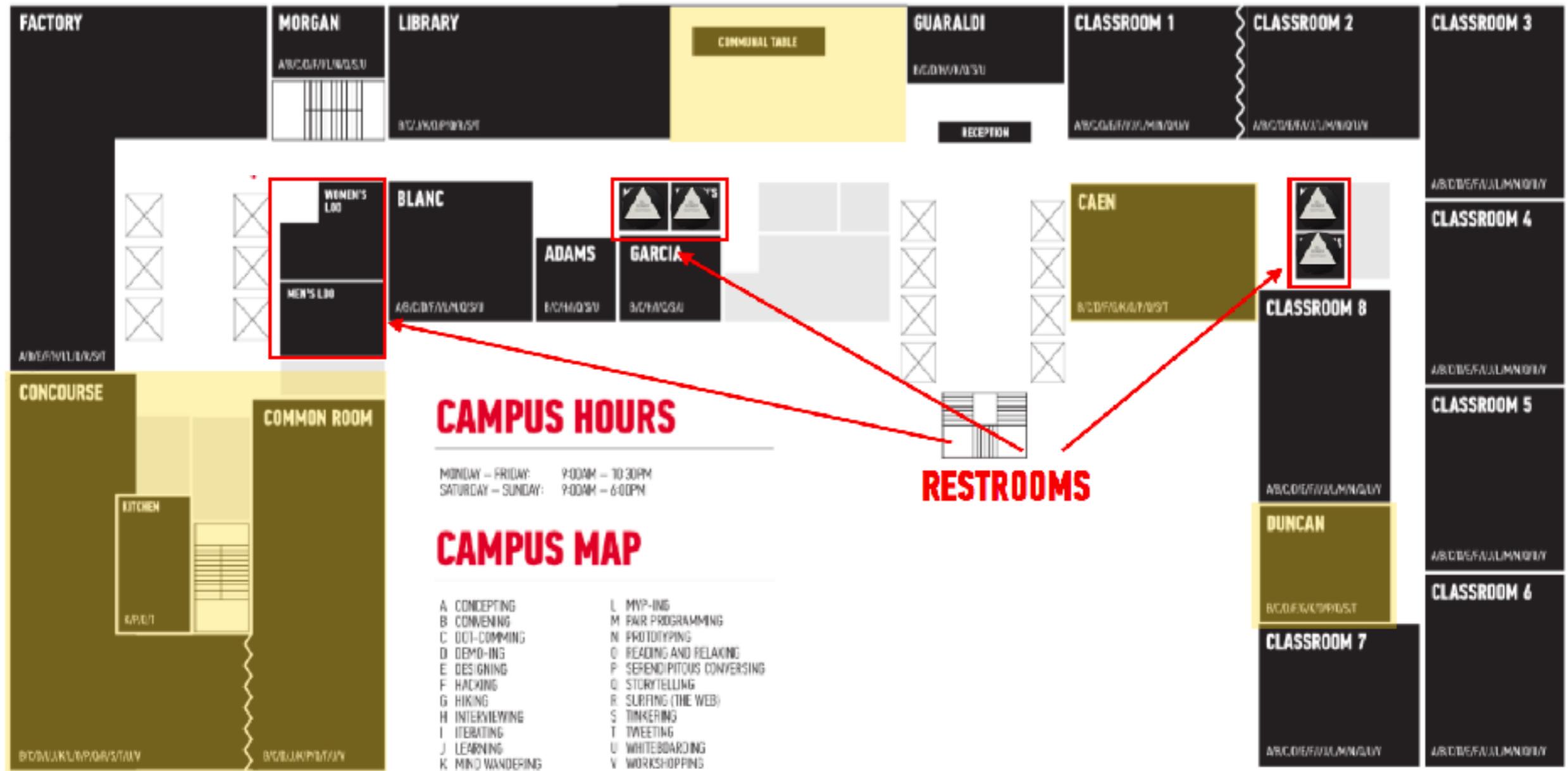
15+ campuses around the world





Come work on campus.

We're open:
8am - 10pm, Monday to Friday
10am - 6pm, Saturday and Sunday



PUBLIC USE SPACES

Have a question about...

- the campus?
- lost and found?
- loaner equipment?
- free coffee and snacks?



Come here to talk to
Front Lines and they
will help you out.



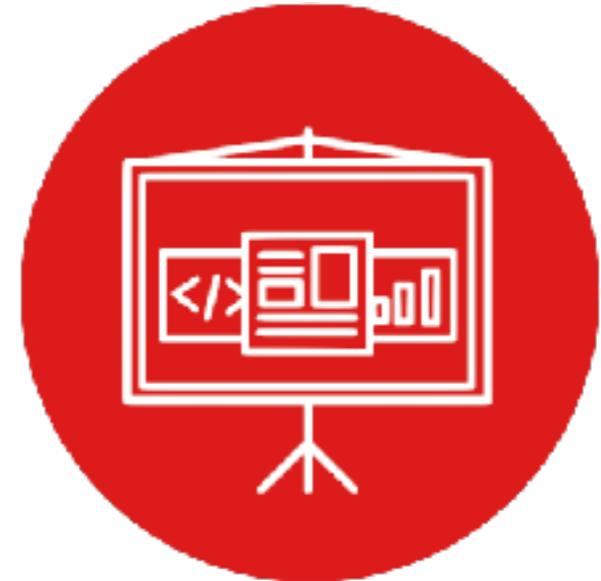
Course dates

JavaScript Development 6

Course dates:

- Mondays and Wednesdays, 6:30pm - 9:30pm
- February 1 - April 10

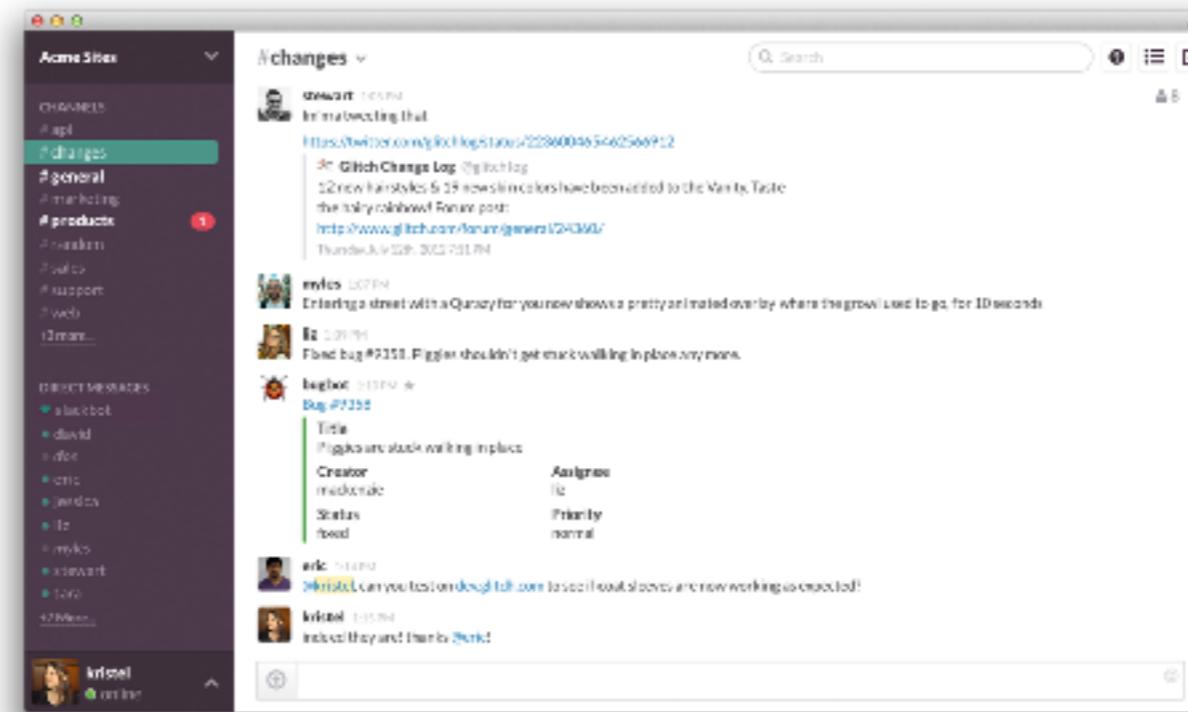
No holidays





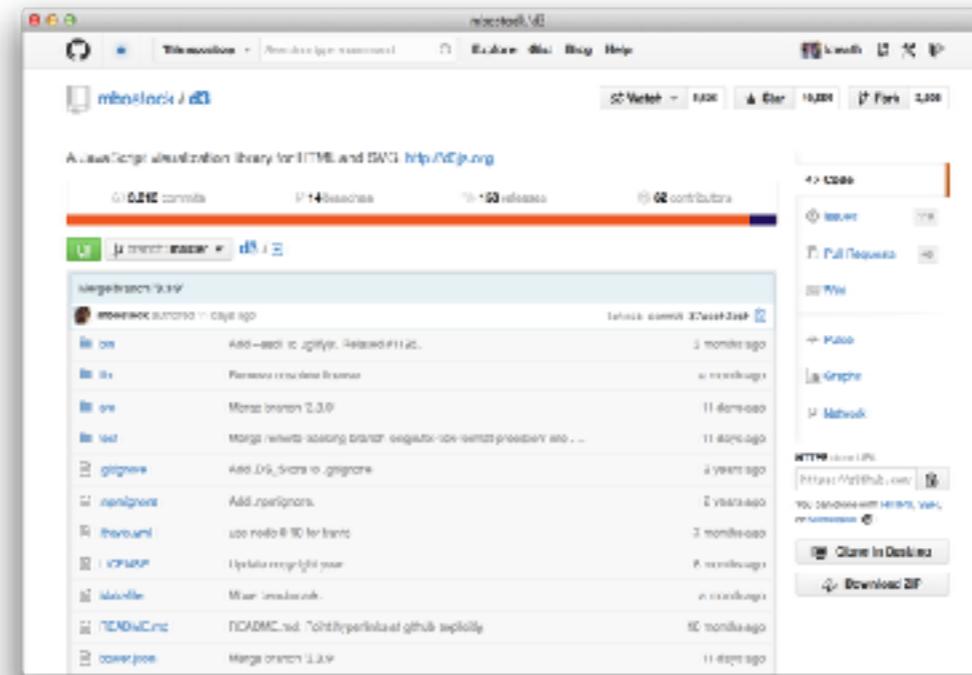
STUDENT EXPERIENCE

Slack



All course communication with each other and instructors will happen here.

Github

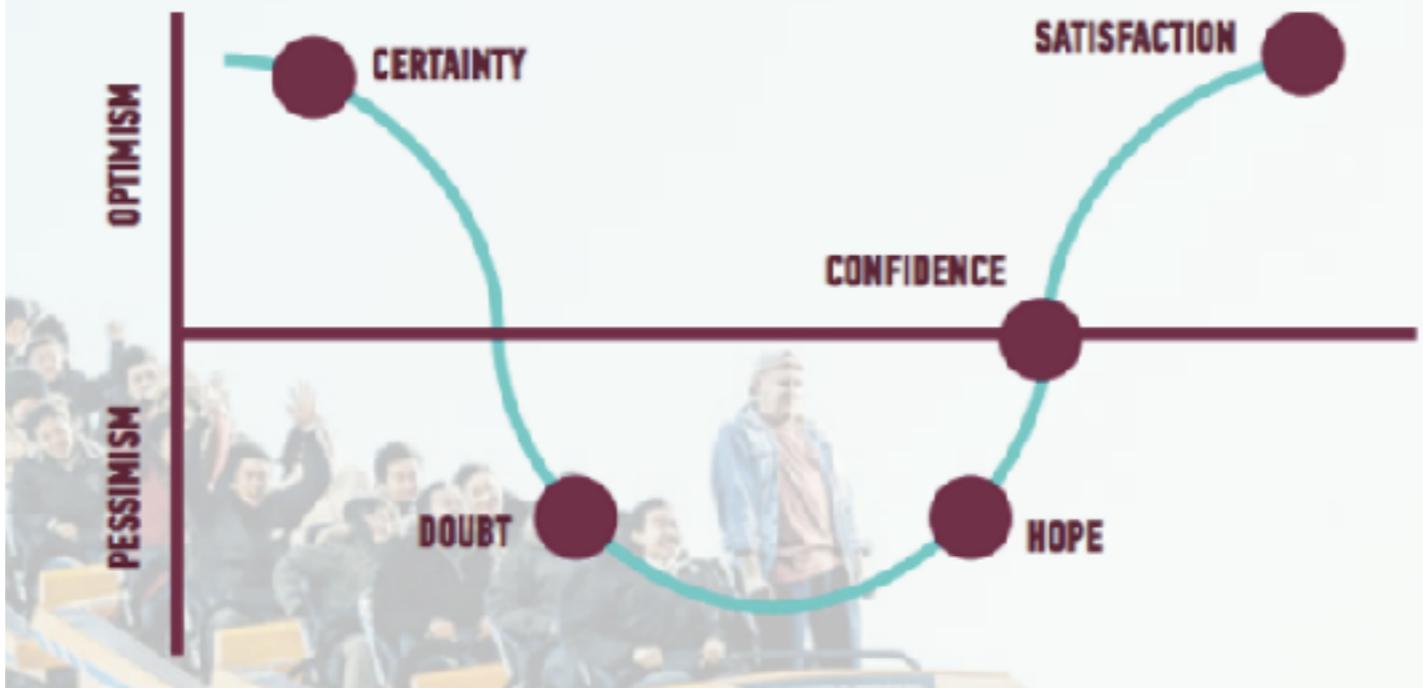


Github will have all the course resources you need: sample code, assignments, and lesson decks.

SYLLABUS

Lesson	Title	Lesson	Title
0	Installfest	10	Asynchronous JavaScript & Callbacks
1	JavaScript on the command line	11	Advanced APIs
2	Data Types & Loops	12	Unit 2 Lab
3	Conditionals & Functions	13	Prototypal Inheritance
4	Scope & Closures	14	The module pattern & this
5	Unit 1 Lab	15	Intro to CRUD & Firebase
6	Objects & JSON	16	Deploying your App
7	Intro to the DOM	17	Instructor-Student Choice
8	Intro to jQuery & templating	18	Final Project Lab
9	Ajax & APIs	19	Final Project Presentations

THE LEARNING ROLLERCOASTER



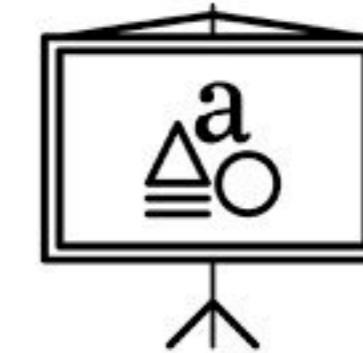
How to get a certificate



Complete 80% of the homework



Don't miss more than 3 classes



Complete and present a final project



HOMEWORK

OVERVIEW:

- Assigned most days, starting next week
- Due the following Monday
- Expect feedback within 5 days

GRADING:

- Complete/Incomplete

LATE ASSIGNMENTS:

- Accepted, but will not receive feedback; schedule office hours

OFFICE HOURS

Programming is tough!

We want you to succeed and we are here for you.

HOW TO REACH US:

- › Hit us up on Slack
- › Come to regular office hours Mon & Wed 5:30-6:30pm
- › Schedule other office hours
 - in-person at GA or elsewhere
 - Skype/Hangouts

EXIT TICKETS/FEEDBACK

- GA is REALLY into feedback - and so are we!
- Helps us help you
- Two BIG feedback surveys:
 - ⇒ Midway
 - ⇒ End
- Smaller survey after every class, known as an **exit ticket**

CLASS NORMS

- › Come on time
- › Participate
- › Step up, step back
- › Ask for help when you need it
- › Helping your classmates helps you too



TIPS FOR SUCCESS

- Complete homework before the next class if possible
- Brush up on your CSS selectors — especially element, ID, and class selectors
- Ask questions



JAVASCRIPT DEVELOPMENT

Sasha Vodnik, Instructor

JAVASCRIPT DEVELOPMENT

INSTALLFEST

LEARNING OBJECTIVES

At the end of this class, you will be able to

- › Differentiate between the Internet and the World Wide Web.
- › Summarize the client-server model & explain how DNS lookup works.
- › Use Node.js, npm, Git, and other command line tools on your computer.
- › Write pseudocode and explain how it relates to programmatic thinking.

AGENDA

- JavaScript & web development
- Set up Slack, Brew, Git, Node, and code editors
- Set up GitHub
- Pseudocode

JAVASCRIPT AND WEB TECHNOLOGIES

What is web development?

The process of building sites and applications for the web

JAVASCRIPT AND WEB TECHNOLOGIES

What is front-end development?

The development of client/browser code (HTML, CSS, JS),
i.e., what the user sees and interacts with

JAVASCRIPT AND WEB TECHNOLOGIES

What is back-end development?

The development of server-side code that handles such functions as routing, data handling, and databases (Ruby, Python, Java, JavaScript), i.e., the “stuff behind the scenes that makes web applications work

JAVASCRIPT AND WEB TECHNOLOGIES

How do these fit together?

web development

front-end development

back-end development

JAVASCRIPT AND WEB TECHNOLOGIES

- Websites are really just collections of files:
 - » .html
 - » .css
 - » .js
- Hosted on specialized computers ⇒ servers
- Goals for JSD:
 1. Create these files
 2. Organize these files
 3. Host (serve) these files

WHAT IS JAVASCRIPT?

- The language of the browser - aka the frontend; aka the client-side
- JavaScript ≠ Java
- One of the most popular programming languages
- [githut.info](#)
- [Stack Overflow - popular technologies](#)
- [Stack Overflow - top tech stacks](#)
- [Quora](#)

HOW IS JAVASCRIPT USED?

- JavaScript is (almost) universal (write once, run everywhere)
- Frontend (client-side):
 - ⇒ Used in the browser (alongside HTML and CSS)
 - ⇒ Included in, or referenced by, an HTML document
 - ⇒ Designed to make web pages dynamic (vs. static)
- Backend (server-side):
 - ⇒ Increasingly popular
 - ⇒ See NodeJS

INTERNET VS WORLD WIDE WEB

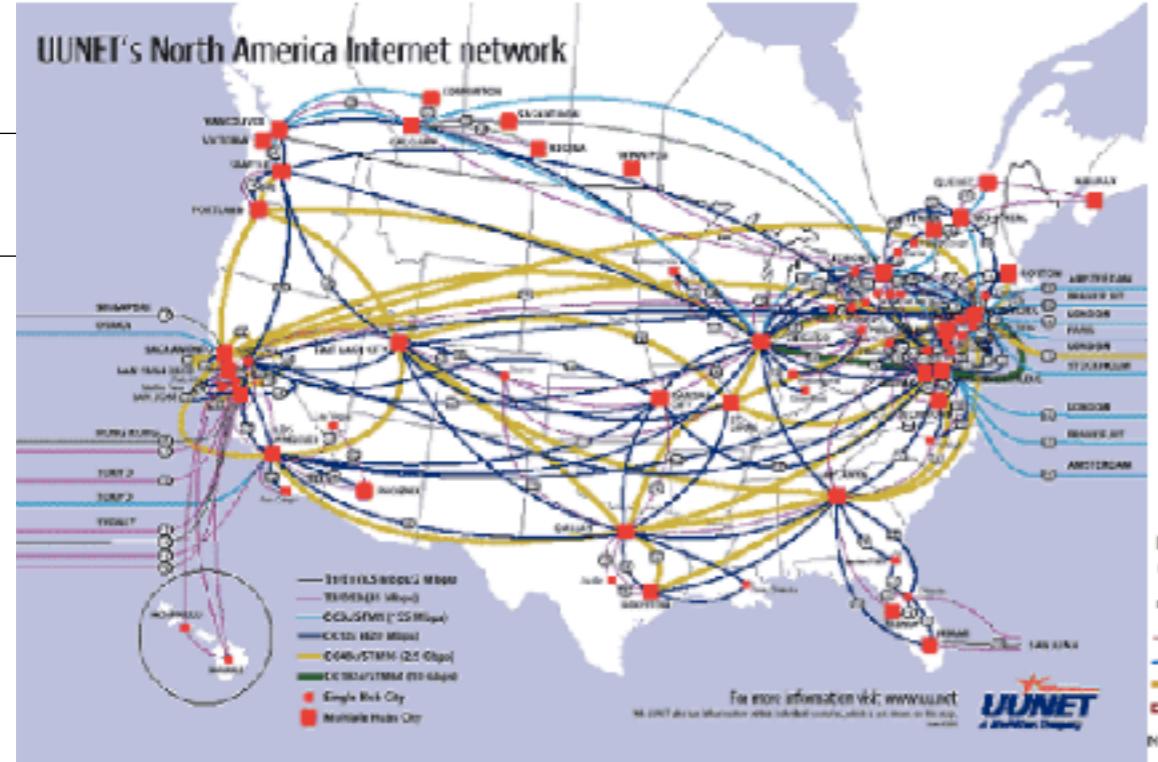
What is the Internet?

- ▶ A set of interconnected computer networks
- ▶ The infrastructure to connect computers around the world
- ▶ Communication can use any agreed upon protocol

A SERVER FARM



UUNET's North America Internet network



AT&T IP BACKBONE NETWORK



Level(3)
Version 1.0 © 2014



The internet's undersea world

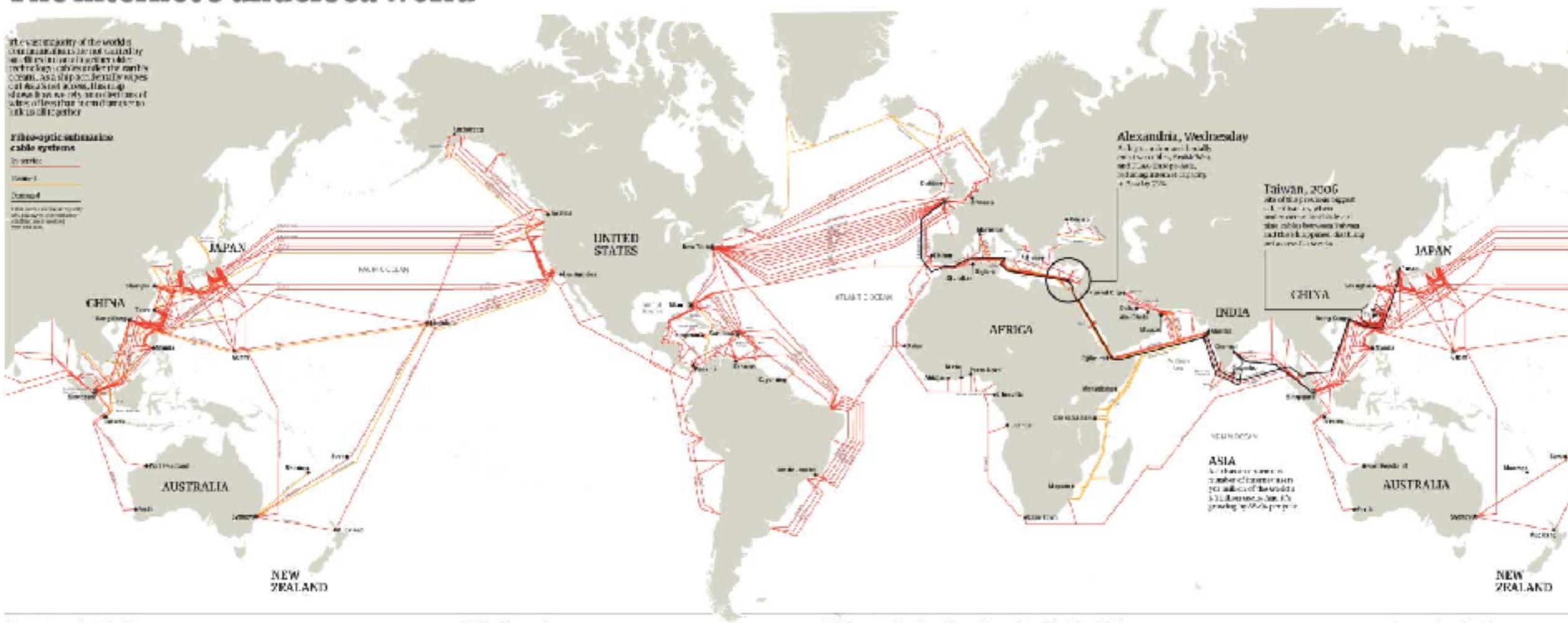
In the vast majority of the world's continents there are not satellite or seafloor seismic or magnetometer technology cables under the earth's crust. As a ship accidentally rakes out such a cable across the map, it may be the only evidence we have of where a fault has run and where to look up to find another.

ribo-optic submarine cable systems

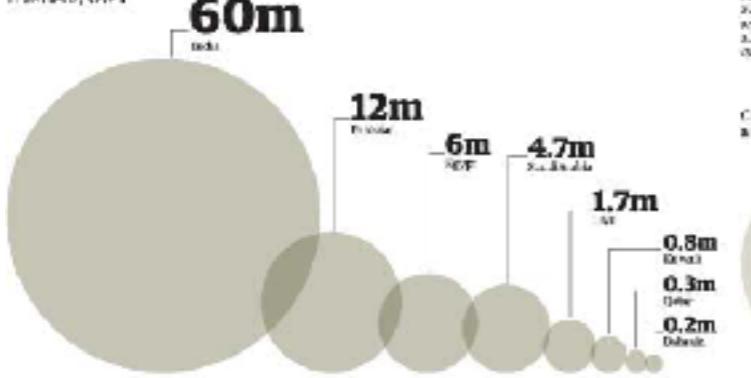
In practice

第十一章

Dominos 4

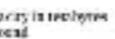


Internet users affected by the Alexandria accident

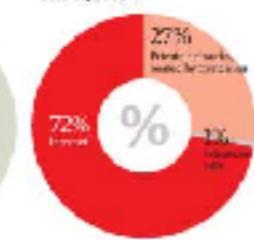


Grid cable capacity

and now the operation is going well and we are in full swing again. Much of the other orders Curran was causing trouble to hold him up, so that the company had to use their hands with him; and, I understand, he is gone.



Whitman



The longest submarine call

The *Scutellaria*-*Argyranthemum* alliance
consists of two taxa that are morphologically
similar: *Scutellaria galericulata* and
Argyranthemum frutescens.

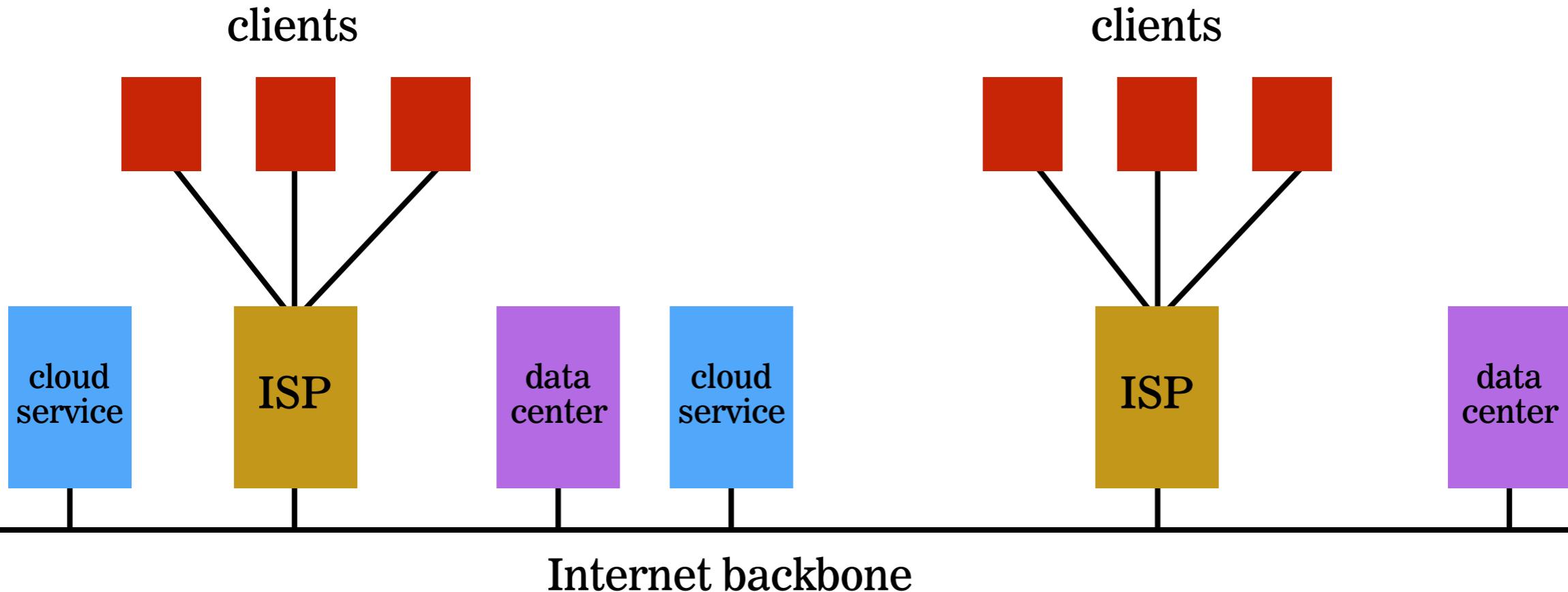
Scallop Area 3	10
California Coast	100,500 lbs
— 1982-90	200,439 lbs
1. M.C.T. Long-Asia	20,100 lbs
South America	21,000 lbs

The world's tallest iron bridge

The 1-1-1 station is located at 1000 Avenue of the Americas, between 42nd and 43rd Streets. The station has a total capacity of 840,000 passengers per day. It is the second largest station in New York City.



EXCHANGING INFORMATION OVER THE INTERNET



INTERNET VS WORLD WIDE WEB

What is the World Wide Web?

- ▶ A massive collection of HTML documents
- ▶ Accessed over the Internet
- ▶ Communication is based on Hypertext Transfer Protocol (HTTP)

THE FIRST EVER WEB PAGE

World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#), [Policy](#), November's [W3 news](#), [Frequently Asked Questions](#).

[What's out there?](#)

Pointers to the world's online information, [subjects](#), [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#) [X11](#) [Viola](#) , [NeXTStep](#) , [Servers](#) , [Tools](#) , [Mailbot](#) , [Library](#))

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

[How can I help ?](#)

If you would like to support the web..

[Getting code](#)

Getting the code by [anonymous FTP](#) , etc.

hypertext

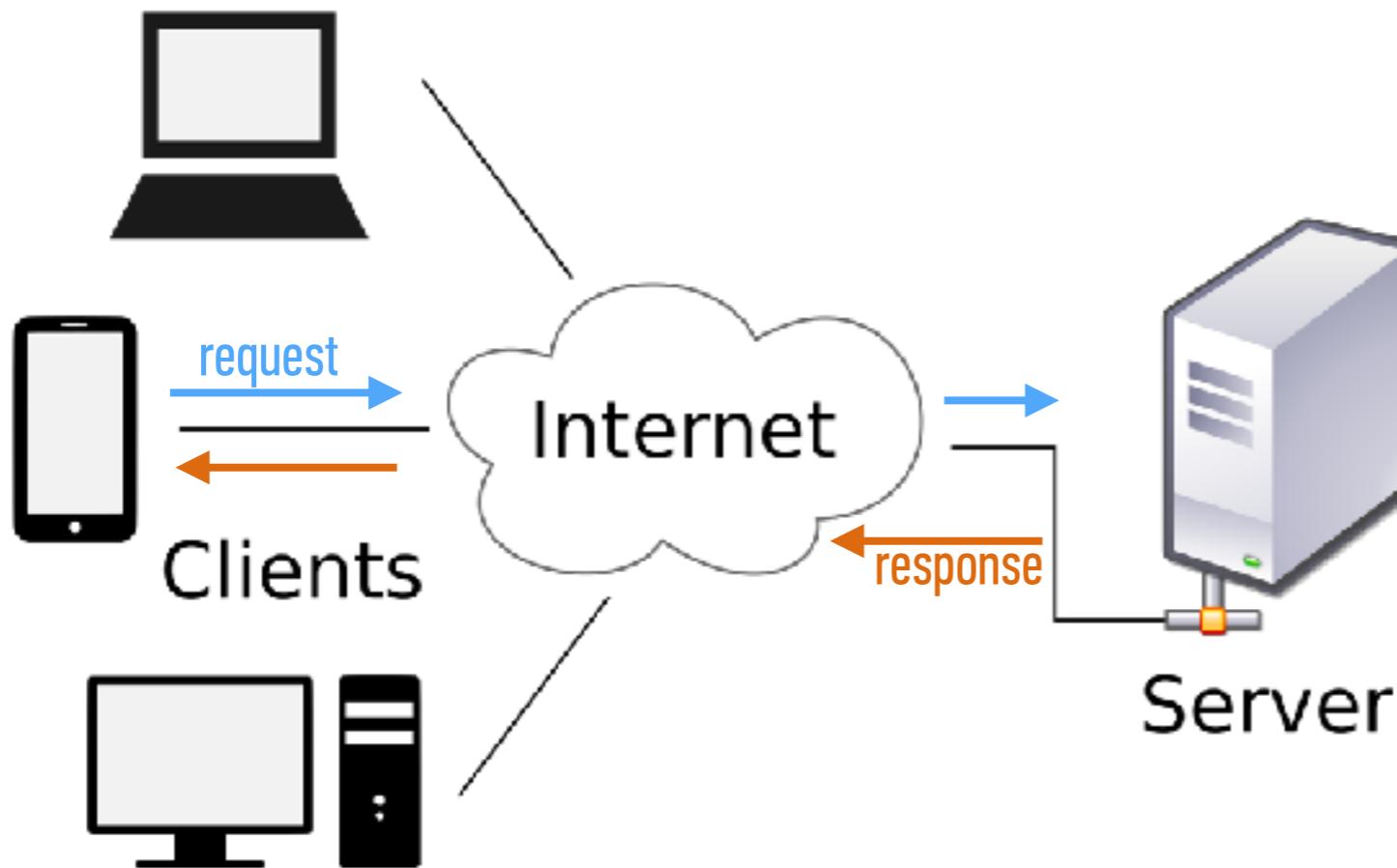
INTERNET VS WORLD WIDE WEB

Name some things you use the Internet for that are not part of the web

- Email
- Skype/GoogleTalk/FaceTime
- Dropbox/iCloud/cloud storage
- Spotify/Pandora/music streaming
- YouTube/Netflix/video streaming

BREAK (5 MINUTES)

THE CLIENT-SERVER MODEL



HOW DO YOU REACH A SPECIFIC SERVER?

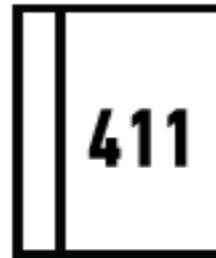
BUSINESS NAME

Joe's Florist



CUSTOMER

DIRECTORY ASSISTANCE



FLOWERS



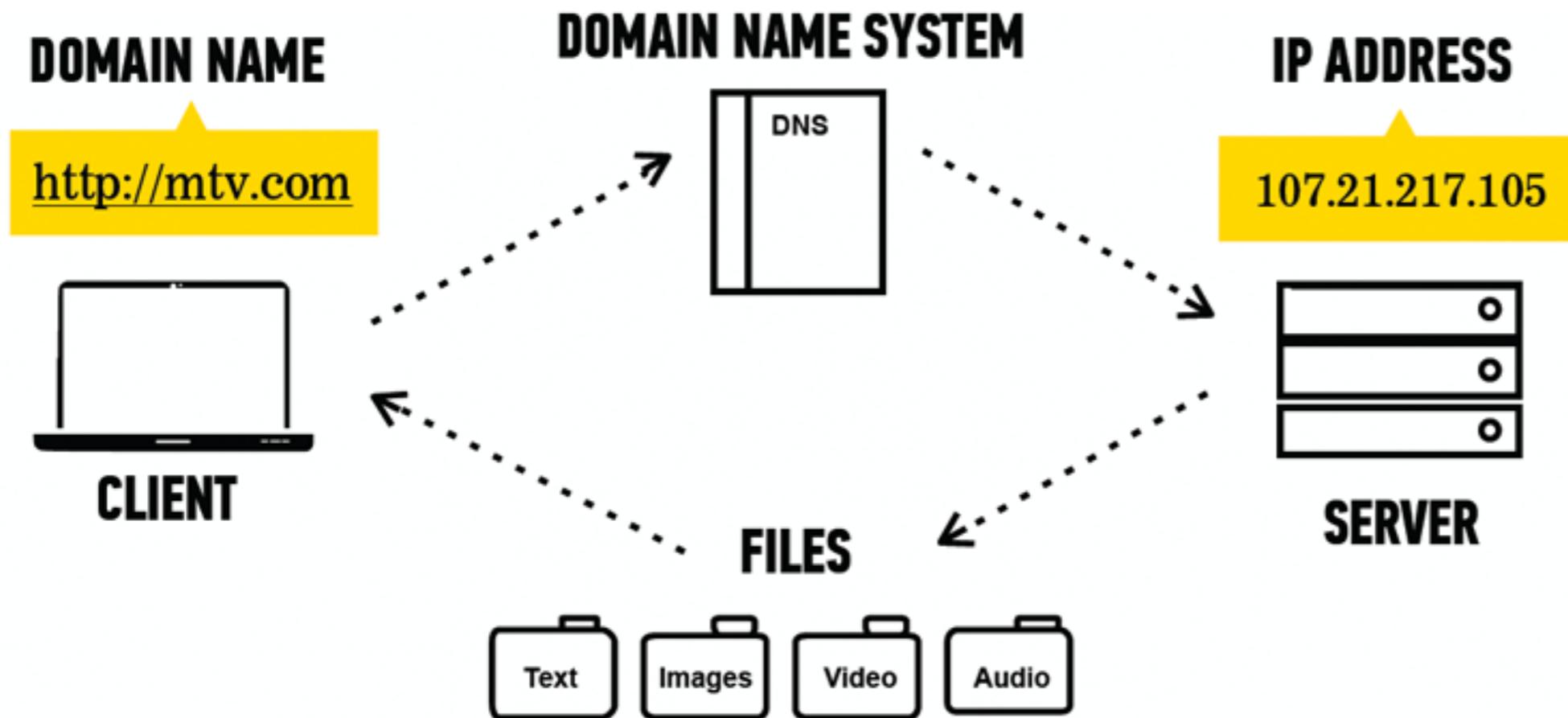
PHONE NUMBER

212-123-4567



FLORIST

HOW DO YOU REACH A SPECIFIC SERVER?



SET UP SLACK

We'll be using Slack to share resources and to communicate during and outside of class

- Visit slack.com/downloads to download the application
- Sign up using your email and join our class Slack channel: **JS-SF-6**
- Upload a profile picture to Slack

TERMINAL (COMMAND LINE)

- **Mac:** Open the Terminal app (Applications > Utilities > Terminal)
- **Windows:** Open Command Prompt (Start Button > type cmd)

HOMEBREW (BREW)

- Package manager (Mac only)
- Software that helps you install other software

GIT & GITHUB

- **git**: code versioning software
- **GitHub**: online storage
- Together, they let you collaborate and keep track of code

NODE & NPM

- **Node**: for running JavaScript from the command line
- **npm**: package manager for JavaScript

VISUAL STUDIO CODE

- Text editor
- Other popular options:
 - Sublime Text
 - Atom

INSTRUCTIONS

TAKE A DEEP BREATH: Problems getting your environment configured come with the territory

See Slack for the instructions URL

BREAK (5 MINUTES)

THINKING LIKE A PROGRAMMER

- **What is a program?**
 - A program is a set of instructions that tells a computer how to carry out a task
- **What is programming?**
 - Programming is the task of writing those instructions in a language that a computer can understand
- **What's the first step in becoming a programmer?**
 - Not learning a particular language, but learning how to think like a computer

PSEUDOCODE

- An outline of a program that can be converted into code
- The process of writing pseudocode helps you through a program, step-by-step, without actually writing a line of code
- Allows a programmer to focus on problem solving, not the precise layout of the code and its syntax
- Don't need to know how to code to write pseudocode

PSEUDOCODE EXERCISE

- › Write pseudocode for a program that calculates how many cups of your favorite drink you will consume from now until you turn 65, and displays the result.
- › Take into account
 - › Your favorite drink
 - › Your current age
 - › How many times a day you consume this drink

PSEUDOCODE EXERCISE 2

- › Write the pseudocode for a program that controls a light that changes color based on user input.
- › Imagine the light has three different-colored buttons—red, blue, and yellow.
- › When a user touches one of the buttons, the light changes to the corresponding color.
- › If the selected color is touched again, the light turns off.
- › If the button for a different color is touched, the existing color turns off and the corresponding color turns on
- › You do not have to write any actual JavaScript for this exercise.

PSEUDOCODE EXERCISE 3

- › Write pseudocode for a program that calculates the number of miles a user travels between home and work (or another destination) per year.
- › Take into account
 - › Distance between home and destination
 - › Times per day the user makes that trip (probably 2)
 - › Working days per year

LEARNING OBJECTIVES - REVIEW

- Differentiate between the Internet and the World Wide Web.
- Summarize the client-server model & explain how DNS lookup works.
- Use Node.js, npm, Git, and other command line tools on your computer.
- Write pseudocode and explain how it relates to programmatic thinking.

NEXT CLASS PREVIEW

The Command Line

- Work with files/directories via the terminal window
- Create a Git repository and push/pull changes
- Run basic JavaScript code on the command line

Exit Tickets!

Q&A