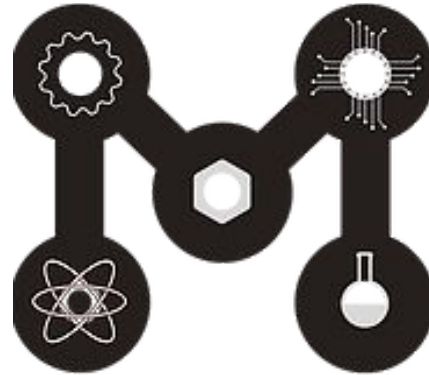


# Host Your Own Website Workshop

Finally a place to store all those memes

Hosted by:




# More Workshops This Year!



<https://making.engr.wisc.edu>


← → ↻ ⓘ https://making.engr.wisc.edu

UNIVERSITY of WISCONSIN-MADISON

 **GRAINGER ENGINEERING LAB**

**HOME** **GET INVOLVED ^** **EQUIPMENT** **POLICIES v**

**Location**

**Events** 

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**Teach Your Class at the Makerspace**

**Host your Event at the Makerspace**

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**Upcoming Events**

IAN ...

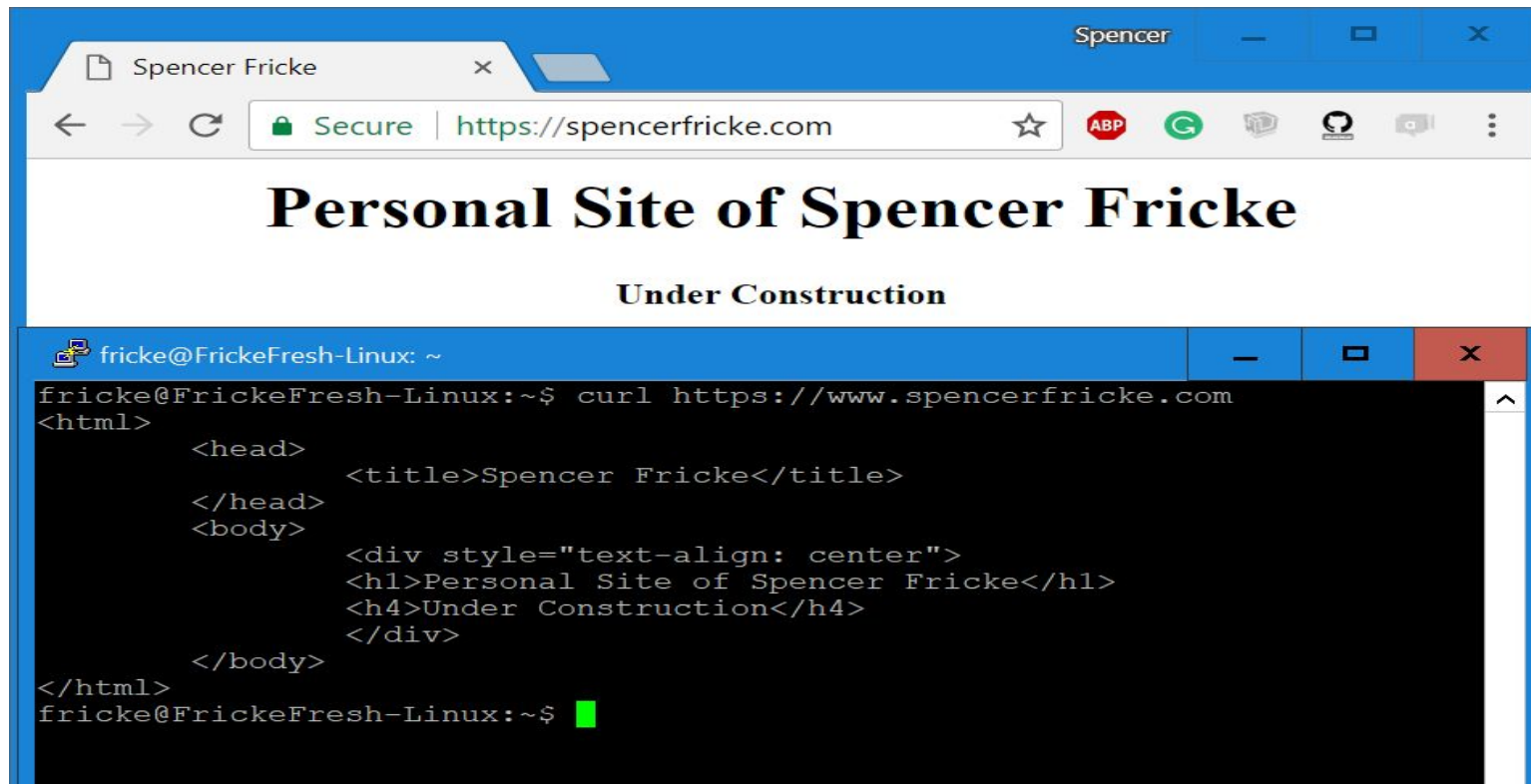
# What makes up a webpage

- HTML (Hyper Text Markup Language)
- CSS (Cascade Style Sheet)
- JS (JavaScript)
- **HTML** creates the **structure** of the page
- **CSS** adds the **styling**
- **JS** brings **programmatically functionality**

# The Browser

- Just a program
  - Knows how to display HTML and CSS
  - “Compiles” and runs the JavaScript code
  - Works on about every device
- Don't need browser to **get** webpage...
  - only to **display** it

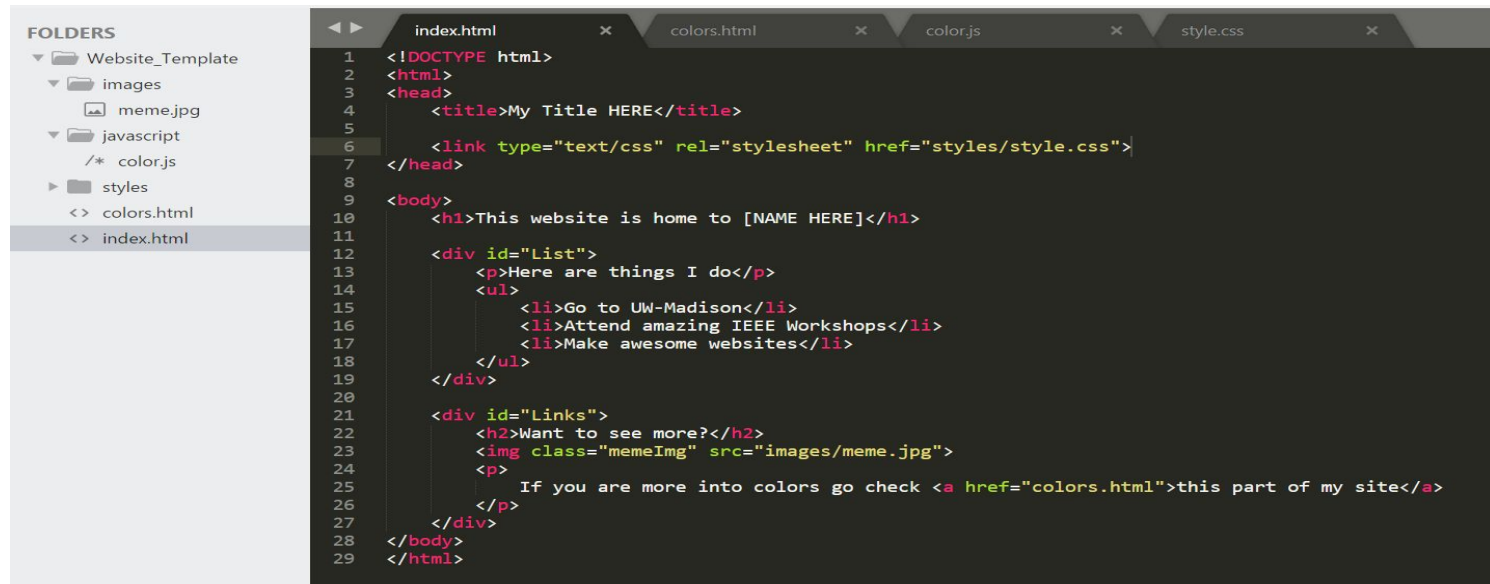
# Website is just text at core



The image illustrates the concept that a website is fundamentally just text. It is divided into two horizontal sections. The top section shows a web browser window with the title 'Spencer Fricke' and the URL 'https://spencerfricke.com'. The page content consists of a large heading 'Personal Site of Spencer Fricke' and a subheading 'Under Construction'. The bottom section shows a terminal window with the prompt 'fricke@FrickeFresh-Linux: ~'. A command 'curl https://www.spencerfricke.com' has been executed, and the output displays the raw HTML source code of the website, which matches the visual content shown in the browser above.

```
fricke@FrickeFresh-Linux: ~$ curl https://www.spencerfricke.com
<html>
  <head>
    <title>Spencer Fricke</title>
  </head>
  <body>
    <div style="text-align: center">
      <h1>Personal Site of Spencer Fricke</h1>
      <h4>Under Construction</h4>
    </div>
  </body>
</html>
fricke@FrickeFresh-Linux: ~$
```

# Websites are just files



<input type="checkbox"/> Name	Date modified	Type
images	10/11/2017 11:09 PM	File folder
javascript	10/11/2017 11:05 PM	File folder
styles	10/11/2017 11:02 PM	File folder
colors.html	10/11/2017 11:08 PM	Chrome HTML Docu...
index.html	10/11/2017 11:14 PM	Chrome HTML Docu...

# How to edit site

- Need a Text Editor
  - Get a good one to save you time
- My top two suggestions:
  - Sublime Text 3
    - Great for editing files and lots of support
  - Atom
    - Has built in server to let your view webpages severed from server

# What you need for Public Webpage

1. Domain Name
2. Server to hold your web files
  - Also need to have public IP



# What is a Server?



- Any “Computer” with a way to store data, run processes, and can connect to other computers can be a Server

# Connect to Server

- HTTP
  - Stands for Hypertext Transfer Protocol
  - Way of sending text to servers and getting a response back from them

# Why Protocols

- Way of knowing how data is formatted
- We send 2 bytes of data
  - 4 bits for A, 4 bits for B, 8 bits for C

0100001010100111

Or

0100001010100111

Or

0100001010100111

Or what about

0100001010100111

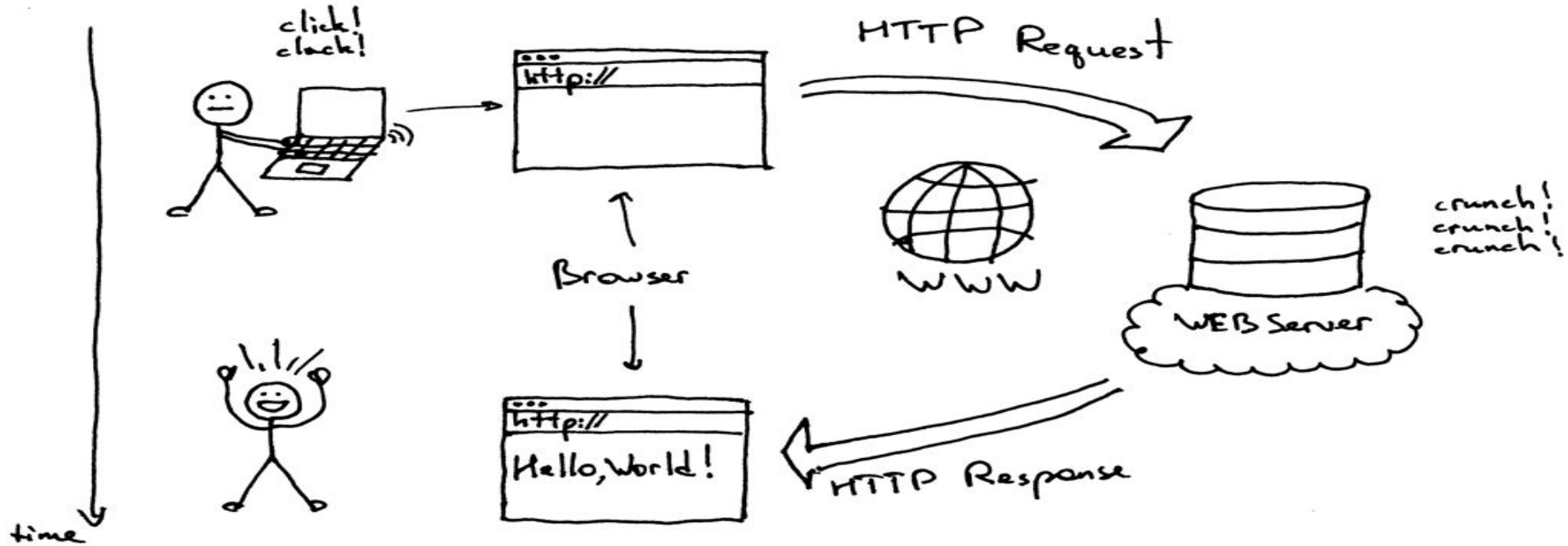


Here is  
16 bits

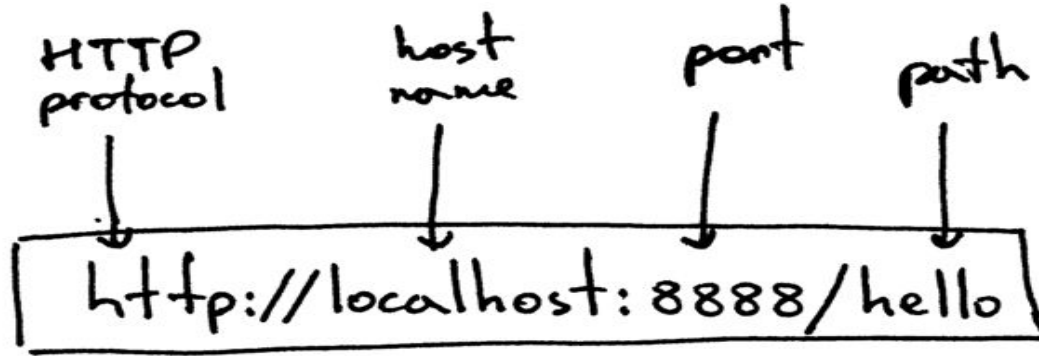


Bro, which  
bits are  
what?

# How Loading a Website Works

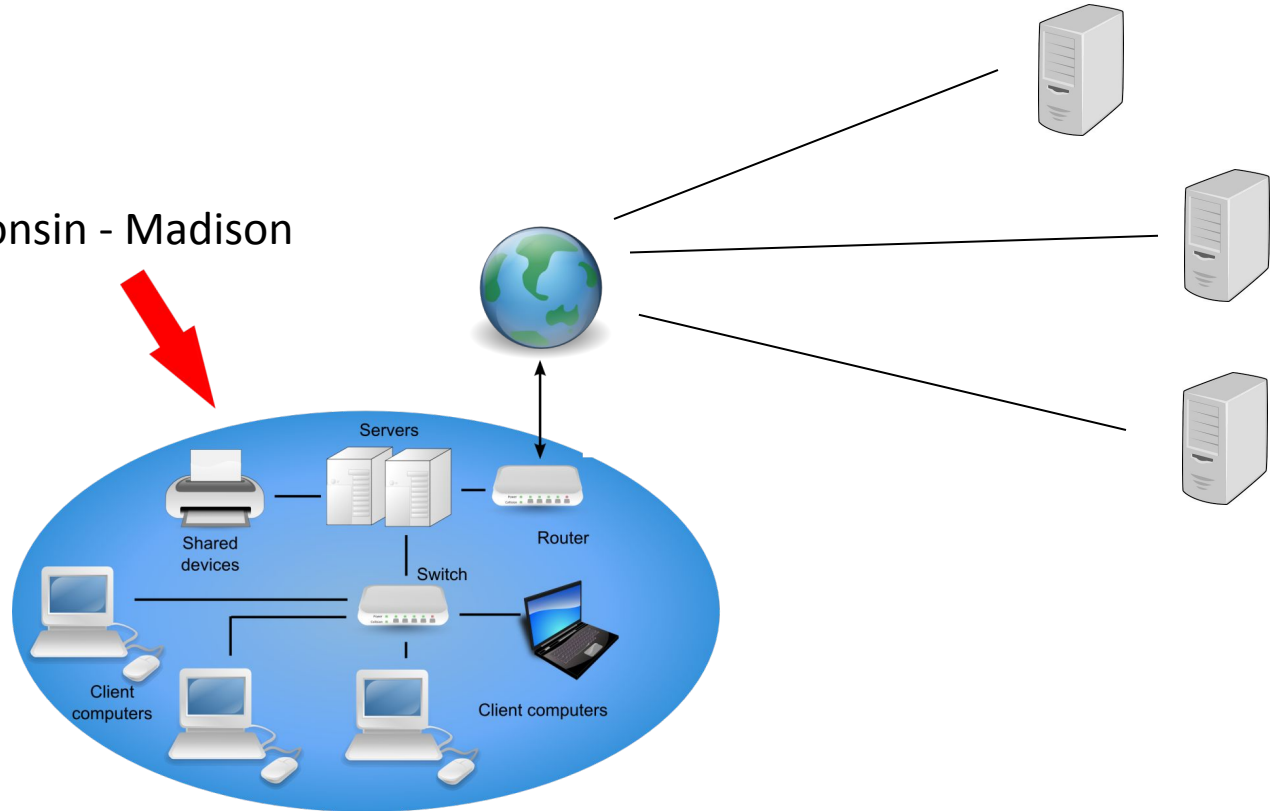


# How Loading a Website Works



# How Internet Works

University of Wisconsin - Madison



# IP Addresses

- 127.0.0.1 is your computer
  - Also called **localhost**
- 192.168.1.100 is IP on local network (in this case)
  - Can't get too from another network

```

enol      link addr:192.168.1.100  Bcast:192.168.1.255  Mask:255.255.255.0
          inet addr:192.168.1.100  Bcast:192.168.1.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  NetDevice
          RX packets:30445 received dropped:0 overrun:0 frame:0
          RX bytes:35.9 M  TX bytes:35.9 M
          Interrupt:0

lo        link addr:127.0.0.1  Mask:255.0.0.0
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  NetDevice
          RX packets:877870 received dropped:0 overrun:0 frame:0

```

# IP Addresses

- Each local network has a “Public Facing IP”

← → ↻ www.whatismyipublicip.com

 **WHAT IS MY  
PUBLIC IP**

Home [Whois Lookup](#) [Speed Test](#) [Ping](#)

To

Your Public IP Address Is:

**72.33.2.45**

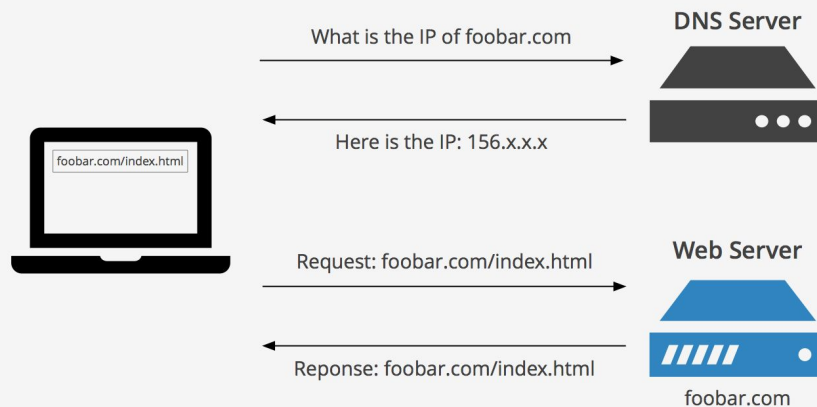
Country:	United States
Region:	Wisconsin
City:	Madison
Latitude:	43.075291
Longitude:	-89.411412



Map data ©2017 Google



# What is a Domain



**What Is a DNS Server?**

# How much does it cost?



...if you are a student

# Getting a Domain name

- Domain companies LOVE giving 1-year promotions
- [Namecheap](#) gives students 1 free domain
- [Domain.com](#) gives a free year with MLH code
- Domain names can be used to redirect to other websites
  - But the address will change in the browser

# Have Domain, now what?

- Need to direct it
  - Give an **A Record** to the IP of server
- Set “Nameservers”
  - Tell it where to find IP
  - Namecheap and Domain.com have this supported
- Use a CDN like Cloudflare
  - Free (for non-business websites)
  - Can prevent DDoS attacks
  - Shows detailed analytics

# Where to host server

- **Digital Ocean**
  - \$50 of credit for students (\$5/month for lowest tier)
- **AWS** (Amazon Web Service)
  - About \$100 credit for students
- **Azure** (Microsoft Cloud Service)
  - About \$200 credits for students
- Your computer
  - Can host a Raspberry Pi from apartment
- Many of free host sites (GitHub.pages, wordpress, etc)
  - Will display their domain when on page

# Static or Served page

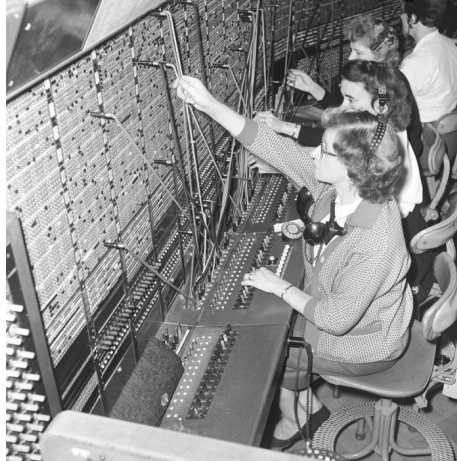
- Want webpage to talk to other sites/servers?
  - Need to serve page from server
- Static pages just download and display files
- Served pages have connection with server
- Cross-Origin Policy
  - Can't just randomly call other servers if static

# Starting a server is easy

- Can do in with one line
  - in Python
  - in Node.js
  - in Golang
  - ...
- Maintaining it becomes more of the issue

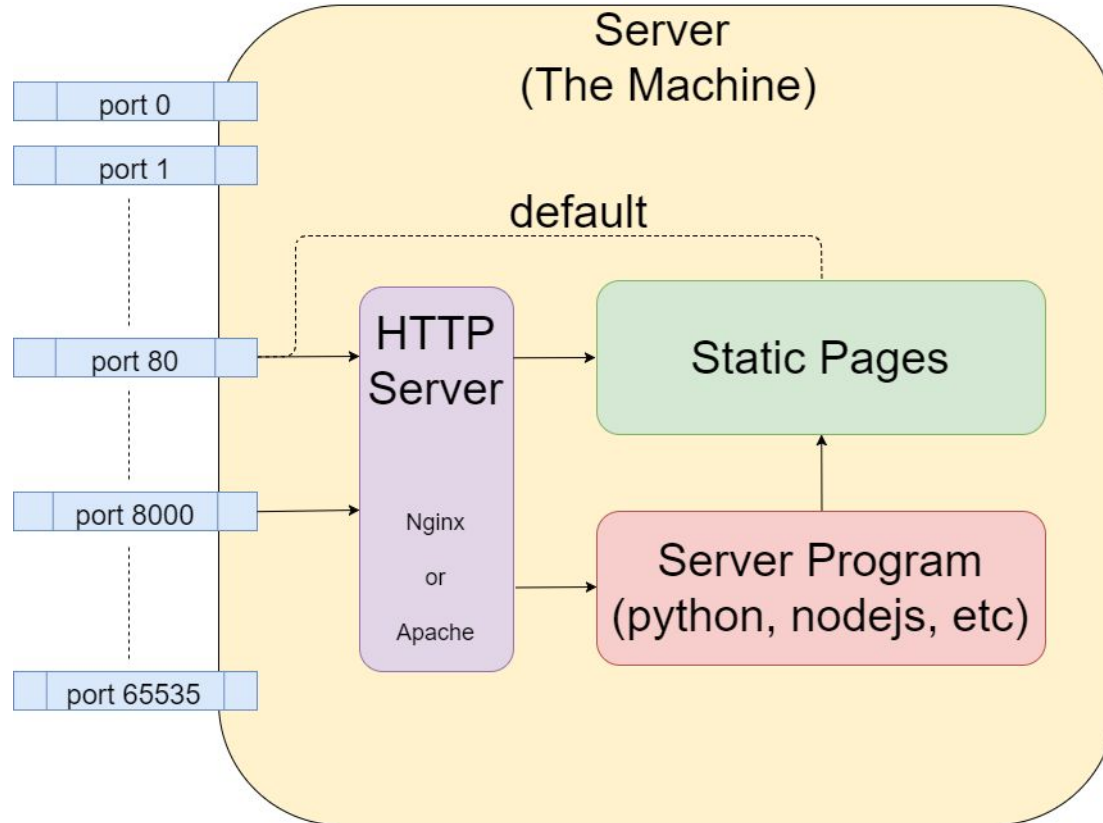
# Will want HTTP Server

- Nginx or Apache
  - Both HTTP Server
  - Redirect to port where Server code is running





# Ok, I am so lost



# Decide What You Want First

- Do I need to update this site constantly?
  - Is someone updating the site?
- Do I want my domain displayed?
- Is my website static or have functionality
- How much do I want to spend
  - In money
  - In my time

Time to get some practice!

[tinyurl.com/WebsiteWorkshopEEE](https://tinyurl.com/WebsiteWorkshopEEE)

**[ Note: it's case sensitive ]**