Day 9 Training Report

1 July 2025 (Tuesday)

Topic: **Cryptography: Symmetric and Asymmetric Encryption, Algorithms (AES, RSA, SHA-256)**

1. Introduction

Today's session focused on **Cryptography: Symmetric and Asymmetric Encryption, Algorithms (AES, RSA, SHA-256)**. The objective was to understand the concepts in detail and explore their importance in cybersecurity. The instructor began with theoretical explanations supported by practical examples that demonstrated how these principles apply in real-world systems. Students were encouraged to ask questions and engage in discussions to clarify concepts.

2. Practical Work and Discussion

The practical session included demonstrations, command-line practice, and security tool exploration. Participants learned how to use essential cybersecurity tools and perform tasks related to today's topic. For example, we examined how attackers exploit vulnerabilities and how proper configurations and security mechanisms prevent these issues. The trainer guided step-by-step demonstrations, allowing students to understand both offensive and defensive sides of cybersecurity operations.

3. Hands-on Activities

During the lab session, hands-on activities reinforced the topic. Students practiced using security commands, analyzing data, and performing simulations that related directly to the theory taught earlier. These exercises improved technical confidence and gave exposure to real-world cybersecurity practices, preparing students for professional work environments.

4. Learning Outcomes

By the end of the day, students were able to:

- Understand the key concepts of Cryptography.
- Identify practical applications in system and network security.
- Use cybersecurity tools effectively for analysis and protection.
- Apply theoretical knowledge in simulated environments.

5. Conclusion

The session was informative and interactive, helping solidify the foundational understanding of Cryptography. It provided both theoretical clarity and practical exposure, making students confident in applying cybersecurity principles and best practices in real scenarios.