Lab 5 : User and Group Management & Administering Local Password Policies in RHEL 9

Section 1: Understanding Users and Groups

1. **Question**: What is the purpose of users and groups in a Linux system? Provide an example scenario where group permissions are useful.
   1. Purpose of users and groups

- **Users**: Identify who is logged in and owns files/processes.
- **Groups**: Allow multiple users to share permissions on files/resources.

Example scenario

A project directory `/project` is owned by group `developers`.
All developers can read/write files without changing individual permissions for each user.

2. **Question**: Run a command to display a list of all users currently on the system.
   cat /etc/passwd or getent passwd
3. **Bonus Question**: List all the groups available on the system and identify which group has the most members.
   cat /etc/group or getent group
   getent group | awk -F: '{ print $1, NF-3 }'

Section 2: Switch to Superuser Account & Grant Superuser Access Using sudo

4. **Question**: How do you switch to the superuser (root) account from a regular user account? Perform this action.
   su -
5. **Question**: Add an existing user (student) to the sudoers file so they can perform administrative tasks using sudo. Verify this by switching to the student account and running a command with sudo.
   1. sudo visudo
   2. add student ALL=(ALL) ALL
   su - student
   3. sudo dnf update
6. **Bonus Question**: Set up a policy in the /etc/sudoers file that allows the user adminuser to execute any command without being prompted for a password.

1. sudo visudo
2. adminuser ALL=(ALL) NOPASSWD: ALL

Section 3: Create, Modify, and Delete Local User Accounts

7. **Question**: Create a new user named devopsuser with a home directory and a default shell of /bin/bash.
   sudo useradd -m -s /bin/bash devopsuser
8. **Question**: Modify the user devopsuser to have a different home directory (/home/devuser) and assign them to the group developers.
   sudo groupadd developers
   sudo usermod -d /home/devuser -m -G developers devopsuser
9. **Question**: Delete the user devopsuser and remove their home directory.
   sudo userdel -r devopsuser
10. **Bonus Question**: View the details of a specific user (e.g., student) using the appropriate command.
    id student or getent passwd student

Section 4: Create, Modify, and Delete Local Group Accounts

11. **Question**: Create a new group called projectteam.
    sudo groupadd projectteam
12. **Question**: Add multiple users (student1, student2, student3) to the projectteam group.
    sudo usermod -aG projectteam student1
    sudo usermod -aG projectteam student2
    sudo usermod -aG projectteam student3
13. **Question**: Modify the projectteam group by changing its group ID (GID) to 1050.
    sudo groupmod -g 1050 projectteam
14. **Question**: Delete the group projectteam.
    sudo groupdel projectteam

Section 5: Set a Password Management Policy for Users

15. **Question**: Set the password expiry for the user student1 to expire in 30 days using the chage command.
    sudo chage -M 30 student1
16. **Question**: Force a password change for the user student2 at the next login.
    sudo chage -d 0 student2
17. **Question**: Display the password aging details for the user student3.
    sudo chage -l student3

18. **Bonus Question**: Set a global password policy that requires passwords to be at least 10 characters long.
    sudo nvim /etc/security/pwquality.conf
    minlen = 10

Section 6: Lock and Unlock User Accounts

19. **Question**: Lock the account of user student3 to prevent them from logging in.
    sudo usermod -L student3
20. **Question**: Unlock the account of student3 to allow them to log in again.
    sudo usermod -U student3
21. **Bonus Question**: What is the difference between locking a user's account and disabling their password?

Action	Effect
Lock account (`-L`)	Prepends `!` to password hash → login denied
Disable password	Removes password entirely → user can't authenticate with password