

Before we begin...

- Connect to the WiFi
 - Network Name: **GA-Guest**
 - Password: **yellowpencil**
- Open up these slides:
 - https://slides.com/threeequal/jsd_00_installfest/



Install Fest



Learning Objectives

- Get to know each other
- Explain how the web works
 - Summarise how the client-server model works
- Understand the structure of the course and tools that will be used
- Install and configure Node.js, NPM, Git, and other command line tools
- Practice programmatic thinking by writing pseudocode

Agenda

- Introductions
- Structure and overview of the course
- Benchmarks
- Installation
- Fundamentals of the Web
- Fundamentals of JavaScript
- Thinking like a programmer
- Final questions and homework
- What's next and exit tickets

Introductions



Who am I?

- Teacher
- Google Developer Expert
- Programmer || Hacker || Code Enthusiast (Addict)
- Generative (Algorithmic) Artist
- Web Proponent
- [@threeequal](#) on Twitter
- Beyond coding...

Who are you?

- Your name
- What you do
- Your coding experience
- What do you want to get out of this course?
- How do you prefer to learn?
 - Books, videos etc.
- Your guilty pleasure OR
- A truth or a lie - don't tell us which! We have to guess

This course



Structure of the course

- Fundamentals of JavaScript
- JavaScript & The Browser
- APIs
- Persisting Data & Advanced Topics
- Building & Deploying Your App

What is this course about?

- Learning JavaScript as an actual language
- Getting you excited about what you can do with it
- Introducing you to lots of new topics
- Teaching you how to learn (in a coding context)
- Lots of effort!

Getting the most out of it

- Do much more than we ask
- Ask a lot of questions
 - Not just in class!
- Work together
- Embrace your inner nerd
- Share everything!
 - Doesn't have to just be code

How I teach

- I'm a dork
- I make lots of incredibly bad jokes
- Respectful interruptions are always welcome
- I'm very open about my methods
 - For example, I always wait ten seconds
- I'll try to keep it interesting
- I always want to keep learning

Class Structure

- Quiz / Review
- Lecture / Codealong / Exercises
- Break
- Lecture / Codealong / Exercises

Ground Rules

- Attendance - 80% or more
- Be on time
- Code of Conduct
- Homework
 - You need to have a really good crack at it!
 - The more you do, the better it will be

Installation



What are we installing?

- Maybe... [Ubuntu on Windows](#) or [VirtualBox](#)
- [Slack](#)
- Browser - [Google Chrome](#)
- Text Editor - [VS Code](#)
- Terminal - [iTerm2](#) or Terminal
- [GitHub](#)
- [Git](#)
- [Node](#)
- [Twitter](#)

Ubuntu on Windows

- **Only do this if you are running Windows 10!!**
- Follow these steps [here](#)

Virtual Machine

- **Only do this if you are running Windows under version 10!!**
- Follow the steps [here](#) (if that doesn't work, follow the steps on [this link](#)). This is roughly what you will do:
 - Download [Virtual Box](#)
 - Download [Ubuntu](#)
 - Create a new Virtual Disk
 - Install Ubuntu
 - Share a Folder
 - Set up Port Forwarding

Slack

- Install Desktop Application
 - [Slack Beta](#) (I prefer this one)
 - [Slack](#)
- Install Phone Application
 - [iOS](#)
 - [Android](#)
- Here is a [cheatsheet!](#)
- For code... Back-ticks and Snippets!

Browser

- Download [Google Chrome](#)

Terminal

- If you are on a Mac, install [iTerm2](#)

GitHub

- [Sign up here](#)
- Verify your email address
- Choose the free plan (if you want)

From here on...

If you just installed Ubuntu, run all commands in an Ubuntu terminal

If you installed iTerm2, run all commands in iTerm2

Git - Ubuntu

- `sudo apt update`
- `sudo apt install git`
- Restart the terminal!
- `git --version`

Git - OSX

- Install command line tools
 - `xcode-select --install`
- Install brew
- Install Git
 - `brew install git`
- Restart the terminal
 - `git --version`

Configure Git

- `git config --global user.email "YOUR GITHUB EMAIL"`
- `git config --global user.name "YOUR GITHUB NAME"`

Node

- Install [NVM](#)
 - On Ubuntu, you'll need to run **sudo apt install curl** first
 - Run the curl script that is on that page
- Restart the terminal
- **nvm install node**
- **nvm alias default node**
- Restart the Terminal
 - Run **node --version**

Text Editor - VS Code

- Download [VS Code](#)
- Cheatsheets
 - [Windows](#)
 - [Mac](#)
- [Awesome extensions](#)
- If you are on a Mac, open up VS Code, open up the Command Palette (CMND + SHIFT + P), and hit enter on "Shell Command: Install 'code'..."

Twitter

- [Sign up here](#)
- Share your username in Slack
- Follow everyone in the room!

Web Fundamentals



What is the web?



What is the web?

Billions of connected devices through a series of networks

Are the internet and the web the same?

- Nope! The Web is a physical network of devices
- The Internet is the virtual network of information

A bit of history

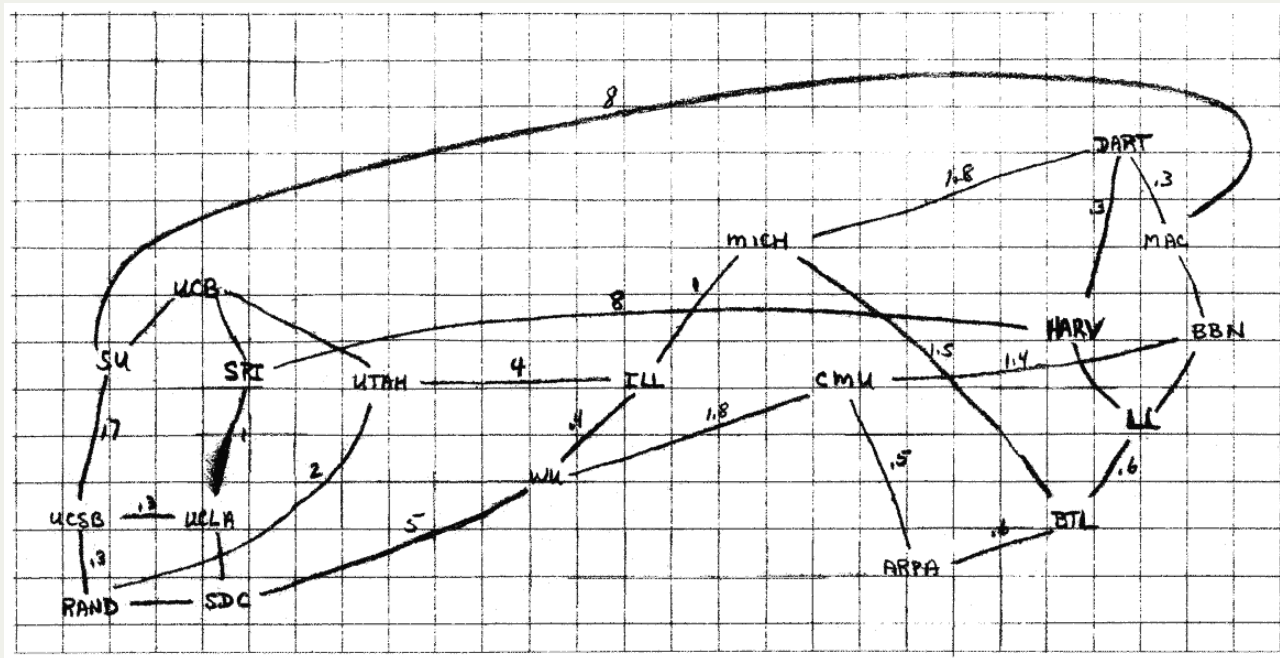


Where did it come from?

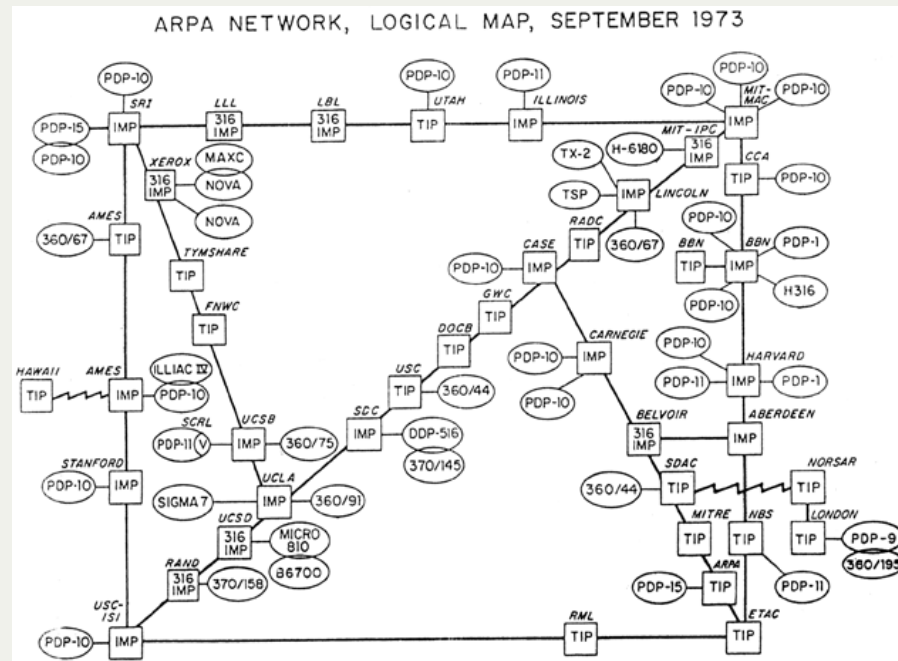
- J.C.R. Licklider came up with 'The Galactic Network' (Aug. 1962)
- ARPAnet in the 1960's for the US Government
- Vint Cerf and Bob Kahn invented TCP/IP in 1974

Then, Tim Berners-Lee released the "World Wide Web" in 1991, with this site

ARPANet Proposal



ARPANet Proposal



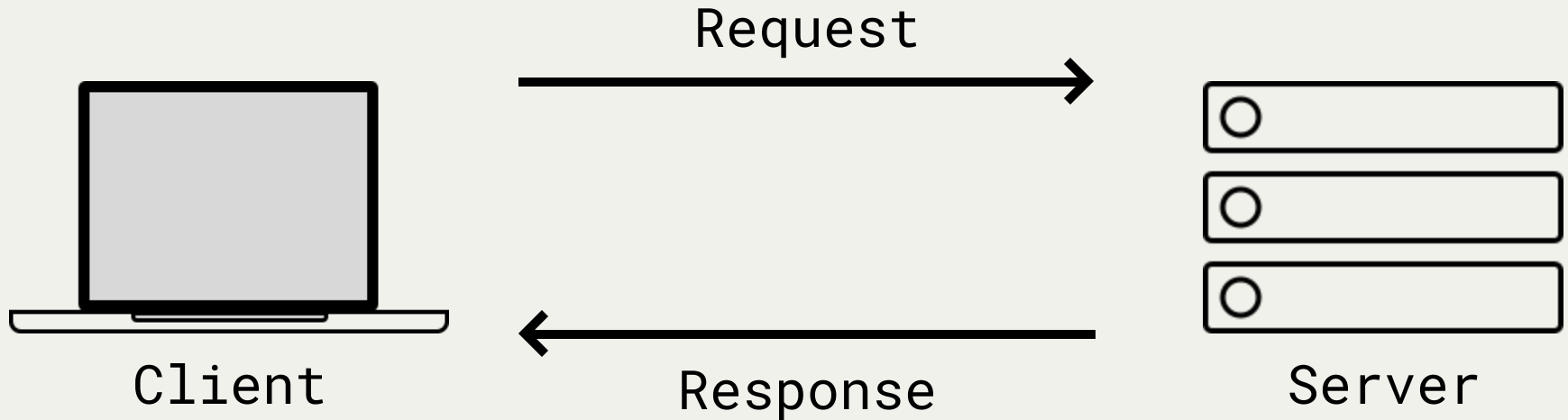
Why do we love it?

- Unprecedented growth
- Unrivalled activity
- Unchallenged evolution

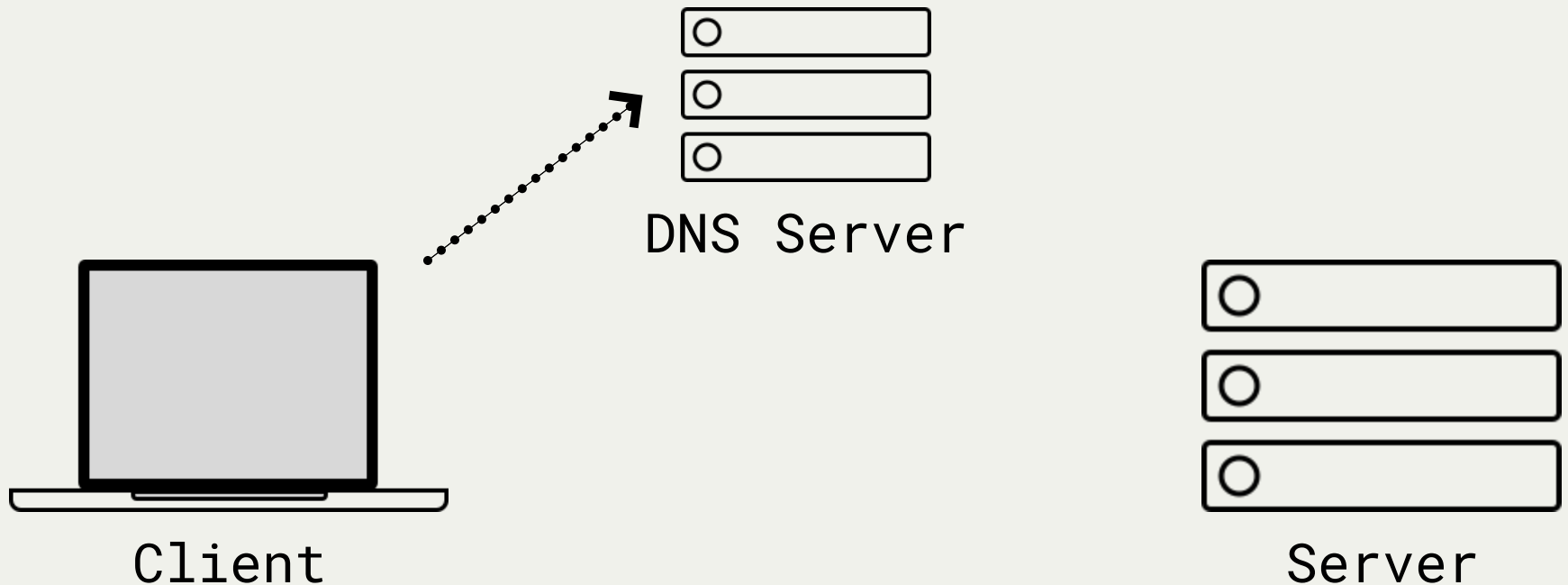
How's it work?



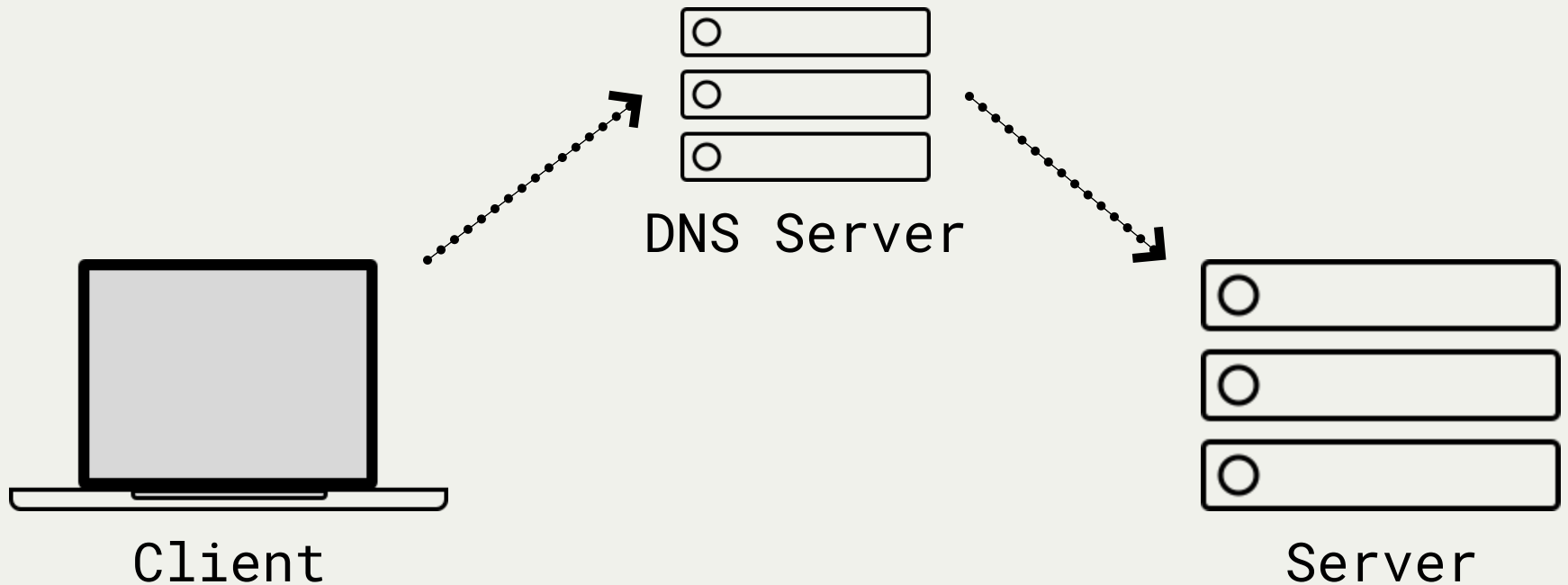
How does it work?



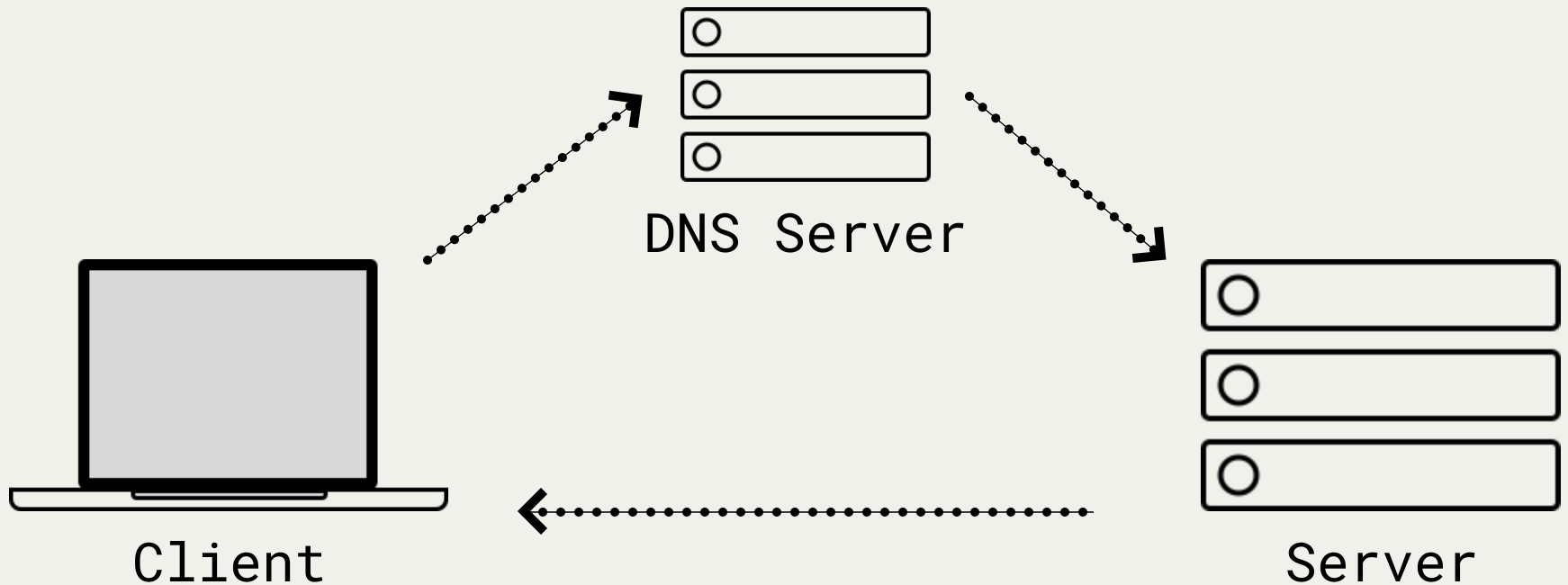
How does it work?



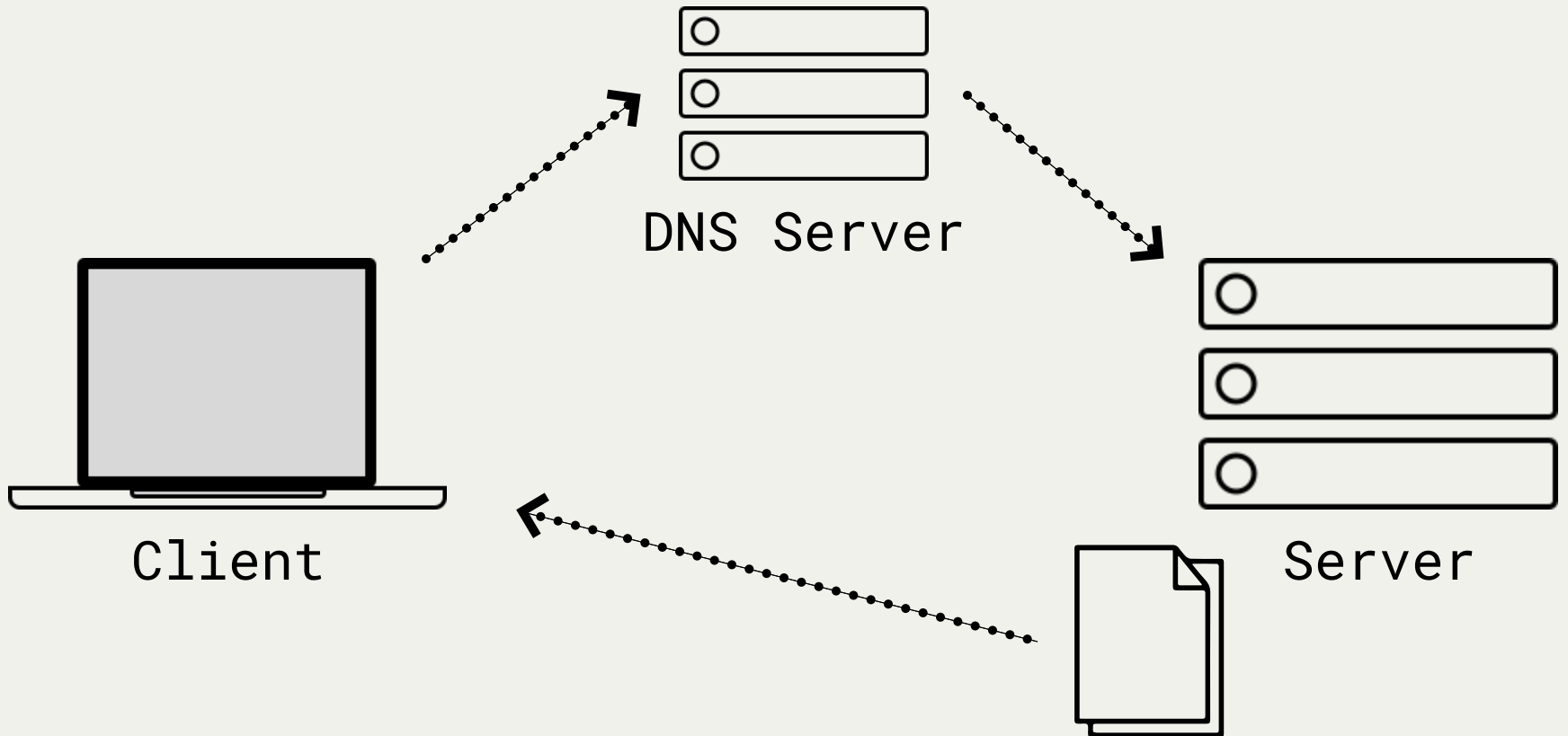
How does it work?



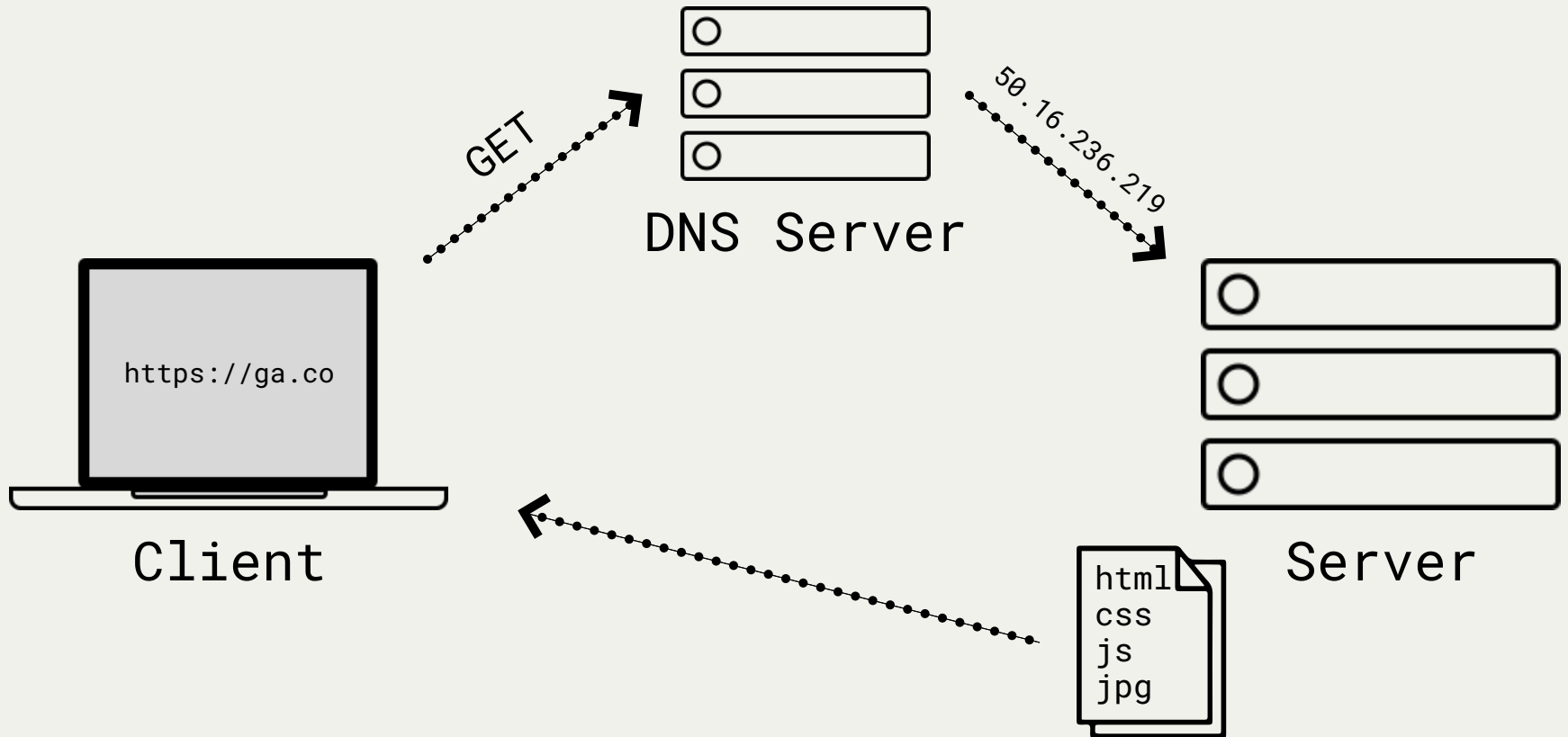
How does it work?



How does it work?



How does it work?



Web Development?



What is web development?

The creation and management of both websites and web-based applications

Made up of the Front-end and the Back-end

Most developers will try to convince you it is magic

The Front-End



What is the front-end?

It is what the user sees

It powers the visuals and interactions of the web

It is meant to be pretty, like this (or this, or this, or this)

Made up of HTML, CSS and JavaScript

What is the front-end?

HTML

Defines the content (the bones)

CSS

Defines the style (the skin)

JavaScript

Adds the functionality (the brain)

The Back-End



What is the back-end?

It is what goes on behind the scenes

Consists of databases, servers etc.

Lots of languages:

Ruby (Ruby on Rails), Node.js, PHP, Python, C++ etc.

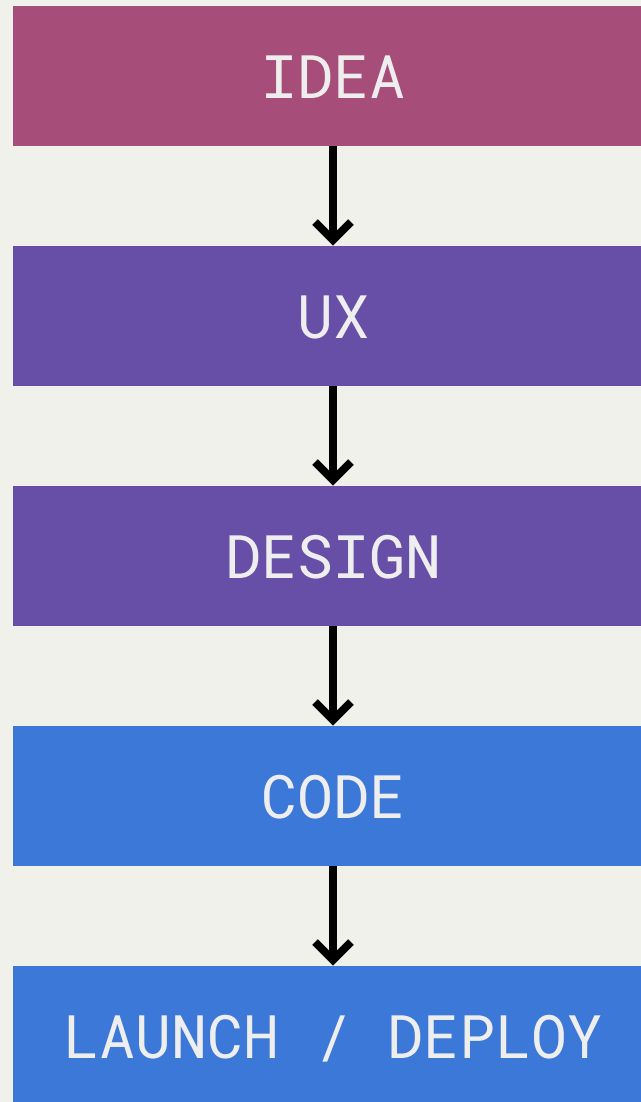
Fast-Food time!



**What's your favourite fast
food restaurant?**

A Web Workflow





Web Workflow

- Not as strict as it looked just before
 - Lots of different approaches
- Take a design and turn it into code and assets
- Use HTML and CSS to create the page
- Add interactions and functionality with JavaScript
- Lots of other responsibilities
 - Accessibility, performance, cross-browser differences, cross-device differences, responsive etc.

Programming



Programming vs. Coding



Programming vs. Coding

- Coding is the practice of writing in a language that a computer interprets to perform a task
 - It requires knowledge of **a specific language**
- Programming is the ability to solve problems, or rather, instruct a device to be able to solve problems
 - This is shared **between languages**
- The first language you learn is the hardest!

So, what are we doing?

Teaching a very general machine to do a very specific thing

We are going to write instructions in a language that a computer can understand

Thinking like a programmer



Thinking like a programmer

- Break things down as much as you can
- Draw as many parallels as possible
- Love the pain
 - Enjoy the little wins!
- Focus on the *why* and the *actual problem*
 - Solve it first, before you even start coding
- Everyone needs help. Reach out!
- Have fun with it!

Pseudocode



Pseudocode

Pseudocode is the language we use when writing a program without using the syntax of a programming language

It's a universal programming language for humans

It is a way to plan - essentially a shorthand we use before we write a program

Pseudocode - Area

```
STORE the rectangle width as rectangleWidth  
STORE the rectangle height as rectangleHeight  
CALCULATE and STORE the area by:  
    MULTIPLYING the width and the height
```

Pseudocode - Area

```
STORE the number of clicks as numClicks
  SET the value to be 0
EVERY TIME the button with ID "click" is clicked:
  INCREMENT numClicks
  UPDATE TEXT of paragraph with ID of "main"
```

Pseudocode - Events

```
EVERY TIME the user scrolls down the page  
CHECK to see if the user is over 100px down  
  IF they are:  
    SHOW the button with ID "backToTop"  
  ELSE:  
    HIDE the button with ID "backToTop"
```

What makes up a program?



Programs are made from...

- Data types
- Conditionals
- Variables
- Logical Operators
- Comparison Operators
- Loops
- Functions
- etc.

Comparison Operators

`===` Equal to

`!==` Does not equal

`<` Less than

`>` Greater than

`>=` Greater than or equal to

`<=` Less than or equal to

Logical Operators

& &	AND
	OR
!	NOT

Exercise

Write Pseudocode for Rock, Paper, Scissors

Part One

For a single game

Part Two

For a best of three game



Homework

- Finish off the pseudocode for Rock, Paper, Scissors
- Browse the web, search for interactions, and try to write the pseudocode for two of them
 - e.g. Navigation Bars, Fancy Menus, Animations
- Make sure you are comfortable with HTML and CSS



Homework (Extra)

- Read [You Don't Know JS: Up and Going](#)
- Read [Eloquent JavaScript](#)
- Read [Speaking JavaScript](#)
- Do the JS video tutorials on [CodeAcademy](#) and [Dash](#)
- Gather and share (in Slack) your favourite sites. Talk about your favourite features (and where the JS is)



What's next?

- The Command Line & Terminal
- Git & GitHub
- What is JavaScript?
- Data Types in JavaScript



Questions?



Feedback time!

Lesson 00: *Install Fest*

<https://ga.co/js05syd>



Thanks!

