Front-End Web Development

The Internet

What is The Internet?

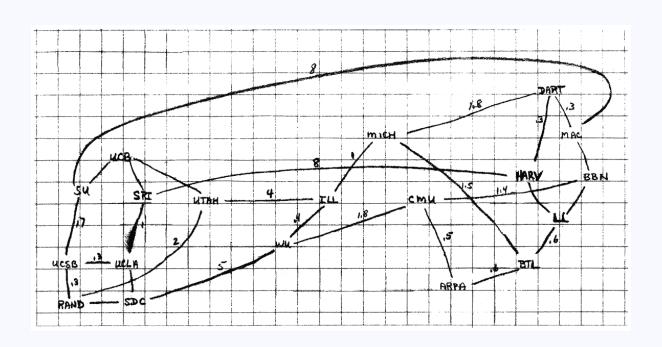Billions of connected devices through a series of networks
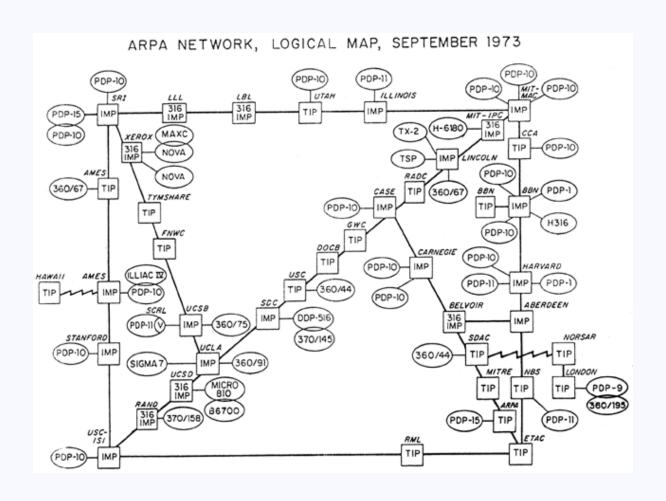
Are the internet and the web the same?

The History of the Internet

Where did the Internet come from?

- J.C.R. Licklider came up with 'The Galactic Network' (August 1962)
- ARPAnet in the 1960's for the US Government
- Vint Cerf and Bob Kahn invented TCP/IP in 1974
- "Enquire Within Upon Everything" was released in 1980

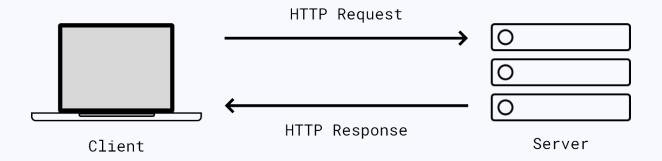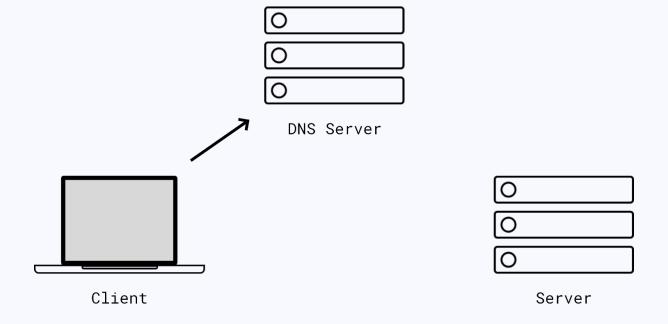Then, Sir Tim Berners-Lee released the "World Wide Web" in 1991/1992, with this site

8

DART

1.8

.3

mich

.3

MAC

UCB

8

1

HARV

BBN

SU

SRI

UTAH

4

ILL

1.5

1.4

CMU

LL

.17

.1

.4

1.8

.5

.6

2

WU

.13

.3

UCSB

UCLA

5

BTL

.3

.5

ARPA

.4

RAND

SDC

ARPA NETWORK, LOGICAL MAP, SEPTEMBER 1973

SRI — IMP — 316 IMP (LLL) — 316 IMP (LBL) — TIP (UTAH) — IMP (ILLINOIS)
PDP-10 (SRI)
PDP-15, PDP-10 (SRI)
XEROX — 316 IMP — MAXC, NOVA, NOVA
AMES — TIP — 360/67
TYMSHARE — TIP
FNWC — TIP
HAWAII — TIP
AMES — IMP — ILLIAC IV, PDP-10
SCRL — PDP-11 (V)
UCSB — IMP — 360/75
STANFORD — IMP — PDP-10
SIGMA 7
UCLA — IMP — 360/91
UCSD — 316 IMP — MICRO 810, B6700
RAND — 316 IMP — 370/158
USC-ISI — IMP — PDP-10
USC — TIP — 360/44
SCC — IMP — DDP-516, 370/145
DOCB — TIP
GWC — TIP
CASE — IMP — PDP-10
CARNEGIE — IMP — PDP-10, PDP-10
RADC — TIP — 360/67
LINCOLN — IMP — TX-2, H-6180, TSP
MIT-IPC — 316 IMP
MIT-MAC — IMP — PDP-10, PDP-10
PDP-10
CCA — TIP — PDP-10
BBN — TIP — PDP-10
BBN — IMP — PDP-1, H316, PDP-10
HARVARD — IMP — PDP-10, PDP-11, PDP-1
BELVOIR — 316 IMP
ABERDEEN — IMP
SDAC — TIP — 360/44
NORSAR — TIP
MITRE — TIP
NBS — TIP
LONDON — TIP — PDP-9, 360/195
ARPA — TIP — PDP-15, PDP-11
ETAC — TIP
RML — TIP

Now, the Internet is our global village!
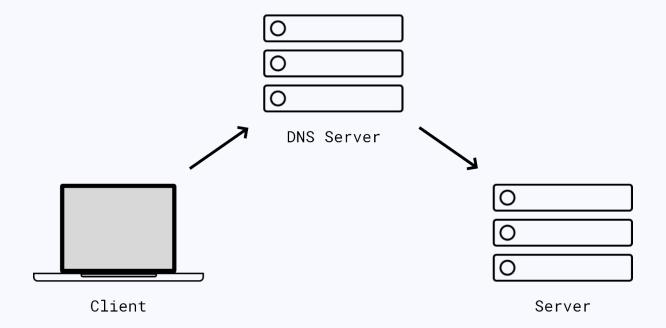
How does the Internet work?
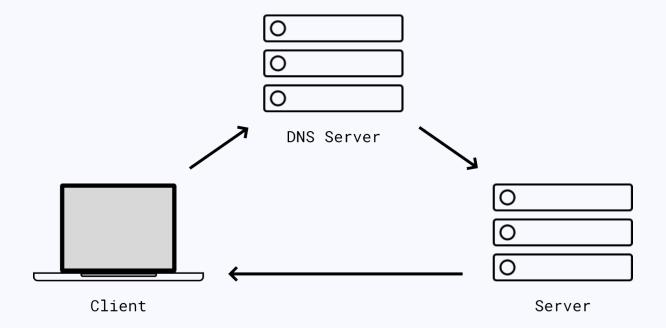
Resources
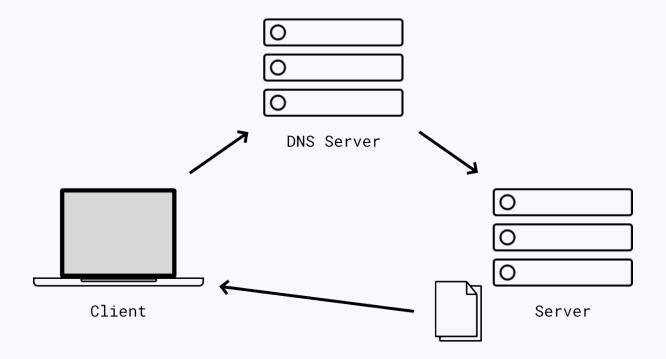
- How DNS works
- How HTTPS works

HTTP Request

HTTP Response

Client

Server

DNS Server

Client

Server

DNS Server

Client

Server

DNS Server

Client

Server

DNS Server

Client

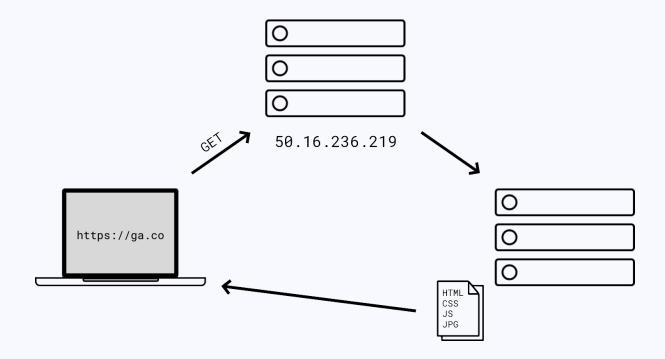Server

Web Development

What is the Front End?

It is what the user [sees](#)

It powers the visuals and interactions of the web

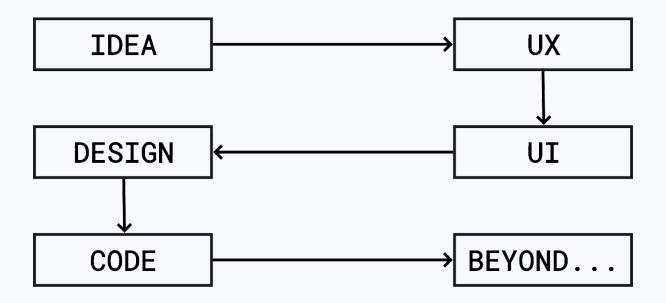Made up of HTML, CSS and JavaScript

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, Go, C++ etc.

An Ideal Approach

```
┌──────────────┐                              ┌──────────────┐
│     IDEA     │ ───────────────────────────▶ │      UX      │
└──────────────┘                              └──────────────┘
                                                      │
                                                      ▼
┌──────────────┐                              ┌──────────────┐
│    DESIGN    │ ◀─────────────────────────── │      UI      │
└──────────────┘                              └──────────────┘
       │
       ▼
┌──────────────┐                              ┌──────────────┐
│     CODE     │ ───────────────────────────▶ │  BEYOND...   │
└──────────────┘                              └──────────────┘
```

What does a developer do?

- Take a design and turn it into code and assets
- Use HTML to add content to the page
- Use CSS to style the page
- Add interactivity with JavaScript
- Lots of other responsibilities...
  - Accessibility, performance, browser compatibility, device differences, make things responsive, search engine optimisation etc.

The Front End

The Languages

HTML

Defines the content (the bones)

CSS

Defines the style (the skin)

JavaScript

Adds the functionality (the brain)