Introduction

This document contains my Week 1 findings for the Linux fundamentals and Networking Basics study modules. The purpose of this submission is to consolidate the theoretical knowledge gained during the week, along with practical command-line examples and GitHub references for my hands-on scripts and exercises.

Theoretical Findings

Linux fundamentals:

• Key topics covered:
  - Navigating the Linux CLI (cd, ls, pwd, mkdir, rmdir).
  - File operations (cp, mv, rm, cat, touch).
  - User and group management (id, whoami, su, sudo).
  - File permissions and security (chmod, chown).
  - Package management (rpm, yum, apt).
  - Process and service management using systemd.
  - Shell types (sh, bash, zsh) and bash scripting basics.
  - Linux command-line navigation and editors (VI editor).
  - Package managers (rpm, yum, apt) and software installation.
  - Managing services with systemctl.
  - Setting up virtual machines using VirtualBox and Vagrant.
  - Basics of JSON/YAML used in configuration management.

Networking Basics

• Networking is essential for system connectivity and DevOps tools.
• Key networking concepts covered:
  - IP addressing and subnetting.
  - Network interfaces (ip link, ip addr).
  - Routing and gateways (ip route).
  - Default gateway configuration for internet access.
  - DNS and name resolution (/etc/hosts, ping, curl).
  - Enabling IP forwarding for communication between networks.

Git Basics

Git is a **distributed version control system** used for tracking changes in source code.
Key commands:

- `git init` → Initialize a new Git repository
- `git clone <url>` → Clone an existing repository
- `git add <file>` → Stage file changes for commit
- `git commit -m "message"` → Commit staged changes
- `git push origin main` → Push commits to a remote repository
- `git pull` → Fetch and merge changes from the remote
- `git status` → Show the working directory status
- `git log` → View commit history

Key Takeaway

The key takeaway from this week is that I gained extensive knowledge by strengthening my linux fundamentals.
It was a foundation-clearing learning journey, which is valuable to have at this stage.
This experience not only improved my theoretical understanding but also enhanced my practical skills, making me more confident in working with Linux, Networking, Git, and DevOps concepts.

Conclusion

In Week 1, I gained foundational knowledge of Linux basics, DevOps prerequisites, and networking essentials. This will serve as the building block for upcoming weeks as I move towards automation, configuration management, and containerization. The hands-on commands and GitHub scripts reinforced my theoretical learning.