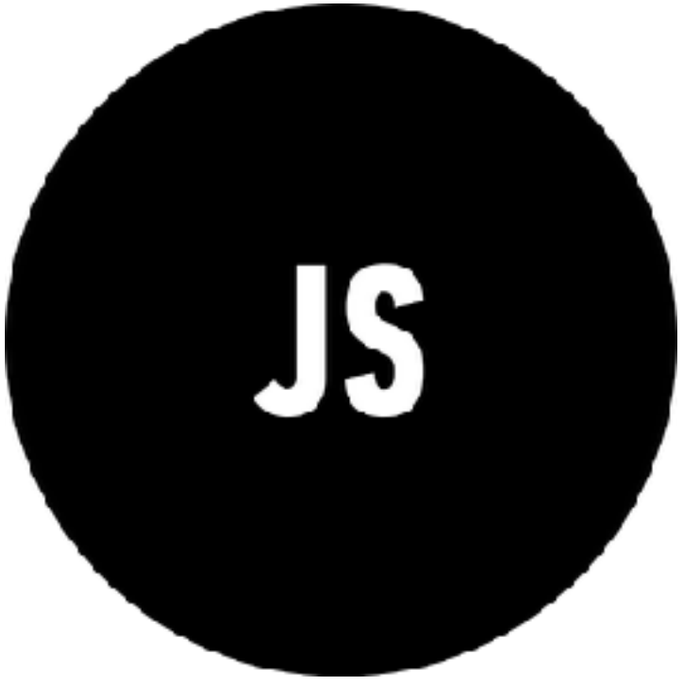


WELCOME TO JAVASCRIPT DEVELOPMENT

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

Wi-fi: GA-Guest
pw: yellowpencil


YOUR
INSTRUCTIONAL
TEAM

SASHA

Student Services

Email: studentservicesSF@ga.co

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

RAY HSIA

Instructor Manager

NIÑA PINEDA

Front Lines Lead

VANESSA OHTA

Instruction Manager

Let’s get to know each other

STRUCTURE

PAIRS

INTROS: 5 MIN
SHARING: 15 MIN

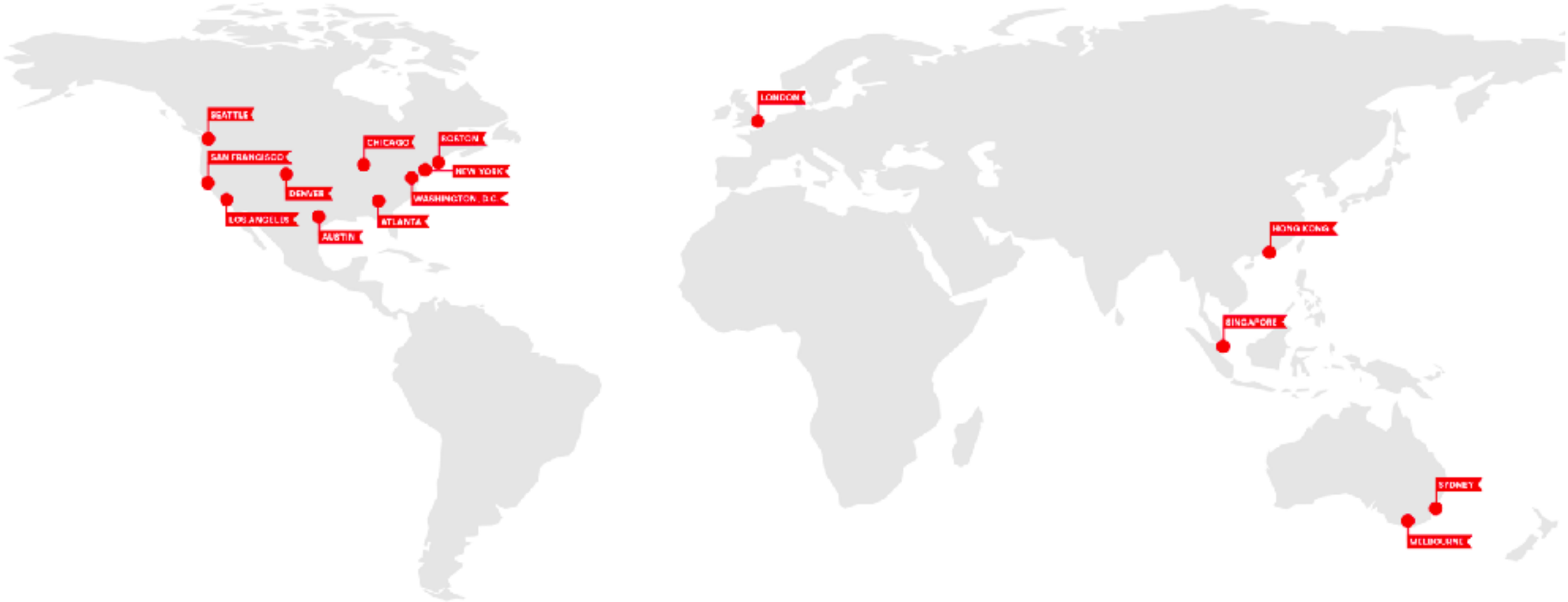
OBJECTIVES

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

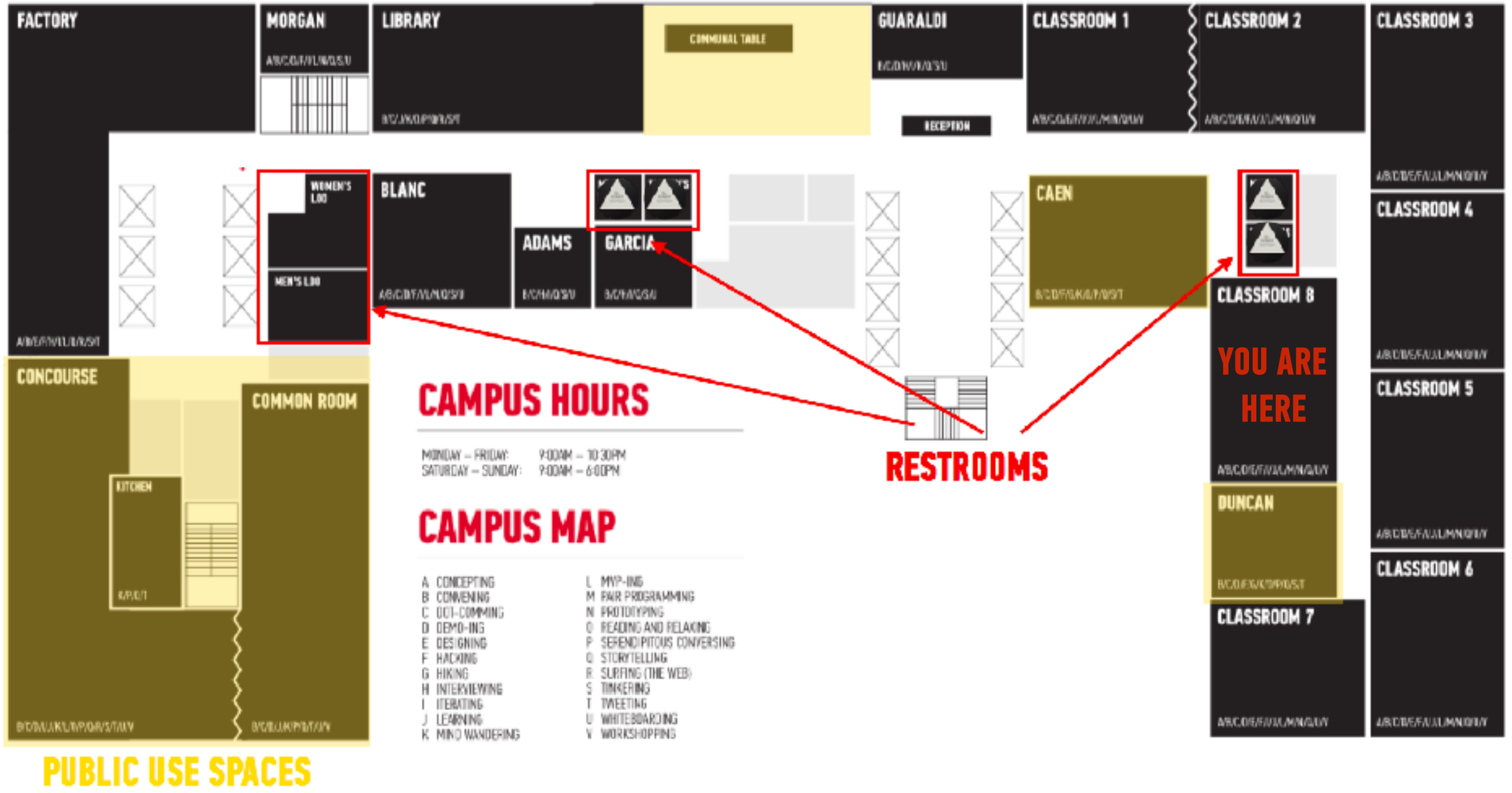

WHAT IS
GENERAL
ASSEMBLY?

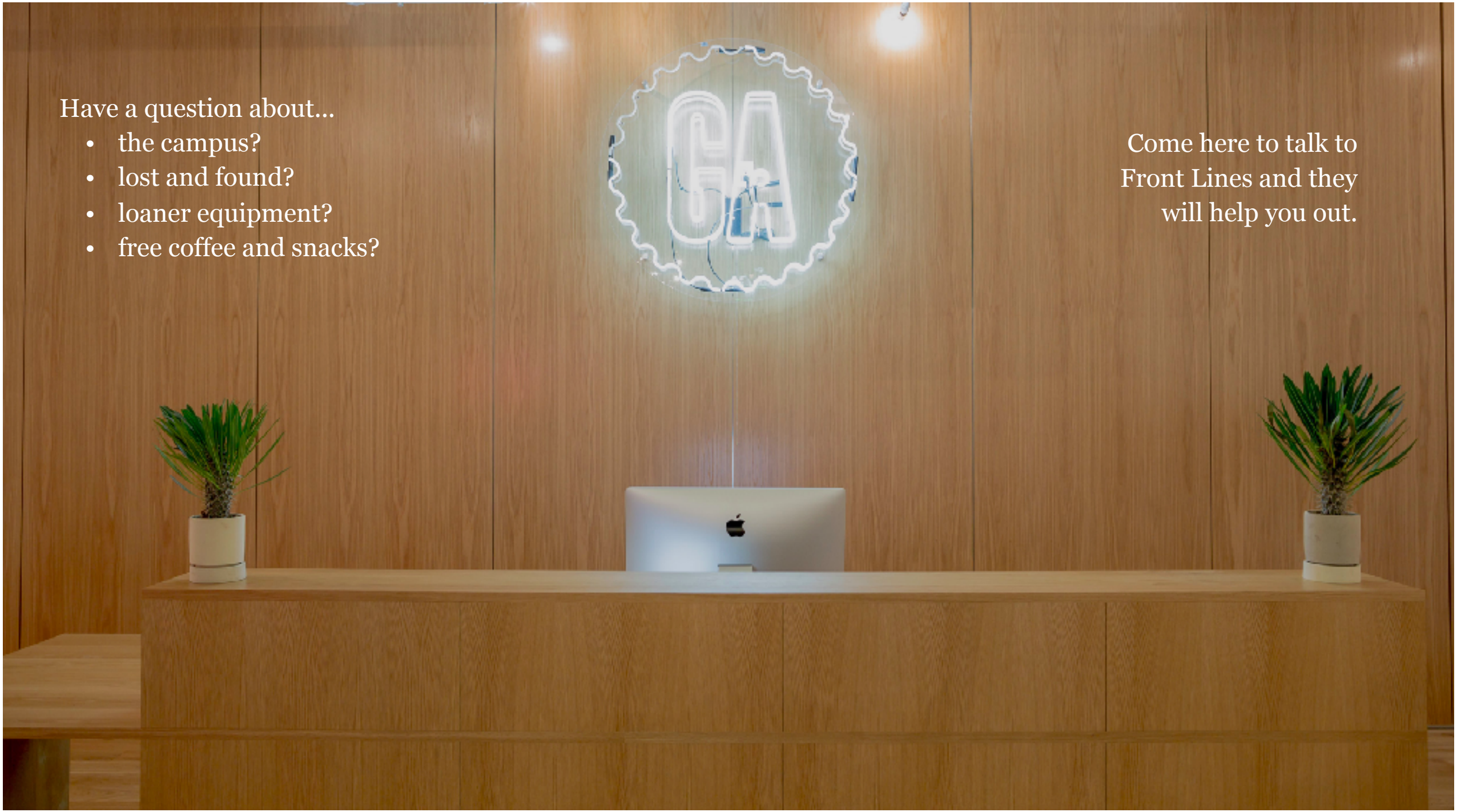
15+ campuses around the world



Come work on campus.

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


FACTORY
MORGAN
LIBRARY
COMMUNAL TABLE
GUARALDI
CLASSROOM 1
CLASSROOM 2
CLASSROOM 3
RECEPTION
WOMEN'S L00
MEN'S L00
BLANC
ADAMS
GARCIA
CAEN
CLASSROOM 4
CLASSROOM 8
YOU ARE HERE
CLASSROOM 5
CONCOURSE
COMMON ROOM
KITCHEN
DUNCAN
CLASSROOM 6
CLASSROOM 7
RESTROOMS
CAMPUS HOURS
MONDAY – FRIDAY: 9:00AM – 10:30PM
SATURDAY – SUNDAY: 9:00AM – 6:00PM
CAMPUS MAP
A CONCEPTING
B CONVENING
C OCT-COMMING
D DEMO-ING
E DESIGNING
F HACKING
G HIKING
H INTERVIEWING
I ITERATING
J LEARNING
K MIND WANDERING
L MVP-ING
M PAIR PROGRAMMING
N PROTOTYPING
O READING AND RELAXING
P SERENDIPITOUS CONVERSING
Q STORYTELLING
R SURFING (THE WEB)
S TINKERING
T TWEETING
U WHITEBOARDING
V WORKSHOPPING
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 9

Course dates:

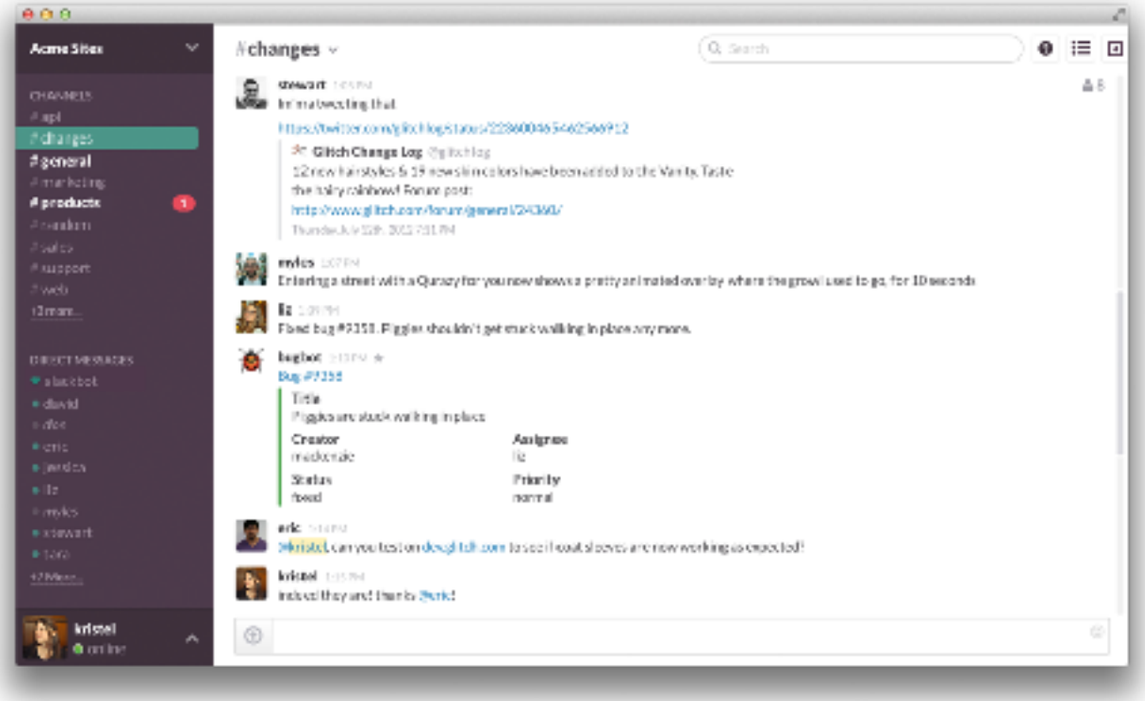
- Tuesdays and Thursdays, 6:30pm - 9:30pm
- November 7 - January 23

Holidays:

- November 23
- December 26
- December 28

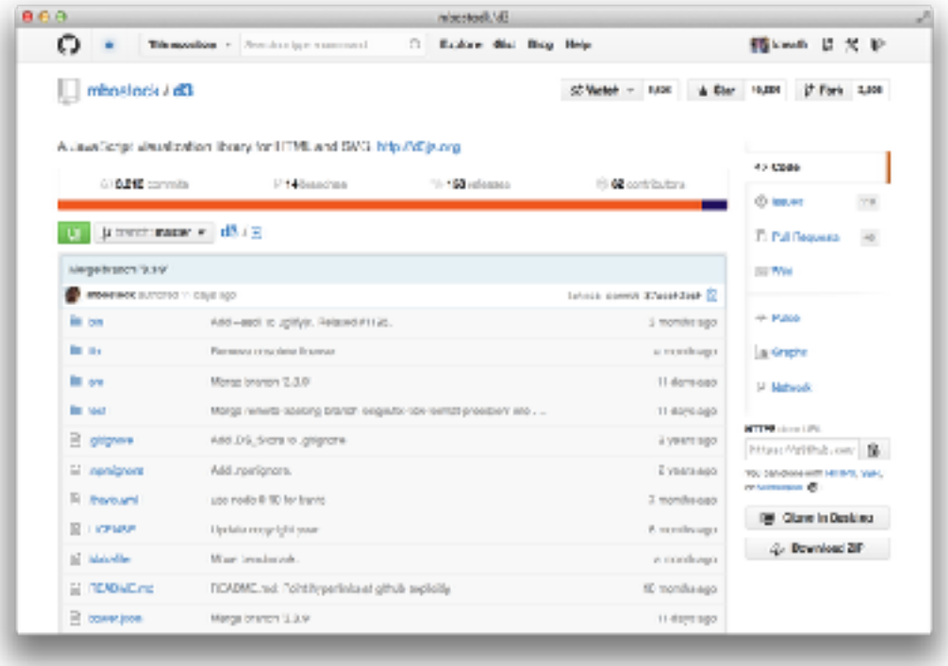
STUDENT EXPERIENCE

Slack



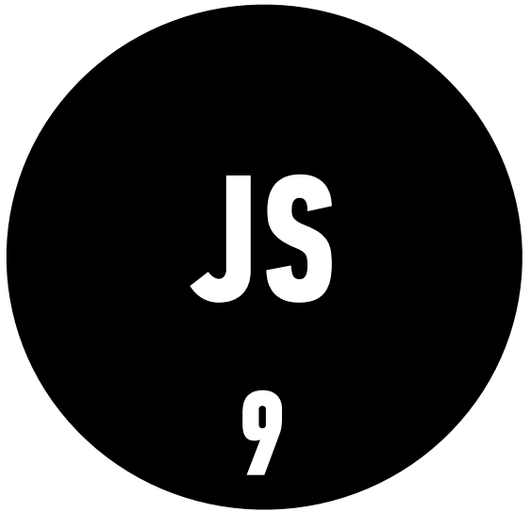
All course communication with each other and instructors will happen here.

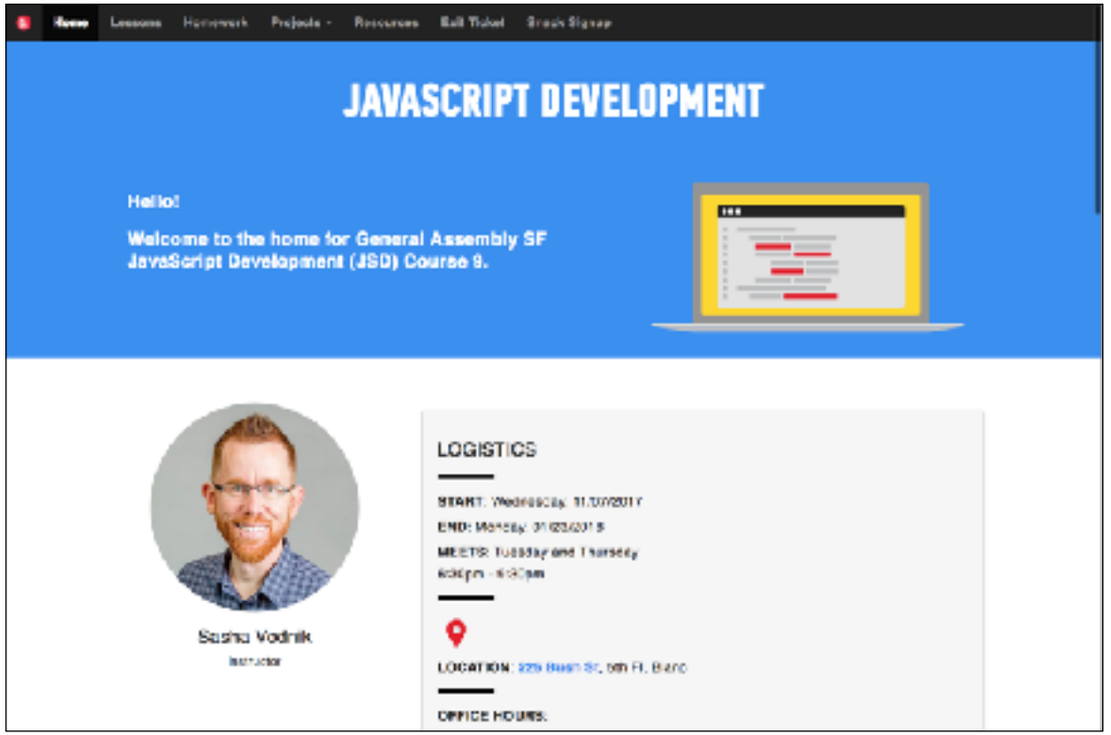
Github



Github will have starting code for all class activities and assignments.

Class website



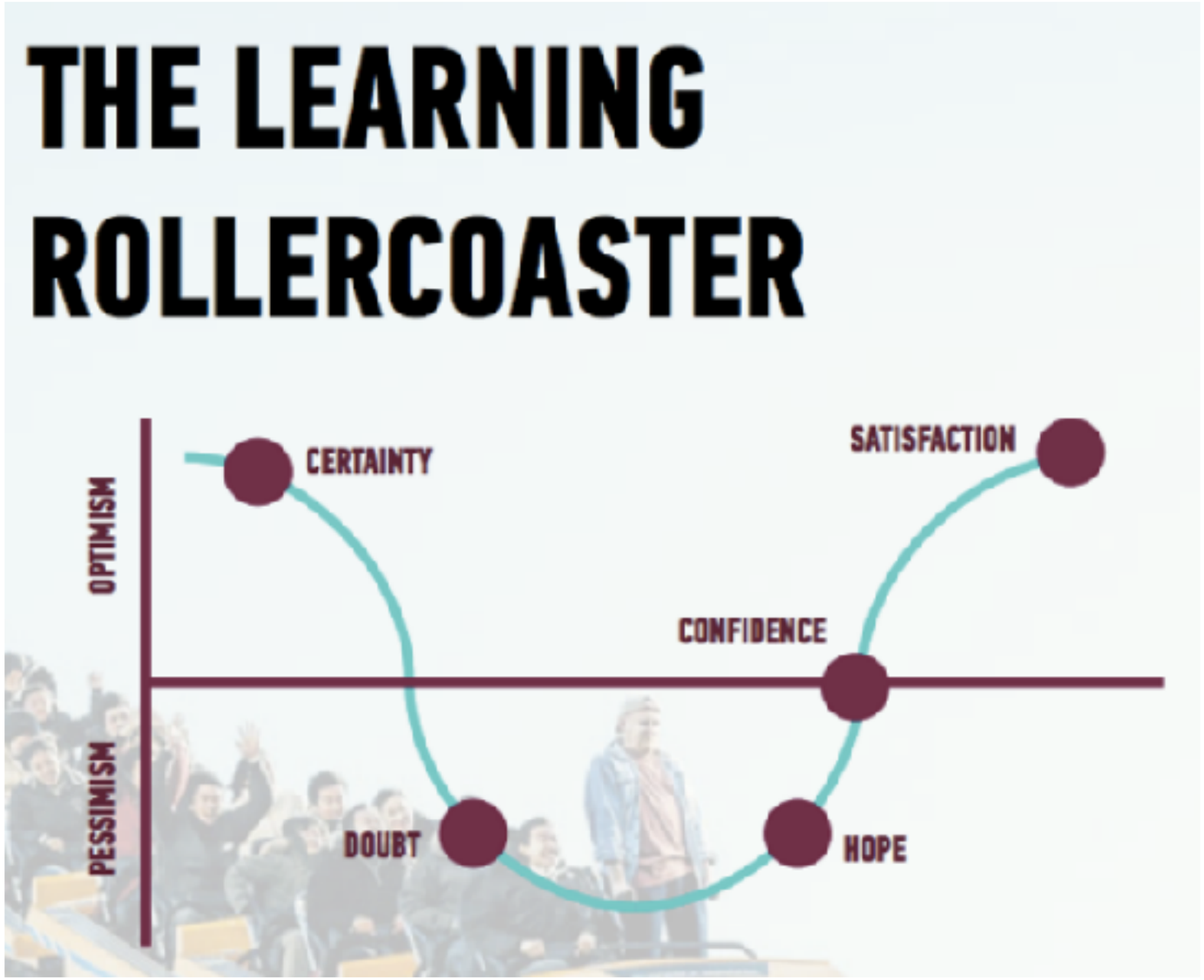


The class website will have details on assignments and projects, as well as slide decks and additional resources.

INSTALLFEST

SYLLABUS

Lesson	Title	Lesson	Title
0	Installfest	10	Ajax & APIs
1	JavaScript on the command line	11	Asynchronous JavaScript & Callbacks
2	Data Types & Loops	12	Advanced APIs
3	Conditionals & Functions	13	Unit 2 Lab - Feedr
4	Scope	14	Closures & the module pattern
5	Unit 1 Lab - Slackbot	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	18	Final Project Lab
9	Advanced jQuery	19	Final Project Presentations


THE LEARNING ROLLERCOASTER
OPTIMISM
PESSIMISM
CERTAINTY
DOUBT
CONFIDENCE
HOPE
SATISFACTION

How to get a certificate

Complete 80% of the homework

1

2

Don’t miss more than 3 classes

Complete and present a final project

3

HOMEWORK

OVERVIEW:

- Assigned every Thursday, starting next week
- Due the following Tuesday
- 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 (Tue/Thu, 5:00-6:00pm)
- Schedule other office hours
  - –in-person at GA or elsewhere
  - –Skype/FaceTime/Hangouts

EXIT TICKETS/FEEDBACK

- GA is REALLY into feedback - and so am I!
- Helps me 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
- Brush up on your CSS selectors — especially type, ID, and class selectors
- Ask questions

GENERAL ASSEMBLY

JAVASCRIPT DEVELOPMENT

Sasha Vodnik, Instructor

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.
- Run 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 & WEB DEVELOPMENT

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

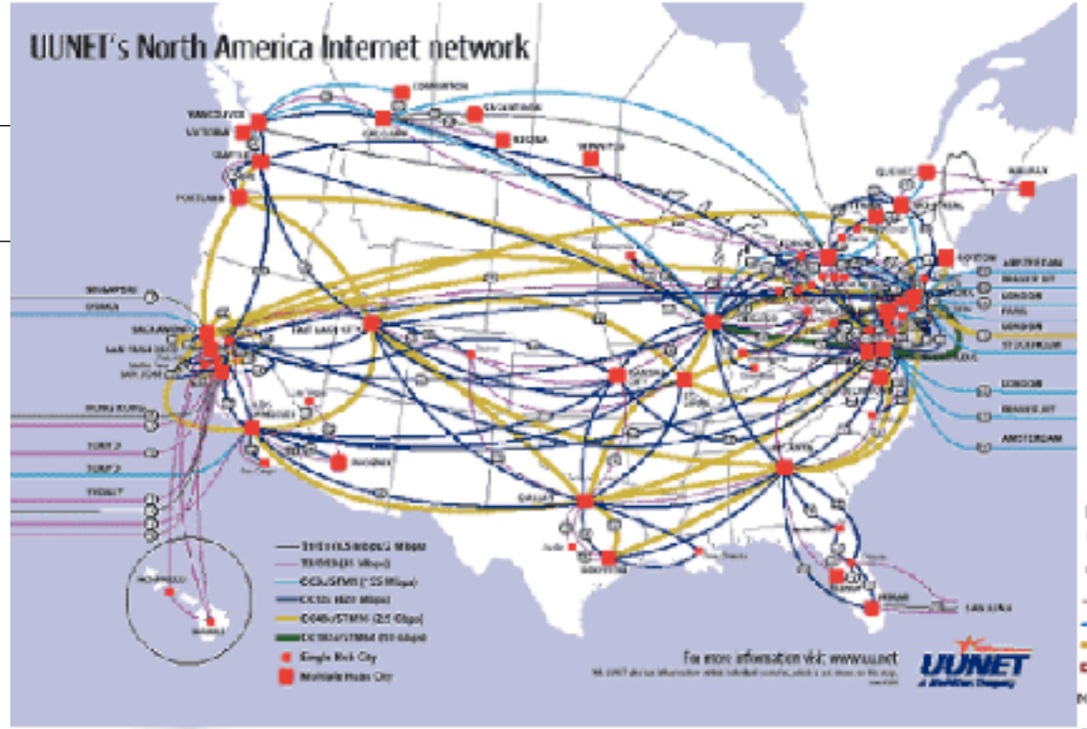
  ⇒ See NodeJS

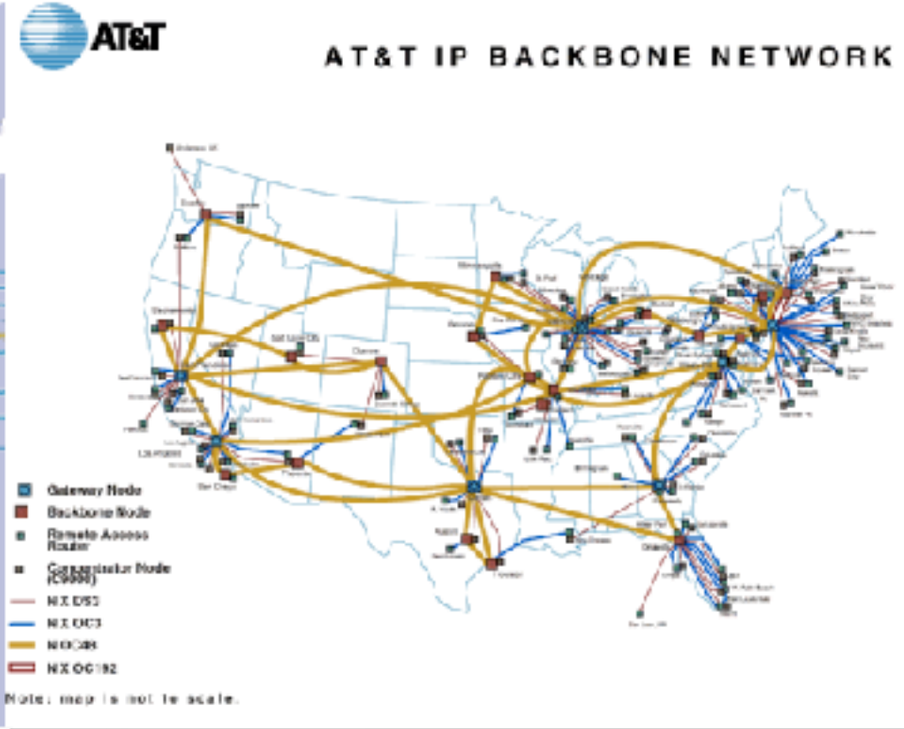
INTERNET VS WORLD WIDE WEB

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
For more information visit: www.uu.net
UUNET

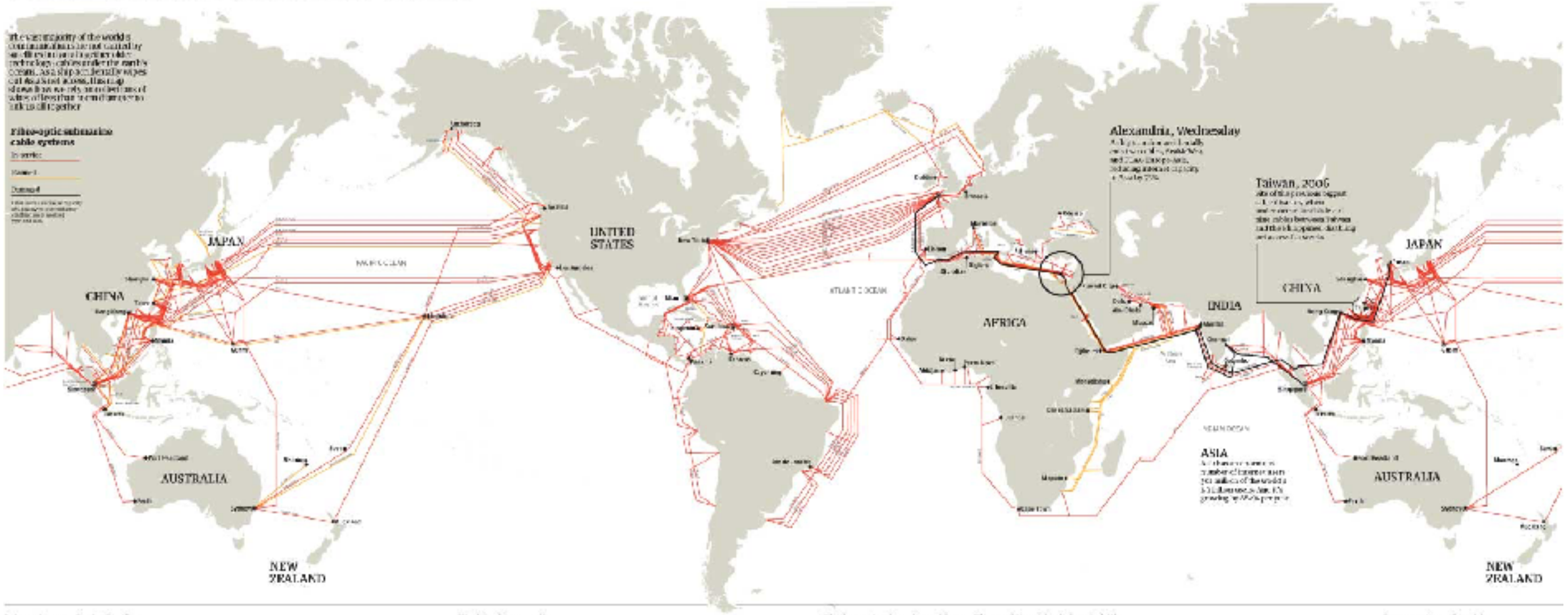

AT&T
AT&T IP BACKBONE NETWORK
Gateway Node
Backbone Node
Remote Access Router
Concentrator Node (C8000)
NEX OC3
NEX OC48
NEX OC192
Note: map is not to scale.


Seattle
Tacoma
Sacramento
San Jose
Silicon Valley
Los Angeles
Anaheim
To Pearl City, HI
Denver
Kansas City
Chicago
Springfield
Boston
New York
Pennsauken
Reston
Atlanta
Dallas
Orlando
OC48
OC12
OC3
Internal Transport Node
Internet Center

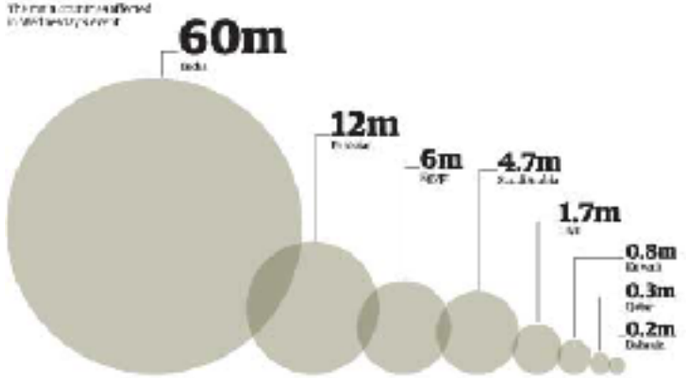

Level(3)
Seattle
Portland
Salt Lake City
Oakland
San Jose
Sacramento
San Francisco
Las Vegas
San Luis Obispo
Los Angeles
Orange
San Diego
Phoenix
Denver
Omaha
Chicago
Kansas City
St. Louis
Detroit
Cleveland
Buffalo
Albany
Pittsburgh
Indianapolis
Louisville
Cincinnati
Richmond
Raleigh
Charlotte
Nashville
Memphis
Atlanta
Dallas
Fort Worth
El Paso
Austin
San Antonio
Houston
New Orleans
Jacksonville
Orlando
Tampa
Miami
Manchester
Boston
Providence
Hartford
Stamford
Long Island
New York City
Jersey City
Newark
Princeton
Philadelphia
Baltimore
Wilmington
Washington D.C.


Sprint

The internet's undersea world



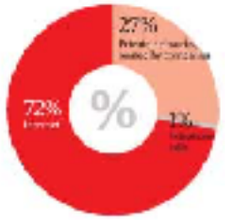
Internet users affected by the Alexandria accident



World cable capacity

Capacity in terabytes a second

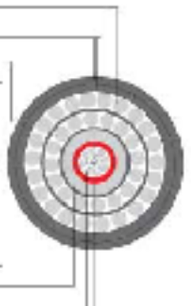
What makes up "used capacity"?



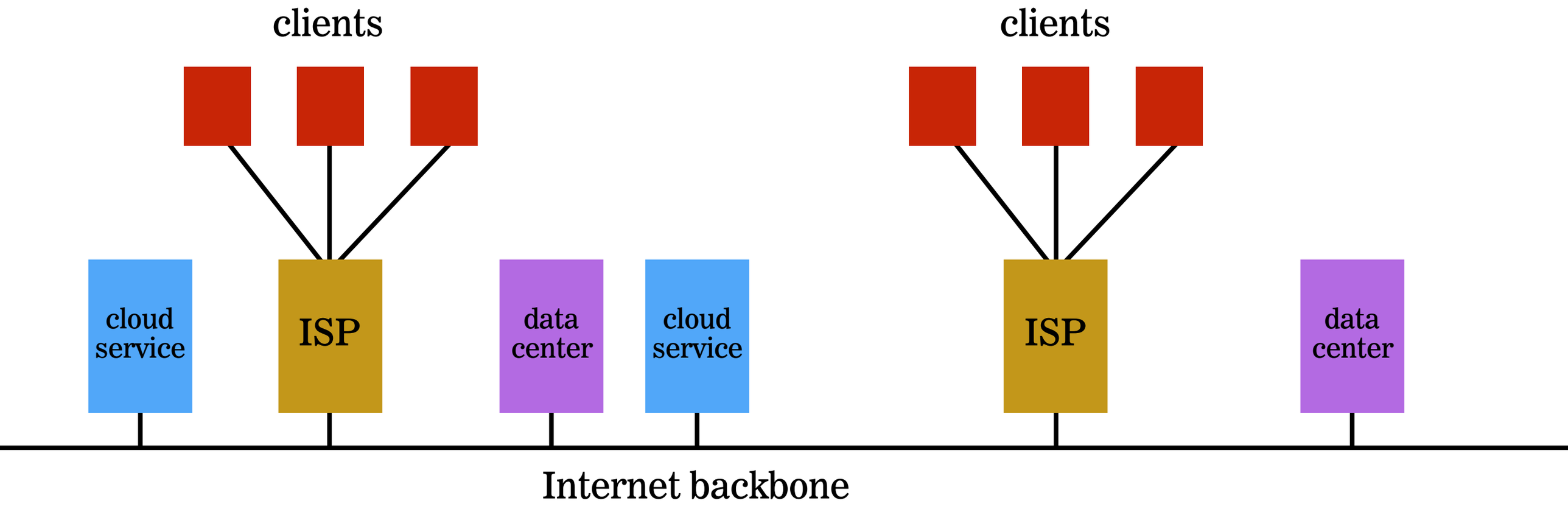
The longest submarine cables

The world's cables in bandwidth

Cross-section of a cable



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 , Mail robot , 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

EXERCISE

KEY OBJECTIVE

- Differentiate between the Internet and the World Wide Web.

TYPE OF EXERCISE

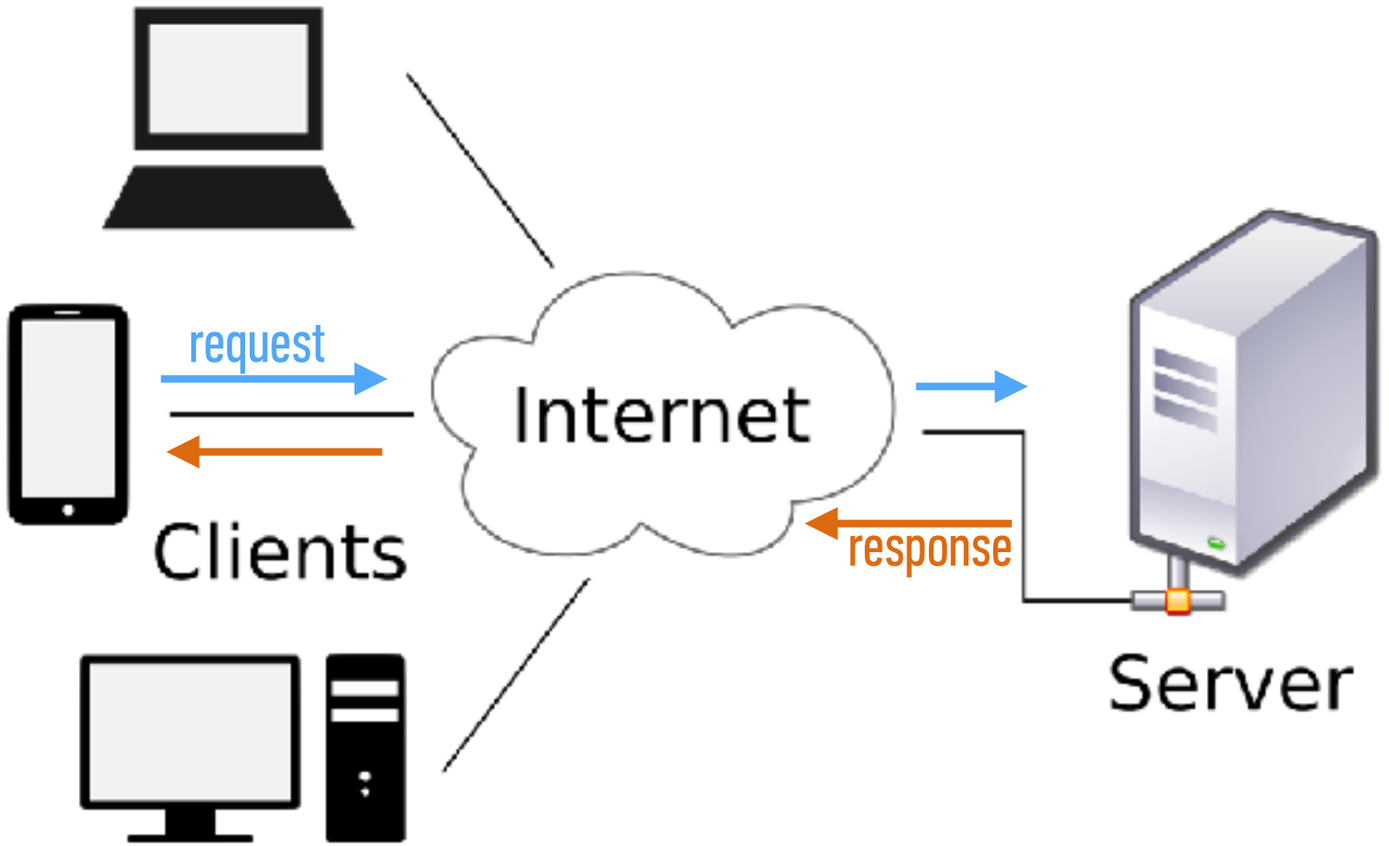
- Turn and Talk

TIMING

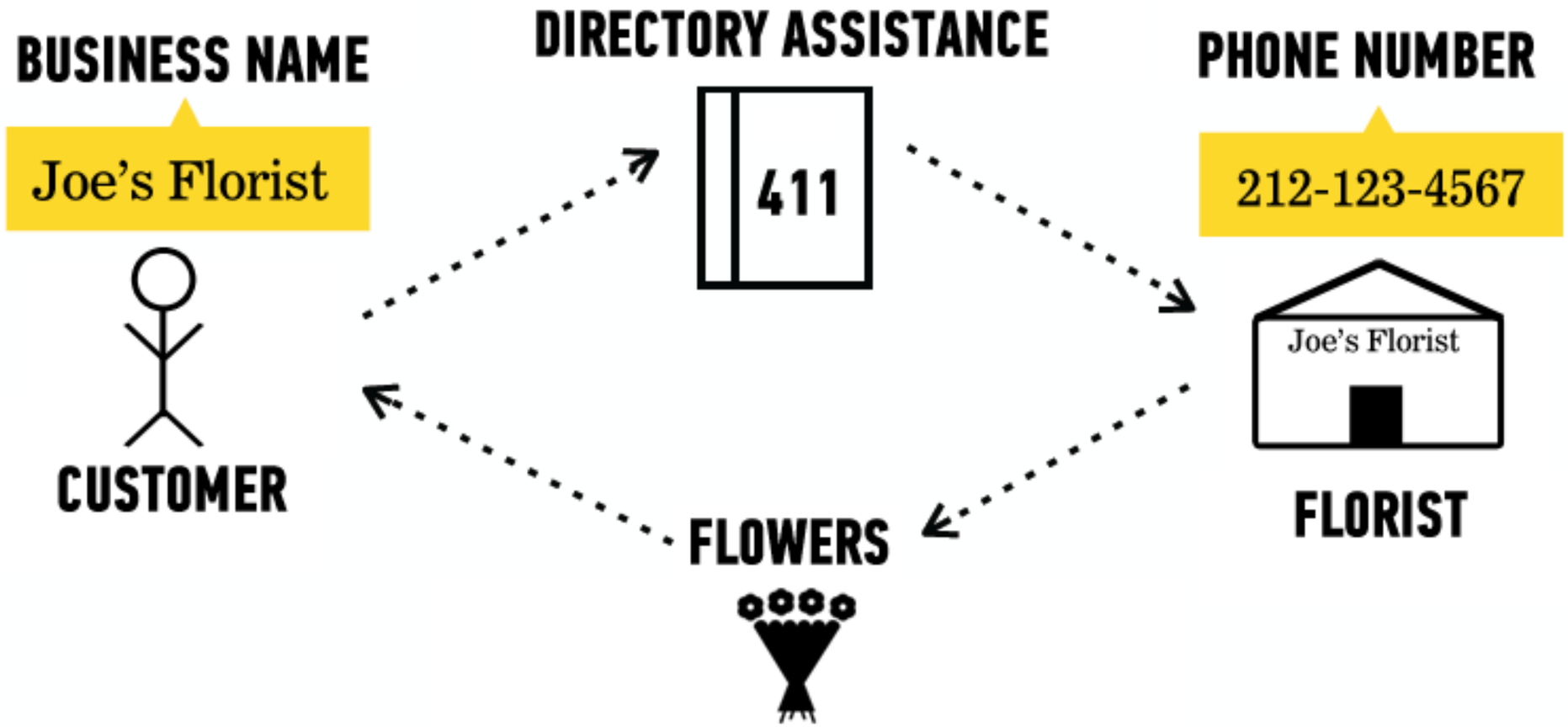
4 min

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

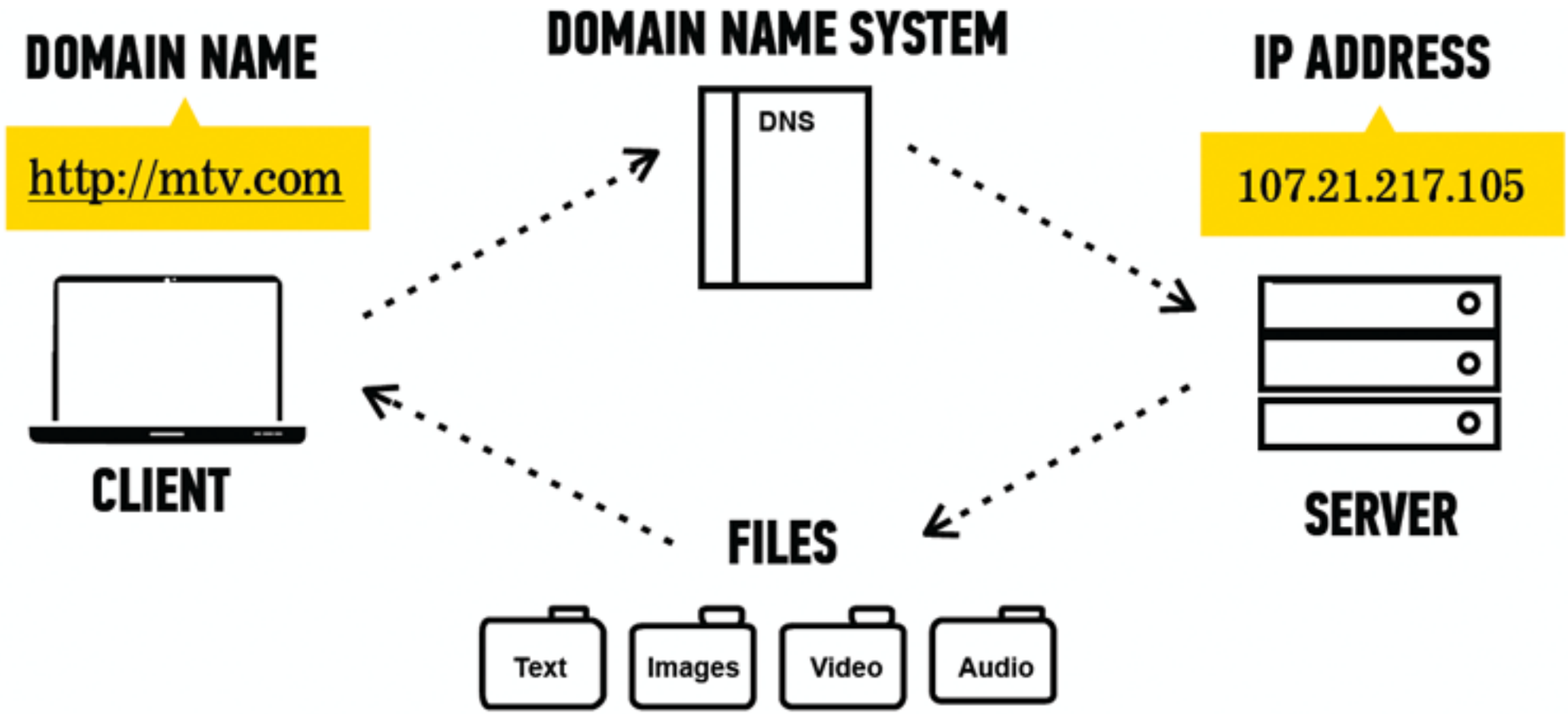
THE CLIENT-SERVER MODEL



HOW DO YOU REACH A SPECIFIC SERVER?



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.

LET'S INSTALL!

ACTIVITY - SET UP SLACK

EXERCISE

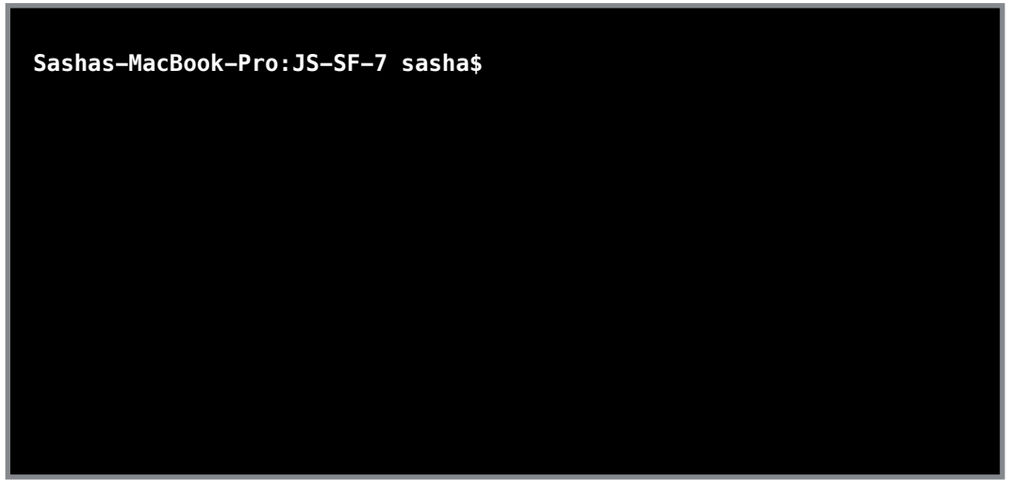
TASKS

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-8**
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`**)

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

ACTIVITY

EXERCISE

KEY OBJECTIVE

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

TIMING

30 min

1. Follow the instructions to install tools on your machine:
   Mac: https://svodnik.github.io/jsd9/resources/mac-install.html
   Win: https://svodnik.github.io/jsd9/resources/windows-install.html
2. If classmates around you are still working on this when you finish, please offer to lend a hand
3. BONUS: Explore and install one or more of the extensions listed in the Visual Studio Code section at https://svodnik.github.io/jsd9/pages/resources.html

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.

PSEUDOCODE

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

PSEUDO CODE

- When we write a program, we need to figure out a way to translate the ideas that are in our heads into code
- Pseudo code is a way to 'plan out' your program before coding it
- **Pseudo code** is a *detailed yet readable description* of what a computer program must do
- Expressed in plain English rather than in a programming language

PSEUDOCODE — THE IMPORTANCE OF PLANNING

PSEUDOCODE — HEIGHT COMPARISON

PSEUDOCODE — PASSING SCORE

LAB — PSEUDOCODE

EXERCISE

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

- Explain how pseudocode 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!

(Class #0)

Q&A