Aneef Sheriff

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Cybersecurity Project CSN 190

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Comprehensive Topic Analysis

**Topic 1: Automated Vulnerability Assessment Tool Development (Project - Build Python tool)**

**Technical Requirements:**

For this project I will need the software Python, which I already have installed on my lab computer at home. I also have Virtual Box installed so I can spin up VMs for testing in a sandbox environment. I plan to use Linux as well.

I would rate my current capability level at a 3 out of 5, the reason being that I have experience with using Python from the network scripting class I took last semester. I have never created a Python tool before, so this will be my first time.

I would need to learn how to create a tool in Python that links to a database that stores vulnerabilities and runs a check against the system I am running the tool on. During my research I found a lot of resources online to help with this project.

**For Project-Based Topics:**

For this project, I will need to build, test, and deploy an automated vulnerability assessment tool. The developmental tool needed is Python, and I have VMs created to act as a sandbox environment, and I can complete the core functionality in 8-10 weeks.

**Learning and Growth Potential**

After doing this project I see myself developing my coding skills. I never attempted to make a Python tool, so when I finish the project, I will be familiar with the process moving forward. This aligns with my career goals by giving me exposure to some of the tools that are used in the cybersecurity industry. I am excited about this topic because I really enjoy coding in Python. My passion will push me through this project.

**Realistic Planning**

Ambitious Goal: I would like to accomplish the goal of finishing the Python tool and use it to highlight my coding skills in Python.

Realistic Target: I will work on developing this tool daily. I have a home lab environment setup and Python installed.

Minimum Viable Outcome: Even if I do not finish this project, I will learn the necessary steps it takes to develop a tool in Python.

**Topic 2: AI-Powered Phishing Detection System (Project - Develop detection tool)**

**Technical Requirements:**

To complete this project, I would need a combination of machine learning tools, security datasets, and development frameworks. I would rate my capability at 1 out of 5 because my current knowledge about these tools is low, and I would need to learn what these tools are and how to use them. I have found many resources online that can help me with this project.

**For Project-Based Topics:**

I would need to develop a detection tool that uses AI to detect phishing attempts. The tools I would need are machine learning tools, security datasets, and development frameworks, and I can realistically complete the core functionality in 8-10 weeks.

**Learning and Growth Potential**

The challenge of having no experience with AI phishing tools will help me grow because by doing this project I will be exposed to AI tools. This aligns with my cybersecurity goals by exposing me to tools that are used to defend against AI cyber-attacks. I am excited to learn more about AI and how it is being used in the cybersecurity landscape. My passion for learning new things that can increase my value will get me through any difficulties when doing this project.

**Realistic Planning**

Ambitious Goal: I would like to accomplish the goal of learning how AI detects phishing and what goes into the process of creating such a tool.

Realistic Target: I will work on developing this tool daily. I have a home lab environment setup.

Minimum Viable Outcome: Even if I do not finish this project, I will learn how AI is being used in the cybersecurity landscape today and the steps necessary to create an AI phishing detection tool.