Module 1 & 2

1. ## What are the main characteristics of a network operating system?
- The main characteristics of an operating system are running and executing system and user programs. Another characteristic of the operating system is handling In and Out (I/O).

2. ## Compare DHCP with APIPA. What are the benefits of having both of these protocols available within a network?
- DHCP is what assigns the Ip address, subnet mask, and default gateway. It is usually used in a larger network
- APIPA is usually a "Fallback" mechanism when DHCP fails. It gives a unique IP to the device. It is usually used in smaller networks.
- The benefits of having both are:
    - More reliability with having APIPA as a fall back plan for DHCP
    - It's easier to use since they automatically assign IP addresses

3. ## What are the main differences between a PowerShell variable and a constant?
- A Powershell variable can be changed with input, however a constant cannot and will not change in response to commands. This is the main difference between the two types of variables in Powershell.

4. ## Compare the System File Checker tool to the File Signature Verification tool (Sigverif). What are the benefits of having both of these tools available within PowerShell?
- System File Checker is a system that checks for any missing or corrupted files within the system. File Signature Verification scans for digital signatures on all documents to see if they were all sdigned correctly or at all.
- Benefit of having both:
    - Having both makes sure that your files are intact and verified.
    - It is also convenient since they are both in powershell.

5. What was the significance of the NSA's Advanced Network Technology (ANT) catalogue, and how did its leak impact public awareness of NSA's capabilities?

- The significance of the catalog is that it shows us exactly what the NSA works on and produces. The leak gave the public the knowledge that the NSA wasn't only on cyber defense but also an offense. The impact of the leak made the public more skeptical of what the NSA is all about and if they're doing more than hacking other countries and defending our networks.

6. How did the Shadow Brokers' initial leak in August 2016 impact the cybersecurity community, and what were the immediate concerns?

- It caused companies like microsoft to lose or have their trust wavier because the NSA were stockpiling and exploiting malware without telling these companies about it potentially/having them be susceptible to multiple zero days out of no where if it leaked.

7. What was the response of the cybersecurity community and companies like Cisco and Fortinet to the Shadow Brokers' leak?

- This caused the community to go on a mass analysis and started to try and patch everything they could. Everyone was on edge to see if any hacks or vulnerabilities were attacking/in their system.