Assignment for Linux Administrator Role

Scenario-Based Problem Statement:

You are part of a **Linux Infrastructure & Virtualization Operations team** that supports mission-critical applications hosted across a hybrid environment — both on-premises (VMware vSphere/ESXi) and potentially cloud-integrated systems.

Your Linux systems run inside **VMware VMs**, and your team is responsible for:

- Managing **performance, availability, and capacity** of Linux VMs.
- Monitoring and resolving issues across the virtualization and OS layer.
- Automating system provisioning, recovery, and patching.
- Implementing fault-tolerant configurations and disaster recovery.
- Maintaining **secure and hardened systems** in compliance with best practices.

You have access to **AI tools** (e.g., ChatGPT, Cursor, DeepSeek) to assist in **prompt engineering, troubleshooting, automation scripting, and design thinking**.

Prompts You Would Give to an AI Assistant:

Create at least 2 **detailed prompts** to an AI assistant that would help you with: (need to create 2 out of below)

- Diagnosing high CPU/memory/disk usage in a **Linux VM hosted on vSphere**.
- Automating **VM snapshot creation, backup, and rollback** using PowerCLI or Python + pyVmomi.
- Monitoring VM performance via **VMware Tools** integration (guest metrics).
- Designing **auto-recovery logic** using AI + shell/Python/Ansible if the Linux VM becomes unresponsive.
- Building a **VM provisioning workflow** using cloud-init + vSphere templates.

For each prompt, explain:

- The **intent** behind it.
- How the AI's response would **help you solve the problem or build the solution**.

Submit your solution via **GitHub repository** or **Google Drive folder** (no ZIPs).

- Ensure your submission includes:

- AI prompts + purpose
- Written problem explanation
- Technical strategy breakdown
- Implementation code + tests
- Performance benchmark results
- Optional: architecture or automation flow diagrams (e.g., VM lifecycle or alert workflow)