**AUG 2024 CAPSTONE PROJECT**

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PHASE I: Rough Draft

Ideas:

I have been thinking primarily between two different projects for the Capstone Project. I like both projects equally, but my only concern would be the time that it would take to complete either one, or if you think it would be feasible to complete in the allotted time. But my proposal is laid out below:

1. *Network Setup, Security, Active Directory*

For the planning phase of the capstone project, I spent some time on google looking at various other project examples and templates. One of the project Ideas that stuck out to me, as one of my favorites, was to set up a virtual environment for a small and upcoming fictional business whereby I create a network with poor security and outdated equipment that I can come in and rehabilitate, review security measures, set up active directory. I feel like since active directory plays such a big role in companies all around the world, using it to help establish a successful network would make for a great project.

Step 1:

Create a virtual network space using the virtual box or azure, whichever is the preferred method. Set up a simple network space that could use some design improvements and security modifications. The network chart below is a sample network to be used.

A diagram of a network diagram

Description automatically generated

Step 2:

Investigate the security setup of the network, organize the layout of the network, implement firewall settings, implement automated updates, use an IDS if needed, implement secure user settings, essentially do an audit of security measures for the network and ensure that security is improved.

Step 3:

Develop a brief report on the security findings and show a plan for continued network security. Within the report, ensure that there is a program in place for educating employees on the importance of cyber security and improve their awareness of dangers.

1. *File Monitoring*

For some companies the safety and security of their files is of utmost importance. Integrity, being part of the CIA triad, is an important part of cyber security. In a project like this I would try to develop a file integrity monitoring program that automatically and autonomously validates the authenticity of files.

Step 1:

Develop a plan to use a file integrity monitor using PowerShell, a hashing algorithm (SHA-512), to alert to changes made on a system file logger.

Step 2:

Ensure that should any change be made to a file sends an alert to the system administrator that a change was made. This helps with creating some automation exposure as the program will be programmed to continuously compare actual files vs the baseline file to automatically raise an alert should any change occur.

Conclusion:

I feel like both projects would make for a great Capstone project for the end of this course. I do, however, like the idea of simulating an actual network and then working towards securing it. I feel like the file monitoring project would showcase some coding abilities.