DAY 01

1. Update vs Upgrade

- **Update**: Fetches the latest package information from repositories. It updates the package database but doesn't install anything.
    - Example:

    ```
    sudo apt update
    ```

- **Upgrade**: Installs the latest versions of installed packages from the updated package database.
    - Example:

    ```
    sudo apt upgrade
    ```

2. Create Hidden Directory in Linux

- A hidden directory starts with a dot (.) in its name.
    - Command:

    ```
    mkdir .myhiddenfolder
    ```

- Use `ls -a` to view hidden files/directories.
    - Example:

    ```
    ls -a
    ```

3. VAPT in Linux

- **VAPT**: Vulnerability Assessment and Penetration Testing.
- **Purpose**: Identify and mitigate security vulnerabilities.
- **Example Tools**:
    - `Nmap` for port scanning:

    ```
    nmap 192.168.1.1
    ```

    - `Nikto` for web vulnerability scanning:

    ```
    nikto -h http://example.com
    ```

    - `Lynis` for system auditing:

    ```
    sudo lynis audit system
    ```

4. What is Bash?

- **Bash**: Bourne Again SHell, a command-line interpreter.
- Used to run commands and scripts.
- **Example**:

```
echo "Hello, World!"
```

5. What is Ping and Common Uses

- **Ping**: Network tool used to check if another host is reachable.
- **Common Command**:

```
ping google.com
```

- **Uses**:
    - Confirm internet connectivity
    - Diagnose network issues
    - Measure response time (latency)

6. What is a Packet?

- **Packet**: A unit of data sent over a network.
- **Contents Include**:
    - Source & destination IP addresses
    - Data payload (actual content)
    - Headers with protocol info
- **Example (View with tcpdump)**:

```
sudo tcpdump -i eth0
```

7. Why Groups are Used in Linux?

- **Groups**: Help manage user permissions in bulk.
- **Example**:
    - Add a user to a group:

    ```
    sudo usermod -aG developers username
    ```

    - Check group memberships:

    ```
    groups username
    ```

8. What is Directory Jump in Linux?

- Allows faster navigation between directories.
- **Examples**:
    - Jump back to the previous directory:

    ```
    cd -
    ```

    - Use directory stack:
    - ```
      pushd /var/log
      popd
      ```

    - Tools: `autojump, z` (must be installed separately)