



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



LARISSA



Student Services



Email: studentservicesSF@google.com
Slack: Matt Jones

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

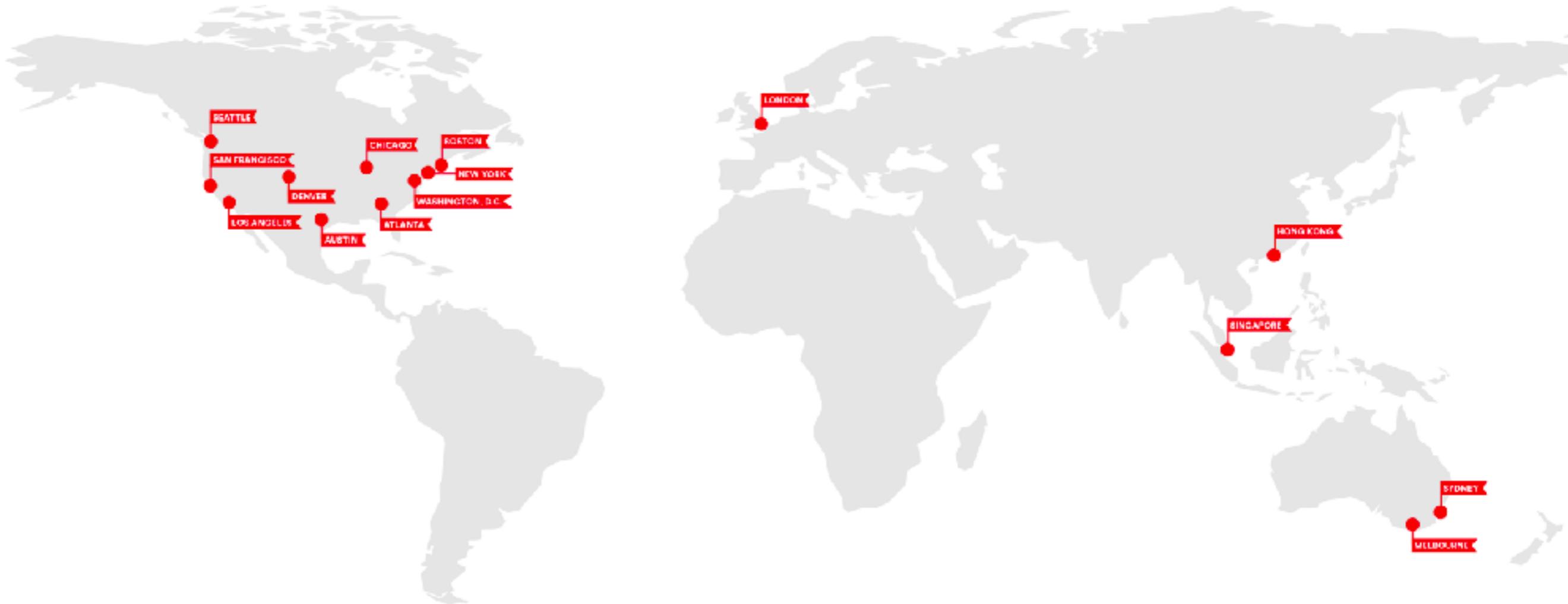
1. Take 5 minutes to get to know your neighbor by finding out:
 - a. Their name
 - b. Why they are taking this course
 - c. A guilty pleasure

1. Be prepared to introduce your neighbor to the rest of the room

WHAT IS GENERAL ASSEMBLY?



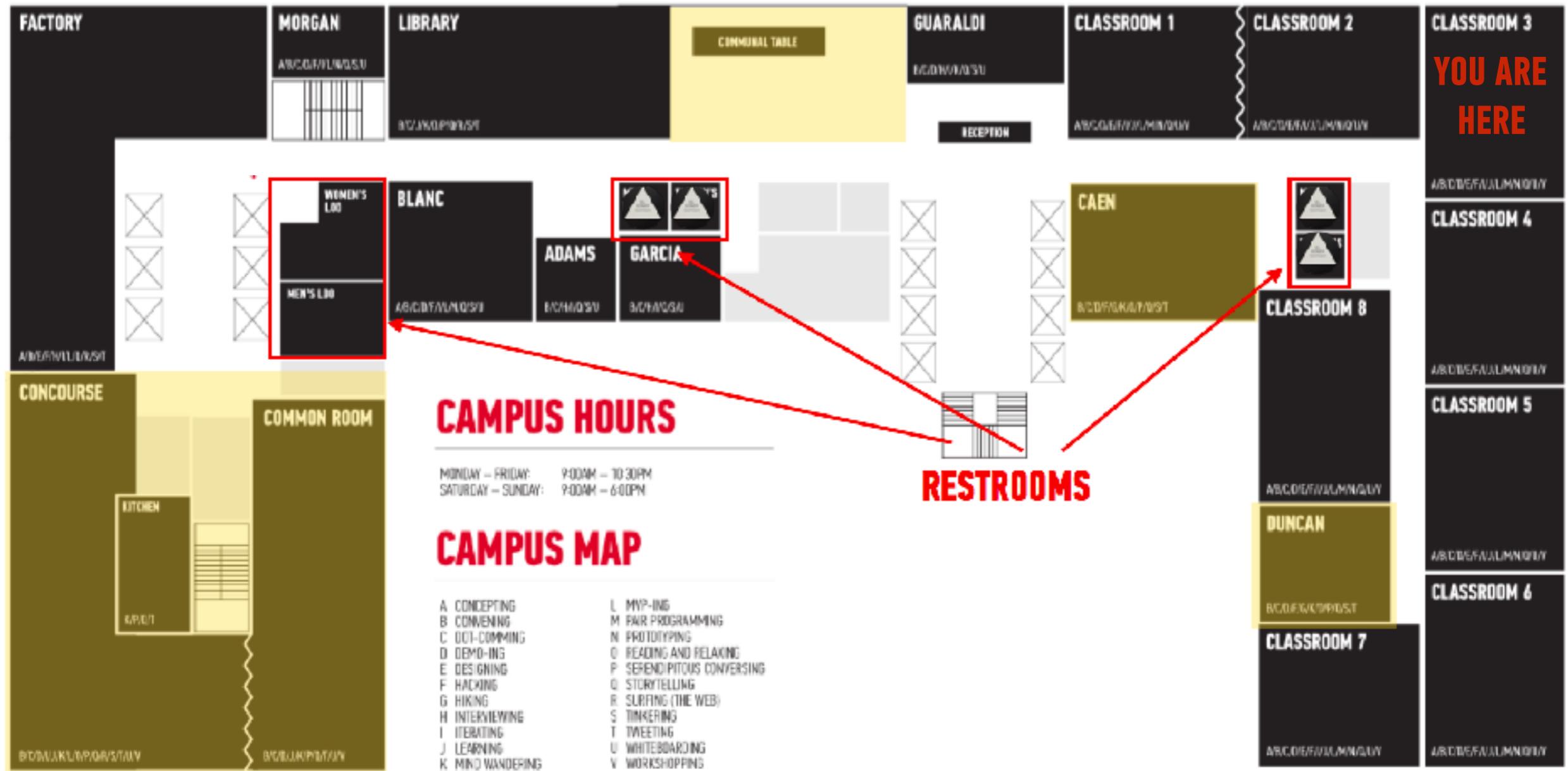
15+ campuses around the world





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

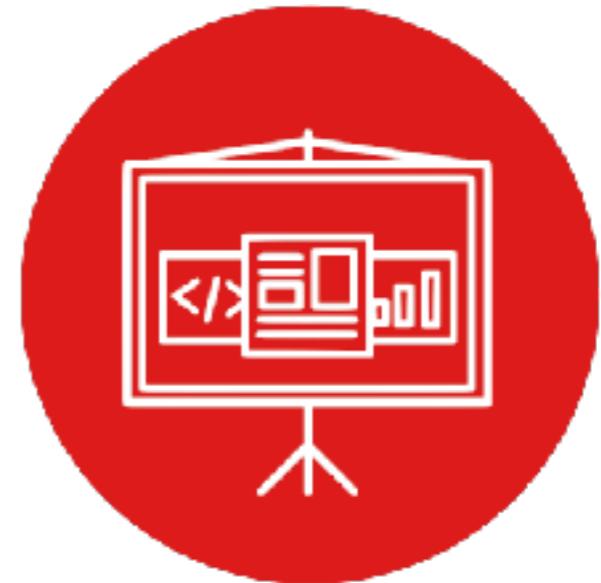
JavaScript Development 7

Course dates:

- Mondays and Wednesdays, 6:30pm - 9:30pm
- May 1 - July 12

Holidays:

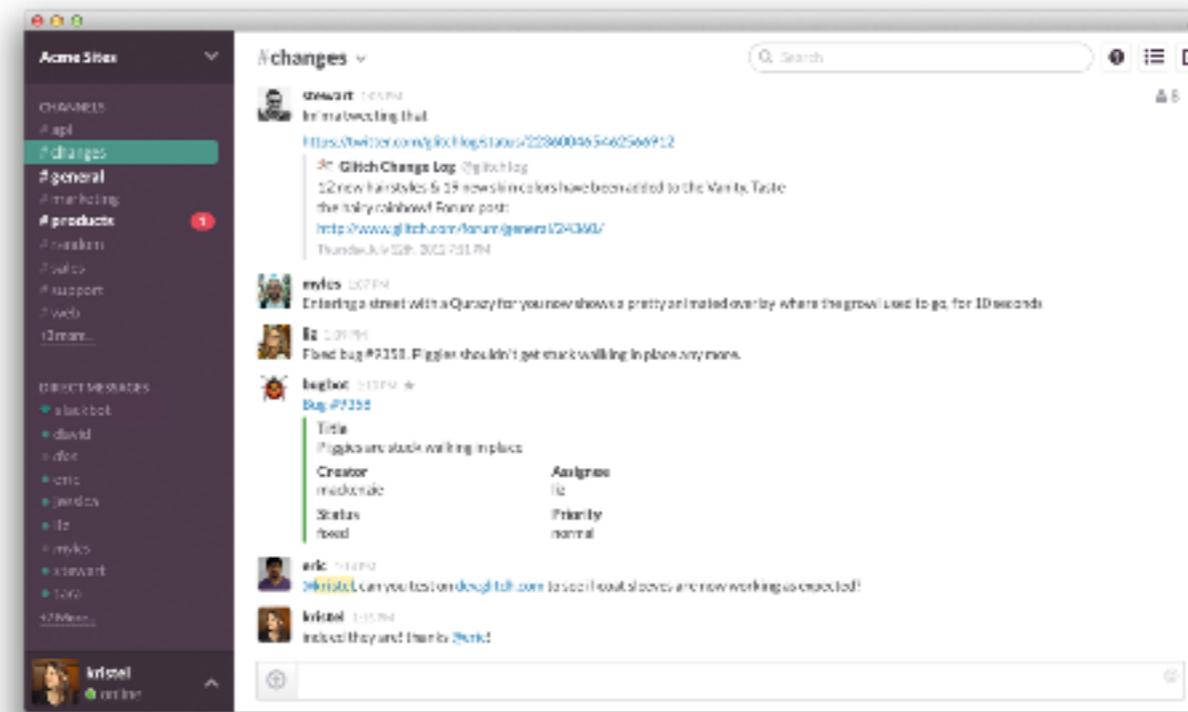
- May 29
- July 3





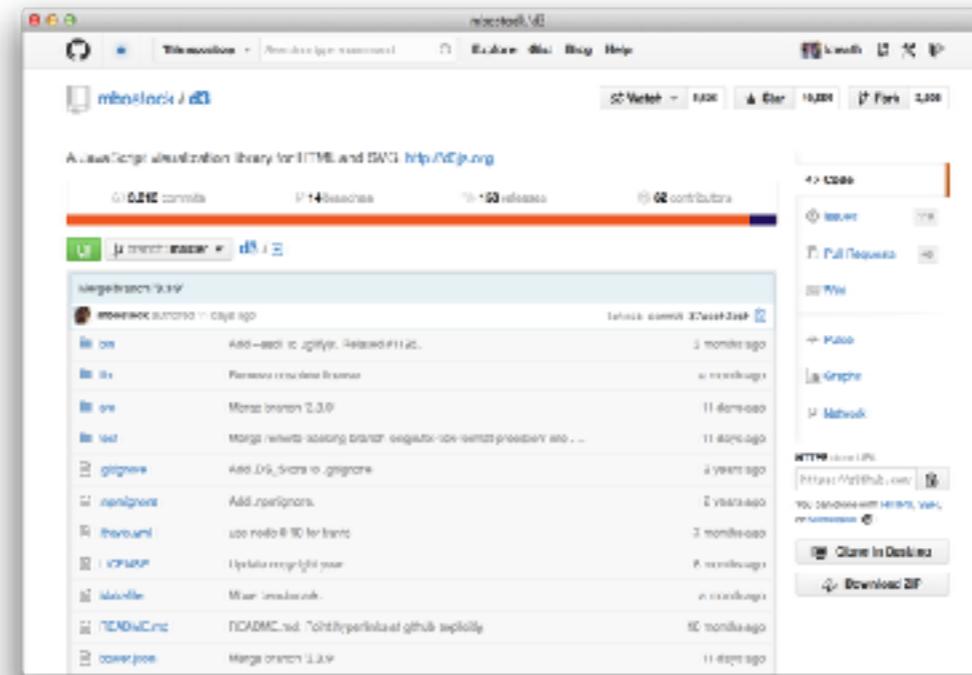
STUDENT EXPERIENCE

Slack



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

Github



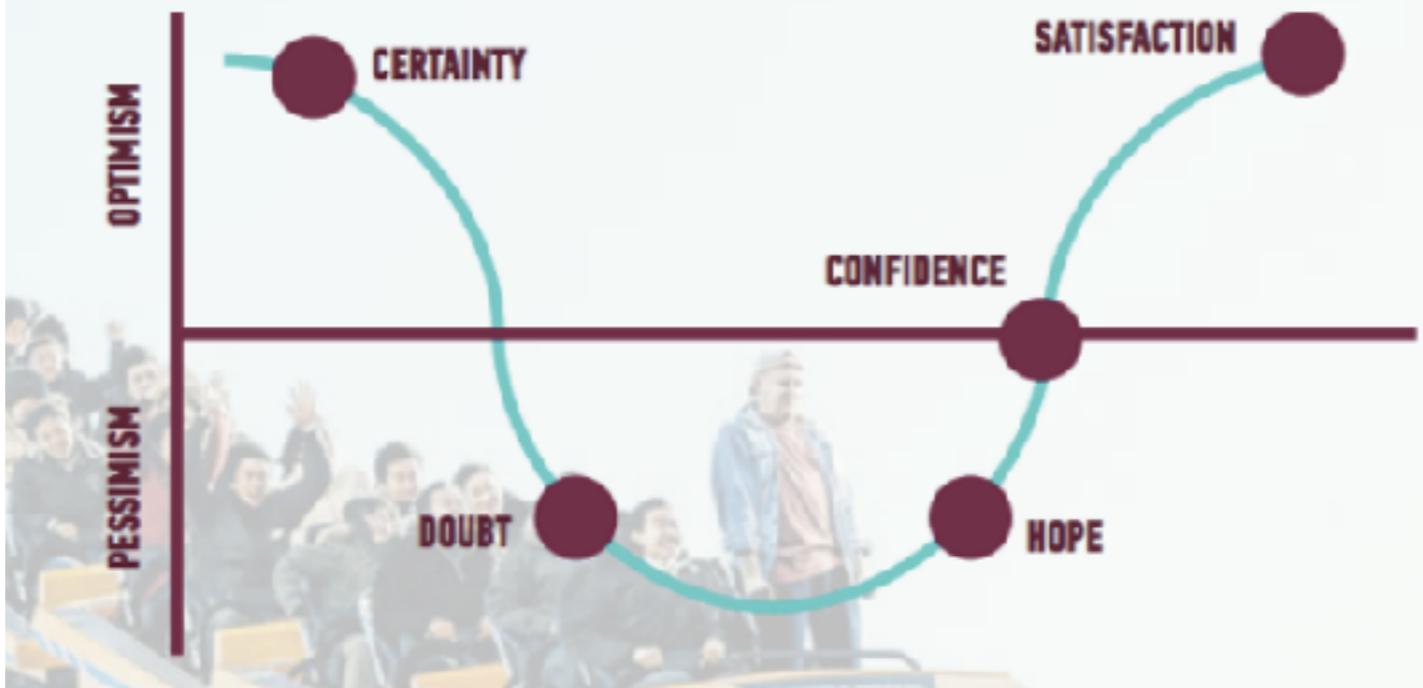
Github will have all the course resources you need:
starting code, assignments, and slide decks.

INSTALLFEST

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 & <code>this</code>
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



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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

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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
- › Schedule other office hours
 - in-person at GA or elsewhere
 - Skype/Hangouts

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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 type, ID, and class selectors
- Ask questions



JAVASCRIPT DEVELOPMENT

Sasha Vodnik, Instructor

JAVASCRIPT DEVELOPMENT

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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.

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AGENDA

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

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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

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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

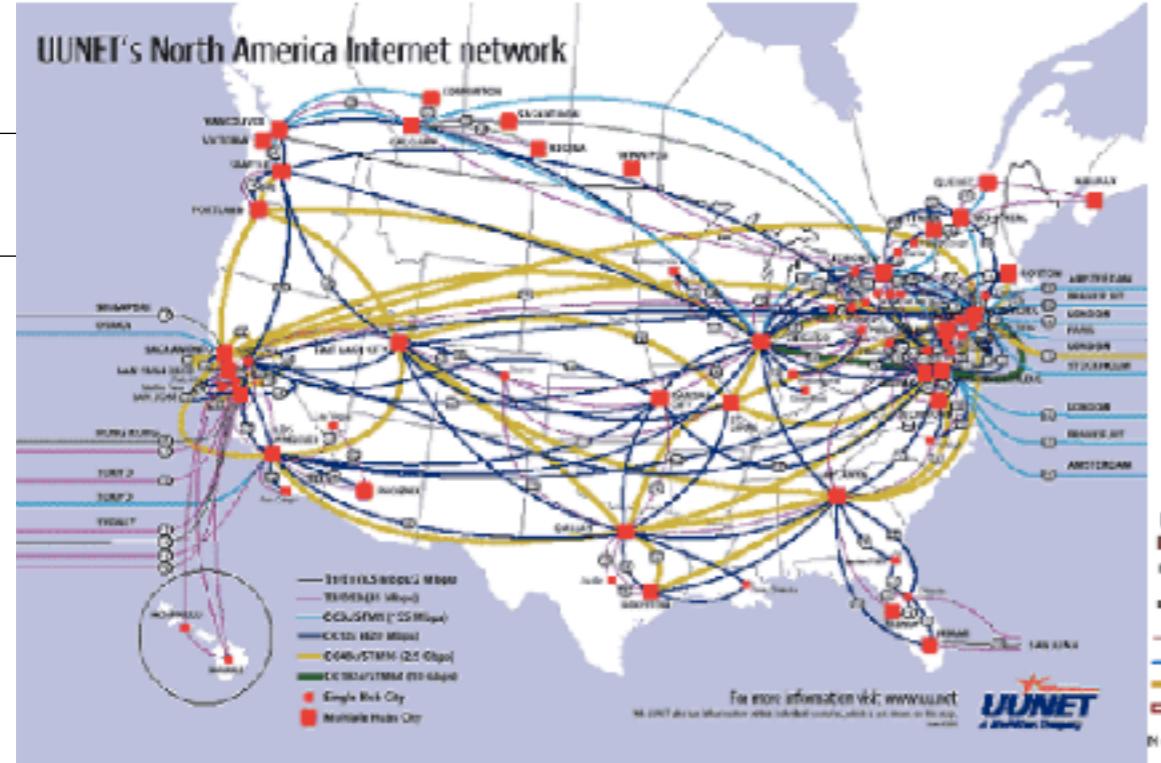
What is the Internet?

- ▶ 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



The internet's undersea world

The ever-increasing volume of the world's communications traffic is not carried by satellite or fibre-optic cables under the earth's technology, cables under the earth's oceans. As a ship can't easily types out dissolved oxygen, this map shows how we rely on a network of wires to keep our world all tied together.

Submarine cable systems

In service

Planned

Delayed

Under construction
and awaiting
authorisation

Proposed

Abandoned

Retired

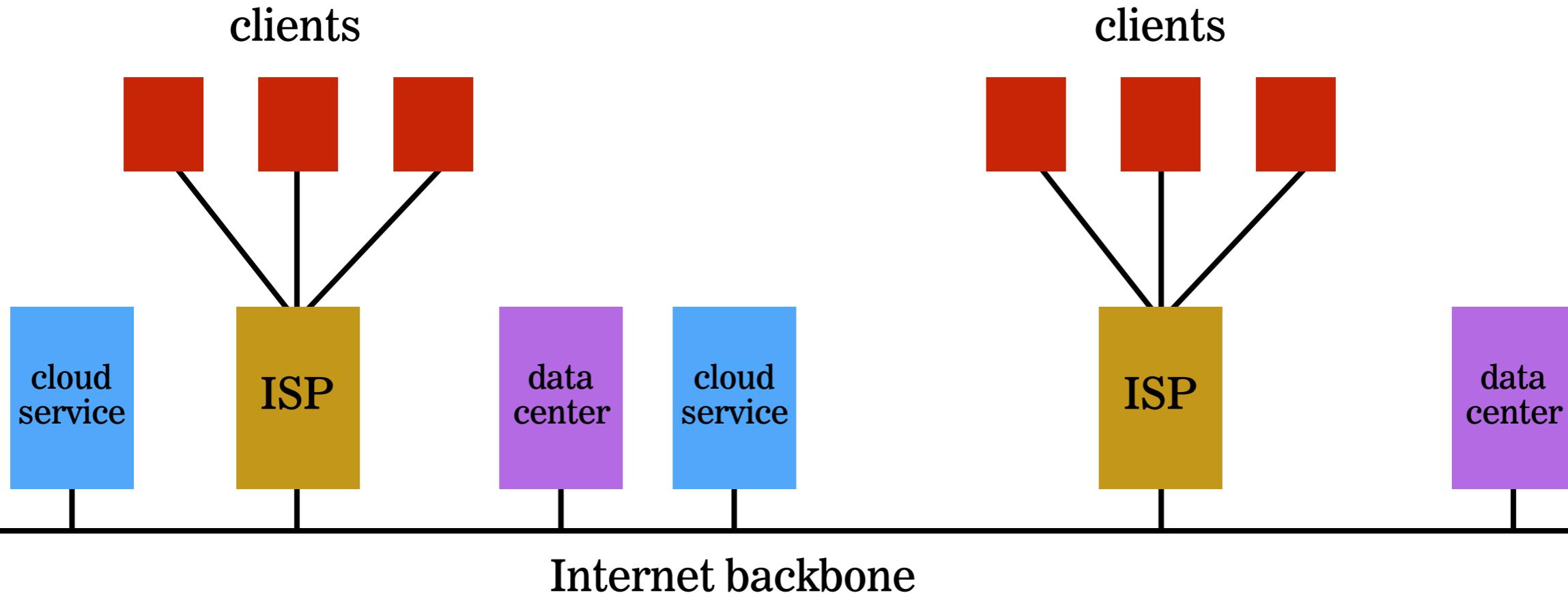
Under construction

Delayed

Proposed</p

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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)

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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

ACTIVITY



KEY OBJECTIVE

- ▶ Differentiate between the Internet and the World Wide Web.

TYPE OF EXERCISE

- ▶ Turn and Talk

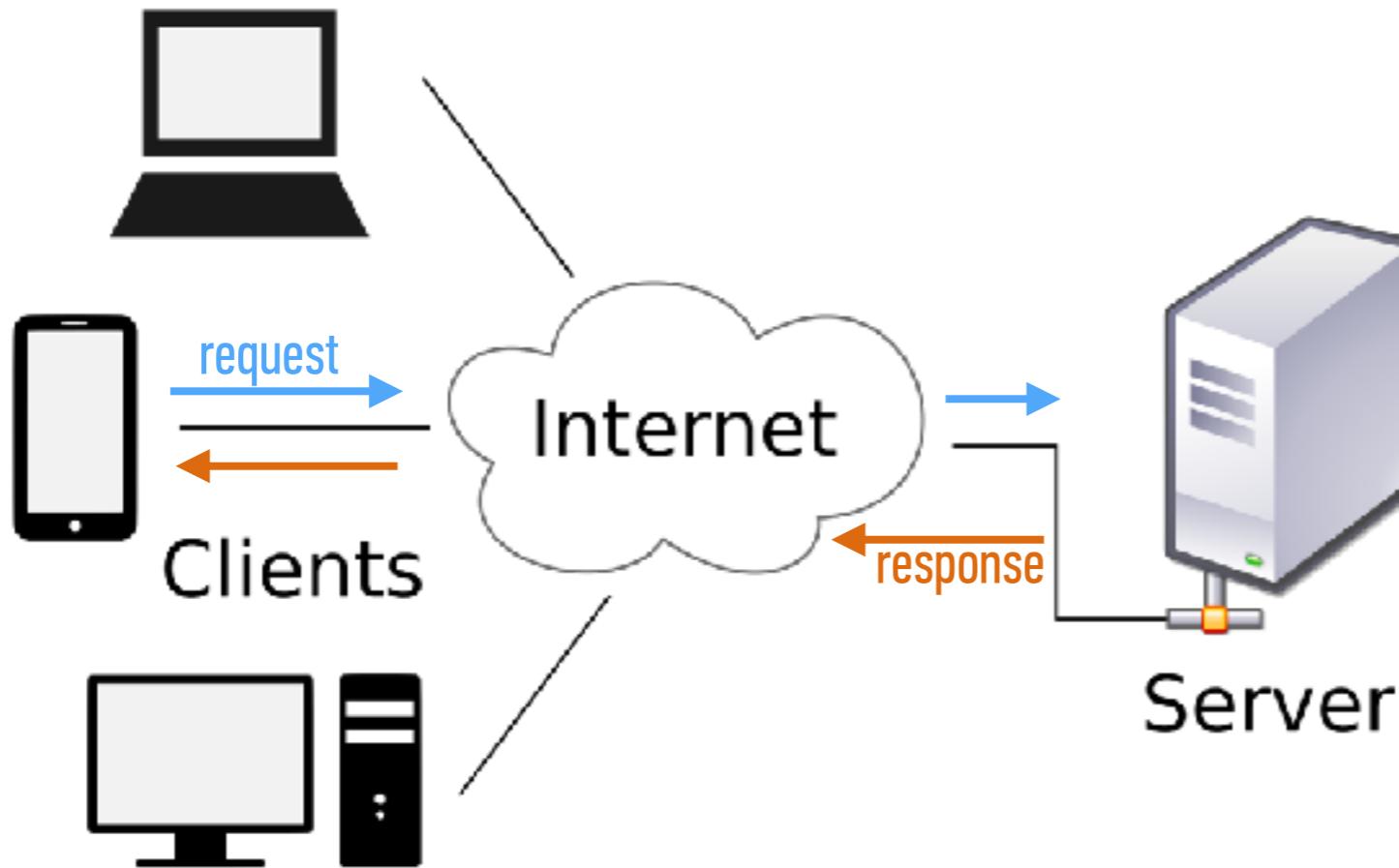
TIMING

4 min

1. What is the Internet?
2. What is the World Wide Web?
3. What is the difference between the two?

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THE CLIENT-SERVER MODEL



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HOW DO YOU REACH A SPECIFIC SERVER?

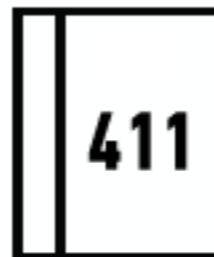
BUSINESS NAME

Joe's Florist



CUSTOMER

DIRECTORY ASSISTANCE



FLOWERS



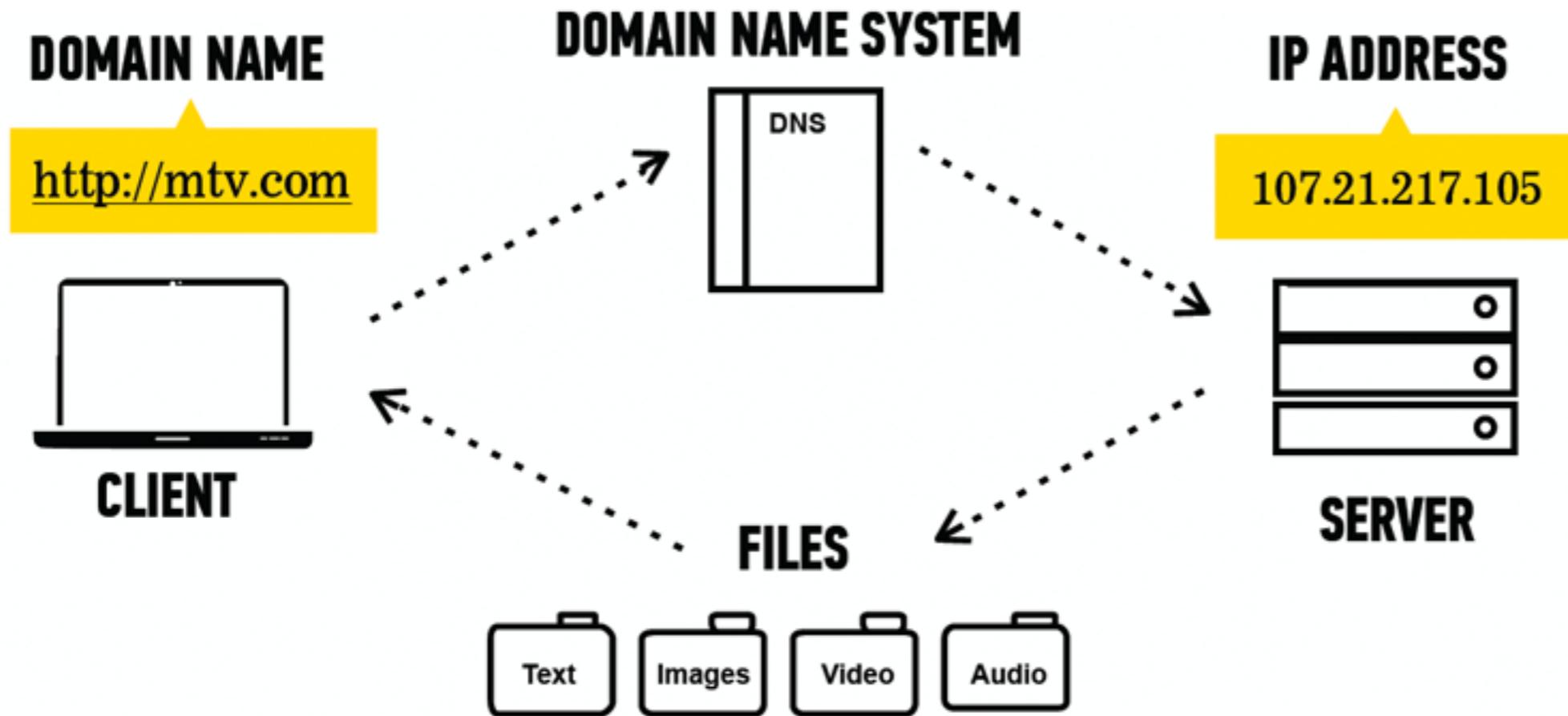
PHONE NUMBER

212-123-4567



FLORIST

HOW DO YOU REACH A SPECIFIC SERVER?



ACTIVITY



KEY OBJECTIVE

- ▶ Summarize the client-server model & explain how DNS lookup works.

TYPE OF EXERCISE

- ▶ Partner activity (groups of 2-3)

TIMING

4 min

1. In your browser, open a new tab, type **50.0.2.222**, then press Enter.
2. Discuss with your partners what happened and why.
3. On your desk, collaborate to draw a diagram illustrating what happened. Include client, server, and DNS in your diagram.

ACTIVITY - SET UP SLACK



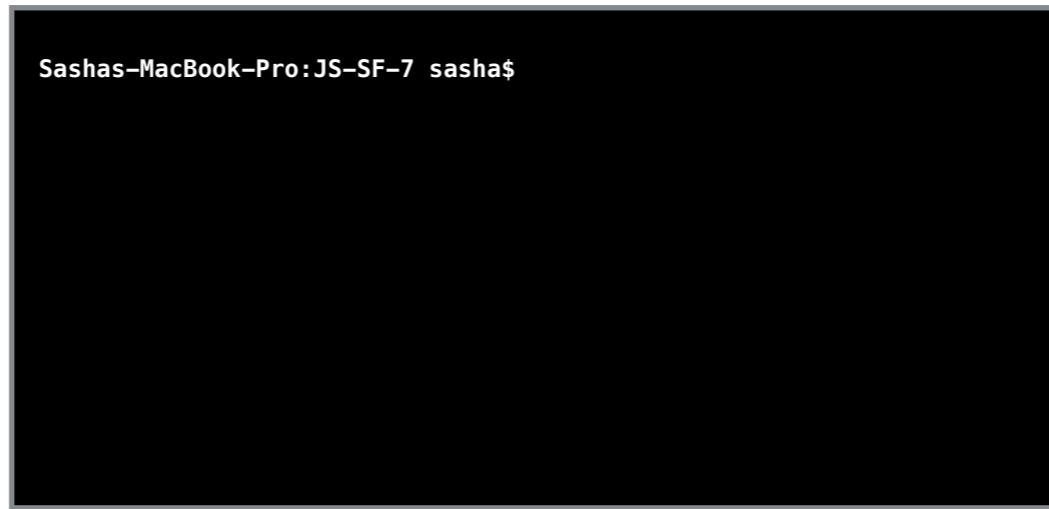
TASKS

5 min

1. Visit **slack.com/downloads** to download the application
2. Sign up using your email and join our class Slack channel: **JS-SF-7**
3. Upload a profile picture to Slack

ACTIVITY - OPEN THE TERMINAL (COMMAND LINE)

EXERCISE



TASKS

1 min

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

TOOLS WE'LL BE USING

HOMEBREW (BREW)

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



TOOLS WE'LL BE USING

GIT & GITHUB

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



TOOLS WE'LL BE USING

NODE & NPM

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



TOOLS WE'LL BE USING

VISUAL STUDIO CODE

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



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INSTRUCTIONS

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

See Slack for the instructions URL

ACTIVITY



KEY OBJECTIVE

- ▶ Use Node.js, npm, Git, and other command line tools on your computer.

TYPE OF EXERCISE

- ▶ Partner activity (groups of 2-3)

TIMING

2 min

1. With your group members, create a list of the command line tools and other applications you just installed.
2. Describe the purpose of each tool.

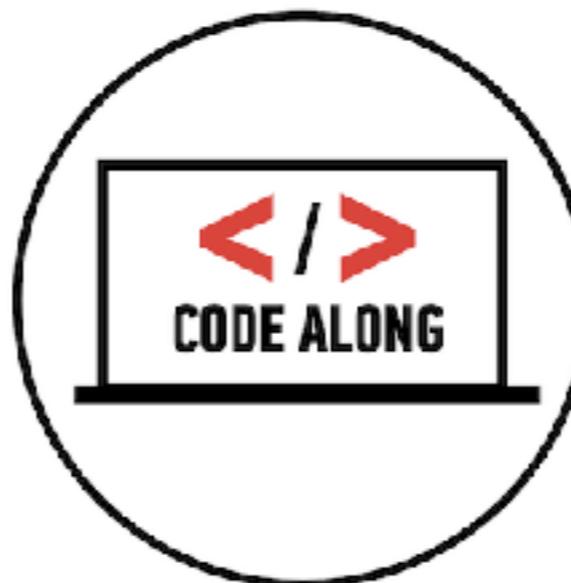
THINKING LIKE A PROGRAMMER

- **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

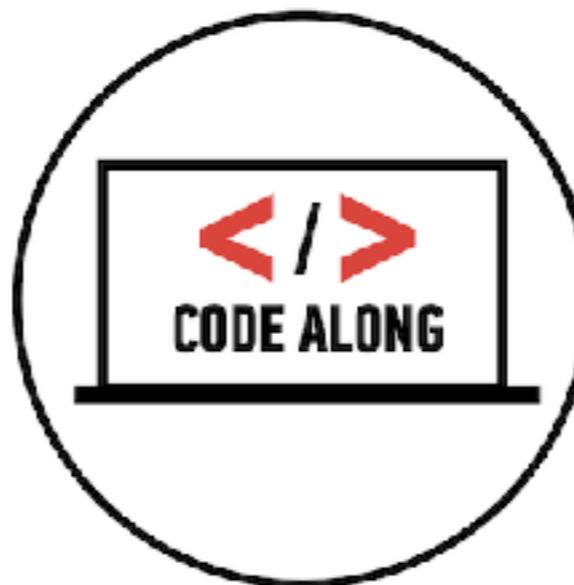
PSEUDOCODE

- 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 — HEIGHT COMPARISON



PSEUDOCODE — PASSING SCORE



LAB — PSEUDOCODE



KEY OBJECTIVE

- Write pseudocode and explain how it relates to programmatic thinking.

TYPE OF EXERCISE

- Pairs

TIMING

5 min

1. Create pseudocode for a program that calculates the number of miles a user travels between home and work (or another destination) per year.
2. Take into account distance between home and destination, times per day the user makes that trip (probably 2), and working days per year.

ACTIVITY



KEY OBJECTIVE

- ▶ Write pseudocode and explain how it relates to programmatic thinking.

TYPE OF EXERCISE

- ▶ Turn and Talk

TIMING

4 min

1. Describe pseudocode in your own words.
2. Explain what programmatic thinking is, and how it relates to pseudocode.

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!

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Q&A