Networking 101

1. OSI vs TCP/IP models

* Physical layer
* Data Link layer (Ethernet, wireless)
* Network layer (IPv4, IPv6, DHCP)
* Transport layer(TCP, UDP)  
  session  
  presentation
* Application layer (HTTP, HTTPS, FTP, SFTP, TELNET, SMTP, DNS, SSH)
* Tools: Wireshark, tcpdump

1. Data-Link Layer

* MAC addresses
* ARP
* ARP cache poisoning

1. Network layer

* Classes: A,B,C
* CIDR, /n
* private addresses: 10.0.0.0/8, 192.168.0.0/16, 172.16.0.0/12
* DHCP
* Routing
* You will need to learn IPv6, too

1. Transport Layer

* TCP: SYN, ACK, 3-way handshake
* Sockets

1. Application Layer

* http: HEAD, GET, POST, need to encode data
* DNS: domain name to IP address, different messages types for requesting different information