Operation Toolbox

Data security is a critical threat to every company in the world, most of all the government. It should be every company's priority to protect and analyze their data, using the various resources and tools they have. However, analyzing data is a time consuming and arduous process. Employees need to wait for the data collection process to finish. The project would involve automating the process so that data collection programs could run over the weekend while using just one toolkit, instead of multiple programs scattered across the computer screen. The process would allow employees to analyze the collection of data when they return the next business day.

In the past, employees had to wait for one tool to output data and pass that as an input to the other two tools. The project will provide employees a toolkit that automates the data collection process allowing them to have an extended timetable to analyze large amounts of data. Using multi-threading the toolkit will integrate three different tools that the client, WSMR, are currently using, which include Nmap, Nessus and Gobuster. The client requires that the project uses the Python scripting language since it has libraries that are compatible with the tools we're automating, such as "python-nmap" and "python-nessus." To facilitate our goals throughout the project, we will be using Microsoft Teams for communication, command-line Linux, and the Visual Studio IDE to write our code, unless specified by the client otherwise.

The project is targeted towards military personnel and penetration testers who analyze network systems for vulnerabilities and analyze the data collected by the specified tools. The project will assist the target audience in enumerating the data

collected during the reconnaissance phase of penetration-testing. The project will use the combination of the three different tools to help users make sense of the raw data collected. Through the use of client feedback sessions, the project team can determine the needs of the target user group. As a consequence, the team can simultaneously submit the application to the client during the sessions to evaluate the product throughout its development.

Data collection and analysis is a huge time sink. Automating the process would allow an increased timetable for data analysis. The data collection programs could potentially run over the weekend and allow employees to analyze the data when they return on the next business day. The project would benefit everyone at WSMR in keeping their information protected and to help with time management. The project expands to not only the safety and well being of our area, but could potentially encompass national security. It encourages new ways to deal with cyber security and allows security researchers to find new vulnerabilities in networks. The project presents an opportunity to gain good experience in working with an established and credible organization.

Our team will accomplish the proposed project by combining our skills and applying our prior coding experience. We have two team members with Associate degrees in Computer Networking and Security. Gabby has worked on data pipeline creation and management during her internship, making sure to maintain the security and integrity of the data being queried and processed. She also worked on automation using Java and internal resources. Tony had a network engineering internship and

worked extensively with cloud infrastructure services. He also worked on developing a Python script which automates the combination of two network topology models. Our team has experience with Python and UI creation, and all but one member of our group have experience in scripting and developing games in Unity. We have also taken Game and Software Development courses, so we have an understanding of design models and processes. When working together to create our game *Knock Blocks*, we were successful in assigning tasks, using version control, and bringing everything back together to form a cohesive and working product.

Resumes

https://drive.google.com/drive/folders/1tIGv-OPhw7_DJoG-9RX0Pu9dKr7gwSeZ?usp=sharing