Phishing Attack Simulation & Detection – Comprehensive Report

Cyber Security Internship – Task 11

Simulation Type: Manual & Ethical (Offline)

Environment: Kali Linux

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Abstract

This comprehensive report presents an in-depth phishing attack simulation conducted for educational purposes. The task focuses on social engineering techniques, phishing workflows, detection methods, and prevention strategies while maintaining ethical and legal compliance.

1. Introduction

Phishing is a social engineering attack that exploits human trust and cognitive biases rather than technical flaws. It remains one of the most effective cyber threats due to its simplicity and high success rate.

2. Social Engineering Concepts

Social engineering manipulates individuals into revealing confidential information by exploiting psychological triggers.

3. Psychological Triggers in Phishing

Urgency, fear, authority, curiosity, and trust are commonly used to pressure victims into unsafe actions.

4. Types of Phishing Attacks

Email phishing, spear phishing, whaling, smishing, vishing, and clone phishing are common attack variants.

5. Simulation Environment & Ethics

The simulation was conducted on Kali Linux using manual templates and local files. No real users were involved.

6. Phishing Email Design Analysis

The email template was designed to appear legitimate using professional language and urgent messaging.

7. Fake Landing Page Simulation

A basic HTML login page was created to demonstrate credential harvesting techniques.

8. Phishing Attack Lifecycle

The lifecycle includes reconnaissance, delivery, victim interaction, and post-exploitation.

9. Indicators of Phishing

Suspicious links, unknown senders, generic greetings, and spelling errors are common red flags.

10. Detection Techniques

Detection involves user awareness, email filtering, browser warnings, and sender verification.

11. Prevention & Mitigation

Layered security measures such as MFA, training, and email gateways help prevent phishing.

12. Impact of Phishing Attacks

Phishing can cause financial loss, data breaches, identity theft, and reputational damage.

13. Conclusion

This task emphasized the importance of understanding phishing and applying preventive measures.