INTERNSHIP FINAL REPORT

Student Name: Asare Ansah Prince

University: Kwame Nkrumah University of Science and Technology

Major: Telecommunications Engineering

Internship Duration: September 1st, 2024 - September 30th, 2024

Company: ShadowFox

Domain: Cyber Security

Mentor: Mr. Surendharan

Assistant Mentor: Mr. Pranshu

Coordinator: Mr. Aakash

OBJECTIVES

The intended objectives for this internship were to:

- ✓ Understand cyber security threats and vulnerabilities.
- ✓ Acquire hands-on experience to detect, analyse, and mitigate security threats.
- ✓ Master security protocols to secure networks, systems and data from breaches.
- ✓ Improve my skills in using cyber security tools and techniques in real-world environment.

TASKS AND RESPONSIBILITIES

Throughout my internship, I actively participated in key cyber security tasks, including the following:

- ✓ **Assessing Vulnerabilities:** Scanned and identified all the open ports and the service versions on the specified website.
- ✓ **Vulnerability Exploitation:** Mitre ATT&CK was leveraged to access the vulnerabilities of the service versions identified on the open ports.

- ✓ **Risk Evaluation:** Determine how exploitable the service version is based on mapped vulnerabilities.

- ✓ **Penetration Testing:** Conducted brute-force attack with a security tool and found all the directories present in the given website.
- ✓ **Traffic Analysis:** during a simulated login attempt to the given website, the network traffic was intercepted using a tool called Wireshark, successfully capturing and analysing the transmitted credentials through traffic analysis.

LEARNING OUTCOMES

- ✓ **Technical Proficiency:** I acquired hands-on experience with various cybersecurity tools, including Wireshark, Metasploit, and MITRE ATT&CK, as well as techniques such as vulnerability scanning, penetration testing, and packet capturing.

- ✓ **Cybersecurity Knowledge:** I developed a thorough understanding of securing systems, from conducting initial vulnerability assessments to implementing mitigation strategies.

- ✓ **Problem-Solving Skills:** Addressing complex security issues sharpened my analytical abilities and enabled me to develop effective solutions under pressure.

- ✓ **Self Development:** My experience enhanced my teamwork, improved my ability to clearly communicate technical information, and honed my time management skills in a fast-paced setting.

CHALLENGES AND SOLUTIONS

- ✓ **Handling Advanced Security Scenarios:** Dealing with the complexity of real-world security threats required a solid understanding of fundamental principles. I managed this by engaging in continuous learning and seeking advice from my coordinator and team members.

- ✓ **Understanding Complex Terminologies:** I struggled with the technical terms and jargons used in cybersecurity but overcame it through searching and coordinators.

- ✓ **Learning Multiple Tools Simultaneously:** Mastering tools like Kali Linux, Metasploit, and Wireshark can be overwhelming for beginners. I addressed this by dedicating time to YouTube tutorials and practicing in a simulated environment on various platforms, which greatly improved my proficiency.

CONCLUSION

My internship at ShadowFox was a valuable experience that greatly enhanced my knowledge and skills in cybersecurity. The hands-on exposure to real-world security challenges and the use of advanced tools have reinforced my passion for a career in cybersecurity. This experience has been pivotal in preparing me for the complexities of the field.

ACKNOWLEDGMENT

I extend my heartfelt thanks to ShadowFox, especially my mentor, Mr. Surendharan, and assistant mentor, Mr. Pranshu, for their guidance and support throughout the internship. I am also grateful to Amrita Vishwa Vidyapeetham for offering this opportunity, which has played a key role in my personal and professional growth.

This report encapsulates my internship experience, showcasing how academic knowledge and practical skills came together in a professional environment, and reflecting my journey of learning and growth in cybersecurity.