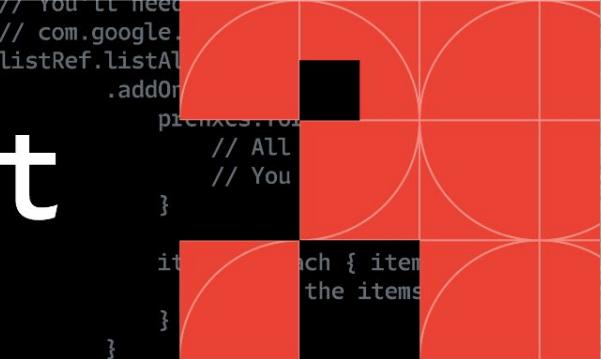


devfest



Beyond the Browser: Modern Server-Side

 Google Developer Groups
St. John's



i'm jack harrhy

software dev @ c-core
coach @ get coding

with Mitch!

previously @ CoLab Software
@ Bluedrop
with Tim & Lesley!

i have too many
slides, lets go

Terminology

HTML

Hyper

Text

Markup

Language

```
<!DOCTYPE html>
<html lang="en">

    <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>Basic HTML5 Skeleton</title>
    </head>

    <body>
        <header>
            <h1>Welcome to My Website</h1>
        </header>

        <main>
            <section>
                <h2>About Us</h2>
                <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit.  
Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</p>
            </section>

            <section>
                <h2>Our Services</h2>
                <ul>
                    <li>Service 1</li>
                    <li>Service 2</li>
                    <li>Service 3</li>
                </ul>
            </section>
        </main>
    </body>

</html>
```



Hyper Text Transfer Protocol

HTTP

```
telnet jackharry.com 80 /home/jack - ×  
jack@pop-os ~ [1]> telnet jackharry.com 80  
Trying 142.93.144.29...  
Connected to jackharry.com.  
Escape character is '^]'.  
GET / HTTP/1.1  
Host: jackharry.com  
  
HTTP/1.1 302 Found  
Location: https://jackharry.com/  
Date: Fri, 01 Dec 2023 19:17:49 GMT  
Content-Length: 5  
Content-Type: text/plain; charset=utf-8  
  
Found[]
```



HTTPS

Hyper Text Transfer Protocol Secure

```
fish /home/jack/repos/personal/beyond-the-browser
jack@pop-os ~/r/p/beyond-the-browser (main)> curl https://jackharry.com | head
% Total    % Received % Xferd  Average Speed   Time   Time     Time  Current
          Dload  Upload Total   Spent    Left  Speed
100 4325  100 4325 <!DOCTYPE html>0      0  --:--:-- --:--:-- --:--:--  0
<html lang="en" class="h-full">
  <head>
    <meta charset="UTF-8">
    <link rel="sitemap" href="/sitemap-index.xml">
    <link rel="alternate" type="application/rss+xml" title="posts on jackharry.dev" href="/posts/rss.xml">
    <link rel="icon" type="image/svg+xml" href="/favicon.ico">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/css/all.min.css" integrity="sha512-ic5zj7kZB1oqLqEjBZq5wJZlHqBQhWpDyvXtqE8WVgTz3oZuOOGGZB2nqKUuPjRzYDfzJLWZuHhC9eNBvH0H/ZpiBw==" crossorigin="anonymous" referrerPolicy="no-referrer">
    <title>about - jackharry</title>
24637      0  --:--:-- --:--:-- --:--:-- 24714
curl: (23) Failed writing body
jack@pop-os ~/r/p/beyond-the-browser (main)> []
```



a kei truck is fine, but
don't put important data in a kei truck



CSS

Cascading Style Sheets

```
body {  
    font-family: Arial, sans-serif;  
    margin: 0;  
    padding: 0;  
}  
  
.container {  
    display: flex;  
    justify-content: space-around;  
    align-items: center;  
}  
  
.box {  
    flex: 1;  
    text-align: center;  
    border: 1px solid red;  
}
```

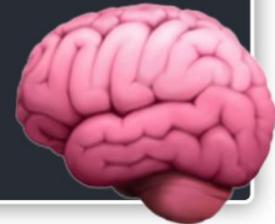


Java Script

```
<div class="explode">if you click me i will blow up</div>
<div class="explode">me 2</div>
<div class="explode">i am three</div>

<script>
  const explodeElements = document.querySelectorAll('.explode');

  explodeElements.forEach((element) => {
    element.addEventListener('click', () => {
      alert('I blowed up!');
    });
  });
</script>
```





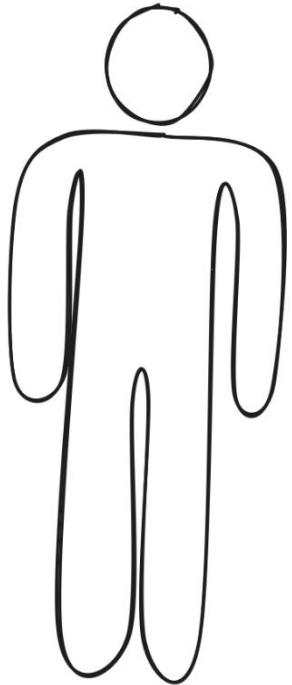
Aktually, it's ECMAScript

ECMAScript, ECMA-262, JavaScript [\[edit source \]](#)

ECMA-262, or the *ECMAScript Language Specification*, defines the *ECMAScript Language*, or just **ECMAScript**.^[6] ECMA-262 specifies only language syntax and the semantics of the core application programming interface ([API](#)), such as `Array`, `Function`, and `globalThis`, while valid implementations of JavaScript add their own functionality such as [input/output](#) and [file system handling](#).

This is where we get ES5 / ES6 / ESNext from,
the ES = ECMAScript

User



Web Browsers



Internet
"The Cloud"



Server



Client vs. Server

Client

Browser on some device

Safari on iOS

Chrome on Windows

Firefox on Linux



Server

'X' on device

Node behind NGINX on Debian

PHP behind Apache on Gentoo

Rust behind Caddy on ArchLinux

Go behind Traefik on k8s cluster

<Insert AWS Acronym(s) here>

seperation

Internet, "the cloud" AKA someone else's box

localhost, like putting mail in your own mailbox

192.168.1.x, something on your local network

142.93.144.29, ipv4 / ipv6, another box on the internet

DNS Domain Name System

```
fish /home/jack/repos/personal/beyond-the-browser
jack@pop-os ~/r/p/beyond-the-browser (main)> dig jackharry.dev
; <>> DiG 9.18.12-0ubuntu0.22.04.3-Ubuntu <>> jackharry.dev
;; global options: +cmd
;; Got answer:
;; ->>HEADER<- opcode: QUERY, status: NOERROR, id: 58629
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;jackharry.dev.           IN      A
;; ANSWER SECTION:
jackharry.dev.      1912    IN      A      142.93.144.29
;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Fri Dec 01 16:48:55 NST 2023
;; MSG SIZE  rcvd: 59
jack@pop-os ~/r/p/beyond-the-browser (main)> 
```

from domain name

to IP address!

IP: Internet Protocol, ∵ IP address = Internet Protocol Address

tangent time

192.168.1.x, something on your local network
not actually a real ip in every circumstance
right?



IP range details

134.153.0.0/16

AS6579 · Memorial University of Newfoundland

Summary

Country  Canada ⓘ

Domain mun.ca

ASN AS6579

Registry arin

Hosted IPs 65,536

ID MUNET-MEMORIAL-UNIVERSITY-MAIN-CAMPUS

ipinfo.io/AS6579/134.153.0.0/16

registered in: 1989-06-19
numbers of ips: 65,536



ssh garfield /home/jack

```
garfield%  
garfield% whoami  
jaharry  
garfield% hostname  
garfield  
garfield% ip -f inet addr show eth0  
3: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000  
    inet 134.153.48.1/22 brd 134.153.51.255 scope global eth0  
        valid_lft forever preferred_lft forever  
garfield% []_
```





ssh garfield /home/jack

```
garfield% cat /etc/hosts | tail
134.153.           engr.mun.ca
134.153.           engr.mun.ca
134.153.           engr.mun.ca
134.153.           engr.mun.ca
134.153.           engr.mun.ca
134.153.           engr.mun.ca
134.153.           n.ca
134.153.           mun.ca
134.153.           n.ca
134.153.           .ca
garfield% [ ]
```



Wow



A screenshot of a terminal window titled "ssh garfield /home/jack". The terminal shows two command outputs:

```
garfield% cat /etc/hosts | grep 134.153 | wc -l  
3401  
garfield% cat /etc/hosts | wc -l  
3415  
garfield%
```

MUN has enough IP
addresses, to not
need a NAT

AS6579 total IPs: 71,424

Upper bound cost estimate per IP: \$60

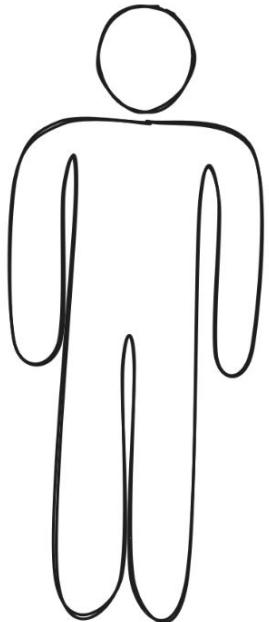
$$71,424 * 60 = \sim 4.3\$ \text{ mil}$$



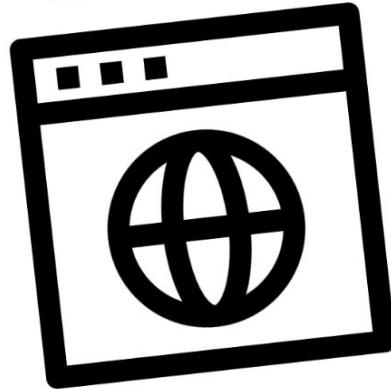
tangent over

lets revise this
picture into more
simple for this talk

User



Browser

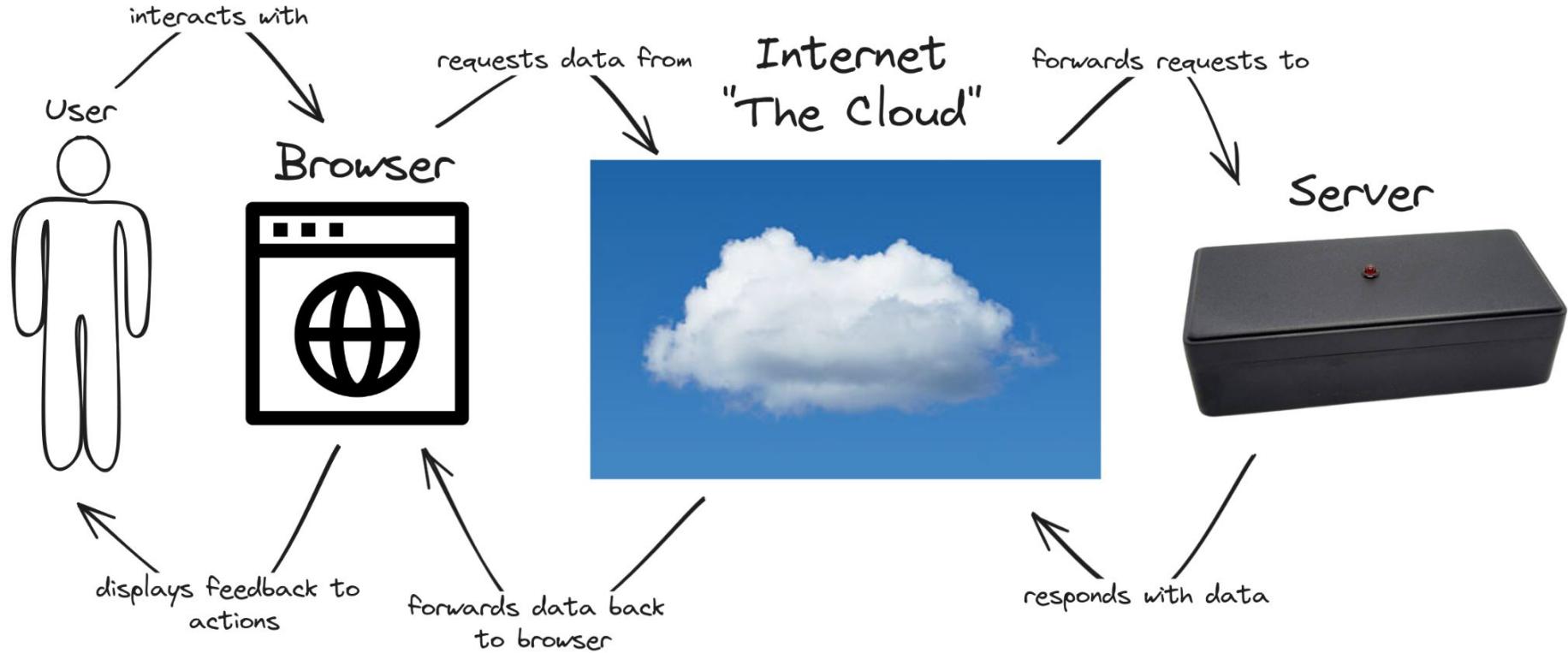


Server

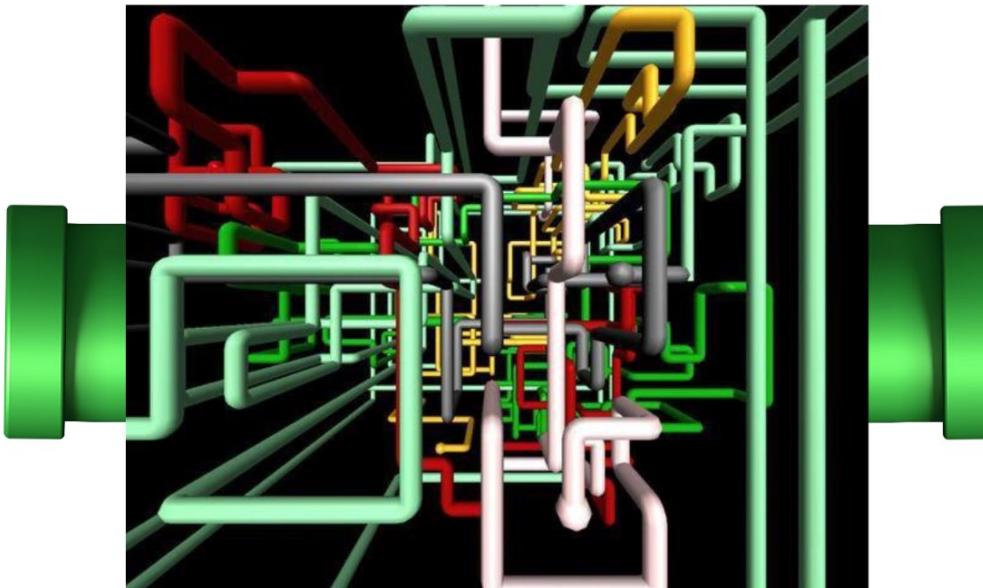
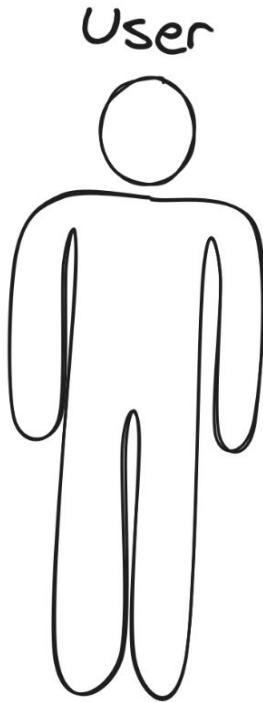


Internet
"The Cloud"

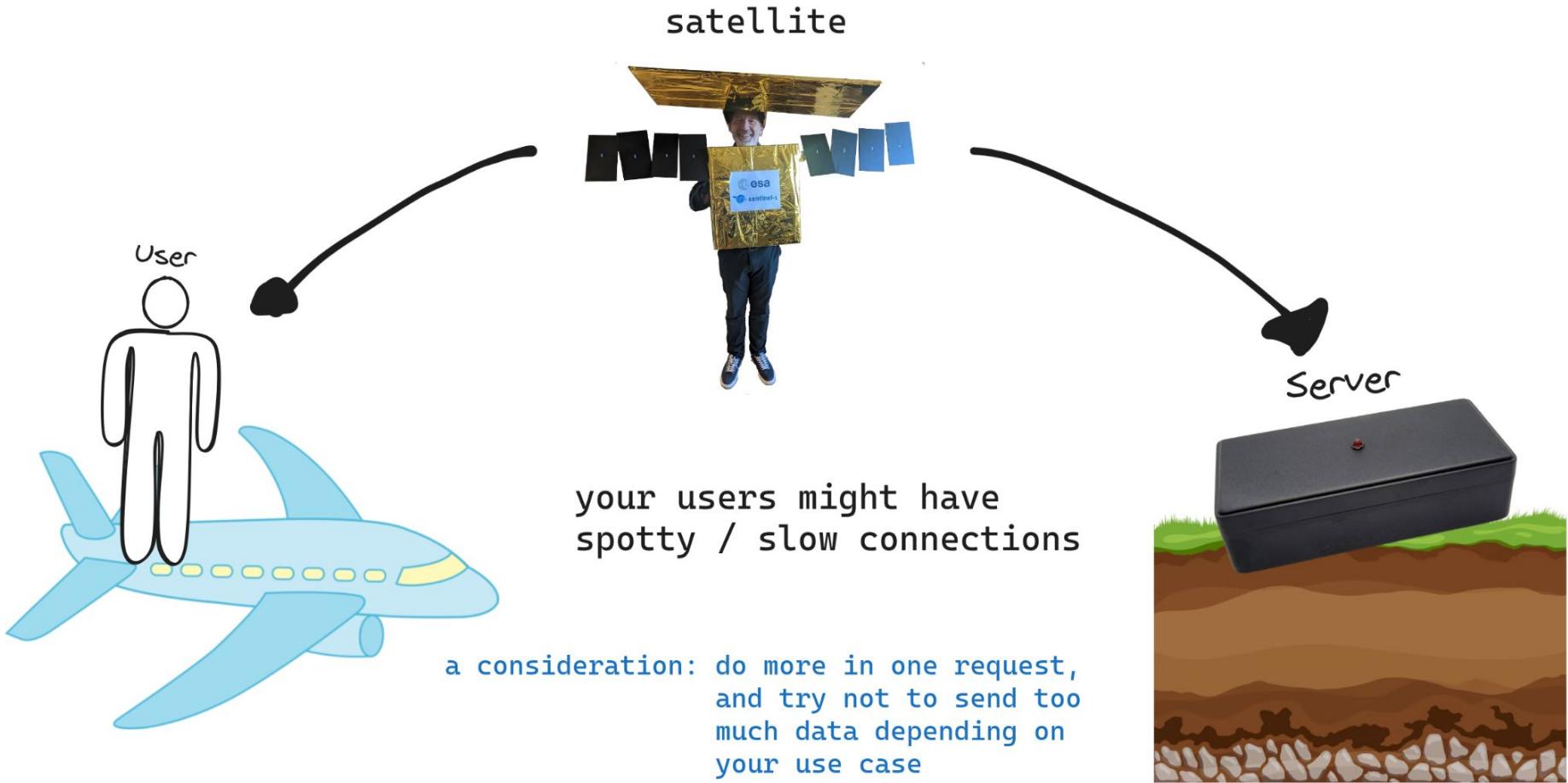




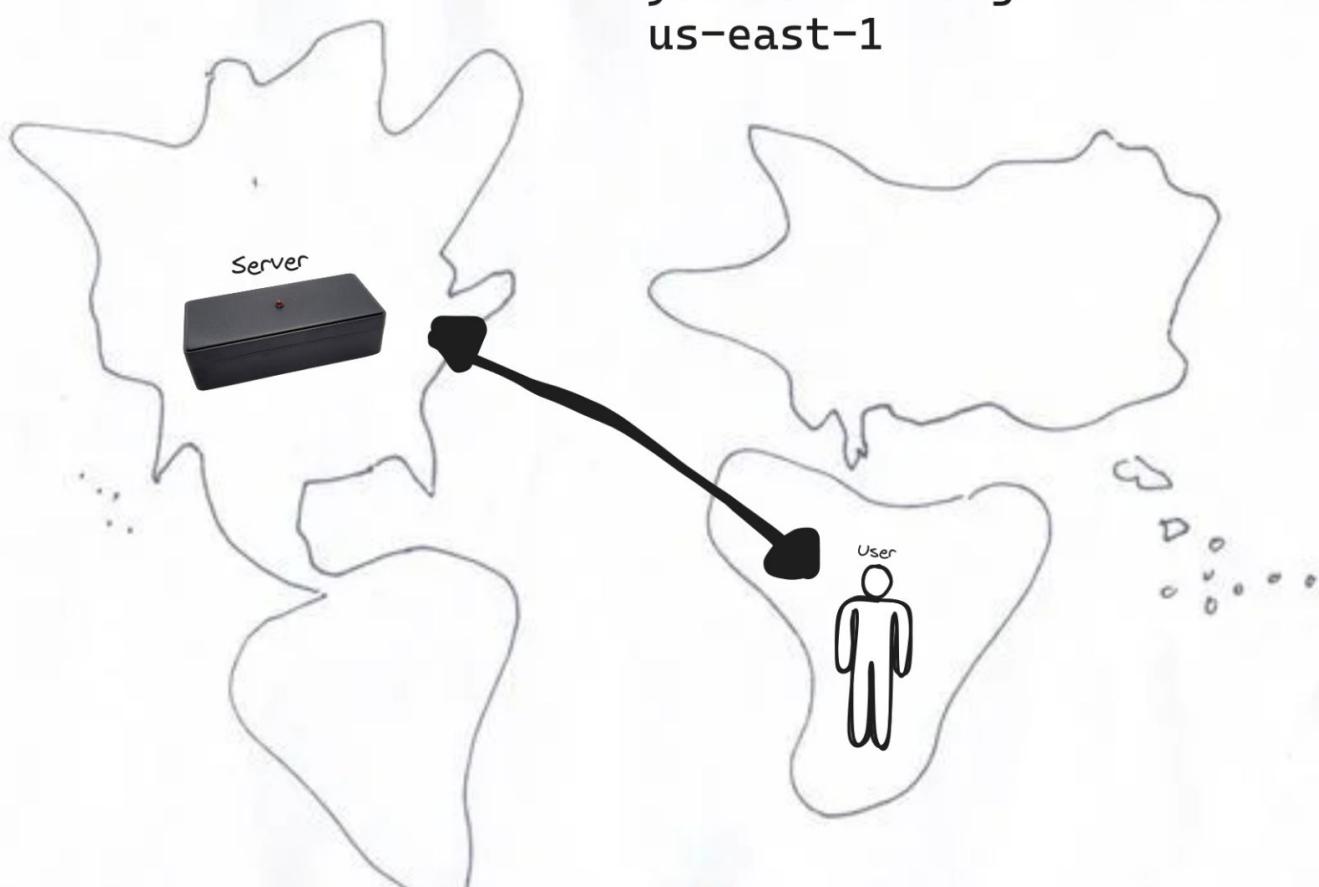
how long does it take
for a round trip from
one to the other?



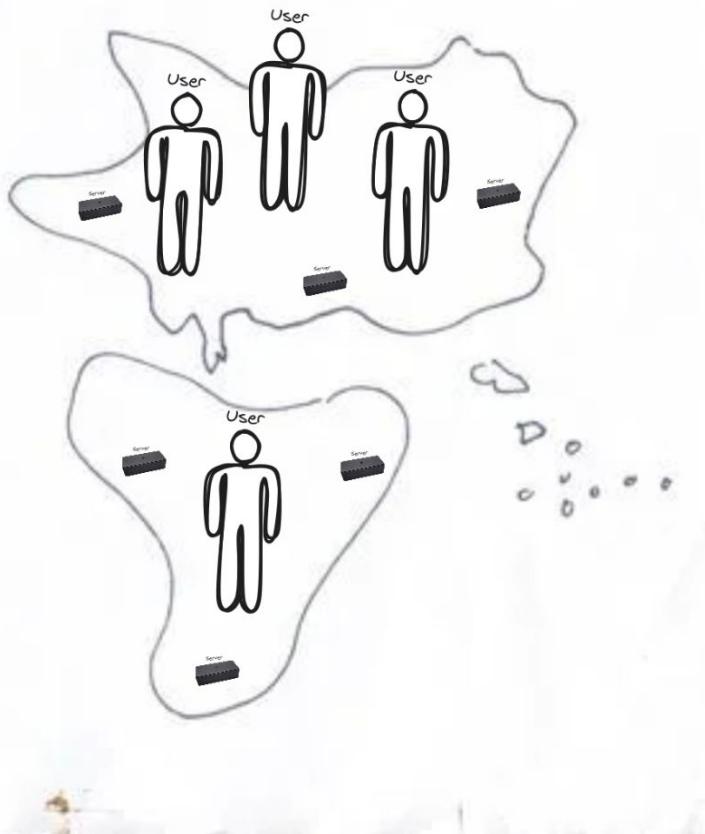
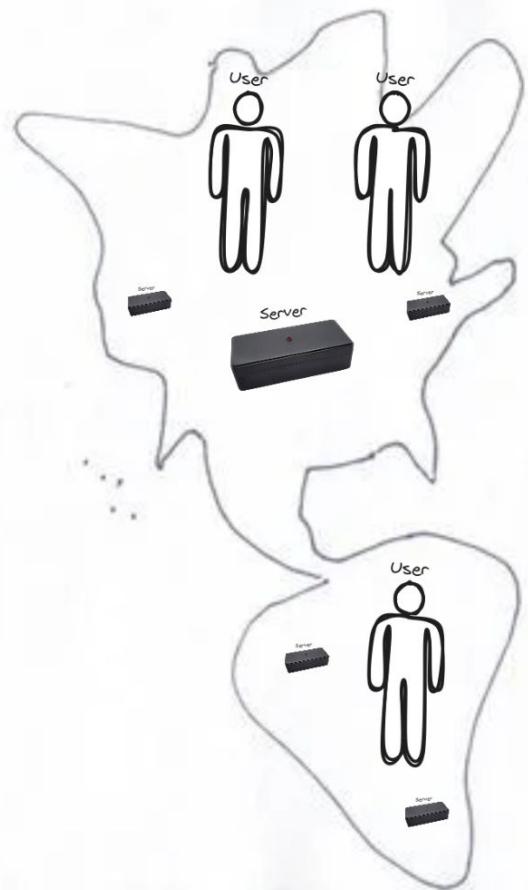
how much will it cost the
user vs. the server



your users might not be close to
us-east-1



a consideration: move content / servers closer to users, on the 'edge'



**LIBRARY
VS FRAMEWORK**

LIBRARY

something you can add to your codebase that gives you a toolbelt to work with rather than an entire prescribed structure of how you should build your app, other than an API you must consume somehow in your application



TanStack **Query** ^{v5}

jQuery, Pandas, TanStack Query, etc. are libraries

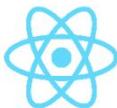


FRAMEWORK

something that will affect the entire structure of how you build an application

it does not mean that you cannot write bespoke code / bring in other libraries, but you will likely run into a lot less friction if you 'go with the flow' of a framework

(i.e. if you reach for `document.getElementById` in React, you are likely doing something wrong)



insert other logos here

React, Angular, Ruby on Rails, Springboot, Django, Phoenix, Laravel, Blazor, etc. are frameworks

Terminology

HTML / HTTP(S) / CSS

JS / Browsers / Client
Server / "Cloud" / DNS

"your users are maybe on a
plane, or far away from you"

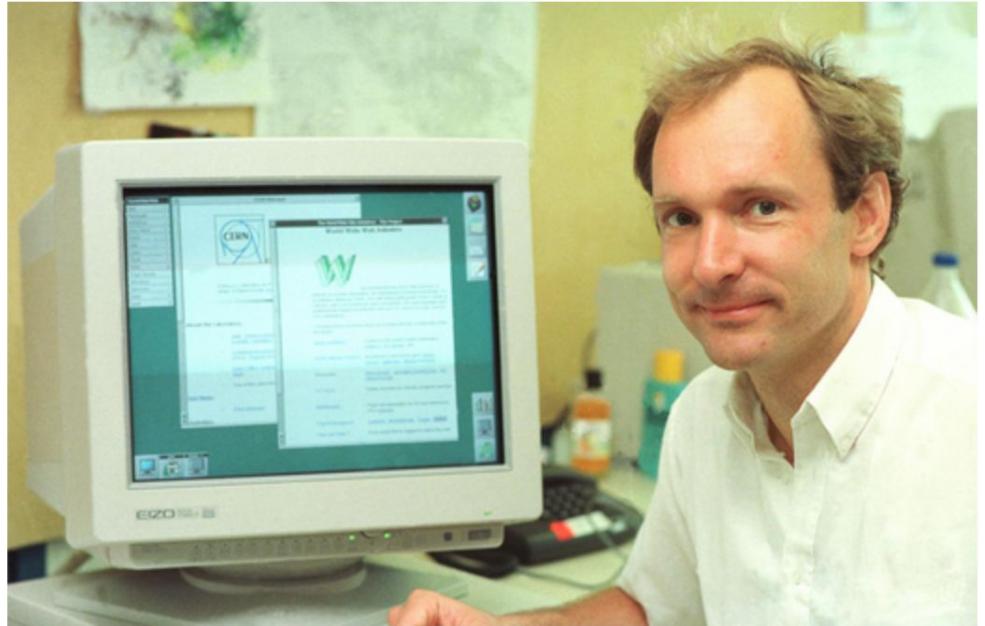


Static Websites

Tim



Tim



Tim Berners-Lee, a British scientist, invented the World Wide Web (WWW) in 1989, while working at CERN.

The Web was originally conceived and developed to meet the demand for automated information-sharing between scientists in universities and institutes around the world.

home.web.cern.ch/science/computing/birth-web/short-history-web



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..

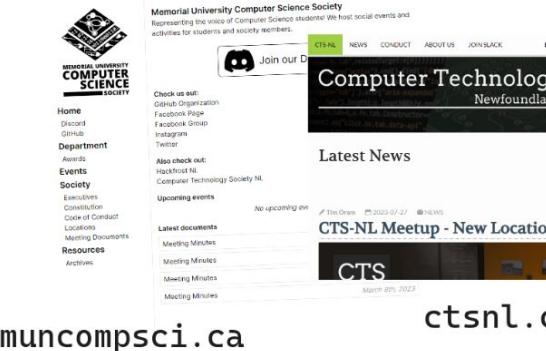
[Getting code](#)

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

/some/folder/on/my/computer/

GET /
GET /about
GET /projects/
GET /projects/beyond-the-browser
GET /foo/bar/baz/
GET /assets/style.css
GET /assets/js/cool-script.js

→ index.html
→ about.html
→ /projects/index.html
→ /projects/beyond-the-browser.html
→ /foo/bar/baz/index.html
→ /assets/style.css
→ /assets/js/cool-script.js



mununcompsci.ca

ctsnl.ca

jackharry.dev

resume websites,
portfolio websites,
one-off landing pages,
other informational or
read-only sites

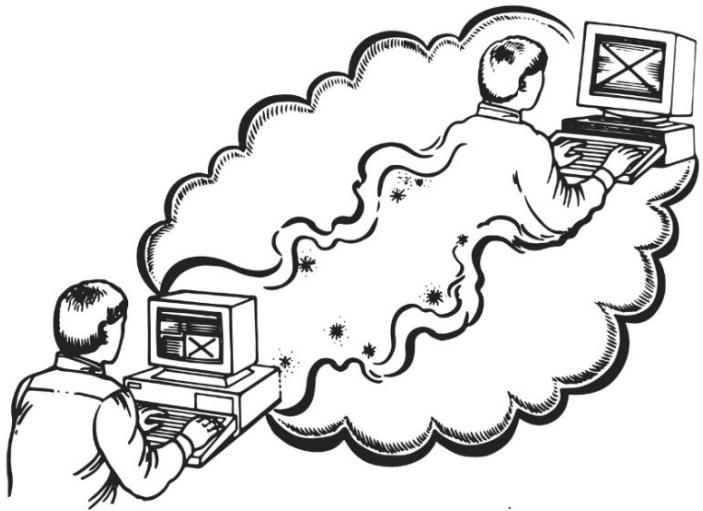


Figure 7.1 Remote login is a lot like astral projection.



Wikipedia

(sort of) a static website





Search Wikipedia

Search

Create account Log in ...



Memorial University of Newfoundland

16 languages

Contents [hide]

(Top)

- > History
- > Academics
- > Campuses and facilities
- > Student body and campus life
- > Cultural impact
- Notable faculty and alumni
- Arms
- See also
- > References
- External links

[Article](#) [Talk](#)[Read](#) [Edit](#) [View history](#) [Tools](#) ▾

From Wikipedia, the free encyclopedia

Coordinates: 47.57203°N 52.73265°W

Memorial University of Newfoundland, also known as **Memorial University** or **MUN** (*/mʌn/*), is a public research university in the province of **Newfoundland and Labrador**, based in **St. John's**, with satellite campuses in **Corner Brook**, elsewhere in Newfoundland and in Labrador, **Saint Pierre**, and **Harlow**, England. Memorial University offers certificate, diploma, undergraduate, graduate, and post-graduate programs, as well as online courses and degrees.

Founded in September 1925 as a living memorial to Newfoundlanders and Labradorians who died in the First World War, Memorial is the largest university in **Atlantic Canada**, and Newfoundland and Labrador's only university. As of 2018, there were a reported 1,330 faculty and 2,474 staff, supporting 18,000 students from nearly 100 countries.^{[5][6]}

History [edit]

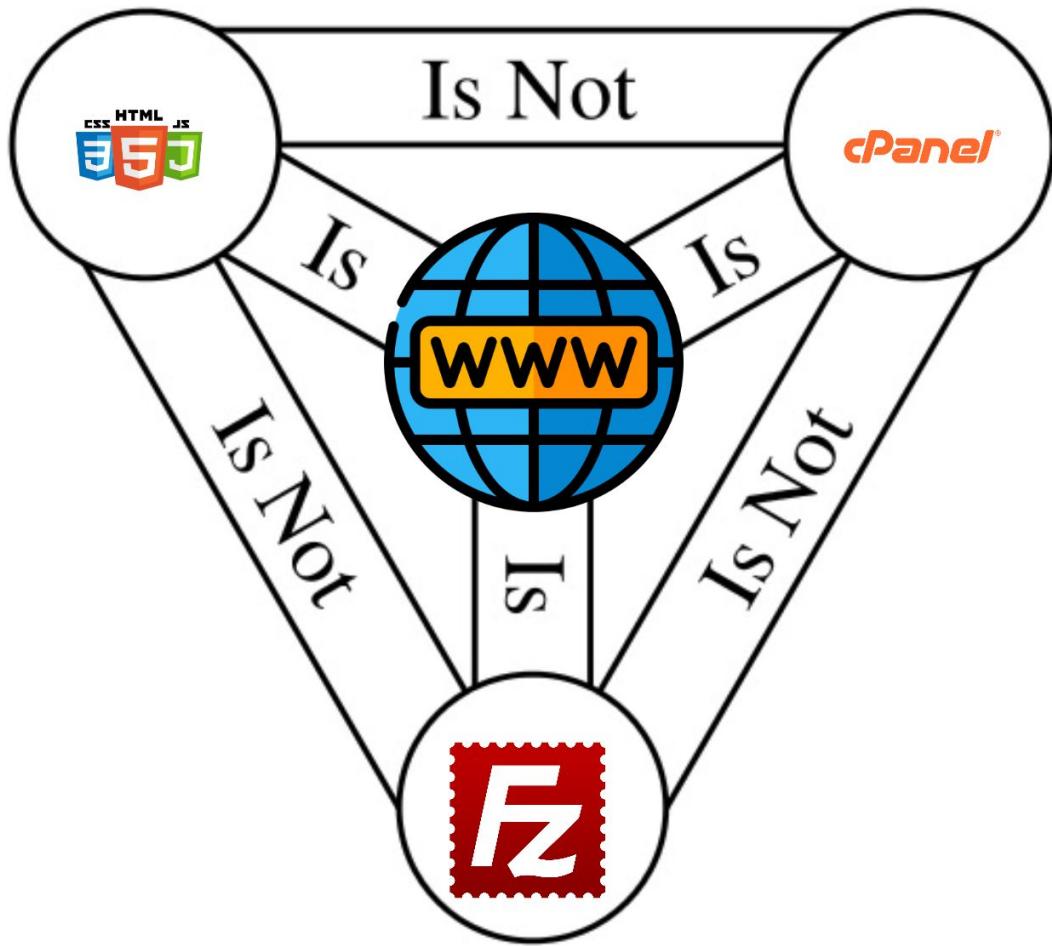
Founding [edit]

At its founding, **Newfoundland** was a **dominion** of the United Kingdom. Memorial University began as **Memorial University College** (MUC), which opened in September 1925 at a campus on Parade Street in St. John's.^[7] It was founded to honour the war dead from World War I, to provide a way of educating school

Latin: *Universitas Memorialis*

Former names	Memorial University College
Motto	<i>Provehito in Altum</i> (Latin)
Motto in English	"Launch forth into the deep"
Type	Public
Established	1925; 98 years ago
Endowment	CAD\$93 million ^[1]
Chancellor	Earl Ludlow ^[2]
President	Neil Bose
Visitor	Judy Foote





 **Jack Arthur Harrhy**

Student
Department of Computer Science
E-mail Address: jaharry@mun.ca
St. John's, Newfoundland, Canada
41°57'46"N, -52°57'35"

jack 7 days ago advent of code soon:

quotes

tea log
tea is being consumed, and logged
26-11-2023
24-07-2023
23-05-2023
11-01-2022

★ Esteemed Colleagues ★
Tim Orman - [_orman](#)
Steve Person - [_s47su0](#)
Riley Flynn - [_raflynn](#)
Ethan Cramm - [_etcrann](#)
Andrew Stacey - [_aestacey](#)
Christian Winsor - [_cwinson](#)
ios

this is egg, please feed him



linkbox
<http://cs.mun.ca/~jaharry/> • you are here
[Jack.tilde.institute](#)
[tilde.team/~jack/](#)
[jackharry.neocities.org](#)

gamedev - jams
ceojam october 2023
gumpjam august 2023



www.cs.mun.ca/~jaharry/

jacks page
a place on the internet, just like any other place



jackharry.neocities.org

H U G O 11ty

jekyll





```
import Banner from '../components/Banner.astro';
import ReactPokemonComponent from '../components/ReactPokemonComponent.jsx';
const myFavoritePokemon = [/* ... */];
const data = await fetch('SOME_SECRET_API_URL/users').then(r => r.json());
const { title } = Astro.props;

<Banner />
<h1>Hello, world!</h1>

<p>{title}</p>
<div>{JSON.stringify(data, null, 2)}</div>

<ReactPokemonComponent client:visible />

<ul>
  {myFavoritePokemon.map((data) => <li>{data.name}</li>)}
</ul>

<p class:list={[ "add", "dynamic", {classNames: true}]} />
```



MEMORIAL UNIVERSITY
COMPUTER SCIENCE
SOCIETY

Home

Discord
GitHub

Department

Awards

Events

Society

Executives
Constitution
Code of Conduct
Locations
Meeting Documents

Resources

Archives

Memorial University Computer Science Society

Representing the voice of Computer Science students! We host social events and activities for students and society members.



Join our Discord!

Check us out:

[GitHub Organization](#)
[Facebook Page](#)
[Facebook Group](#)
[Instagram](#)
[Twitter](#)

Also check out:

[Hackfrost NL](#)
[Computer Technology Society NL](#)

Upcoming events

No upcoming events

Latest documents

Meeting Minutes	October 17th, 2023
Meeting Minutes	October 3rd, 2023
Meeting Minutes	August 1st, 2023
Meeting Minutes	March 8th, 2023

```
import { LINKS } from "../data/links.js";
import Main from "../layouts/Main.astro";
import { UpcomingEvents } from "../components/UpcomingEvents.jsx";
import { LatestDocuments } from "../components/Documents.jsx";
import TextLink from "../components/TextLink.jsx";
```

```
<Main title="Homepage">
  <h1 class="text-xl font-semibold">
    Memorial University Computer Science Society
  </h1>

  <p>
    Representing the voice of Computer Science students!
    We host social events and activities for students and
    society members.
  </p>

  <a href={LINKS.discord}>
    <div
      class="w-[19rem] flex border ... "
    >
      
      <p class="text-2xl self-center">Join our Discord!</p>
    </div>
  </a>

  <h2 class="font-semibold mt-4">Check us out:</h2>
  <TextLink href={LINKS.github}>GitHub Organization</TextLink>
  <TextLink href={LINKS.facebookPage}>Facebook Page</TextLink>
  <TextLink href={LINKS.facebookGroup}>Facebook Group</TextLink>
  <TextLink href={LINKS.instagram}>Instagram</TextLink>
  <TextLink href={LINKS.twitter}>Twitter</TextLink>

  <h2 class="font-semibold mt-4">Also check out:</h2>
  <TextLink href={LINKS.hackfrotnl}>Hackfrost NL</TextLink>
  <TextLink href={LINKS.ctsnl}>Computer Technology Society NL</TextLink>

  <h2 class="font-semibold mt-4 mb-2">Upcoming events</h2>
  <UpcomingEvents client:only="react" />

  <h2 class="font-semibold mt-4 mb-2">Latest documents</h2>
  <LatestDocuments client:only="react" />
</Main>
```



Home

Discord

GitHub

Department

Awards

Events

Society

Executives

Constitution

Code of Conduct

Locations

Meeting Documents

Resources

Archives

Resources

Computer Technology Society (CTS)

The [Computer Technology Society Newfoundland Labrador](#) generally known as CTS-NL, is a community group for people who work in or have an interest in software development, technology, and computing in Newfoundland and Labrador.

Its [Slack](#) is quite active and is a great place to ask questions and get help.

Hackfrost NL

[Hack Frost NL](#) is a student-led initiative at Memorial University of Newfoundland.

Founded in 2020, Hack Frost NL organized the first ever university-wide open hackathon with the goal of bridging the gap between the classroom and the workplace.

```
layout: ../layouts/Markdown.astro
title: Resources
_____
# Resources
## Computer Technology Society (CTS)
The [Computer Technology Society Newfoundland Labrador](https://ctsnl.ca/) generally known as CTS-NL, is a community group for people who work in or have an interest in software development, technology, and computing in Newfoundland and Labrador.
Its [Slack](https://join.slack.com/t/ctsnl/shared_invite/...) is quite active and is a great place to ask questions and get help.
## Hackfrost NL
[Hack Frost NL](https://hackfrotnl.ca/) is a student-led initiative at Memorial University of Newfoundland.
Founded in 2020, Hack Frost NL organized the first ever university-wide open hackathon with the goal of bridging the gap between the classroom and the workplace.
```



astro



Jack

literally anyone



GitHub Pages



Cloudflare
Pages



Static Site

a way you can still to this day,
deploy things to the internet

Static is nice,
but not all things
can be static

User requests page → Page created on demand

This isn't a new problem,
so how was this solved in
the early days of the web?

bespoke C HTTP Server

Socket time



WhoCaresAboutThat 2015

```
#include ...

int main() {
    int server_fd, new_socket;
    struct sockaddr_in address;
    int addrlen = sizeof(address);

    if ((server_fd = socket(AF_INET, SOCK_STREAM, 0)) == 0) {
        perror("Socket creation failed");
        exit(EXIT_FAILURE);
    }
    // ... setup address structure
    // ... bind the socket to the specified port
    // ... listen for incoming connections
    printf("Server listening on port %d ... \n", PORT);
    while (1) {
        // ... accept incoming connections
        char *response = "HTTP/1.1 200 OK\nContent-Type: text/ ... ";
        send(new_socket, response, strlen(response), 0);
        printf("Response sent\n");

        close(new_socket);
    }
    return 0;
}
```

Bespoke HTTP Server

a way you can still to this day,
deploy things to the internet
(but why)

CGI

Common Gateway Interface

_Eric Wastl

Software Engineer and cr
of Advent of Code

...

+

Following

Eric Wastl

@ericwastl

Created adventofcode.com, compute-cost.com, anoik.is, was.tl/projects/;
Principal Architect @ACVAuctions

Advent of Code: Behind the Scenes

adventofcode.com

Eric Wastl
@ericwastl
eric@was.tl

6-8 NOV 2019
Eric Wastl

Scandinavian Developer Conference
Malmö, Sweden



Advent of Code: Behind the Scenes (Programming Puzzles)
youtube.com/watch?v=CFWuwNDOnIo

- A random memory of Advent calendars
 - A passion for programming puzzles and helping people learn to become better programmers
- Advent of Code**

[Advent of Code](#) [About] [Events] [Shop] [Settings] [Log Out] Eric Wast
\$year=2018; [Calendar] [AoC++]

--- Day 1: Chronal Calibration ---

"We've detected some temporal anomalies," one of Santa's Elves at the Daily Research and Detection Instrument Station tells you. "I'm worried when she called you down here. "At 500-year intervals, someone has been changing Santa's history!"

It is that the changes won't propagate to our time stream yet, and we have a device" - she attaches something to your belt. "This will let you fix the changes with no such propagation delay. We had to send you 500 years further into the past every few days, but that's the best we could do on such short notice."

It is that we are detecting roughly fifty anomalies throughout the day. The ice will indicate fixed anomalies with stars. The other anomalies will only have one device and you're the best person for the job." She taps a button on the device and you suddenly feel a slight pull. To save Christmas, you need to get all fifty stars.

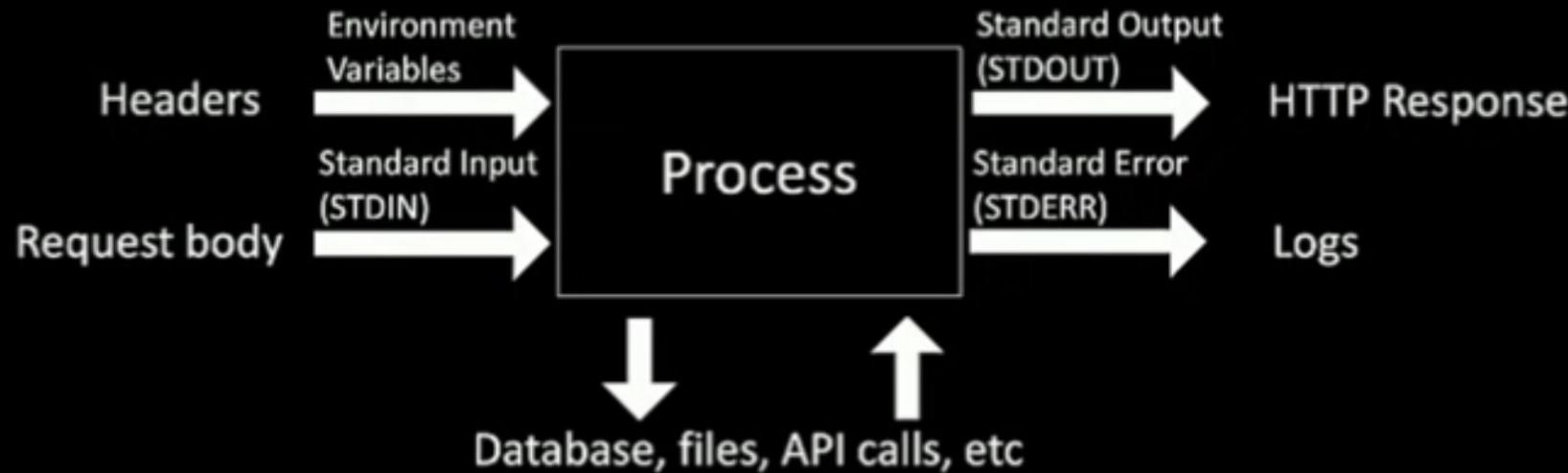
It is that we are detecting roughly fifty anomalies throughout the day. The ice will indicate fixed anomalies with stars. The other anomalies will only have one device and you're the best person for the job." She taps a button on the device and you suddenly feel a slight pull. To save Christmas, you need to get all fifty stars.



adventofcode . com

CGI: Common Gateway Interface

For every request:



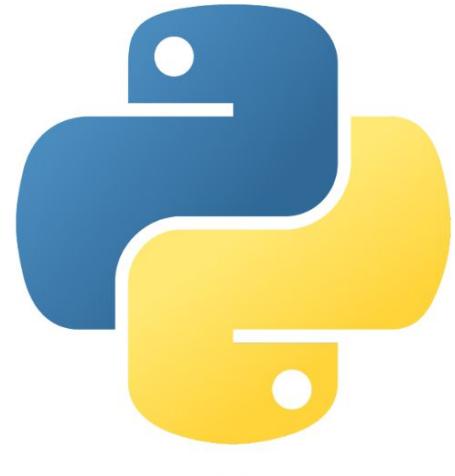
```
import os
from datetime import datetime

print("Content-type: text/html\n")

current_time = datetime.now().strftime("%Y-%m-%d %H:%M:%S")

user_agent = os.environ.get('HTTP_USER_AGENT', 'Unknown User Agent')
requested_path = os.environ.get('REQUEST_URI', 'Unknown Requested Path')

print("<html>")
print("<head>")
print("<title>Current Time and Environment Variables</title>")
print("</head>")
print("<body>")
print("<h1>Current Time:</h1>")
print(f"<p>{current_time}</p>")
print("<h1>User Agent:</h1>")
print(f"<p>{user_agent}</p>")
print("<h1>Requested Path:</h1>")
print(f"<p>{requested_path}</p>")
print("</body>")
print("</html>")
```



modern python,
old paradigm

```
import os
from datetime import datetime

print("Content-type: text/html\n")

current_time = datetime.now().strftime("%Y-%m-%d %H:%M:%S")

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print("<h1>Requested Path:</h1>")
print(f"<p>{requested_path}</p>")
print("</body>")
print("</html>")
```



```
#!/usr/bin/perl

use strict;
use warnings;

print "Content-type: text/html\n\n";

my $current_time = `date +"%Y-%m-%d %H:%M:%S"`;
my $user_agent = $ENV{'HTTP_USER_AGENT'} || 'Unknown User Agent';
my $requested_path = $ENV{'REQUEST_URI'} || 'Unknown Requested Path';

print <<HTML;
<html>
<head>
<title>Current Time and Environment Variables</title>
</head>
<body>
<h1>Current Time:</h1>
<p>$current_time</p>
<h1>User Agent:</h1>
<p>$user_agent</p>
<h1>Requested Path:</h1>
<p>$requested_path</p>
</body>
</html>
HTML
```



How should we host this thing?

- Programming puzzles probably won't be that popular
- I have a few friends that might like it
- They have a few friends that might like it
- Figure maybe 50 people?



Eric Wasti

@ericwasti

My secret project is done: I've been building
an Advent calendar for the last two months.
See you in a few hours! adventofcode.com

2:06 PM - 30 Nov 2015

27 Retweets 28 Likes



3



27



28



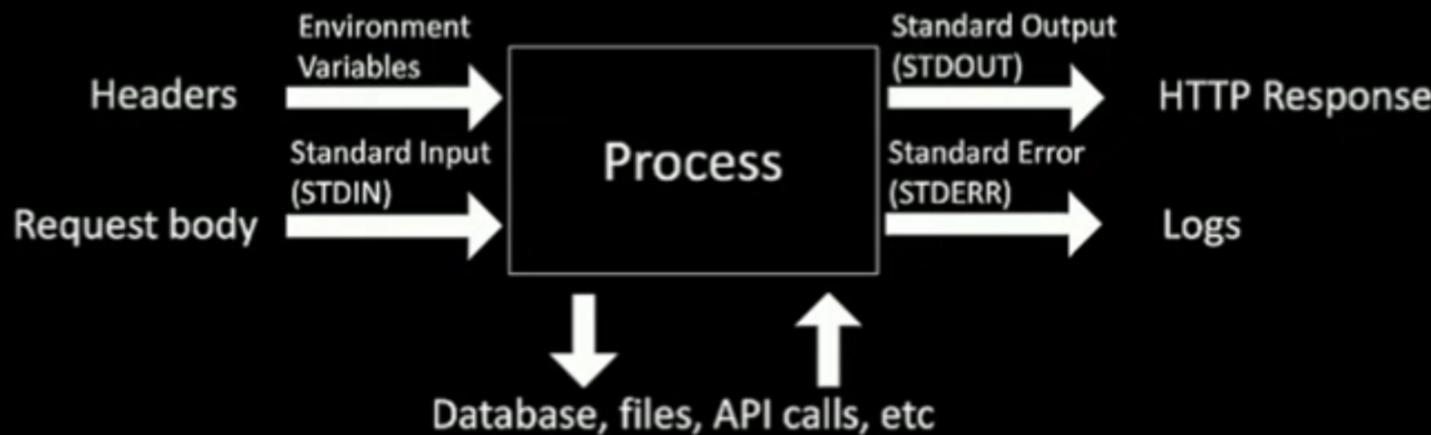
How should we host this thing?

- Programming puzzles probably won't be that popular
- I have a few friends that might like it
- They have a few friends that might like it
- They have a few friends that like it
- They have a few friends that like it
- They have a few friends that like it
- They have a few friends that like it

uh oh

CGI: Common Gateway Interface

For every request:



12 hours into the event

Estimate: 70

Actual: 4000

Off by: 5600%

Small server: VERY SAD



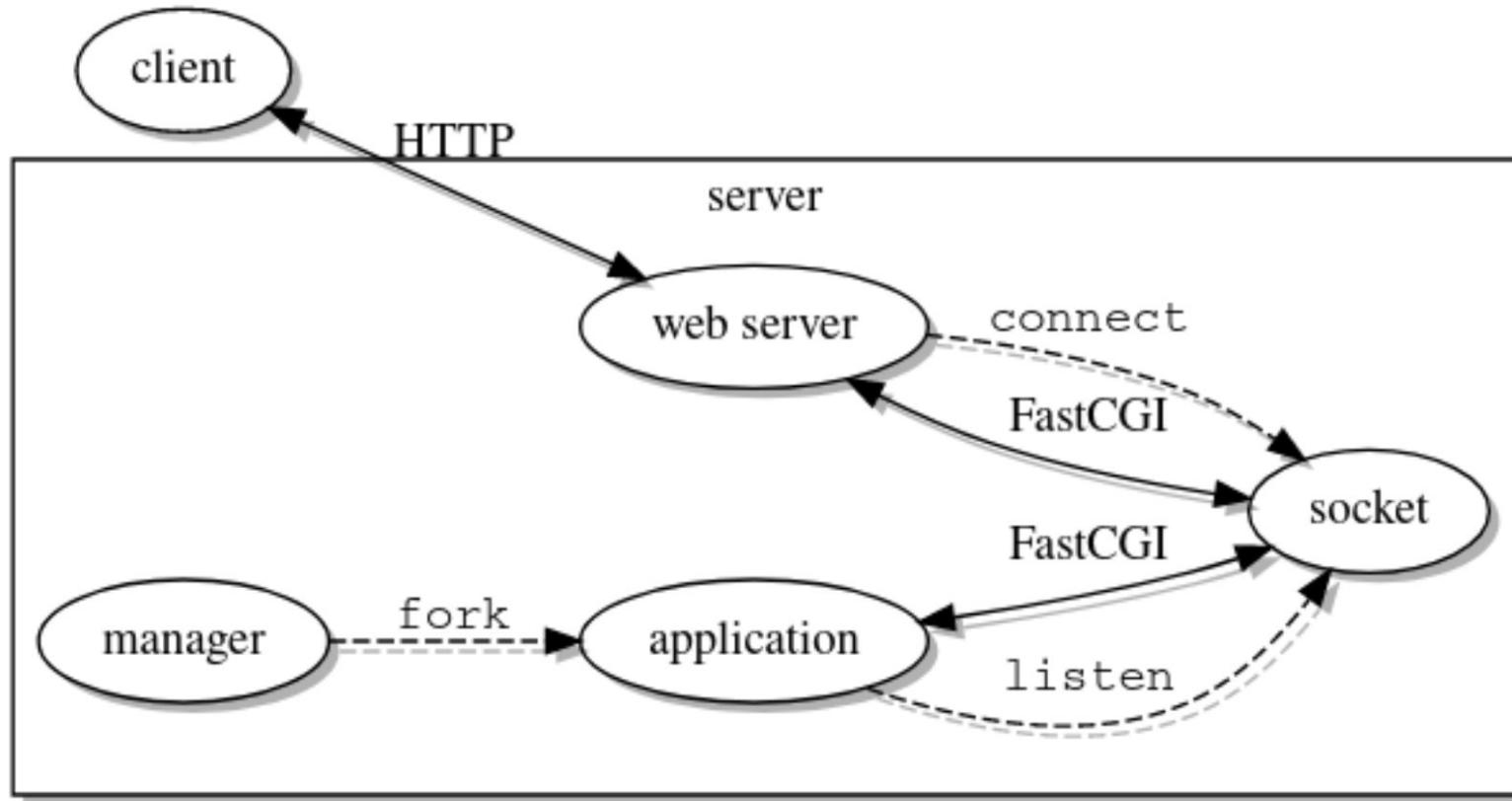
70 users? No problem

4000 users? Don't use CGI.

(An emergency switch to
FastCGI saved the event!)

You're bad at traffic estimation. Now what?

- 1.Turn off the Minecraft server.
- 2.Don't create a new process to handle every request.



kristaps.bsd.lv/absdcon2017/intro-fastcgi.html

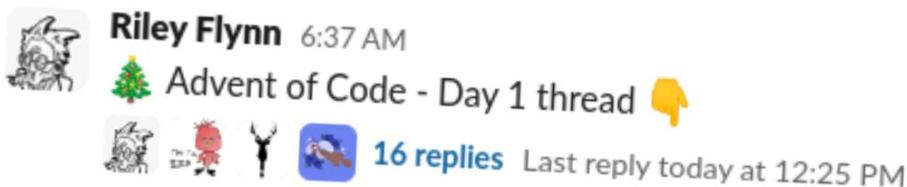
CGI

(likely with FastCGI)

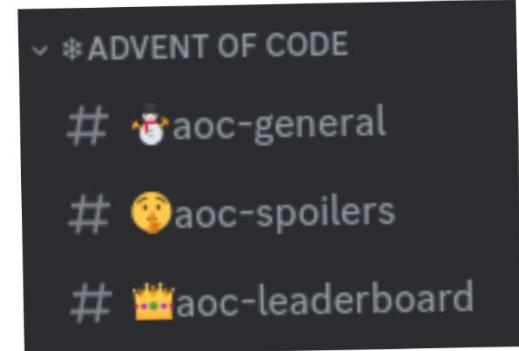
a way you can still to this day,
deploy things to the internet

→ adventofcode.com ←

CTSNL Slack: ctsnl.ca
in #general



MUNCS Discord: muncompsci.ca
in #aoc- ...



NDev Slack: ndev.co
in #advent-of-code

Not everyone who wants
to build / have a website,
is a developer



Dashboard

Welcome to WordPress!

Learn more about the 6.1.1 version.

Author rich content with blocks and patterns

Block patterns are pre-configured block layouts. Use them to get inspired or create new pages in a flash.

[Add a new page](#)

Start Customizing

Configure your site's logo, header, menus, and more in the Customizer.

[Open the Customizer](#)

Rank Math Overview

Quick Draft

The image shows the WordPress dashboard interface. On the left is a dark sidebar with various menu items: Home, Updates (1), Kinsta Cache, Posts, Media, Pages, Lasso, Comments, Rank Math, Elementor, Templates, Appearance, Plugins (1), Users, Tools, and Settings. The main area has a blue header "Dashboard" and a large blue banner with the text "Welcome to WordPress!". Below the banner, there are two sections: one for "Author rich content with blocks and patterns" featuring a "Blocks" icon, and another for "Start Customizing" featuring a "Customizer" icon. At the bottom, there are links for "Add a new page", "Open the Customizer", and "Rank Math Overview". A "Quick Draft" button is also visible at the bottom right.

CMS: Content Management System



*insert more logos
here idk i don't work
in this space*

Off-the-shelf solutions



Twitter / Developers / Forums

Sign Up Log In

Categories Latest Top

Category Topics Latest

Announcements 155

Announcements about the Twitter Developer Platform, usually for specific technical changes and advisories such as feature deprecations, bug fixes, and API changes.

OAuth 3 / week

Troubleshooting, insights, and discussion on OAuth, authentication, authorization, the permission model, and signing requests.

Events 26

This category is for announcements of events that the @TwitterDev team are attending, and also news about the #TapintoTwitter Developer Community meetups.

Developer Portal 23 / week

The Developer Portal is a self-serve tool that developers can use to manage their API access and their Twitter apps.

Publisher Tools & SDKs 9 / week

Twitter's Publisher Platform provides tools and SDKs enabling

Since/Until using SEARCH API
REST API v1.1 0 32m

Tableview Pacer with dynamic cell size causing stuttering/jumpy behavior
McPub SDK 0 1h

Control notifications of followers
REST API v1.1 3 1h

What endpoint should I be accessing for a Organization's/School Version of the Twitter Search API?
Premium APIs python search 0 2h

I want to set up quick replies for my mental health awareness account
REST API v1.1 4 3h

Drop down list of countries 0 2h



phpBB® yourdomain.com Default username/password: administrator/administrator

Search...

Board index

It is currently Feb 23rd, '15, 19:58

Last visit was: Feb 22nd, '15, 19:48

Mark forums read

YOUR FIRST CATEGORY

Your first forum
Description of your first forum. 1 1 Welcome to phpBB3 by administrator Feb 22nd, '15, 19:48

WHO IS ONLINE

In total there is 1 user online :: 1 registered, 0 hidden and 0 guests (based on users active over the past 5 minutes). Most users ever online was 2 on Feb 22nd, '15, 19:48

Registered users: administrator Legend: Administrators, Global moderators

BIRTHDAYS

No birthdays today

STATISTICS

Total posts 3 • Total topics 3 • Total members 1 • Our newest member administrator

Board index

The team Members Delete all board cookies All times are UTC

Powered by phpBB® Forum Software © phpBB Limited
GLTF-GTF | SQL Explain
Administration Control Panel

Templates / No-Code Tools



SQUARESPACE

wix

Canva



Webflow

my-startup.io

app.my-startup.io

whatever you want to put here

Wordpress / CMS's Off-the-shelf & Pre-packaged

all ways you can still to this day,
deploy things to the internet

This is a developer
talk, so lets get
back to development

So, CGI gets you pretty far, but as time progressed, things expanded into tools more suited for the web, not just wrapping an existing language with enough tools to expose it over HTTP

Server-side Languages & Frameworks

php

```
<?php  
if (isset($_GET['name'])) {  
    $name = $_GET['name'];  
} else {  
    $name = "World";  
}  
  
echo "Hello, " . $name . "!";  
?>
```

ruby
(rails)

```
class GreetingsController < ApplicationController  
  def hello  
    @name = params[:name].present? ? params[:name] : "World"  
  
    render inline: "<h1>Hello, <%= @name %>!</h1>"  
  end  
end
```

java / kotlin
(javalin)

```
import io.javalin.Javalin  
  
fun main() {  
    val app = Javalin.create().start(7000)  
  
    app.get("/greetings/hello") { ctx ->  
        val name = ctx.queryParam("name") ?: "World"  
  
        ctx.result("<h1>Hello, $name!</h1>")  
            .contentType("text/html")  
    }  
}
```

JavaServer Pages
ASP.NET
Django
...

request comes in

do something about the request

... talk to the db

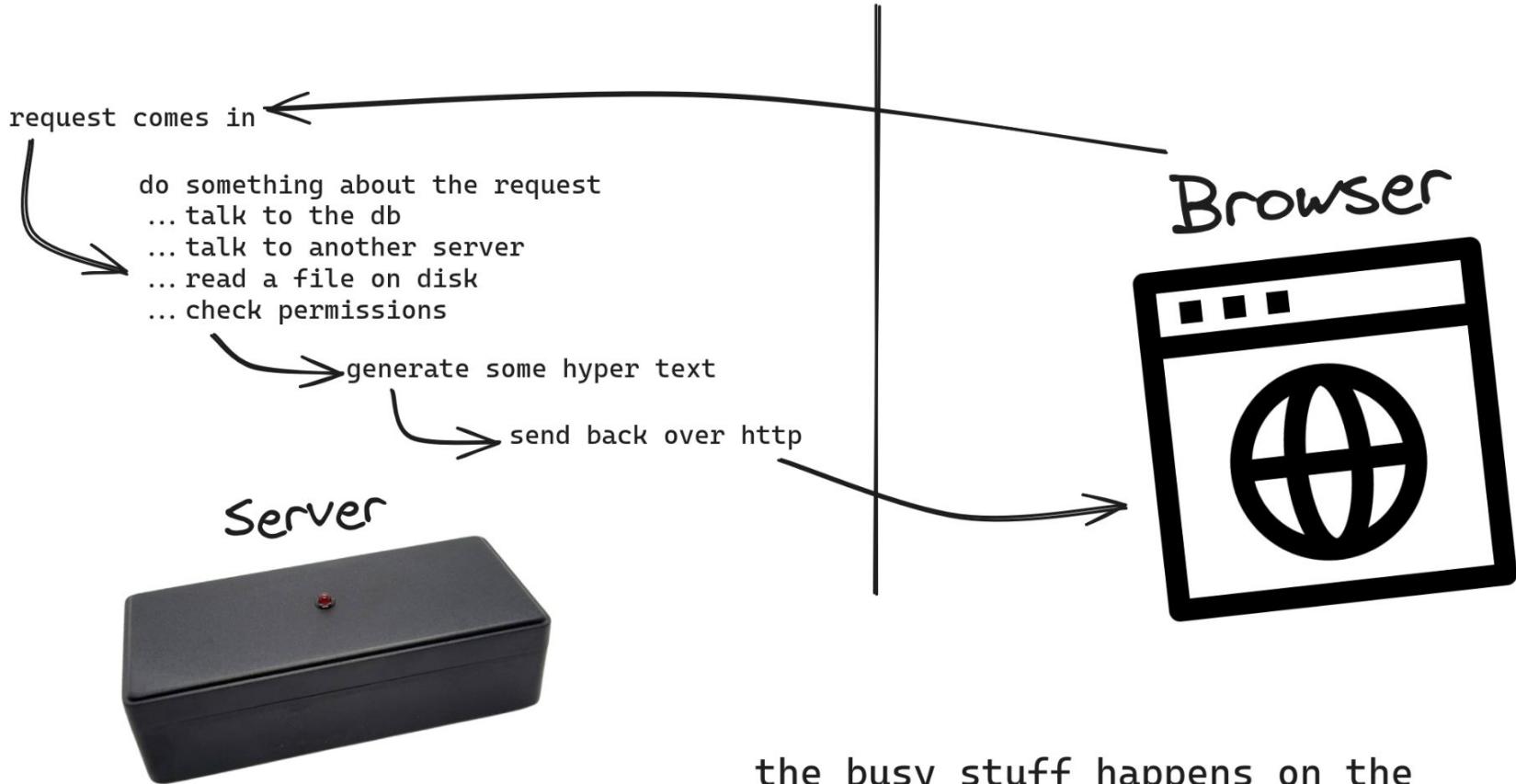
... talk to another server

... read a file on disk

... check permissions

generate some hyper text

send back over http



the busy stuff happens on the server, and a dynamically created but static page is shipped to the browser

Browser



```
<a href="/go-somewhere-else">  
  click me!  
</a>  
  
<form action="https://example.com/your-endpoint" method="POST">  
  <label for="data">Data:</label>  
  <input type="text" id="data" name="data" required>  
  <input type="submit" value="Submit">  
</form>
```

```
const fs = require('fs');
const { parse } = require('querystring');

const generateHtml = (alert = '') => `<!DOCTYPE html>
<html><title>CGI Script UI</title></head>
<body>
  <form method="post">
    <label for="data">Enter some data:</label>
    <input type="text" name="data" id="data" required>
    <button type="submit">Submit</button>
  </form>
  ${alert}
</body>
</html>`;

const isPostRequest = process.env.REQUEST_METHOD === 'POST';
process.stdout.write('Content-Type: text/html\r\n\r\n');

if (isPostRequest) {
  let requestData = '';
  process.stdin.on('data', chunk => {
    requestData += chunk.toString();
  });
  process.stdin.on('end', () => {
    const formData = parse(requestData);
    const dataToSave = formData.data || '';
    const filePath = 'saved_data.txt';
    try {
      fs.writeFileSync(filePath, dataToSave);
      const successAlert = '<p>Data saved successfully!</p>';
      process.stdout.write(generateHtml(successAlert));
    } catch (err) {
      const errorAlert = '<p>Error saving data</p>';
      process.stdout.write(generateHtml(errorAlert));
    }
  });
} else {
  process.stdout.write(generateHtml());
}
```

Server-side Languages & Frameworks

a way you can still to this day,
deploy things to the internet

These days lots of apps are mostly written using Client-side JavaScript, why was it not this way from the start?



2004 vs. 1995, almost a decade!

JavaScript

```
const LOCALE = globalThis.navigator.language
const div = document.body.appendChild(document.createElement('div'))
const dayNames = new Map()
for (let k = 0, l = 7 - k; k < 7; k++) {
    const d = Temporal.PlainDate.from({
        year: Temporal.Now.plainYear(),
        month: Temporal.Now.plainMonth(),
        day: k + 1,
    })
    dayNames.set(k, d.toLocaleString(LOCALE, { weekday: 'long' }))
}
for (const num of [...dayNames.keys()].sort((a, b) => a - b)) {
    const element = document.createElement('li');
    element.textContent = dayNames.get(num);
}
```

Screenshot of JavaScript source code

Paradigm Multi-paradigm: event-driven, functional, imperative, procedural, object-oriented programming

Designed by Brendan Eich of Netscape initially; others have also contributed to the ECMAScript standard

First appeared December 4, 1995; 27 years ago^[1]

JavaScript, initially
was meant to be the 'glue'
adding splashes of
interactivity into existing
websites



So you're writing a PHP / Rails app, how do you have a chat box users can type into, but then see responses in real-time?

A input field / form for the input, but how do we fetch data? Asking the user to refresh the page every couple of seconds is a no-go



Naseem Hakim

[-](#) [X](#)[Clear Chat History](#)

Naseem 10:53am

Dude, they finally did it

Justin 10:53am

what do you think?

Naseem 10:53am

It's awesome

very well done - at least from my 30
seconds of interaction

this would probably make me leave a
browser open on facebook most of

the day in the office



Naseem Hakim

[X](#)

Online Friends (19)

```
const socket = new WebSocket('wss:// ... com');

const messageDiv = document.getElementById('messageDiv');

socket.addEventListener('message', (event) => {
  const message = JSON.parse(event.data);

  const messageElement = document.createElement('p');
  messageElement.textContent = message.content;
  messageDiv.appendChild(messageElement);
});

function sendMessage(message) {
  socket.send(JSON.stringify({ content: message }));
}
```

AJAX

Asynchronous

JavaScript

and

XML

```
function reqListener() {
  document.getElementById("title").innerHTML = this.responseText;
}

const req = new XMLHttpRequest();
req.addEventListener("load", reqListener);
req.open("GET", "http://www.example.org/some-route");
req.send();
```



Cons:

- you are likely writing two different languages
i.e. JS & (PHP | Ruby | Java | ...)
- you must consider what is sent to the user in the initial page load
- for improved UX, you might need to write some of the same sort of logic twice

Server-side Languages & Frameworks (with JS sprinkled in)

a way you can still to this day,
deploy things to the internet

As JavaScript got
better, you could
do more with it

activex



XMLHttpRequest

(~2000 kinda, thanks microsoft)



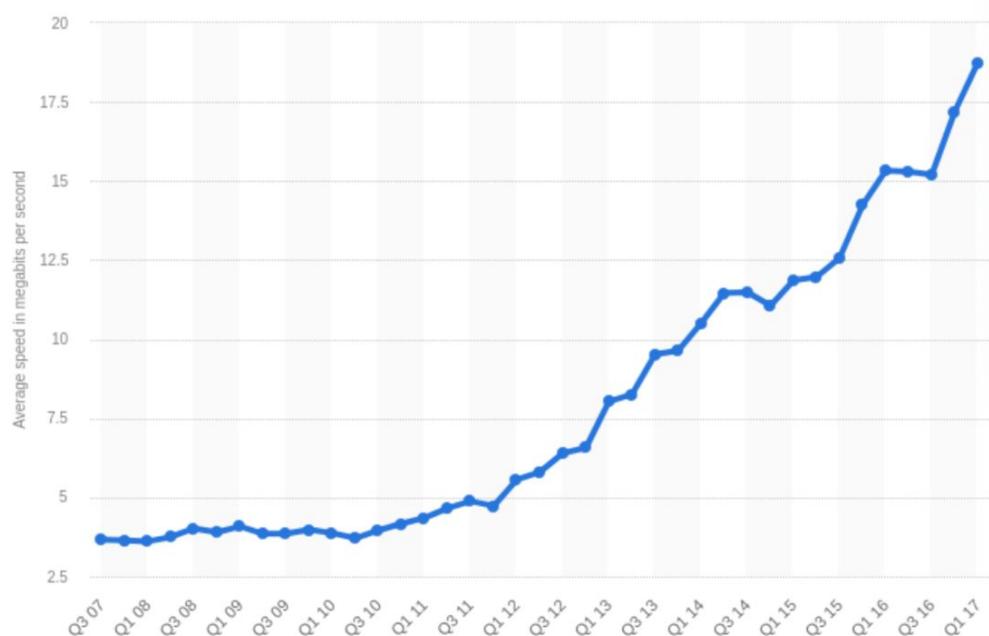
HTML5 (~2008)

Firebug (~2006)

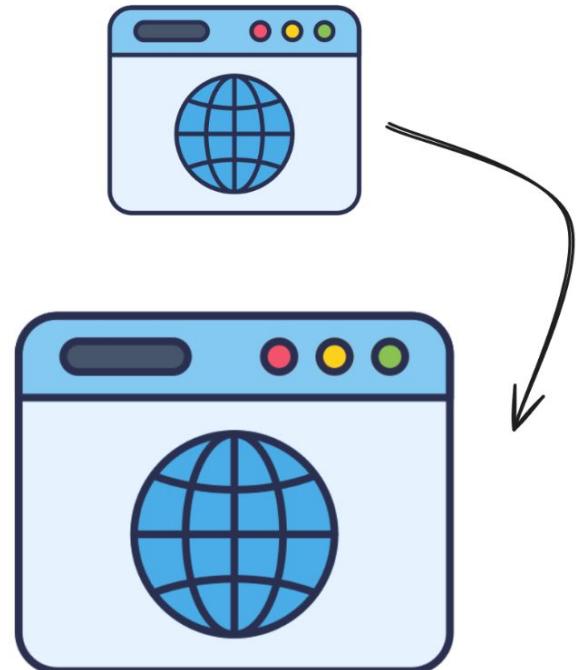


EcmaScript / ES5 (~2009)

Average internet connection speed in the United States from 2007 to 2017 (in Mbps), by quarter



statista.com/statistics/616210





Ramona's Pizza

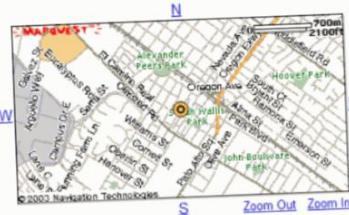
2313 Birch St
Palo Alto, CA 94306-1602
(650) 322-2181

Get driving directions to this location:

Start Location

palo alto

[Get Directions](#)



Web pages related to this location:

[San Francisco Restaurants - Chowbabyc.com](#)
<http://www.chowbabyc.com/searchrest.asp?city=ATHERTON&maanumber=7360> - Cached

[Unofficial Guide](#)
... Ramona's Pizza \$ Post review Star 2313 Birch Street Palo Alto , CA (650) 322-2181
Mon-Sat 11am-10pm, Sun 4:30pm-10pm This simple, no-frills pizzeria is a good ...
http://unofficial.stanford.edu/unofficial/guide_section.html?contentID=13 - Cached

A YouTube video player showing a man sitting in a cage, likely a bear enclosure. The video has 49,345 views and 165 comments. The title of the video is "Me at the zoo".

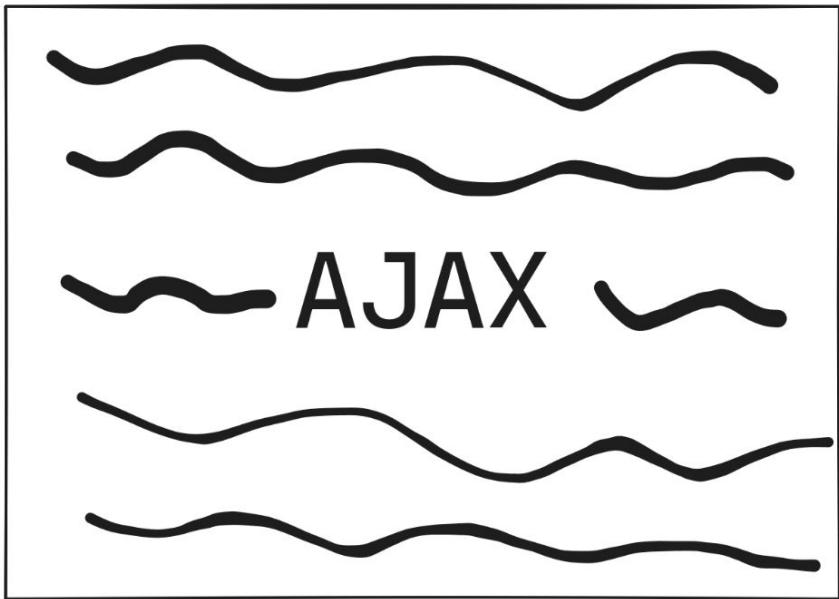
A screenshot of the Bank of America website. It features a banner for "Wrap up the holidays..." and "and win \$100,000!". Below this, there are sections for "Personal Finance", "Business Services", "Inside Bank of America", and "Financial Tools". There are also links for "Teach your kids how to handle money" and "Confused about Retirement Plans?".

Bank of America, N.A.
Member FDIC
Equal Housing Lender ©
2000 Bank of America
Corporation.
All rights reserved.

Find It | Help | Contact Us | Sign In
Personal Finance | Business Services | Inside Bank of America | Financial Tools
Privacy and Security | Careers | ATM | Banking Center | Locator

A screenshot of a Gmail inbox. The subject of the top email is "Dictionary.com Word of the Day - wanderlust - impulse to travel". The email is from "wikimediasample@gmail.com" and was sent at "4:14 pm". The inbox also shows other messages from "Gmail Team" and "Gmail". The interface includes standard Gmail controls like "Compose Mail", "Archive", "Report spam", "Delete", and "More Actions".





- Rendering any HTML on the client
- Server just speaks JSON / exposes an API
- We still need more than one page,
we can use the history API to give
a multiple page experience that under
the hood is only a single page (SPA)
- Good for splitting frontend / backend
into two specific teams / repos / contexts

```
<!DOCTYPE html>
<html lang="en">

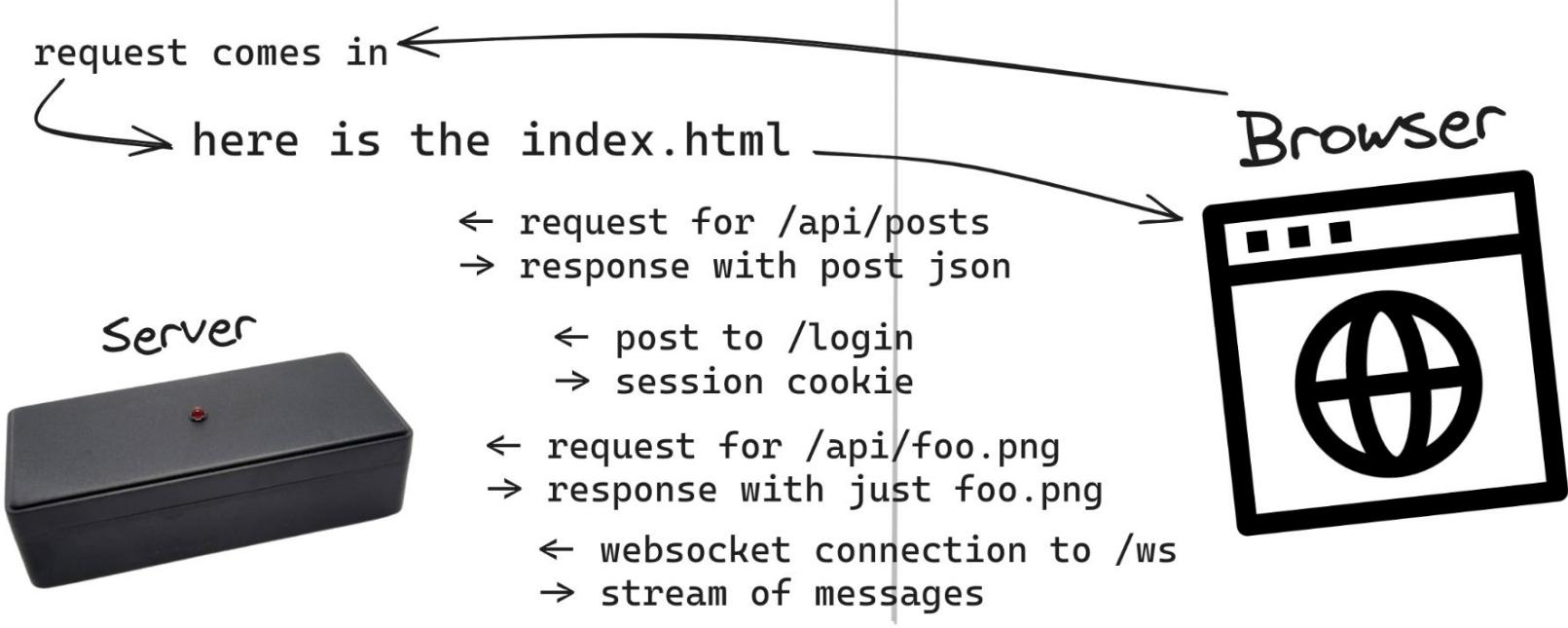
<head>
    <meta charset="UTF-8" />
    <script async src="https://www.googletagmanager.com/gtag/js?id=G-TV9YBV4V3C"></script>
    <script>
        window.dataLayer = window.dataLayer || [];
        function gtag() { dataLayer.push(arguments); }
        gtag('js', new Date());

        gtag('config', 'G-TV9YBV4V3C');
    </script>
    <link rel="icon" type="image/svg+xml" href="/favicon.png" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>C-CORE - Coresight</title>
    <script type="module" crossorigin src="/assets/index-9937f195.js"></script>
    <link rel="stylesheet" href="/assets/index-5e63bcd2.css">
</head>

<body>
    <div id="root"></div>

</body>

</html>
```



server still is concerned about
database / auth / 'backend' things,
and speaks http, but does not speak html

```
const express = require('express');
const sqlite3 = require('sqlite3');

const app = express();

const db = new sqlite3.Database(' ... ');
// ... init db schema

app.get('/posts', (req, res) => {
  db.all('SELECT * FROM posts', (err, rows) => {
    if (err) {
      // handle
      return;
    }

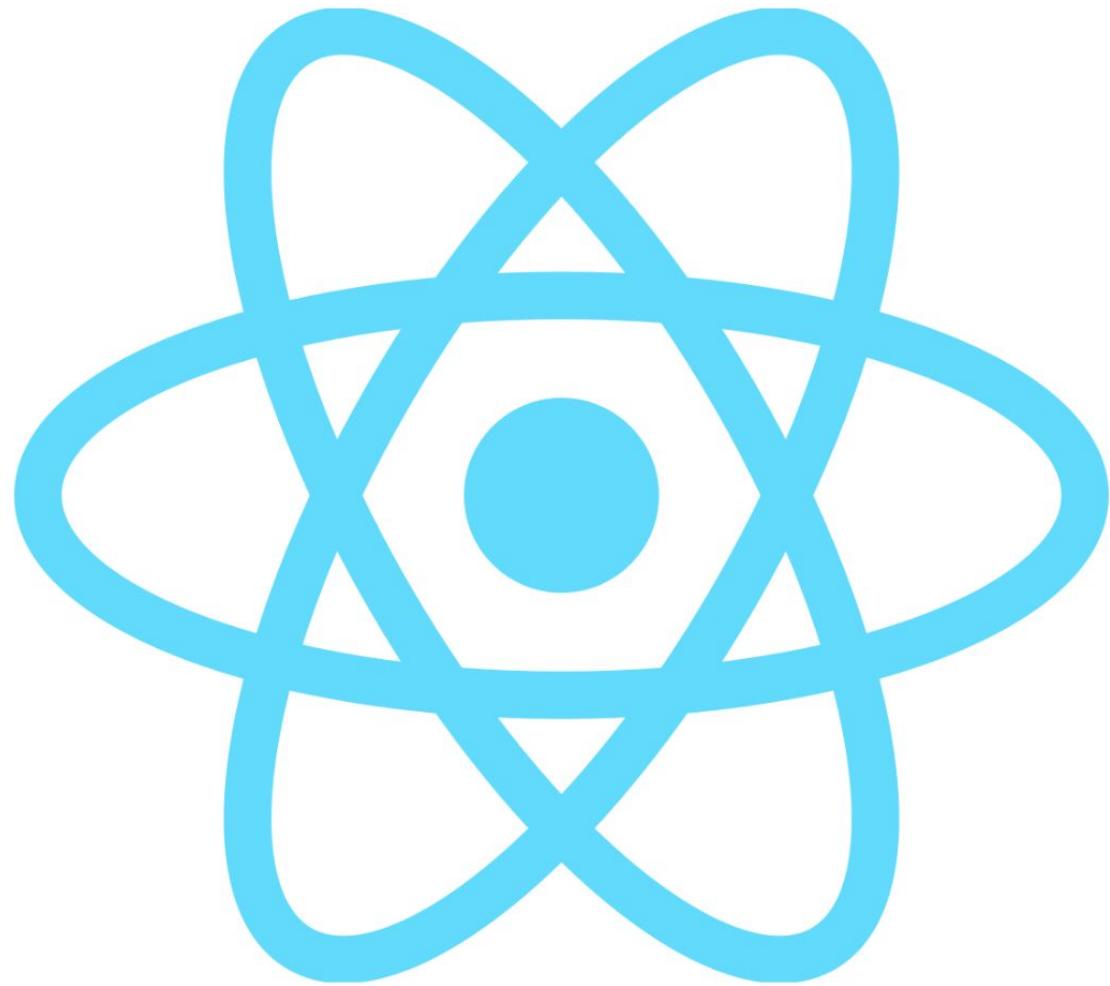
    res.json(rows);
  });
});

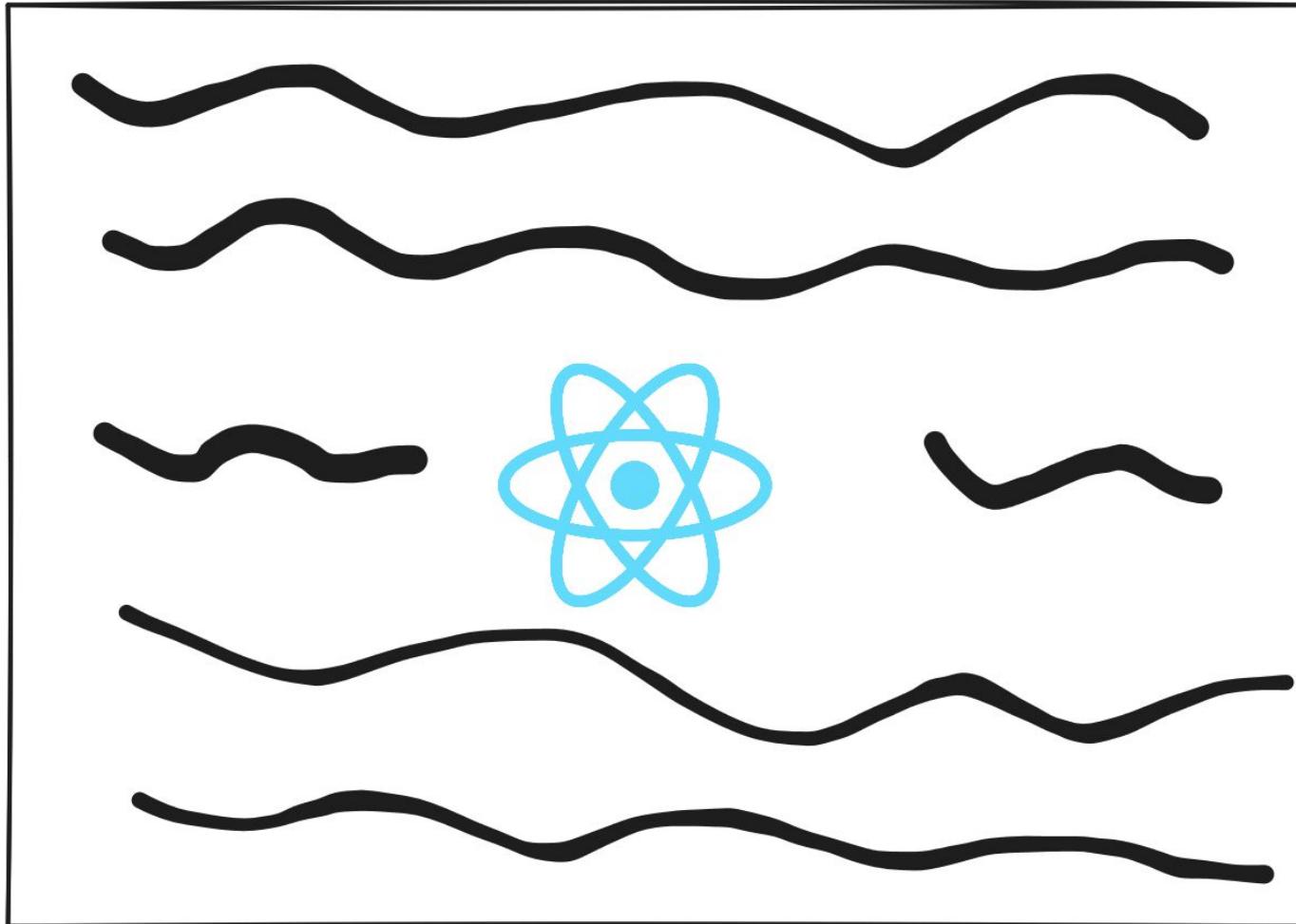
app.listen(3000, () => { ... });
```

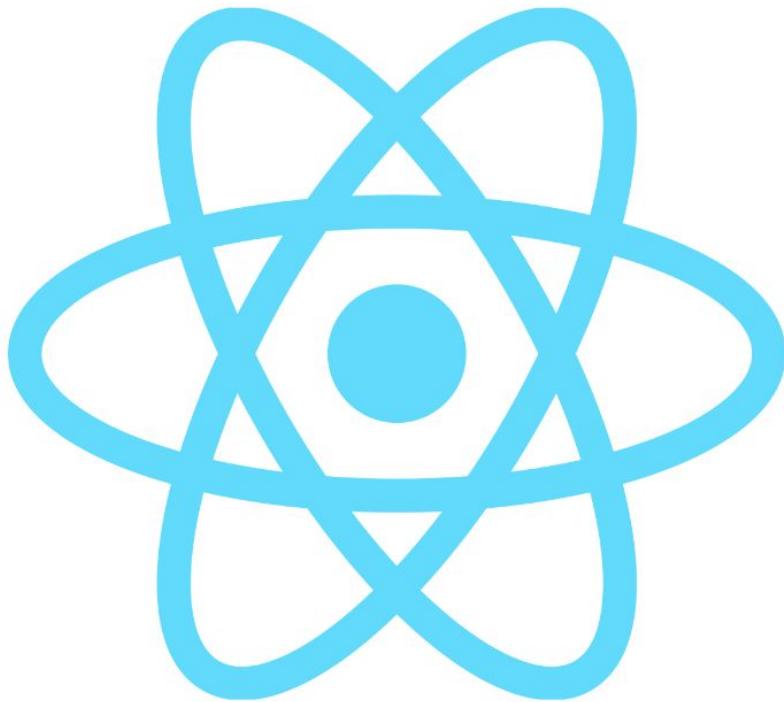


etc.









```
import { createRoot } from 'react-dom/client';

document.body.innerHTML = '<div id="app"></div>';

const root = createRoot(document.getElementById('app'));
root.render(<h1>Hello, world</h1>);
```

```
const router = createBrowserRouter([
  {
    path: "/",
    element: <div>Hello world!</div>,
  },
  {
    path: "/about",
    element: <AboutComponent />,
  },
]);
ReactDOM.createRoot(document.getElementById("root")).render(
  <React.StrictMode>
    <RouterProvider router={router} />
  </React.StrictMode>
);
```

```
export const AboutComponent = () => {
  return (
    <div className="container mx-auto mt-10">
      <h2 className="text-4xl font-bold mb-6">About</h2>
      <p className="text-gray-700 leading-7">
        Bacon ipsum dolor amet tri-tip pig drumstick shankle,
        prosciutto ribeye pastrami short loin jerky. Alcatra
        chicken flank, buffalo chuck sirloin fatback burgdoggen
        spare ribs boudin. Jowl boudin shoulder ham corned beef
        kevin. Porchetta filet mignon turkey jowl.
      </p>
    </div>
  );
};
```

```
const PostsList = () => {
  const { data, isLoading, isError } = useQuery('posts', async () => {
    const response = await fetch('/posts');
    if (!response.ok) {
      throw new Error('Network response was not ok');
    }
    return response.json();
  });

  if (isLoading) { return <div>Loading ...</div>; }

  if (isError) { return <div>Error fetching posts</div>; }

  return (
    <div>
      <h1>Posts List</h1>
      <ul>
        {posts.map(post => (
          <li key={post.id}>
            <h2>{post.title}</h2>
            <p>{post.content}</p>
          </li>
        ))}
      </ul>
    </div>
  );
};
```

```
app.get('/posts', (req, res) => {
  db.all('SELECT * FROM posts', (err, rows) => {
    // ...
    res.json(rows);
  });
});
```

```
export const PokemonList = () => {
  const {
    data: pokemonList, isLoading, error
  } = useQuery('pokemonList', async () => {
    try {
      const response = await fetch('https://pokeapi.co/api/v2/pokemon/');
      if (!response.ok) { ... }
      const data = await response.json();
      return data.results;
    } catch (error) {
      // ...
    }
  });
  if (isLoading) { return <p>Loading ... </p>; }

  if (error) { return <p>Error: {error.message}</p>; }

  return (
    <div>
      <h1>Pokemon List</h1>
      <ul>
        {pokemonList.map((pokemon) => (
          <li key={pokemon.name}>{pokemon.name}</li>
        )));
      </ul>
    </div>
  );
};
```

```
const PostsList = () => {
  const { data, isLoading, isError } = useQuery('posts', async () => {
    const response = await fetch('/posts');
    if (!response.ok) {
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  });
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      <h1>Posts List</h1>
      <ul>
        {posts.map(post => (
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            <h2>{post.title}</h2>
            <p>{post.content}</p>
          </li>
        ))}
      </ul>
    </div>
  );
};
```

```
app.get('/posts', (req, res) => {
  db.all('SELECT * FROM posts', (err, rows) => {
    // ...
    res.json(rows);
  });
});
```

separate things, not the same file

could be: frontend folder, backend folder
frontend repo, backend repo
frontend team, backend team

(even though features will likely span both)



Fakebooks

Dashboard

Accounts

Sales

Expenses

Reports



 Fakebooks

Dashboard

Accounts

Sales

Expenses

Reports

Sales



Fakebooks

Dashboard

Accounts

Sales

Expenses

Reports

Sales

Overview Subscriptions **Invoices** Customers Deposits

OVERDUE

\$10,800

DUE SOON

\$62,000

INVOICE LIST

Santa Monica

1995

\$10,800

OVERDUE



Fakebooks

Dashboard

Accounts

Sales

Expenses

Reports

Sales

Overview Subscriptions Invoices Customers Deposits

OVERDUE

\$10,800

DUE SOON

\$62,000

INVOICE LIST

Santa Monica

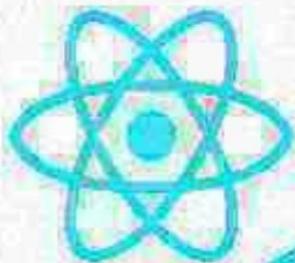
1995

\$10,800

OVERDUE

Stankonia

\$0.00



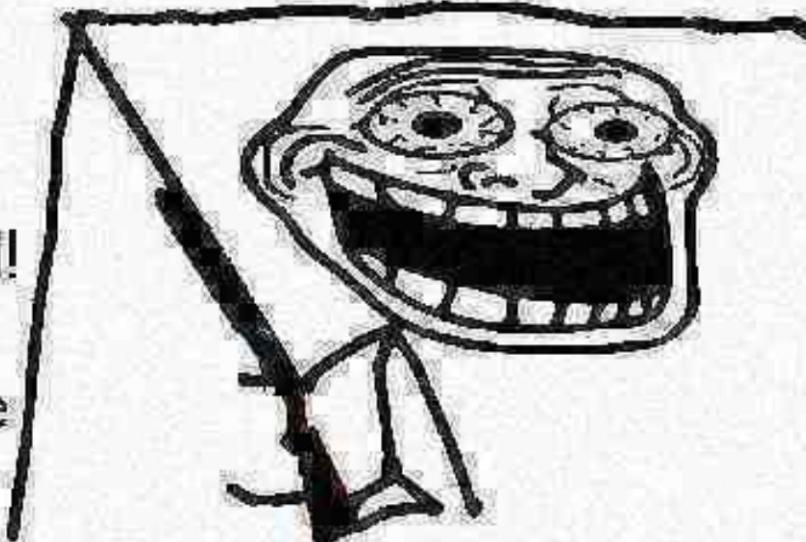
Size

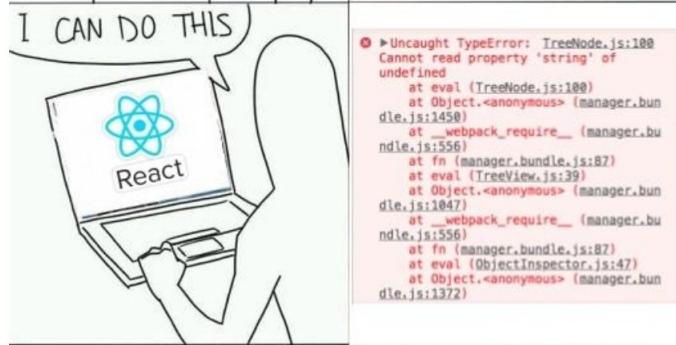
7.04 GB

**we've got
you surrounded!**

take your typescript
and massive bundle
sizes!

i hate
webpack i hate
compiled javascript!



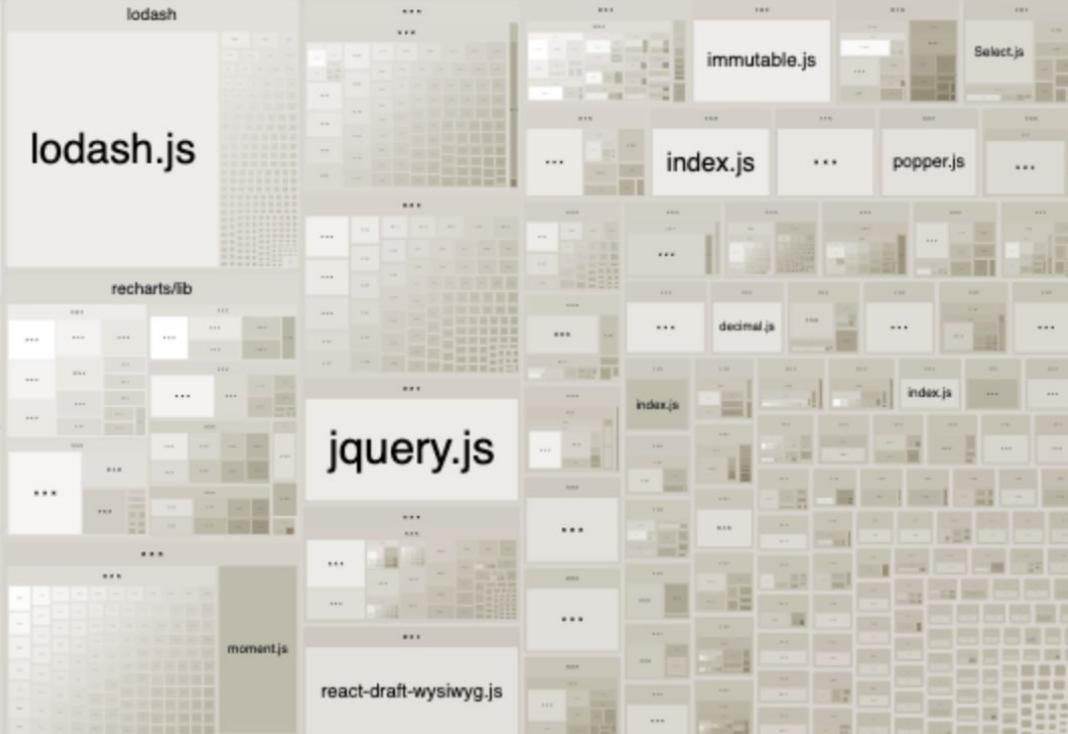


bundle.js

node_modules



latest.json



src

components
dashboard
components

content



react@18.2.0



React is a JavaScript library for building user interfaces



1 dependency



BUNDLE SIZE

6.4 kB

MINIFIED

2.5 kB

MINIFIED + GZIPPED

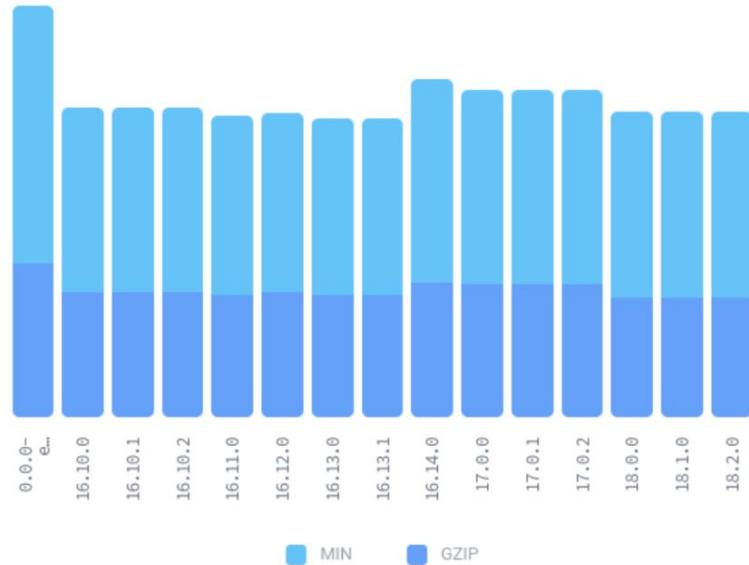
DOWNLOAD TIME

50ms

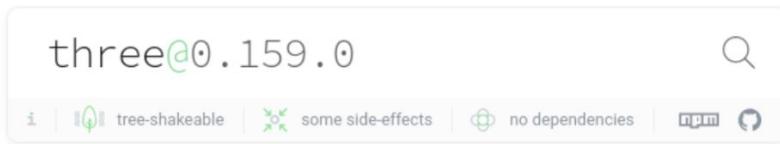
SLOW 3G

3ms

EMERGING 4G



bundlephobia.com/package/react@18.2.0



BUNDLE SIZE

664.3 kB

MINIFIED

162.7 kB

MINIFIED + GZIPPED

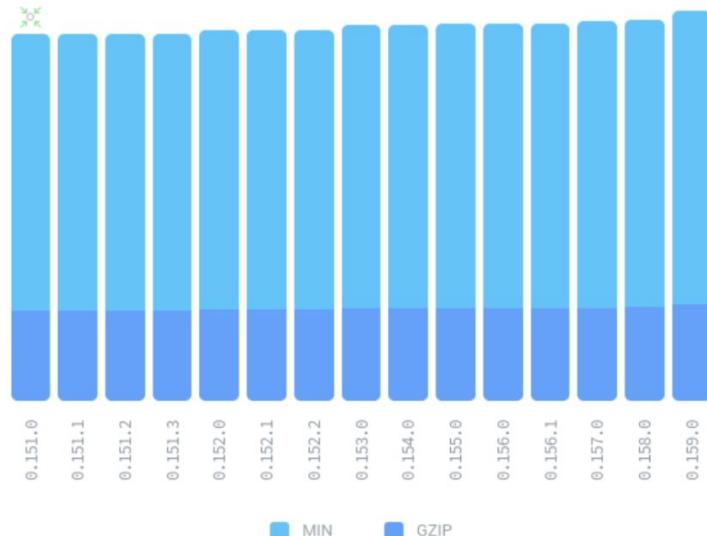
DOWNLOAD TIME

3.25s

SLOW 3G ⓘ

186ms

EMERGING 4G ⓘ



bundlephobia.com/package/three@0.159.0

Client-side heavy websites / SPAs

a way you can still to this day,
deploy things to the internet

PREAMBLE

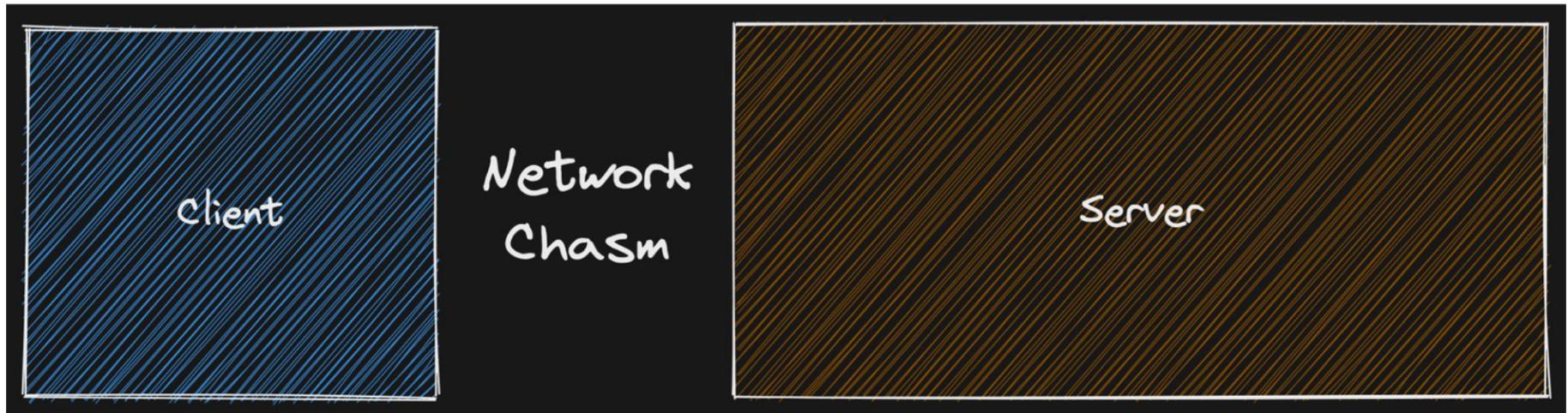
OVER

***Everything I have
showed you so far***

are ways you can still to this day,
deploy things to the internet

Modern Server-side Web Development

kentcdodds.com/blog/remix-the-yang-to-react-s-yin



Client-side
apps

SPA



Node/Rails/PHP/Java/.Net

client

Network
Chasm

Server

when writing the client,
if i want to do backend
things, i need to write
backend code, and integrate
that into my frontend

when writing the backend,
i can't easily just say
'open a dialog window'
without writing a lot of
bespoke code, need to worry
about endpoints / serialization
/ etc.

we're a decent bit into this talk by now, and i'm pretty sure you can see where i am going with this, this is where i finally get to the "but with an interesting twist" i mentioned in my synopsis

I WANT THE BEST
OF BOTH WORLDS



MELD CLIENT AND
SERVER

```
import React, { useState, useEffect } from 'react';

export const Component = () => {
  const [data, setData] = useState([]);

  useEffect(() => {
    const fetchData = async () => {
      try {
        const response = await fetch('/api/foo');
        const result = await response.json();
        setData(result);
      } catch (error) {
        console.error('Error fetching data:', error);
      }
    };

    fetchData();
  }, []);

  return (
    <div>
      <h1>Data List</h1>
      <ul>
        {data.map(item => (
          <li key={item.id}>{item.name}</li>
        ))}
      </ul>
    </div>
  );
};
```

```
import React, { useState, useEffect } from 'react';

const getData = () => {
    return db.exec("SELECT id, name FROM table");
}

export const Component = () => {
    const data = useGetData();

    return (
        <div>
            <h1>Data List</h1>
            <ul>
                {data.map(item => (
                    <li key={item.id}>{item.name}</li>
                ))}
            </ul>
        </div>
    );
};
```

```
import React from 'react';

export const Component = () => {
  const data = await db.exec(`SELECT id, name FROM table`);
  return (
    <div>
      <h1>Data List</h1>
      <ul>
        {data.map(item => (
          <li key={item.id}>{item.name}</li>
        ))}
      </ul>
    </div>
  );
};
```

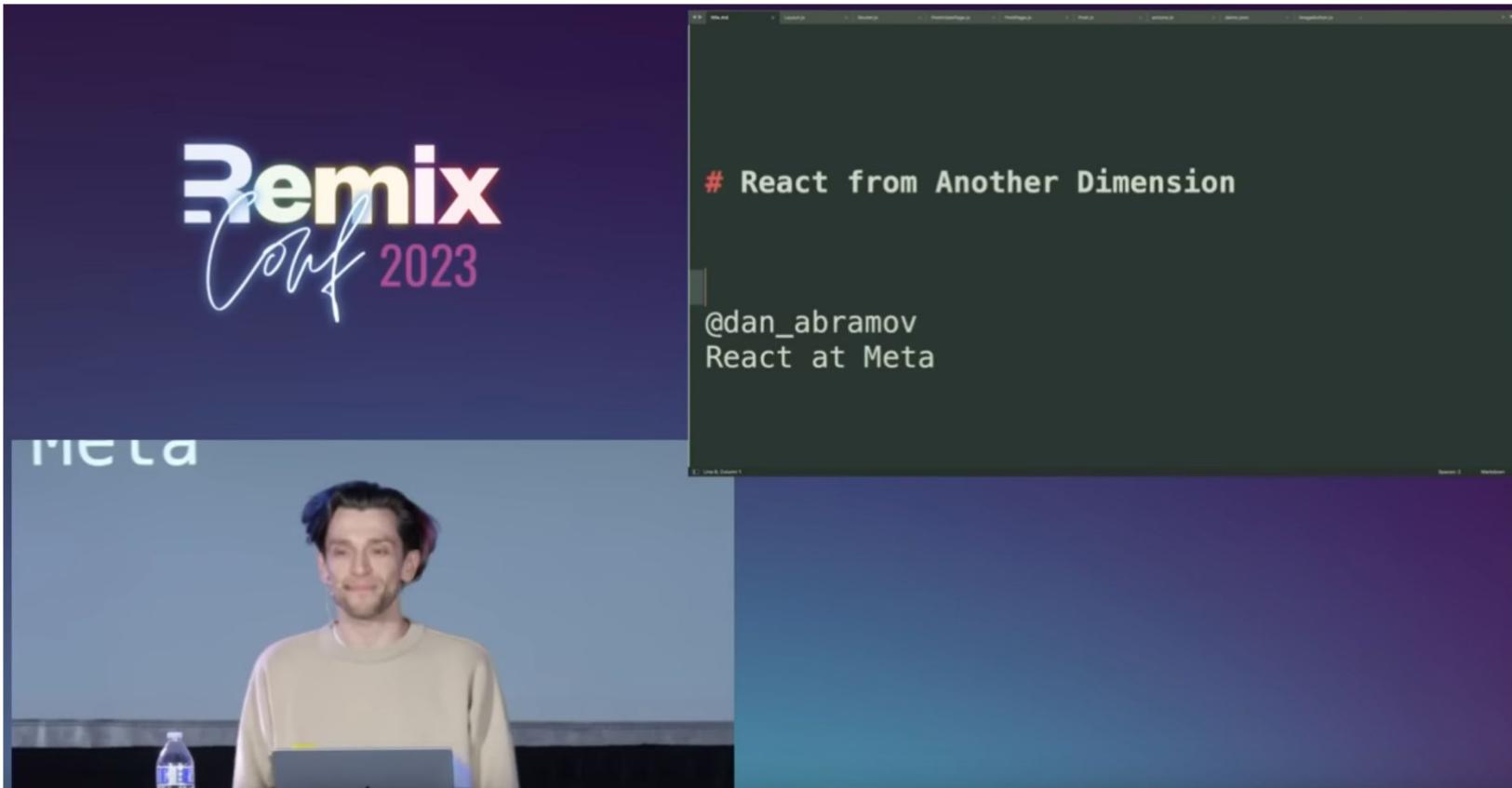
this must be a dream,
react does not work
this way, it is a
client side web
framework, isn't it?



the previous code,
is NOT pseudocode

this, is full stack
web dev 🤘

(specifically react,
but other languages
/ frameworks are
following in its path)



youtube.com/watch?v=zMf_xeGPn6s

```
import { readFile } from 'fs/promises';

export default async function Post({ slug, isExcerpt }) {
  let markdown = await readFile(`./posts/${slug}.md`);
  if (isExcerpt) {
    markdown = (
      markdown.split('\n').slice(0, 12).join('\n') + '\n...'
    );
  }
  return (
    <pre>
      {markdown.toLowerCase()}
    </pre>
  );
}
```

```
export default async function PostIndexPage({ searchParams }) {
  let files = await.readdir('./posts/');
  if (searchParams.query) {
    files = filterFiles(files, searchParams.query);
  }
  return (
    <div>
```

```
function SearchForm({ files, searchParams }) {
  return (
    <form>
      <label>
        search the treasure box:
        <input
          name="query"
          defaultValue={searchParams.query}
        />
        <p>{searchParams.query ? 'found ' + files.length + ' certified bangers' : ''}</p>
      </label>
    </form>
  );
}
```

people in this room that have seen this stuff before, are probably thinking:
"yeah this is some react server component / nextjs / remix stuff"

but just remember for those who have never seen this stuff before, this is really cool

"so you mean this my react app, and express app in the same exact file / component?!?!?!"



NEXT.js



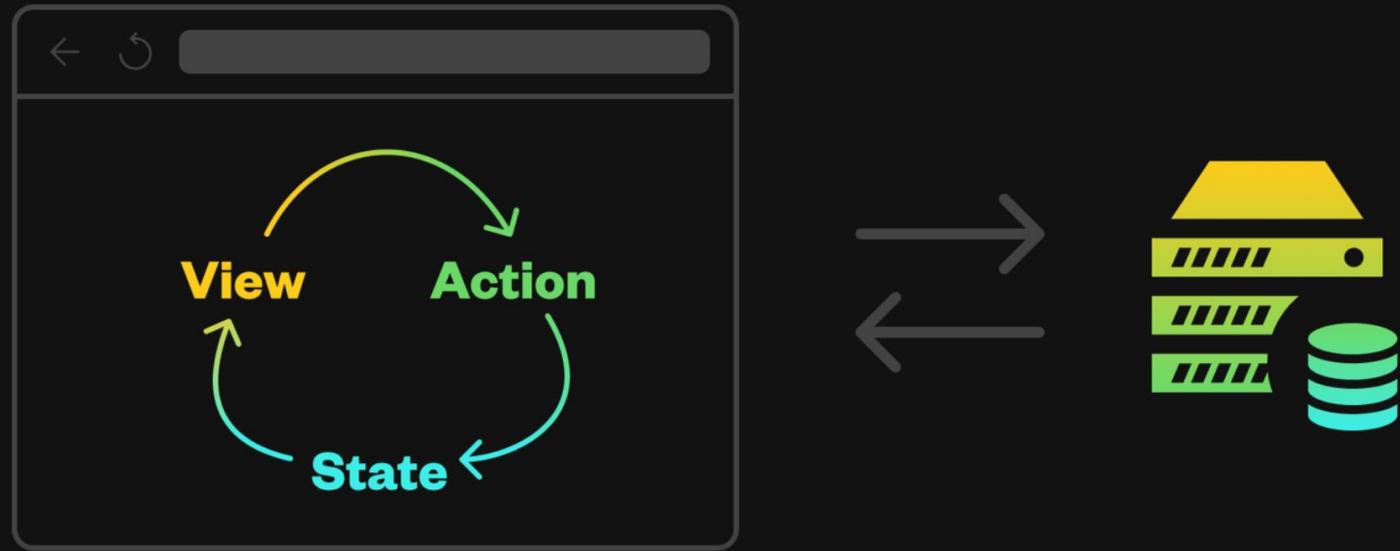
Remix

needing to
reach for
a full-stack
framework

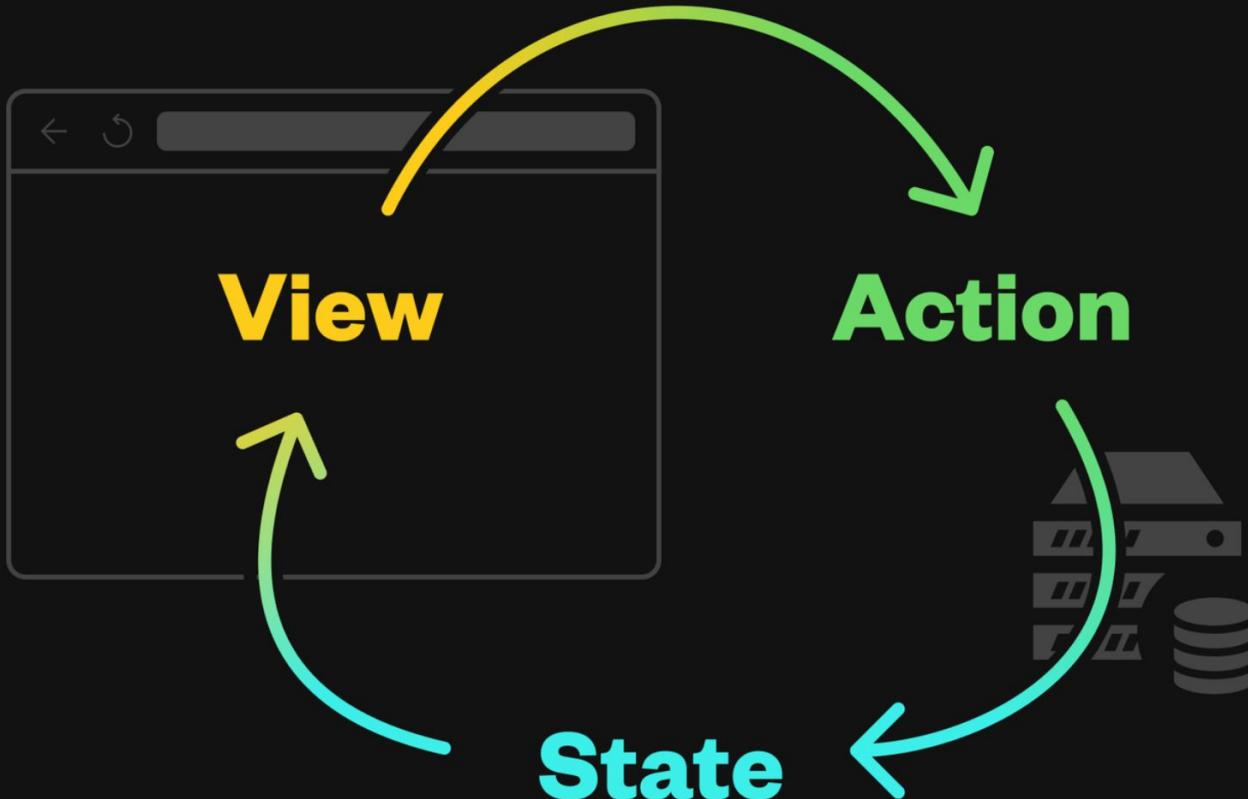


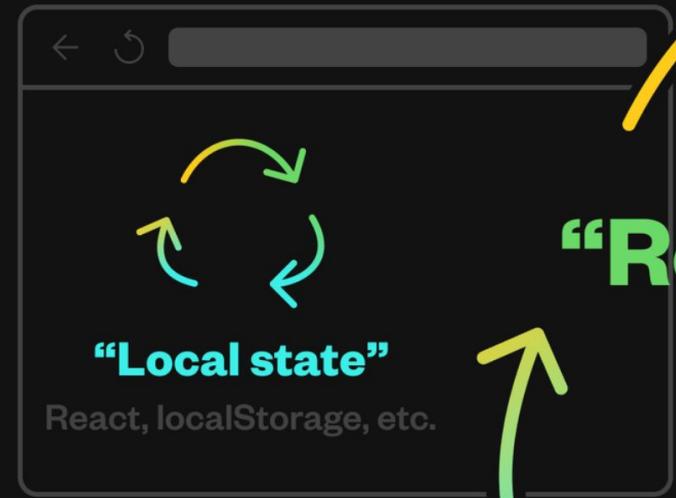
<3





remix.run/blog/remix-data-flow





“Remote State”

Remix

Loader

```
// File (route): /products/$productId/edit

export async function loader({ params }) {
  const { productId } = params;
  const product = await db.products.get(productId);
  return json(product);
}
```

Component

```
export default function Route() {
  const product = useLoaderData();
  return (
    <>
      <h2>Edit Product #${product.id}</h2>
      <Form method="post">
        <input type="text" name="name" defaultValue={product.name} />
        <input type="number" name="price" defaultValue={product.price} />
        <button type="submit">Save</button>
      </Form>
    </>
  );
}
```

Action

```
export async function action({ params, request }) {
  const { productId } = params;
  const form = await request.formData();
  const name = form.get("name");
  const price = form.get("price");
  const product = await db.products.edit({ id: productId, name, price });
  return redirect(`^/products/${product.id}`);
}
```





▲ / **NEXT.js** Showcase [Docs](#) Blog Analytics ↗ Templates ↗ Enterprise ↗

Using App Router
Features available in /app

Getting Started

Installation

Project Structure

Building Your Application

Routing >

Data Fetching >

Rendering >

Server Components

Client Components

Composition Patterns

Edge and Node.js Runtimes

App Router > ... > Rendering > Server Components

Server Components

React Server Components allow you to write UI that can be rendered and optionally cached on the server. In Next.js, the rendering work is further split by route segments to enable streaming and partial rendering, and there are three different server rendering strategies:

- [Static Rendering](#)
- [Dynamic Rendering](#)
- [Streaming](#)

This page will go through how Server Components work, when you might use them, and the different server rendering strategies.

How are Server Components rendered?

Server Rendering Strategies

Static Rendering (Default)

Dynamic Rendering

Switching to Dynamic Rendering

Dynamic Functions

Streaming

Next Steps



Ryan Florence

@ryanflorence

...

The Remix API surface area is going to unfortunately get a lot bigger before it can get smaller.

- migration paths from React Router SPAs
- migration paths from Remix APIs to React APIs (since React is adding a lot of things Remix already does, but a little differently)
- migration to better Remix APIs (we've found things we can simplify but we keep both APIs around so you can iteratively adopt)

My job is to figure out how to show that having “four ways to do the same thing” isn’t us being a bunch of clowns 😅

By Remix v4 I expect to be where I want to be with a smaller surface area but more capability than today.

It’s gonna be a wild ride in our code and docs but I’m committed to bridging the gap from 2015 React to 2025 React.

11:50 AM · Nov 30, 2023 · 63.4K Views

twitter.com/ryanflorence/status/1730245339905441832



+

NEXT.js 14

No New APIs



+



SVELTE



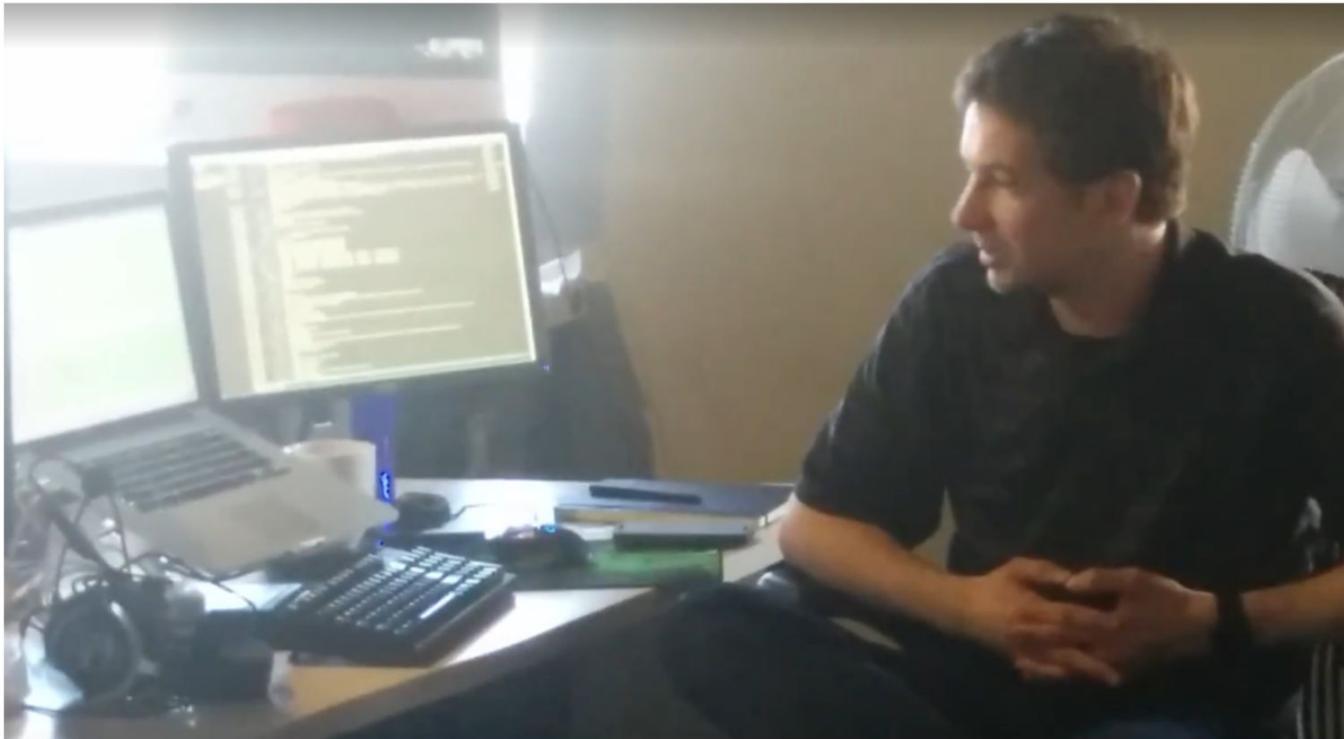
full-stack frameworks (like remix & next)

are ways you can build a website, which do not invalidate what has come before but take aspects of both client & server, and combine them in an ergonomic way

i have more to say, i have too many slides
i will quickly turn this into a Q&A, since
i am curious who in this room is even with
me and what they want me to talk more to,
and potentially cover some things i left
out of this talk, since this is a busy place

but before i do start the Q&A ...

a direct thanks, to the speaker before me
tim oram :)







View History Window Help

CTS-NL Jack Arthur Harry

Channels

- # events
- # general**
- # jobs
- # thanos
- # timsucks

+ Add a channel

Direct Messages

- Slackbot
- Jack Arthur Harry ...
- Adam Licher
- dear ...

mitmara 10:40 AM set the channel topic: Join the new #events channel! | Proj Bean Coffee on Elizabeth Ave. | <https://ctsnl.ca/>

Jack Arthur Harry 11:13 AM

Message #general

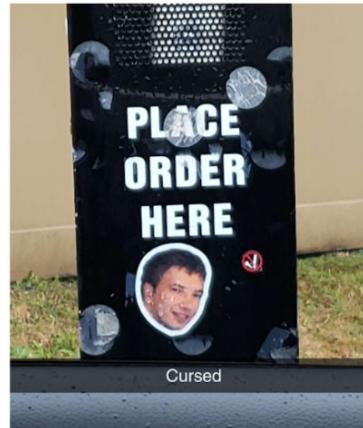
static/locale/fr.json 129 bytes
main = static/js/bundle.js
@babel-dev-server/client?http://bluedro...
fetch ./src/entry.js ./src/config...
@babel/polyfill/lib/index.js 893 byt...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
@babel/polyfill/node_modules/core-js/...
url-polyfill

A hand holding a circular sticker featuring a man's face, which appears to be a portrait of Jack Arthur Harry. The sticker is being held over a computer screen displaying a Slack interface.

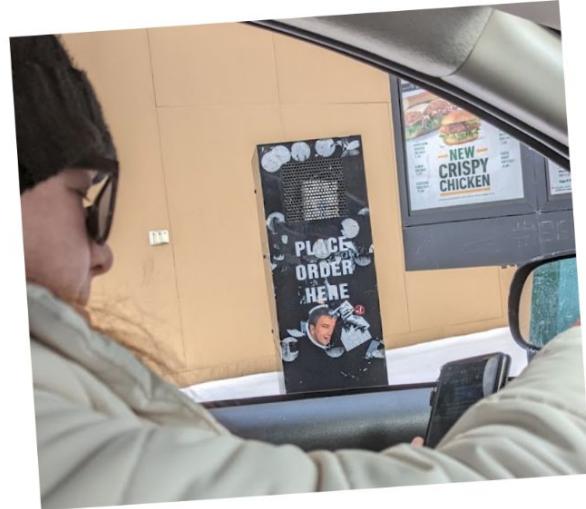
Sept 10th, 2020



Dec 15th, 2020



March 7th, 2022



Jan 24th, 2021





**CTS
NL**

Meetup
@ Jumping Bean on Elizabeth Avenue

Every Thursday @ 7pm

Join us on Slack for more details

ctsnl.ca

A photograph showing several people sitting around a long wooden table in a cafe, working on their laptops. In the background, there's a menu board and a yellow wall.

thanks to
AbdulKabir & everyone else
involved in running this event
all the other amazing speakers
and you folks for staying until
the end of my talk!

i didn't get time to
fill up my water bottle
before doing this talk,
girish did it for me :)
download Uniconn



Q&A



jackharrhy.dev



@jack@nfld.social



me@jackharrhy.com



jackharrhy.dev



@jack@nfld.social



me@jackharrhy.com

again, thanks to
everyone involved!

tools shoutout



EXCALIDRAW



Google Slides