Linux filesystem hierarchy

File_system	Description
/	Rooti is the top of the file system and nothing is above it. Only the root user can modify contents inside this
/bin	essential binaries and commands needed by all user
/boot	Contains all the files required for booting
/etc	Special files that acts as interface between hardware and software are inside this folder
/sbin	system binaries generally used by system administrators for administrative purposes.
/etc	configuration files for system applications, users, services, and tools
/home	user home directories and every non-root user has a home directory
/lib	Shared libraries that an application requires to run are stored here
/media	Details of inserted devices appear here
/mnt	When temporary devices are connected their contents are accessible here
/srv	Contains data related to server specific servers
/var	logs, variable data
/tmp	temporary files created by programs during execution
/usr	user programs
/opt	optional software or third party software not a part of default system can be found here
/dev	Devices information
/proc	Detailed information about system processes
/sys	system info

Linux commands (_ represents a space)

Navigational command	**Uses**
pwd	Print name of current directory
ls	List contents of the directory
ll or ls -al	List contents of the directory including other details such as permissions
cd (cd_filename)	Change a current working directory
man (man_command)	To know how a specific command work
clear	To clear the screen
File and Directory	
touch (touch_filename)	Create a file
Mkdir (mkdir_dirname)	Create a new directory
rmdir (rmdir-dirname)	Delete a directory
cp (cp_filename_destiantion)	To copy a file and directory
mv (mv_filename_destiantion)	To move a file and directory
rm (rm_filename)	To remove a file
stat (stat_filename)	To view status of the file or a directory
File editing tools	
Vim (vim -filename)	To create a new text file
i	To activate editing mode
Esc and :x	To save the changes
Esc and :q	To quit the editor without saving
Viewing files	
cat (cat_filename)	To view contents in a file
more and less	To view contents in a file
head	To view the first part of files(first 10 lines)

tail	To view the last part of files(last 10 lines)
Searching and filtering	
grep (grep_“search_string”_filename)	To find a specific string in a file
find (find_filename)	search for files in a directory hierarchy
Which (which_-a_program-name)	To find a full executable path for a program in a current environment
whereis (whereis_name)	locate the binary, source, and manual page files for a command
Text processing tools	
cut	Extract fields or characters from text
sort	Sort lines alphabetically or numerically
uniq	Remove or count duplicate lines (use after sort)
wc	Count lines, words, and characters
User management	
adduser/useradd (adduser_username)	To create a new user
id (id_username)	To check if the user exists
Cat /etc/passwd	To view users
passwd (passwd_username)	To update user password
usermod	To modify a user account. Many user modifications can be carried out using this command. Such as adding users to a group, renaming users, changing user home directory.
userdel (userdel_username)	To delete an user
su (su_username)	To switch between user
su -	To switch back to the root user
Group management	
Groupadd (groupadd_name)	To add a new group

Usermod_-aG_groupname_username	To add user to a group
getent (getent_group or getent_group_groupname)	To verify creation of a group
groups	To print a group user is in
Important files for user and group management	
/etc/passwd	Stores users information
/etc/shadow	Contains encrypted password and password related information
/etc/group	Stores information related to groups
File permission and ownership	
Numbers associated with file permission: (read) r - 4 (write) w - 2 (execute) x - 1 None - 0	r-w = 6 w-x = 3 r-x = 5 r-w-x = 7
chown (chown_user:group_filename)	To change ownership of the file
rwx-rwx-rwx	First rwr is permission for user Second rwr is permission for group Third rwr is permission for other
chmod (chmod_permission_filename) For example: chmod 774 new.txt	To change file permission The example sets permission for the user and group to read write and execute and others can only read the file new.txt
chgrp (chgrp_groupname_file)	To change group of the file
Process and system management	
ps	To report a snapshot of current processes
top	Report linux processes
htop	Report linux processes, same like top but allows user scroll and interact with the process and also select multiple processes and perform actions to them.
uptime	Tells how long a system has been running

free	Display amount of free and used memory in the system
vmstat	Report virtual memory statistics
kill	Send a signal to process
Disks storage and file system	
lsblk	Lists information about all available specified block device.
blkid	Gives attribute information about block devices. But recommend to use lsbsk –fs
df	Report file system space uses
du	Estimate file uses space
Mounting : the process of attaching a storage device or filesystem to a specific directory in the system's file hierarchy, called a mount point	
Package management	
apt update	To update a package or linux
apt_install (apt_install_packagename)	To install a package
apt_purge (apt_purge_packagename)	To remove the package completely including configurations
apt_remove (apt_remove_packagename)	To remove a package while keeping configuration files
apt_search (apt_search_packagename)	To search and display given regex(regular expression) out of all packages
autoremove	To remove dependencies that were installed unintentionally
Service Management	

systemctl start service Example: systemctl start nginx.service	To start a service
systemctl status service Example: systemctl status nginx.service	To check the status of service, whether running, enabled or disabled
systemctl stop service Example: systemctl stop nginx.service	To stop a service
systemctl restart service Example: systemctl restart nginx.service	To restart a service
systemctl enable service Example: systemctl enable nginx.service	To enable a service
systemctl is-enabled service systemctl is-enabled ssh	To check if the service is enaled