LINUX

1. What is Linux?
   - Linux is an open-source operating system kernel that serves as the foundation for various
     Unix-like operating systems.

2. What is the difference between Unix and Linux?
   - Unix is a family of operating systems, while Linux is a kernel that is Unix-like. Linux is
     often considered a Unix-like operating system.

3. What is a shell in Linux?
   - A shell is a command-line interpreter that provides a user interface for access to an
     operating system's services.

4. What is a filesystem in Linux?
   - A filesystem is a method for storing and organizing computer files and the data they
     contain. In Linux, common filesystems include ext4, Btrfs, and XFS.

5. How do you find out the Linux version you're using?
   - Command: `uname -a`
   - This command displays information about the current system, including the Linux kernel
     version.

6. How do you list files in a directory?
   - Command: `ls`
   - This command lists the files and directories in the current directory.

7. How do you create a directory in Linux?
   - Command: `mkdir [directory_name]`
   - This command creates a new directory with the specified name.

8. How do you remove a file in Linux?
   - Command: `rm [file_name]`
   - This command removes (deletes) the specified file.

9. How do you copy files in Linux?
   - Command: `cp [source_file] [destination]`
   - This command copies the specified file to the specified destination.

10. How do you move files in Linux?
   - Command: `mv [source] [destination]`
   - This command moves the specified file or directory to the specified destination.

11. How do you search for a specific text in files in Linux?
   - Command: `grep [search_term] [file_name]`
   - This command searches for the specified text within the specified file.

12. How do you display the contents of a file in Linux?
   - Command: `cat [file_name]`
   - This command displays the contents of the specified file.

13. How do you change permissions of a file in Linux?
   - Command: `chmod [permissions] [file_name]`
   - This command changes the permissions of the specified file or directory.

14. How do you find out the IP address of your Linux system?
   - Command: `ip addr show`
   - This command displays the IP addresses associated with all network interfaces on the system.

15. What is the root user in Linux?
   - The root user is the administrative user in Linux who has full access to the system.

16. How do you switch to the root user in Linux?
   - Command: `sudo su`
   - This command allows you to switch to the root user by prompting for the password of the current user.

17. What is sudo in Linux?
   - `sudo` is a command-line utility that allows users to perform administrative tasks with the privileges of another user, typically the root user.

18. How do you shut down a Linux system?
   - Command: `shutdown -h now`
   - This command shuts down the system immediately.

19. How do you reboot a Linux system?
   - Command: `reboot`
   - This command restarts the system.

20. How do you check disk space usage in Linux?
   - Command: `df -h`
   - This command displays disk space usage on all mounted filesystems in human-readable format.

21. How do you check memory usage in Linux?
   - Command: `free -m`
   - This command displays memory usage statistics in megabytes.

22. What is a symbolic link in Linux?
   - A symbolic link, or symlink, is a special type of file that points to another file or directory.

23. How do you create a symbolic link in Linux?
   - Command: `ln -s [target] [link_name]`
   - This command creates a symbolic link with the specified name that points to the specified target.

24. How do you find out the process ID (PID) of a running process in Linux?
   - Command: `ps -aux | grep [process_name]`
   - This command displays information about all running processes and filters the output to show only the process with the specified name.

25. How do you kill a process in Linux?
   - Command: `kill [PID]`
   - This command sends a signal to the specified process ID to terminate it.

26. How do you view the contents of a compressed file in Linux without extracting it ?
   - Command: `zcat [file_name]`
   - This command displays the contents of a compressed file (usually a .gz file) without decompressing it.

27. What is the difference between a hard link and a symbolic link in Linux?
   - A hard link points directly to the data on disk, while a symbolic link points to a filename.

28. How do you display the first few lines of a file in Linux?
   - Command: `head [file_name]`
   - This command displays the first 10 lines of the specified file by default.

29. How do you display the last few lines of a file in Linux?
   - Command: `tail [file_name]`
   - This command displays the last 10 lines of the specified file by default.

30. How do you create a new empty file in Linux?
   - Command: `touch [file_name]`
   - This command creates a new empty file with the specified name.

31. How do you find out which shell you're using in Linux?
   - Command: `echo $SHELL`
   - This command prints the path to the current shell executable.

32. How do you create a user in Linux?
   - Command: `sudo adduser [username]`
   - This command creates a new user with the specified username.

33. How do you delete a user in Linux?
   - Command: `sudo deluser [username]`
   - This command deletes the specified user.

34. How do you change the password of a user in Linux?
   - Command: `sudo passwd [username]`
   - This command allows you to change the password for the specified user.

35. How do you find files in Linux?
   - Command: `find [directory] -name [file_name]`
   - This command searches for files with the specified name within the specified directory.

36. How do you find out the total number of lines in a file in Linux?
   - Command: `wc -l [file_name]`
   - This command counts the number of lines in the specified file.

37. How do you create an archive file in Linux?
   - Command: `tar -cvf [archive_name.tar] [directory]`
   - This command creates a tar archive of the specified directory.

38. How do you extract files from an archive in Linux?
   - Command: `tar -xvf [archive_name.tar]`
   - This command extracts files from the specified tar archive.

39. How do you compress a file or directory in Linux?
   - Command: `gzip [file_name]`
   - This command compresses the specified file and adds a .gz extension.

40. How do you decompress a file in Linux?
   - Command: `gunzip [file_name.gz]`
   - This command decompresses the specified .gz file.

41. How do you list all running processes in Linux?
   - Command: `ps aux`
   - This command lists all running processes along with detailed information about each process.

42. How do you check the current date and time in Linux?
   - Command: `date`
   - This command displays the current date and time.

43. How do you schedule a task to run periodically in Linux?
   - Command: `crontab -e`
   - This command opens the user's crontab file for editing, where you can specify tasks and their schedules.

44. How do you list all installed packages in Linux?
   - Command: `dpkg --list`
   - This command lists all installed packages on a Debian-based system.

45. How do you install a package in Linux?
   - Command: `sudo apt-get install [package_name]`
   - This command installs the specified package on a Debian-based system using APT.

46. How do you uninstall a package in Linux?
   - Command: `sudo apt-get remove [package_name]`
   - This command uninstalls the specified package on a Debian-based system using APT.

47. How do you check the network connectivity in Linux?
   - Command: `ping [hostname]`
   - This command sends ICMP echo requests to the specified hostname to check network connectivity.

48. How do you display the routing table in Linux?
   - Command: `route -n`
   - This command displays the kernel routing table.

49. How do you display the listening ports in Linux?
   - Command: `netstat -tuln`
   - This command displays all listening TCP and UDP ports.

50. How do you monitor system resource usage in real-time in Linux?
   - Command: `top`
   - This command displays a real-time overview of system resource usage, including CPU, memory, and processes.

51. How do you check the system's hostname in Linux?
   - Command: `hostname`
   - This command displays the system's hostname

52. How do you edit a file in Linux from the command line?
- Command: `nano [file_name]`
- This command opens the specified file in the nano text editor for editing.

53. How do you display the manual page for a command in Linux?
- Command: `man [command]`
- This command displays the manual page for the specified command.

54. How do you check the disk usage of a directory in Linux?
- Command: `du -sh [directory]`
- This command displays the total disk usage of the specified directory in a human-readable format.

55. How do you change the owner of a file in Linux?
- Command: `chown [new_owner] [file_name]`
- This command changes the owner of the specified file to the specified user or group.

LINUX COMMANDS:

ls: List files and directories in the current directory.
cd: Change the current working directory.
pwd: Print the current working directory.
mkdir: Create a new directory.
rmdir: Remove a directory.
touch: Create an empty file or update the access and modification times of a file.
cp: Copy files and directories.
mv: Move or rename files and directories.
rm: Remove files or directories.
cat: Concatenate and display the contents of files.
more: Display contents of a file one screen at a time.
less: Display contents of a file with backward and forward navigation.
head: Display the beginning of a file.
tail: Display the end of a file.
grep: Search for patterns in files.
find: Search for files and directories.
chmod: Change file permissions.
chown: Change file ownership.
chgrp: Change file group ownership.
tar: Archive files.
gzip: Compress files.
gunzip: Decompress files.
df: Display disk space usage.
du: Display disk usage of files and directories.
uname: Print system information.
ps: Display information about running processes.
top: Display real-time system information.
kill: Terminate processes.
sudo: Execute a command with superuser privileges.
nano: A simple text editor for editing files.
vim: A powerful text editor for editing files.
wget: Download files from the internet.
scp: Securely copy files between hosts.
ssh: Securely connect to remote hosts.
ping: Test network connectivity.
traceroute: Trace the route to a network host.
ifconfig: Configure network interfaces.
netstat: Display network connections, routing tables, and more.
ip: Show and manipulate routing, devices, policy routing, and tunnels.
history: Display command history.
wc: Display word, line, and character count for files.

date: Display or set the system date and time.

cal: Display a calendar.

uptime: Display how long the system has been running.

man: Display the manual page for commands.

info: Display detailed information about commands.

sort: Sort lines of text files.

uniq: Report or omit repeated lines in a file.

diff: Compare files line by line.

grep: Search for patterns in files.