**Week 4 Homework Submission File: Linux Systems Administration**

**Step 1: Ensure/Double Check Permissions on Sensitive Files**

1. Permissions on /etc/shadow should allow only root read and write access.
   * Command to inspect permissions: **ls -l /etc/shadow**
   * Command to set permissions (if needed): **sudo chmod 600 /etc/shadow**
2. Permissions on /etc/gshadow should allow only root read and write access.
   * Command to inspect permissions: **ls -l /etc/gshadow**
   * Command to set permissions (if needed): **sudo chmod 600 /etc/gshadow**
3. Permissions on /etc/group should allow root read and write access, and allow everyone else read access only.
   * Command to inspect permissions: **ls -l /etc/group**
   * Command to set permissions (if needed): **sudo chmod 644 /etc/group**
4. Permissions on /etc/passwd should allow root read and write access, and allow everyone else read access only.
   * Command to inspect permissions: **ls -l /etc/passwd**
   * Command to set permissions (if needed): **sudo chmod 644 /etc/passwd**

**Step 2: Create User Accounts**

1. Add user accounts for sam, joe, amy, sara, and admin.
   * Command to add each user account (include all five users):

**sudo adduser sam**

**sudo adduser joe**

**sudo adduser amy**

**sudo adduser sara**

**sudo adduser admin**

1. Ensure that only the admin has general sudo access.
   * Command to add admin to the sudo group:

**Step 3: Create User Group and Collaborative Folder**

1. Add an engineers group to the system.
   * Command to add group: **sudo addgroup engineers**

2.Add users sam, joe, amy, and sara to the managed group.

* + Command to add users to engineers group (include all four users):

**Sudo usermod -G sam**

**Sudo usermod -G joe**

**Sudo usermod -G amy**

**Sudo usermod -G sara**

1. Create a shared folder for this group at /home/engineers.
   * Command to create the shared folder:
2. Change ownership on the new engineers' shared folder to the engineers group.
   * Command to change ownership of engineer's shared folder to engineer group:

**Step 4: Lynis Auditing**

1. Command to install Lynis:
2. Command to see documentation and instructions:
3. Command to run an audit:
4. Provide a report from the Lynis output on what can be done to harden the system.
   * Screenshot of report output:

**Bonus**

1. Command to install chkrootkit:
2. Command to see documentation and instructions:
3. Command to run expert mode:
4. Provide a report from the chrootkit output on what can be done to harden the system.
   * Screenshot of end of sample output: