Part 2: Networking Byte-by-Byte!

1. What happens when you open google.com in a web browser? Here are some terms you may consider in your discussion:

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- Internet Service Provider (ISP)
- Web Browser
- IP Address
- Local Router
- DNS
- Network Switch
- Web Server
- Packet
- Protocol
- URL
- Top Level Domain

2. Which of the following commands can you use to find your server's Local IP Address?

```
$ iwconfig
$ ifconfig
$ netstat -N
$ netstat -c
```

ifconfig

3. Experiment with this hosted Traceroute Tool (https://tools.keycdn.com/traceroute), are you surprised by what you see?

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4. Try trace-routing maxxpotential.com & google.com. What are some of the differences you see?

The first few steps are similar (local > ISP, but afterwards the route is very different

5. What is a web server? Is it hardware or software?

Both! To be a web server, software needs to be running on hardware. Web server software allows the specific machine to take requests and return responses

6. Let's play with the web server running by executing the following command:

```
$ ip addr show eth0 | grep inet | awk '{ print $2; }' | sed 's/\/.*$//'
```

You'll receive a few lines, you can try each in your web browser to see if they work.

Another method:

$ `curl -4 icanhazip.com`

12. What happens when you type:
$ `systemctl stop nginx`

Can you still see the site at the server's ip address?

No, this shuts down the web server

13. What about:
$ `systemctl start nginx`

Yes, this starts the web server

14. Can you access another group's web server? Why or why not?

Yes, we would just need their IP Address

Bonus Challenge: What is the full path to the **index.html** that is currently displayed at your server's IP address?

/usr/share/nginx/html/index.html

Bonus Commands

$ `curl`
$ `scp`
$ `nmap`
$ `grep`
$ `tree`
$ `netstat`
$ `reboot`
$ `apt-get update && apt-get install sl && sl`
$ `apt-get install rig && rig`