Daily Training Diary – Day 6

Date: 30/06/25

📚 Session Summary:

On Day 6 of our cybersecurity training, we were introduced to the **concept of virtualization** and how it is applied using tools like **VirtualBox**. The session helped us understand how virtual environments are created, managed, and utilized in cybersecurity labs and real-world scenarios.

🧠 Key Learnings:

1. **What is Virtualization?**
   Virtualization is the process of creating a **virtual version of physical hardware**, allowing multiple operating systems to run on a single physical machine. This is achieved using a **hypervisor** like VirtualBox or VMware.
2. **Benefits of Virtualization:**
   - Cost-efficient and resource-saving.
   - Safe environment for testing software or malware without affecting the host system.
   - Easy to create isolated environments (called VMs - Virtual Machines).
   - Helps in learning ethical hacking, server management, and network testing.
3. **Types of Virtualization Discussed:**
   - **Hardware Virtualization**
   - **Desktop Virtualization**
   - **Server Virtualization**
   - **Network Virtualization**
4. **VirtualBox Introduction:**
   - We learned how to **install and configure Oracle VirtualBox**, a free and open-source virtualization tool.
   - Explored how to **create a new virtual machine**.
   - Understood how to **allocate RAM, disk space, and choose an ISO image** to boot from.

- Configured **network settings** such as NAT and Bridged Adapter to simulate network behavior.

5. **Hands-on Task:**
    - Created a virtual machine using **Kali Linux ISO**.
    - Practiced installing the OS inside VirtualBox.
    - Explored some basic terminal commands within the virtual environment.

🛠️ **Practical Skills Gained:**

- Installed VirtualBox and configured a VM.
- Learned how to run multiple operating systems on a single device.
- Set up networking in virtual environments.
- Understood how virtualization supports secure cybersecurity practice.

📝 **Conclusion:**

The session was very informative and practical. Virtualization is a powerful concept in cybersecurity that allows us to simulate environments, test tools, and analyze threats without risking our physical systems. It also prepares us to use tools like **Kali Linux**, **Metasploit**, and other cybersecurity frameworks in a safe sandbox environment.