UNIX COMMANDS

S.No	Command Name	Variation	Description
------	----------	----------	----------
1	ls	a. `ls`	List files in the current directory
		b. `ls -a`	List all files (including hidden files) in the current directory
		c. `ls -l`	List files in long format
2	pwd	a. `pwd`	Display the current working directory
3	cd	a. `cd directory_name`	Change the current directory
		b. `cd ~`	Change to the home directory
4	mkdir	a. `mkdir new_directory`	Create a new directory
5	mv	a. `mv file1 file2`	Move or rename files or directories
6	cp	a. `cp file1 file2`	Copy files or directories
7	rm	a. `rm file`	Remove files
		b. `rm -r directory`	Remove directories recursively
8	touch	a. `touch new_file`	Create an empty file or update the modification time
9	ln	a. `ln -s source_file link_name`	Create a symbolic link to a file
10	rmdir	a. `rmdir directory_name`	Remove an empty directory
11	tree	a. `tree`	Display the directory structure in a tree-like format
12	cat	a. `cat file1 file2`	Concatenate files and display their contents
		b. `cat > file`	Create a new file or overwrite an existing file
		c. `cat >> file`	Append to an existing file
13	echo	a. `echo "Hello, World!"`	Display the specified text
		b. `echo $VARIABLE`	Display the value of a variable
14	less	a. `less file`	View the contents of a file page by page
15	head	a. `head file`	Display the first 10 lines of a file
		b. `head -n 5 file`	Display the first 5 lines of a file
16	tail	a. `tail file`	Display the last 10 lines of a file
		b. `tail -n 5 file`	Display the last 5 lines of a file
		c. `tail -f file`	Follow the changes made to a file in real-time
17	diff	a. `diff file1 file2`	Compare two files and display the differences
18	cmp	a. `cmp file1 file2`	Compare two files byte by byte
19	comm	a. `comm file1 file2`	Compare two sorted files and display lines that are unique to each file or common to both
20	sort	a. `sort file`	Sort the lines of a file in alphabetical order
		b. `sort -r file`	Sort the lines of a file in reverse alphabetical order
		c. `sort -n file`	Sort the lines of a file numerically
21	sed	a. `sed 's/old/new/g' file`	Replace all occurrences of "old" with "new" in a file
		b. `sed '1d' file`	Delete the first line of a file
22	awk	a. `awk '{print $1}' file`	Print the first field of each line in a file
		b. `awk '/pattern/ {action}' file`	Perform actions on lines matching a specific pattern
23	cut	a. `cut -d ':' -f 1,3 file`	Extract the first and third fields from a file using ":" as the delimiter
24	paste	a. `paste file1 file2`	Merge corresponding lines from two files
25	join	a. `join file1 file2`	Join lines from two files based on a common field
26	wc	a. `wc file`	Display the number of lines, words, and bytes in a file
		b. `wc -l file`	Display the number of lines in a file
		c. `wc -w file`	Display the number of words in a file
		d. `wc -c file`	Display the number of bytes in a file
27	grep	a. `grep "pattern" file`	Search for a pattern in a file and display matching lines
		b. `grep -i "pattern" file`	Search for a pattern case-insensitively
		c. `grep -r "pattern" directory`	Search for a pattern recursively in a directory
28	tr	a. `tr "a-z" "A-Z" < file`	Convert lowercase letters to uppercase in a file
		b. `tr -d "pattern" < file`	Delete characters matching a pattern from a file
29	uniq	a. `uniq file`	Remove consecutive duplicate lines from a file
		b. `uniq -c file`	Count the number of occurrences of each unique line in a file
30	strings	a. `strings file`	Extract printable strings from binary files

31	gzip	a. `gzip file`	Compress a file using gzip compression
		b. `gzip -d file.gz`	Decompress a gzipped file
32	gunzip	a. `gunzip file.gz`	Decompress a gzipped file
33	bzip2	a. `bzip2 file`	Compress a file using bzip2 compression
		b. `bzip2 -d file.bz2`	Decompress a bzipped file
34	bunzip2	a. `bunzip2 file.bz2`	Decompress a bzipped file
35	xz	a. `xz file`	Compress a file using xz compression
		b. `xz -d file.xz`	Decompress an xzipped file
36	unxz	a. `unxz file.xz`	Decompress an xzipped file
37	lzip	a. `lzip file`	Compress a file using lzip compression
		b. `lzip -d file.lz`	Decompress an lzipped file
38	lzop	a. `lzop file`	Compress a file using lzop compression
		b. `lzop -d file.lzo`	Decompress an lzoped file
39	rzip	a. `rzip file`	Compress a file using rzip compression
		b. `rzip -d file.rz`	Decompress an rzipped file
40	lrzip	a. `lrzip file`	Compress a file using lrzip compression
		b. `lrzip -d file.lrz`	Decompress an lrzipped file
41	plzip	a. `plzip file`	Compress a file using plzip compression
		b. `plzip -d file.plz`	Decompress a plzipped file
42	zip	a. `zip archive.zip file1 file2`	Create a zip archive
		b. `zip -r archive.zip directory`	Create a zip archive recursively
43	unzip	a. `unzip archive.zip`	Extract files from a zip archive
44	tar	a. `tar -cf archive.tar file1 file2`	Create a tar archive
		b. `tar -xf archive.tar`	Extract files from a tar archive
		c. `tar -tf archive.tar`	List the contents of a tar archive
		d. `tar -czf archive.tar.gz directory`	Create a gzipped tar archive
		e. `tar -xzf archive.tar.gz`	Extract files from a gzipped tar archive
		f. `tar -cjf archive.tar.bz2 directory`	Create a bzipped tar archive
		g. `tar -xjf archive.tar.bz2`	Extract files from a bzipped tar archive
45	ifconfig	a. `ifconfig`	Display network interface information
		b. `ifconfig eth0`	Display information for the eth0 interface
		c. `ifconfig eth0 up`	Bring up the eth0 interface
		d. `ifconfig eth0 down`	Bring down the eth0 interface
46	traceroute	a. `traceroute host`	Trace the route to a specified host
47	wget	a. `wget url`	Download a file from a specified URL
		b. `wget -c url`	Resume a partially downloaded file
		c. `wget -r url`	Download a website recursively
48	ufw	a. `ufw enable`	Enable the uncomplicated firewall
		b. `ufw disable`	Disable the uncomplicated firewall
		c. `ufw status`	Check the status of the firewall
		d. `ufw allow 22`	Allow incoming connections on port 22
49	iptables	a. `iptables -L`	List the firewall rules
		b. `iptables -A INPUT -p tcp --dport 80 -j ACCEPT`	Allow incoming connections on port 80
		c. `iptables -D INPUT -p tcp --dport 80 -j ACCEPT`	Delete the rule allowing incoming connections on port 80
50	ssh	a. `ssh user@host`	Connect to a remote host via SSH
		b. `ssh -i key_file user@host`	Connect to a remote host using a specific SSH key
		c. `ssh-keygen`	Generate SSH keys
51	service	a. `service nginx start`	Start the nginx service
		b. `service nginx stop`	Stop the nginx service
		c. `service nginx restart`	Restart the nginx service
52	ps	a. `ps`	Display information about running processes
		b. `ps aux`	Display information about all running processes
		c. `ps -ef`	Display information about all running processes in full-format
53	netstat	a. `netstat -antp`	Display network connections, listening ports, and process IDs
		b. `netstat -r`	Display the routing table

54	ping	a. `ping host`	Send ICMP echo requests to a specified host
55	scp	a. `scp file user@host:/path/to/destination`	Copy a file to a remote host using SCP
		b. `scp user@host:/path/to/file /local/path`	Copy a file from a remote host using SCP
56	rsync	a. `rsync -avz /source/directory user@host:/destination/directory`	Synchronize directories using rsync
		b. `rsync -avz user@host:/source/directory /destination/directory`	Synchronize directories from a remote host using rsync
57	crontab	a. `crontab -e`	Edit the crontab file
		b. `crontab -l`	List the current crontab
		c. `crontab -r`	Remove the current crontab
58	telnet	a. `telnet host port`	Connect to a remote host and port using telnet
59	nc (netcat)	a. `nc -l 8000`	Listen on port 8000 using netcat
		b. `nc host 8000`	Connect to a host on port 8000 using netcat
60	curl	a. `curl url`	Retrieve the contents of a URL using curl
		b. `curl -o file url`	Save the output of a URL to a file using curl
		c. `curl -X POST -d "data=value" url`	Send a POST request with data using curl
61	whois	a. `whois domain`	Retrieve WHOIS information for a domain
62	dig	a. `dig domain`	Perform a DNS lookup for a domain
		b. `dig -x ip_address`	Perform a reverse DNS lookup for an IP address
63	nslookup	a. `nslookup domain`	Perform a DNS lookup for a domain using nslookup
64	host	a. `host domain`	Perform a DNS lookup for a domain using host
65	route	a. `route`	Display the routing table
		b. `route add default gw gateway`	Add a default gateway to the routing table
		c. `route del default gw gateway`	Remove a default gateway from the routing table
66	ss	a. `ss -antp`	Display socket statistics
		b. `ss -s`	Display socket summary statistics
67	systemctl	a. `systemctl start service`	Start a systemd service
		b. `systemctl stop service`	Stop a systemd service
		c. `systemctl restart service`	Restart a systemd service
		d. `systemctl status service`	Check the status of a systemd service
68	journalctl	a. `journalctl`	Display the systemd journal logs
		b. `journalctl -u service`	Display logs for a specific systemd service
		c. `journalctl -f`	Follow the systemd journal logs in real-time
69	nmap	a. `nmap host`	Scan a host for open ports and running services
		b. `nmap -sV host`	Scan a host and determine the version of running services
		c. `nmap -sS -p- host`	Perform a SYN stealth scan on all ports of a host
70	uname	a. `uname`	Display information about the operating system
		b. `uname -a`	Display detailed information about the operating system
71	whoami	a. `whoami`	Display the current user's username
72	tar	a. `tar -cf archive.tar file1 file2`	Create a tar archive
		b. `tar -xf archive.tar`	Extract files from a
73	mount	a. `mount`	Mount a file system
		b. `mount /dev/sdb1 /mnt`	Mount a specific file system to a mount point
74	chmod	a. `chmod permissions file`	Change the permissions of a file or directory
		b. `chmod +x script.sh`	Make a script executable
75	chown	a. `chown user:group file`	Change the owner and group of a file
76	passwd	a. `passwd`	Change the user's password
77	du	a. `du`	Display disk usage by directory
		b. `du -h`	Display disk usage in a human-readable format
78	free	a. `free`	Display memory usage information
79	shutdown	a. `shutdown now`	Shutdown the system immediately
		b. `shutdown -r now`	Restart the system immediately
80	reboot	a. `reboot`	Reboot the system
81	poweroff	a. `poweroff`	Power off the system

82	halt	a. `halt`	Halt the system
83	pkill	a. `pkill process_name`	Send a signal to a process by name
84	sleep	a. `sleep 5`	Pause the execution for a specified time
85	exit	a. `exit`	Exit the current shell session
86	logout	a. `logout`	Logout from the current shell session
87	umount	a. `umount /mnt`	Unmount a mounted file system
88	fdisk	a. `fdisk /dev/sda`	Partition table manipulator for Linux
89	fsck	a. `fsck /dev/sda1`	Check and repair a Linux file system
90	mkfs	a. `mkfs.ext4 /dev/sdb1`	Create a new ext4 file system
91	file	a. `file filename`	Determine file type
92	stat	a. `stat filename`	Display file or file system status
93	lsof	a. `lsof -i :80`	List open files and processes
94	uptime	a. `uptime`	Display system uptime and load
95	users	a. `users`	Display currently logged-in users
96	useradd	a. `useradd username`	Add a new user
97	userdel	a. `userdel username`	Delete a user
98	usermod	a. `usermod -aG group username`	Modify user attributes
99	groupadd	a. `groupadd groupname`	Add a new group
100	groupdel	a. `groupdel groupname`	Delete a group
101	groupmod	a. `groupmod -n newgroup oldgroup`	Modify group attributes
102	chgrp	a. `chgrp groupname filename`	Change group ownership of a file
103	umask	a. `umask 022`	Set default file permissions
104	su	a. `su username`	Switch user
105	sudo	a. `sudo command`	Execute a command as a superuser
106	printenv	a. `printenv`	Print environment variables
107	set	a. `set`	Display shell variables
108	unalias	a. `unalias aliasname`	Remove an alias
109	jobs	a. `jobs`	Display background jobs
110	bg	a. `bg %1`	Move a job to the background
111	fg	a. `fg %1`	Bring a job to the foreground
112	halt	a. `halt`	Halt the system
113	shutdown	a. `shutdown now`	Shutdown the system immediately
114	reboot	a. `reboot`	Reboot the system
115	poweroff	a. `poweroff`	Power off the system
116	init	a. `init 0`	Change system runlevel
117	dmesg	a. `dmesg`	Display kernel messages
118	runlevel	a. `runlevel`	Display previous and current system runlevel
119	apt	a. `apt install package`	Package management for Debian-based systems
120	pacman	a. `pacman -Syu`	Package management for Arch Linux
121	yum	a. `yum install package`	Package management for Red Hat-based systems
122	rpm	a. `rpm -qa`	RPM package manager
123	dpkg	a. `dpkg -l`	Debian package manager
124	kill	a. `kill PID`	Terminate a process by PID
125	killall	a. `killall process_name`	Terminate all processes by name
126	top	a. `top`	Display real-time system processes
127	htop	a. `htop`	Display real-time system processes with detailed information
128	ps	a. `ps`	Display information about running processes
129	jobs	a. `jobs`	Display background jobs
130	bg	a. `bg %1`	Move a job to the background
131	fg	a. `fg %1`	Bring a job to the foreground
132	pkill	a. `pkill process_name`	Send a signal to a process by name
133	time	a. `time command`	Measure the execution time of a command
134	timeout	a. `timeout 5 command`	Execute a command with a time limit
135	watch	a. `watch command`	Execute a command repeatedly at a specified interval
136	nice	a. `nice command`	Execute a command with a modified priority
137	renice	a. `renice priority PID`	Modify the priority of a running process
138	alias	a. `alias aliasname=command`	Create an alias for a command
139	history	a. `history`	Display command history

140	whereis	a. `whereis command`	Locate the binary, source, and manual page files for a command
141	find	a. `find path -name filename`	Search for files based on various criteria
142	which	a. `which command`	Locate the executable of a command
143	apropos	a. `apropos keyword`	Search for manual pages based on a keyword
144	sudo	a. `sudo command`	Execute a command as a superuser
145	su	a. `su username`	Switch user
146	printenv	a. `printenv`	Print environment variables
147	set	a. `set`	Display shell variables
148	unalias	a. `unalias aliasname`	Remove an alias
149	export	a. `export VARIABLE=value`	Set an environment variable
150	source	a. `source script.sh`	Execute a script in the current shell
151	man	a. `man command`	Display the manual page for a command
152	info	a. `info command`	Display detailed information about a command
153	bc	a. `bc`	Perform arithmetic operations with arbitrary precision
154	expr	a. `expr expression`	Evaluate an expression and display the result
155	factor	a. `factor number`	Factor a number into prime factors
156	seq	a. `seq 1 10`	Generate a sequence of numbers
157	yes	a. `yes`	Output a string repeatedly until stopped
158	test	a. `test condition`	Evaluate a conditional expression
159	let	a. `let "expression"`	Evaluate an arithmetic expression
160	printf	a. `printf "format" arguments`	Format and print output
161	screen	a. `screen`	Start a new screen session
162	tmux	a. `tmux`	Start a new tmux session
163	at	a. `at time`	Schedule a command to run at a specified time
164	batch	a. `batch`	Schedule a command to run when system load permits
165	atq	a. `atq`	List scheduled jobs
166	atrm	a. `atrm job_id`	Remove a scheduled job
167	cron	a. `cron`	Schedule recurring jobs
168	anacron	a. `anacron`	Schedule recurring jobs with anacron

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manoj@manoj-virtual-machine: ~

```
manoj@manoj-virtual-machine: $ history
  999  alias ll='ls -lrt'
 1000  ll
 1001  info
 1002  emacs one.txt
 1003  gzip one.sh
 1004  gzip six.txt
 1005  ls -lrt
 1006  gunzip six.txt.gz
 1007  ls -lrt
 1008  tar six.txt
 1009  tar -cvf six.txt
 1010  tar -cvf six.tar six.txt
 1011  ls -lrt
 1012  rm six.txt
 1013  ls -lrt
 1014  tar -xvf six.tar
 1015  ls -lrt
 1016  bzip six.txt
 1017  bzip one.txt
 1018  bzip2 one.txt
 1019  ls -lrt
 1020  bunzip one.txt.bz2
 1021  bunzip2 one.txt.bz2
 1022  ls -lrt
 1023  ps
 1024  pkill 2931
 1025  ps
 1026  pgrep
 1027  apropos search
 1028  apropos display
 1029  apropos EDITOR
 1030  apropos host
 1031  cat one.sh
 1032  chmod -777 one.txt
 1033  cat one.sh
 1034  ls -lrt
 1035  cat one.txt
 1036  sudo cat one.txt
 1037  su nanu
 1038  groupadd ex one.txt
 1039  sudo groupadd ex one.txt
 1040  sudo groupadd ex
 1041  ls -lrt
 1042  chgrp ex two.txt
 1043  sudo chgrp ex two.txt
 1044  ls -lrt
 1045  sudo groupdel ex
 1046  ls -lrt
 1047  sudo chgrp manoj two.txt
 1048  ls -lrt
 1049  ip
 1050  ping
 1051  ping manoj
 1052  ping root
 1053  sudo ping
```

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manoj@manoj-virtual-machine: ~

```
 1058  ping -c manoj
 1059  ping -c one.txt
 1060  ping google.com
 1061  tracepath
 1062  tracepath manoj
 1063  tracepath google.com
 1064  netstat
 1065  sudo apt install net-tools
 1066  netstat
 1067  file
 1068  file one.txt
 1069  diff one.txt two.txt
 1070  sudo diff one.txt two.txt
 1071  ddate
 1072  sudo apt install ddate
 1073  ddate
 1074  rename one.txt 1.txt
 1075  sudo apt tnstall rename
 1076  sudo apt install rename
 1077  rename one.txt 1.txt
 1078  cmp one.txt two.txt
 1079  sudo cmp one.txt two.txt
 1080  cp one.txt 1.txt
 1081  sudo cp one.txt 1.txt
 1082  cat 1.txt
 1083  chmod 777 1.txt
 1084  sudo chmod 777 1.txt
 1085  cat 1.txt
 1086  timeout
 1087  timeout one.txt
 1088  timeout 5s cat one.txt
 1089  sudo timeout 5s cat one.txt
 1090  sudo timeout 10s cat one.txt
 1091  ls -lrt one.txt
 1092  chmod 777 one.txt
 1093  sudo chmod 777 one.txt
 1094  ls -lrt one.txt
 1095  timeout 5s cat one.txt
 1096  timeout 1m cat one.txt
 1097  timeout 0.1s cat one.txt
 1098  vim one.txt
 1099  timeout 5s cat one.txt
 1100  vim one.txt
 1101  timeout 5s cat one.txt
 1102  mv one.txt one.sh
 1103  timeout 5s cat one.sh
 1104  mv one.txt ./one.sh
 1105  timeout 5s cat ./one.sh
 1106  vim one.txt
 1107  vim one.sh
 1108  timeout 5s ./one.sh
 1109  timeout 5s one.sh
 1110  timeout 10s one.sh
 1111  timeout 11s one.sh
 1112  tree unix
 1113  sudo apt install tree
```

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manoj@manoj-virtual-machine: ~

```
 1112  tree unix
 1113  sudo apt install tree
 1114  last
 1115  tree unix
 1116  tree demo
 1117  cd ...
 1118  cd ..
 1119  tree quiz
 1120  cd quiz
 1121  usermod
 1122  ls al
 1123  ls-al
 1124  ls -al
 1125  expr
 1126  dlename
 1127  dirname
 1128  expr $+4
 1129  expr $ + 4
 1130  expr $ * 4
 1131  expr $ /* 4
 1132  expr $ \* 4
 1133  pwd
 1134  dirname /home/manoj/unix/quiz
 1135  tr "abc" [:upper:]
 1136  tr "abc" [:upper:] [:lower:]
 1137  echo "hello" | tr al El
 1138  echo "hello" | tr -d "aelou"
 1139  id
 1140  whois domain
 1141  sudo apt install whois
 1142  whois domain
 1143  wget one.txt
 1144  wget two.txt
 1145  file
 1146  file two.txt
 1147  w
 1148  man w
 1149  write manu
 1150  hello manu how are you?
 1151  write manuDU
 1152  DU
 1153  du
 1154  du -h
 1155  du -h quiz
 1156  du -h one.txt
 1157  du -h one.sh
 1158  pkill manu
 1159  usersel manu
 1160  userdel manu
 1161  sudo userdel manu
 1162  pkill 5635
 1163  sudo userdel manu
 1164  user manu
 1165  su manu
 1166  userdel manu
 1167  sudo userdel manu
```

DIFFERENCE BETWEEN “systemctl” AND “service”:

In simple terms, `systemctl` and `service` are commands used in Unix-like operating systems to manage services, which are programs that run in the background and provide specific functionality.

Here's the main difference:

1. `systemctl`:

- `systemctl` is a more modern and powerful command used for controlling systemd, which is a system and service manager for Linux.

- It can start, stop, restart, enable, disable, reload, or check the status of a service.

- It offers more detailed control and management options compared to the `service` command.

Example: systemctl start apache2

2. `service`:s

- `service` is a simpler and older command used for managing services in Unix-like systems that use System V init system or other older init systems.

- It can start, stop, restart, or check the status of a service.

- It's more straightforward and may be more familiar to users accustomed to older Unix systems.

Example: service apache2 restart

In summary, `systemctl` is more powerful and is commonly used in modern Linux distributions, while `service` is simpler and may still be used in systems that haven't adopted systemd.

: INTERVIEW QUESTIONS :

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1)What command would you use to display the current directory you're in?

Answer: The command to display the current directory is pwd, which stands for "print working directory."

2)Explain the difference between ls and ls -l commands.

Answer: ls lists the files and directories in the current directory, while ls -l provides a detailed listing of files and directories, including permissions, owner, group, size, and modification date.

3)How would you search for a specific string within a file in Unix?

Answer: You can use the grep command followed by the string you want to search for and the file name. For example, grep "search_string" file_name.

4)Can you explain the purpose of the grep command in Unix? Provide an example.

Answer: The grep command is used to search for patterns within files. For example, grep "pattern" file.txt searches for the pattern "pattern" within the file "file.txt".

5)How would you create a new directory in Unix?

Answer: You can create a new directory using the mkdir command followed by the directory name. For example, mkdir new_directory.

6)Explain the difference between cp and mv commands in Unix.

Answer: The cp command is used to copy files or directories from one location to another, while the mv command is used to move files or directories from one location to another.

7)How do you check the amount of free disk space available on a Unix system?

Answer: You can use the df command to display information about disk space usage, including the amount of free disk space available.

8)What command would you use to view the contents of a file in Unix without opening it?

Answer: You can use the cat command to display the contents of a file without opening it. For example, cat file.txt.

9)Can you explain what the chmod command does in Unix? Provide an example.

Answer: The chmod command is used to change the permissions of a file or directory. For example, chmod 755 file.txt sets the permissions of "file.txt" to read, write, and execute for the owner, and read and execute for others.

10)How would you terminate a running process in Unix?

Answer: You can use the kill command followed by the process ID (PID) of the process you want to terminate. For example, kill PID. If the process is unresponsive, you can use kill -9 PID to forcefully terminate it.