AeroAspire - SDE Intern
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Week 5 – Day 1 (October 21)

Questions/Reflections :

1. What is the difference between VM and container?

    - **A Virtual Machine (VM)** is like running a whole computer inside another computer — it has its own full operating system, kernel, and resources.
    - **A Container is lighter** — it shares the host OS's kernel and just isolates applications and dependencies.
    - So, VMs are heavier but more isolated, while containers are faster and use fewer resources.

2. How do permissions work in Linux? Explain chmod and chown.

    - In Linux, every file or folder has three kinds of permissions:
      Read (r) – view the file or list the folder
      Write (w) – modify or delete it
      Execute (x) – run it if it's a script or program
    - And these permissions apply to three groups:
      Owner (the person who created it)
      Group (users in the same group)
      Others (everyone else)
      chmod changes permissions (for example: chmod 755 file.sh gives full permission to owner, and read/execute to others).
      chown changes who owns the file (for example: chown user:group file.txt).

3. Why use apt and sudo? What happens behind the scenes when updating packages?

    - **apt** is the package manager on Debian/Ubuntu — it installs, updates, or removes software from the system.

- **sudo** means “superuser do” — it gives you temporary admin power to make system-level changes.
- When you run something like sudo apt update && sudo apt upgrade, your system:
- Connects to online repositories (servers)
- Checks for new versions of packages
- Downloads and installs them
- Updates dependency links so everything works together smoothly

4. Write command flow: create project folder → create script → run it → make it executable → delete folder
    - Here’s the flow step-by-step:

    - # 1. Create a project folder
      mkdir my_project
      cd my_project

    - # 2. Create a script file
      nano script.sh # or use touch script.sh

    - # 3. Run it (normal way)
      bash script.sh

    - # 4. Make it executable
      chmod +x script.sh
      ./script.sh # now you can run it directly

    - # 5. Delete the folder
      cd ..
      rm -rf my_project