Linux Commands and Examples

vol-1

Commands : A to E

Volume : 1

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#1 apt

apt - command line interface for Ubuntu and Debian based systems
apt provides a high-level command line interface for the package management system

To install packages
```
$ sudo apt install package_name
```

To Check All Dependencies of a Package
```
$ sudo apt depends bind9
```

To Search for a Package
```
$ sudo apt search apache2
```

To View Information About Package
```
$ sudo apt show apache2
```

To Verify a Package for any Broken Dependencies
```
$ sudo apt check apache2
```

To Update System Packages
```
$ sudo apt update
```

To Upgrade System
```
$ sudo apt upgrade
```

To Remove Unused Packages
```
$ sudo apt autoremove
```

To Clean Old Repository of Downloaded Packages
```
$ sudo apt autoclean
```

To Remove Packages with its Configuration Files

```
$ sudo apt purge apache2
```

To Install .Deb Package

```
$ sudo apt deb package-amd64.deb
```

To Find Help for apt

```
$ sudo apt help
```

To Remove Packages

```
$ sudo apt remove package_name
```

To List Packages

```
$ sudo apt list
```

#2 apt-cache

apt-cache - query the APT cache for debian and ubuntu based system

Examples:

To Find Out Package Name and Description of Software

```
$ sudo apt-cache search vsftpd
```

To find and list down all the packages starting with apache2

```
$ sudo apt-cache pkgnames apache2
```

To List All Available Packages

```
$ sudo apt-cache pkgnames
```

To Check Package Information

```
$ sudo apt-cache show apache2
```

To Check Dependencies for Specific Packages

```
$ sudo apt-cache showpkg vsftpd
```

To Check statistics of Cache

```
$ sudo apt-cache stats
```

To install Packages without Upgrading

```
$ sudo apt-get install packageName --no-upgrade
```

To Upgrade Only Specific Packages

```
$ sudo apt-get install packageName --only-upgrade
```

To Remove Packages Without Configuration

```
$ sudo apt-get remove package_name
```

To Completely Remove Packages

```
$ sudo apt-get purge package_name
```

To Clean Up Disk Space

```
$ sudo apt-get clean
```

To Download a Package Without Installing

```
$ sudo apt-get download apache2
```

To Check Change Log of Package

```
$ sudo apt-get changelog vsftpd
```

To Check Broken Dependencies

```
$ sudo apt-get check
```

To Auto clean Apt-Get Cache

```
$ sudo apt-get autoclean
```

#3 ar

ar - create, modify, and extract from archives

install binutils for ar

```
$ sudo apt install binutils
```

create 4 text files file1.txt file2.txt file3.txt file4.txt

general syntax to create new archive

```
$sudo ar r [archive file] [file(s)]
```

To create a new archive myfiles.a and place all .txt files in archive

```
$sudo ar r myfiles.a *.txt
```

To add a new file file5.txt to the archive

```
$sudo ar r myfiles.a file5.txt
```

To print the archive members

```
$sudo ar p myfiles.a
```

To print the archive contents in a list format

```
$sudo ar t myfiles.a
```

To extract a file4.txt from archive

```
$sudo ar x myfiles.a file4.txt
```

To Extract multiple files from archive

```
$sudo ar x myfiles.a file1.txt file2.txt file3.txt
```

To Extract all files

```
$sudo ar x myfiles.a
```

To delete a file from an archive

```
$sudo ar d myfiles.a file5.txt
```

To delete multiple files

```
$sudo ar d myfiles.a file5.txt file4.txt file3.txt
```

To read the contents of an archive

```
$sudo ar pv myfiles.a
```

#4 add-apt-repository

add-apt-repository - Adds a repository into the /etc/apt/sources.list
or /etc/apt/sources.list.d or removes an existing one
example:

```
$ sudo add-apt-repository ppa:PPA_REPOSITORY_NAME/PPA
$ sudo add-apt-repository ppa:libreoffice/ppa
```

To list all repositories

```
$ sudo apt policy
```

To remove PPA repository

```
$ sudo add-apt-repository --remove ppa:PPA_REPOSITORY_NAME/PPA
$ sudo add-apt-repository --remove ppa:libreoffice/ppa
```

#5 adduser

adduser - add a user to the system

install the adduser package

```
$ sudo apt install adduser
```

To add a new user

```
$ adduser username
```

To add a user with a different shell.

```
$ sudo adduser username --shell /bin/sh
```

To add a new user with a different configuration file

```
$ sudo adduser username --conf custom_config.conf
```

To add a user with different home directory.

```
$ sudo adduser username --home /home/klug/
```

To get the version of the adduser command

```
$ sudo adduser --version
```

To display the help section of the adduser command

```
$ sudo adduser -h
```

#6 useradd

useradd - create a new user or update default new user information

To add a new user klug

```
$ sudo useradd klug
```

To set a password for account klug

```
$ sudo passwd klug
```

To create a User with Different Home Directory

```
$ sudo useradd -d /data/myprojects klug
```

To view user related info

```
$ sudo cat /etc/passwd | grep klug
```

To create a User with a Specific User ID

```
$ sudo useradd -u 1007 klug
```

Create a User with a Specific Group ID

```
$ sudo useradd -u 1007 -g mygroup klug
```

To verify the user’s GID

```
$ id -gn klug
```

To Add a User klug to Multiple Groups

```
$ sudo groupadd admins
$ sudo groupadd devops
$ sudo groupadd cloud
$ sudo usermod -a -G admins,devops,cloud klug
$ sudo useradd -G admins,devops,cloud ilugc
```

To verify

```
$ id klug
```

```
$ id ilugc
```

To Add a User without Home Directory

```
$ sudo useradd -M klug
```

to check

```
$ ls -l /home/klug
```

To Create a User with Account Expiry Date

```
$ sudo useradd -e 2022-08-30 klug
```

To verify the age of the account and password

```
$ chage -l klug
```

To Create a User with Password Expiry Date

```
$ sudo useradd -e 2022-04-01 -f 40 klug
```

To verify

```
$ sudo chage -l klug
```

To Add a User with Custom Comments

```
$ sudo useradd -c "Welcome to foss world  +91-9999988888" klug
```

To verify

```
$ sudo tail -1 /etc/passwd
```

To Create User Login Shell in Linux

```
$ sudo useradd -s /sbin/nologin klug
```

To check

```
$ sudo tail -1 /etc/passwd
```

To Add a User with Specific Home Directory, Default Shell, and Custom Comment

```
$ sudo useradd -m -d /var/www/klug -s /bin/bash -c "website admin"
-U klug
```

To Add a User with Home Directory, Custom Shell, Custom Comment, and UID/GID

```
$ sudo useradd -m -d /var/www/klug -s /bin/sh -c "website admin" -u 1000 -g 100 klug
```

To Add a User with Home Directory, No Shell, Custom Comment, and User ID

```
$ sudo useradd -m -d /var/www/klug -s /usr/sbin/nologin -c "web admin" -u 1001 klug
```

To Add a User with Home Directory, Shell, Custom Skell/Comment, and User ID

```
$ sudo useradd -m -d /var/www/klug -k /etc/custom.skell -s /bin/sh -c "custom message" -u 1020 klug
```

To Add a User without Home Directory, No Shell, No Group, and Custom Comment

```
$ sudo useradd -M -N -r -s /bin/false -c "Disabled group Member" klug
```

#7 groupadd

groupadd - create a new group

To create a new Linux group

```
$ sudo groupadd webadmin
```

To check

```
$ sudo grep webadmin /etc/group
```

To Create new group with a specific groupid

```
$ sudo groupadd webadmin -g 1030
```

To check

```
$ sudo grep 1030 /etc/group
```

To create group with group id with certain range of id

```
$ sudo groupadd webadmin -K GID_MIN=1500 -K GID_MAX=2000
```

#8 add group

addgroup - add group to the system

install addgroup package

```
$ sudo apt install addgroup
```

To add a new group ilugc

```
$ sudo addgroup ilugc
```

To add a new group with specified group id

```
$ sudo addgroup klug --gid 6789
```

To create a group with a specific shell

```
$ sudo addgroup klug --shell /bin/sh
```

To enter verbose mode

```
$ sudo addgroup webadmin --debug
```

To display help related to addgroup command.

```
$ addgroup --help
```

#9 alias

alias - customised shortcut for commands

```
$ sudo alias name="value"
```

create a user klug with home directory then,

```
$ sudo alias cd="cd /home/klug"
root@klug:~# cd
root@klug:/home/klug
```

```
$ sudo alias d="df -Th"
root@klug:~# d
```

To print all the defined aliases is reusable format

```
# alias -p
```

#10 unalias

unalias - this command will remove the customised shortcuts created in alias

unalias - Removing an existing alias

```
$ sudo unalias [alias name]
```

```
$ sudo alias d="df -Th"
```

to remove the alias d

To check

```
$ sudo alias -p
```

```
$ sudo unalias d
```

will remove the shortcut d for df -Th

#11 apg

apg - generates several random passwords

```
$ apg -h
```

display the options

```
$ apg -n 2 -m 8 -x 10
```

-n number of passwords

-m minimum password length

-x maximum password length

will give 2 passwords with min password length 8 characters and max 10 characters

#12 apropos

apropos - search the manual page names and descriptions

example:

```
$ apropos useradd
$ apropos adduser
$ apropos df
$ apropos free
$ apropos command_name
```

#13 arch

arch - print machine hardware name

```
$ arch
```

#14 badblocks

badblocks - search a device for bad blocks

By default it doesn’t display any output on the screen, when there are no bad blocks as shown below.

```
$ sudo badblocks /dev/sda1
```

To view the badblocks search in verbose mode i.e how much scanning it has done so far

```
$ sudo badblocks -v /dev/sda1
```

By default it uses 1024 as block size , we specify a block size using -b option

```
$ sudo badblocks -v -b 2048 /dev/sda1
```

To Specify Maximum Bad Blocks Count to 100

```
$ sudo badblocks -v -e 100 /dev/sda1
```

Write the Badblocks to a File

```
$ sudo badblocks -v -o badblocks.log /dev/sdb1
```

To Perform a Badblock Write Mode Test

```
$ sudo badblocks -vw /dev/sda1
```

To display current progress of the test

```
$ sudo badblocks -s /dev/sda1
```

To specify the number of blocks to be tested at a time ,the default is 64 blocks.

```
$sudo badblocks -sc 2000 /dev/sda1
```

To write the list of badblocks to a file rather than on standard output

```
$ sudo badblocks -o out.txt /dev/sda1
```

To provide an input file which contains a list of known bad blocks in device, it will skip the known bad blocks at the time of test

```
$ sudo badblocks -i known-badblocks.txt /dev/sda1
```

To perform a non-destructive read-write test on device,

```
$ sudo badblocks -sn /dev/sda1
```

To test blocks from the first block to the specified last block

```
$ sudo badblocks -s /dev/sda1 2000
```

It is specified by passing the starting block number to test as an option after last block.

```
$ sudo badblocks -s /dev/sda1 2000 200
```

#15 bg

bg command in linux is used to place foreground jobs in background.

```
$ ping google.com
```

press CTRL+Z

To view running jobs (in my environment)

```
$ jobs -l
```

```
[1]+ 73192 Stopped                 ping google.com
```

To resume the job ping google.com job with job number 1

```
$ bg %1
```

To kill the job # ping google.com

```
$ kill -s stop 73192
```

or

```
$ kill -s stop 1
```

or

```
$ pkill -stop 73192
```

or

To kill the job

```
$ kill -9 73192
```

#16 blkid

blkid - locate/print block device attributes

To display all the block devices

```
$ sudo blkid
```

To display the I/O limits on a particular block device

```
$ sudo blkid -i /dev/vda1
```

To displays information about /dev/vda1

```
$ sudo blkid -p /dev/vda1
$ sudo blkid -pi /dev/vda1
```

To look up the devices that matches a specific search criteria

```
$ sudo blkid -l -t TYPE=ext4
$ sudo blkid -l -t TYPE=swap
```

search based on UUID

```
$ sudo blkid -U 02a5af55-4c2a-45b7-9876-599abc192ada
```

To display in list format

```
$ sudo blkid -o list
```

#17 bluetoothctl

bluetoothctl - interactive bluetooth control tool

check for bluetoothctl status

```
$ sudo systemctl status bluetooth
$ sudo systemctl start bluetooth
$ sudo systemctl enable bluetooth
```

search for Bluetooth devices

```
$ bluetoothctl scan on
```

To make your Bluetooth adapter discoverable to other devices

```
$ bluetoothctl discoverable on
```

To connect with a Bluetooth device is to pair it with your PC using the pair command

```
$ bluetoothctl pair MAC_ID_of_Device
```

To connect with already paired device

```
$ bluetoothctl connect MAC_ID-of_Device
```

To List Paired Devices With bluetoothctl

```
$ bluetoothctl paired-devices
```

To list devices that are within the Bluetooth range of your computer

```
$ bluetoothctl devices
```

To trust a Bluetooth device

```
$ bluetoothctl trust MAC_ID_of_Device
```

To untrust a device

```
$ bluetoothctl untrust MAC_ID_of_Device
```

To unpair a Bluetooth device

```
$ bluetoothctl remove MAC_ID_of_Device
```

To disconnect a device from system

```
$ bluetoothctl disconnect MAC_ID_of_Device
```

To block a specific device from connecting to system

```
$ bluetoothctl block MAC_ID_of_Device
```

To enter interactive mode

```
$ bluetoothctl
[bluetooth]# devices
[bluetooth]# exit
```

#18 brctl

brctl - ethernet bridge administration

```
$ sudo apt install bridge-utils
```

To Create New Ethernet Bridge using addbr

```
$ sudo brctl addbr dev
$ sudo brctl addbr stage
$ sudo brctl addbr prod
```

To Display Available Ethernet Bridge using show

```
$ sudo brctl show
```

To Delete Existing Ethernet Bridge using delbr

```
$ sudo brctl delbr dev
```

To Add an Interface to Existing Bridge

```
$ sudo brctl addif dev eth0
```

To Add Multiple Interfaces to Existing Bridge

```
$ sudo brctl addif dev eth0 eth1
```

To Track MAC address of a Bridge

```
$ sudo brctl showmacs dev
```

To Set Ageing Time for Mac Address on a Bridge

```
$ sudo brctl setaging dev 300
```

To Setup Spanning Tree on Ethernet Bridge

```
$ sudo brctl stp dev on
```

or

```
$ sudo brctl stp dev yes
```

To turn off spanning tree on your ethernet bridge

```
$ sudo brctl stp dev off
```

To Display STP Parameter Values of a Bridge

```
$ sudo brctl showstp dev
```

To Change Bridge Parameters Values

```
$ sudo brctl setageing dev 200
```

#19 bunzip2

bunzip2 - a block-sorting file compressor

To compress file input.txt it deletes original

```
$ bzip2 -z input.txt
```

will give input.txt.bz2

To decompress the input.txt.bz2

```
$ bzip2 -d input.txt.bz2
```

To compress file input.txt but does not deletes the original file

```
$ bzip2 -k input.txt
```

To check the integrity of file and to check file is corrupt or not

```
$ bzip2 -t input.txt.bz2
```

To show the compression ratio for each file processed in verbose mode

```
$ bzip2 -v input.txt
```

#20 bzcat

bzcat - decompresses files to stdout

bzcat - decompresses files to stdout

To read the compressed file without decompressing it

example:

create a file number.txt

```
$ echo "for(i=1; i<=10000; i++) {i;}" | bc > number.txt
```

bzip the number.txt file

```
$ bzip2 number.txt
$ bzcat number.txt.bz2
```

#21 bzip2recover

bzip2recover - recovers data from damaged bzip2 files

example:

```
$ bzip2recover file_name
$ bzip2recover archive.tar.bz2
```

#22 blkdeactivate

blkdeactivate – utility to deactivate block devices

To Deactivate all supported block devices , If a device is mounted, skip its deactivation

```
$ sudo blkdeactivate
```

To Deactivate all supported block devices , If a device is mounted, unmount it

```
$ sudo blkdeactivate -u
```

#23 bc

bc - An arbitrary precision calculator language

```
$ echo "12+5" | bc
$ echo "10^2" | bc
```

To store the result of complete operation in variable

```
$ x=`echo "12+5" | bc`
$ echo $x
$ echo "var=10;var" | bc
$ echo "var=10;var^=2;var" | bc
```

To store the result of complete operation in variable

```
$ x=`echo "var=500;var%=7;var" | bc`
$ echo $x
```

```
$ echo "var=11;++var" | bc
```

Variable is increased first and then result of variable is stored

```
$ echo "var=20;var++" | bc
```

Result of the variable is used first and then variable is incremented

```
$ echo "var=20;--var" | bc
```

Variable is decreased first and then result of variable is stored

```
$ echo "var=10;var--" | bc
```

Result of the variable is used first and then variable is decremented.

#24 baobab

Baobab - A graphical tool to analyze disk usage

```
$ baobab
$ baobab /dev/
```

#25 apparmor

AppArmor is a Linux kernel security module that allows the system administrator to restrict programs capabilities with per-program profiles in ubuntu, its similar to selinux in redhat based systems

apparmor_status - display various information about the current AppArmor policy

```
$ sudo  apparmor_status
```

#26 aa-enabled

aa-enabled - test whether AppArmor is enabled in ubuntu systems

```
$ aa-enabled
Yes
```

#27 aa-remove-unknown

aa-remove-unknown - remove unknown AppArmor profiles

```
$ sudo aa-remove-unknown
```

#28 aa-status

aa-status - display various information about the current AppArmor policy.

```
$ sudo aa-status
```

#29 aa-teardown

aa-teardown - unload all AppArmor profiles

```
$ sudo aa-teardown
```

#30 bzdiff

bzdiff - compare bzip2 compressed files

examples:

To output a normal diff

```
$ bzdiff --normal file1.bz2 file2.bz2
```

To output in two columns

```
$ bzdiff -y file1.bz2 file2.bz2
```

#31 bzcmp

bzcmp - compare two bzip2 compressed file internally it uses cmp command

example:

```
$ bzcmp -b file1.bz2 file2.bz2
```

#32 bzgrep

bzgrep - search possibly bzip2 compressed files for a regular expression

example:

```
$ bzgrep -i "keyword" file.txt.bz2
$ bzgrep -i "keyword" file1.bz2
```

#33 bzless

bzless - file perusal filter for crt viewing of bzip2 compressed text

example:

```
$ echo "for(i=1; i<=10000; i++) {i;}" | bc > number.txt
$ bzip2 number.txt
$ bzless number.txt.bz2
```

#34 bzmore

bzmore - file perusal filter for crt viewing of bzip2 compressed text

To view the content of bzip2 compressed files page by page.

example:

```
$ echo "for(i=1; i<=10000; i++) {i;}" | bc > number.txt
$ bzip2 number.txt
$ bzmore number.txt.bz2
```

#35 chattr

chattr - change file attributes on a Linux file system

To add attributes on files and immutable to secure from deletion
create file sample.txt

```
$ sudo chattr +i sample.txt
```

To list the file attributes on a Linux second extended file system

```
$ lsattr sample.txt
----i---------e----- sample.txt
```

Now change permission , rename , remove force will not be permitted

To unset attribute on Files

```
$ sudo chattr -i sample.txt
$ lsattr sample.txt
--------------e----- sample.txt
```

Now its possible to rename , remove , change permissions of the file sample.txt

To open the file only in append mode and the previous data cannot be modified
create a text file example.txt

```
$ sudo chattr +a example.txt
$ lsattr example.txt
-----a--------e----- example.txt

$ echo "this is line two" > example.txt
bash: sample.txt: Operation not permitted
$ echo "this is line two" >> example.txt
$ cat example.txt
```

```
this is line one
this is line two
```

To secure entire directory important_folder and its files

```
$ sudo chattr -R +i important_folder
```

To unset it

```
$ sudo chattr -R -i important_folder
```

#36 cancel

cancel - cancel jobs

examples:

To cancel the current print job

```
$ cancel
```

To cancel all jobs

```
$ cancel -a
```

To cancel job printer-1

```
$ cancel printer-1
```

To cancel with printer name laser-100

```
$ cancel laser-100
```

To cancel all the print jobs that are queued for the user klug

```
$ cancel -u klug
```

#37 cat

cat - concatenate files and print on the standard output

example:

To display contents of file

```
$ cat /etc/group
```

To view contents of multiple files

```
$ cat file3.txt file4.txt
```

To create a file with cat command

```
$ cat > file5.txt
this is file 5
^D
```

To view cat command with large file size

```
$ cat file.txt | more
$ cat file.txt | less
```

To display $ at the end of each Line using cat

```
$ cat -E file1.txt
```

To display line numbers in file

```
$ cat -n number.txt
```

To display multiple files

```
$ cat file1.txt; cat file2.txt; cat file3.txt
```

To redirect the standard output of a file into a new file

```
$ cat file1 > file2
```

To append in existing file

```
$ cat file1 >> file2
```

To redirect all output files to a new single file

```
$ cat file3.txt file4.txt file5.txt > file6.txt
```

#38 cd

cd - change directory

example:

change current directory to /usr/share

```
$ cd /usr/share/
```

switch back to previous directory

```
$ cd -
```

To change current directory to parent directory

```
$ cd ..
```

To show last working directory from where we work

```
$ cd --
```

To move two directory up from where we now

```
$ cd ../ ../
```

move to users home directory from anywhere

```
$ cd ~
```

pushd saves the current location to memory and changes to the requested directory

```
$ pushd /etc/perl/Net/
```

```
/etc/perl/Net ~
```

when popd command is entered, fetch the saved directory location from memory and makes it current working directory

```
$ popd
```

#39 cfdsik

cfdisk - display or manipulate a disk partition table

example:

```
$ sudo cfdisk
$ sudo cfdisk /dev/sda1
```

#40 chacl

chacl - change the access control list of a file or directory

example:

To change the ACL of a file

```
$ chacl u::rwx,g::r-x,o::r-- file
```

To set default acl for a directory

```
$ chacl -d u::rwx,g::r-x,o::r-- file_name
```

To remove the ACL

```
$ chacl -R file
```

To remove the directory default ACL

```
$ chacl -D /directory_name
```

To remove all ACL

```
$ chacl -B file
```

To list the ACL for a file/directory

```
$ chacl -l file/directory
```

To set the access ACL recursively

```
$ chacl -r u::r-x,g::r-x,o::r-- /directory
```

#41 chage

chage - change user password expiry information

example:

To view the list of options

```
$ chage -h
```

To view the account aging information

```
$ chage -l user_name
```

To set the last password change date to your specified date

```
$ chage -d 2022-03-01 user_name
```

To set the date when the account should expire

```
$ chage -E 2022-06-30 user_name
```

To specify the maximum and minimum number of days between password change

```
$ chage -M 90 user_name
```

To give prior warning 7days before the password expires

```
$ chage -W 7 user_name
```

To make the user account to be locked after X number of inactivity days

```
$ chage -I 10 user_name
```

#42 check-bios-nx

check-bios-nx - determine if BIOS has blocked CPU's NX capabilities

NX stands for No eXecute is a technology used in processors to prevent the execution of certain types of code

This program attempts to determine if the running x86-based CPU has NX capabilities

If the CPU is NX-capable but the nx bit is missing from flags, exit 1 otherwise exit 0 (nothing wrong with BIOS)

```
$ sudo check-bios-nx --verbose
```

ok: the NX bit is operational on this CPU.

#43 check-language-support

check-language-support - returns the list of missing packages in order to provide a complete language environment

To show installed packages as well as missing ones

```
$ check-language-support --show-installed
```

To check all available languages

```
$ check-language-support -a
```

#44 cheese

cheese - tool to take pictures and videos from your webcam

To Start in fullscreen mode

```
$ cheese -f
```

Start in wide mode, with the thumbnails to the right of the video preview

```
$ cheese -w
```

To use the supplied DEVICE as the video capture device

```
$ cheese --device=DEVICE
```

#45 cal

cal - displays a calendar

example:

To Show current month calendar

```
$ cal
```

To Show calendar of selected month and year

```
$ cal August 2002
```

To Show the calendar of current year with the current date highlighted

```
$ cal -y
```

To Show the whole calendar of the year

```
$ cal 2010
```

To Show calendar of previous, current and next month

```
$ cal -3
```

#46 chfn

chfn - change real user name and information

```
$ chfn
Password:
Changing the user information for klug
Enter the new value, or press ENTER for the default
Full Name: klug
Room Number [123]: 456
Work Phone [9898]: 2323
Home Phone [9999]: 4545
```

To change the full name on the account

```
$ sudo chfn -f kanchilug klug
```

To change the work phone number on the account

```
$ sudo chfn -w 9999988888 klug
```

To change the room number on the account

```
$ sudo chfn -r 8888 klug
```

To change the home phone number on the account

```
$ sudo chfn -h 7777 klug
```

To change any other detail on the account

```
$ sudo chfn -o "7th floor room 55555" klug
```

#47 chgrp

chgrp - change group ownership

To change a directory group ownership

```
$ sudo chgrp ilugc example
```

To change group ownership of a file

```
$ sudo chgrp ilugc abc.txt
```

To recursively change group ownership

```
$ sudo chgrp -R ilugc example
```

To change the group of a file to match the group of another, reference file

To change the group ownership of the file abc.file to be the same as that of the test.file

```
$ sudo chgrp --reference=test.file abc.file
```

To list the changes that happened in our example directory

```
$ sudo chgrp -c -R ilugc example
```

To describe the action or non-action taken for every File

```
$ sudo chgrp -v ilugc file1
```

To change the group name of link files

```
$ sudo chgrp --dereference ilugc symbolic_link
```

To suppress potential error messages when executing the chgrp command

```
$ sudo chgrp -f [GROUP_NAME] [DIRECTORY/FILE_NAME]
```

```
$ sudo chgrp -f ilugc no_file
```

#48 chmem

chmem - configure memory

The chmem command sets a particular size or range of memory online or offline

To request 1024 MiB of memory to be set online

```
$ sudo chmem --enable 1024
```

2 GiB of memory to be set online

```
$ sudo chmem -e 2g
```

This command requests the memory range starting with 0x00000000e4000000 and ending with 0x00000000f3ffffff to be set offline

```
$ sudo chmem --disable 0x00000000e4000000-0x00000000f3ffffff
```

The memory block number 10 to be set off-line

```
$ chmem -b -d 10
```

#49 chmod (symbolic mode)

chmod - change file mode bits

Symbolic Method
u - The file owner.
g - The users who are members of the group.
o - All other users.
a - All users, equal to ugo.

r - read
w - write
x - execute

- Removes the specified permissions.
+ Adds specified permissions.
= Changes the current permissions to the specified permissions

To set group permission to read the file
```
$ chmod g=r file_name
```

To set other users permission to read the file
```
$ chmod o=r file_name
```

To set user , group and others permission to read the file
```
$ chmod ugo=r file_name
```

To set no permission to execute for all users
```
$ chmod a-x file_name
```
or
```
$ chmod ugo-x file_name
```

To set user alone full permission and no permission to group and other users

```
$ chmod og-rwx filename
```

To set user , group and others full permissions

```
$ chmod a=rwx file_name
```

or

```
$ chmod ugo=rwx file_name
```

To set read, write and execute permission to the file’s owner, read permissions to the file’s group and no permissions to all other users

```
$ chmod u=rwx,g=r,o= file_name
```

To set file owners permission to group and others permissions

```
$ chmod g+u,o+u file_name
```

To set sticky bit to a given directory

```
$ chmod o+t dir_name
```

To set Recursively remove the write permission for other users and group

```
$ chmod -R o-w,g-w dir_name
```

#50 chmod (numeric mode)

chmod - change file mode bits

numeric method
r (read) = 4
w (write) = 2
x (execute) = 1
no permissions = 0

rwx=4+2+1=7
rw= 4+2=6
rx= 4+1=5

To set read , write , execute permission to users , group and others
$ chmod 777 file_name

To set read , write , execute permission to users and read permission only for group and others
$ chmod 744 file_name

To set users read, write and execute permissions, read and execute permissions to group members and no permissions to all other users
$ chmod 750 file_name

To recursively set read, write, and execute permissions to the file owner and no permissions for group and all other users on a given directory
$ chmod -R 700 dir_name

To set the file’s permissions to be same for (file2_name) as those of the specified reference file (file1_name)

```
$ chmod --reference=file1_name file2_name
```

To set the permissions of all files and subdirectories under the /var/www to 700

```
$ chmod -R 700 /var/www
```

To set read, write, and execute permissions, and a sticky bit to a given directory

```
$ chmod 1777 dir_name
```

#51 chown

chown - change file owner and group

To change the owner of a file

```
$ sudo chown klug file.txt
```

To change the group of a file

```
$ sudo chown :developers file.txt
```

To change both owner and the group

```
$ sudo chown klug:developers file.txt
```

To change on symbolic link file

```
$ sudo chown ilugc:devops symlnk_file
```

To forcefully change the owner/group of symbolic file

```
$ sudo chown -h ilugc:devops symlnk_file
```

To change owner only if a file is owned by a particular user

```
$ sudo chown --from=klug ilugc file_name
```

To change group only if a file already belongs to a certain group

```
$ sudo chown --from=:developers :devops file_name
```

To copy the owner/group settings from one file to another

```
$ sudo chown --reference=fileX fileY
```

To change the owner/group of the files by traveling the directories recursively

```
$ sudo chown -R ilugc:devops dir_name/
```

To forcefully change the owner/group of a symbolic link directory recursively

```
$ sudo chown -R -H klug:developers symlnk_dir
```

To list all the changes made by the chown command

```
$ sudo chown -v -R ilugc:devops file_name
```

#52 chpasswd

chpasswd - update passwords in batch mode

```
$ sudo chpasswd
klug: p@ssword1
ilugc: p@ssword2
CTRL+D
```

storing username and password in a file and give input to chpasswd

```
$ cat > password.txt
klug: p@ssword1
ilugc: p@ssword2
```

then,

```
$sudo chpasswd < password.txt
```

or

```
$ sudo cat password.txt | chpasswd
```

To apply encryption algorithm on password

```
$sudo chpasswd -c SHA512
$ sudo chpasswd -c SHA256
$ sudo chpasswd --md5
```

#53 chsh

chsh - change login shell

To set login shell for user1

```
$ chsh -s /bin/bash user1
```

```
$ chsh
Password: *****
Changing the login shell for klug
Enter the new value, or press ENTER for the default
Login Shell [/bin/bash]: /bin/sh
```

To change current login shell from sh to bash

```
$ echo $SHELL
/bin/sh
$ chsh -s /bin/bash
$ echo $SHELL
/bin/bash
```

#54 cksum

cksum - checksum and count the bytes in a file

cksum command in Linux is used to display a cyclic redundancy check (CRC) value

CRC is unique for each file and only changes if the file is edited

```
$ cksum file.txt
```

```
2410262730 15 file.txt
```

after transfer of file.txt to other device or location

check with cksum

```
$ cksum file.txt
```

```
2410262730 15 file.txt
```

CRC value is same hence the file is not corrupted or edited

#55 clear

clear - clear the terminal screen

clear the terminal

```
$ clear
```

or

CTRL+l

or

```
$ reset
```

or

```
$ printf "\033c"
```

#56 cmp

cmp - compare two files byte by byte

cmp command reports the byte and line number if a difference is found

```
$ cmp file1.txt file2.txt
```

To display the differing bytes in the output

```
$ cmp -b file1.txt file2.txt
```

To skip a particular number of initial bytes from both the files

```
$ cmp -i 100 file1.txt file2.txt
```

To input the number of bytes we want to skip

```
$ cmp -i 100:120 file1.txt file2.txt
```

To print byte position and byte value for all differing bytes

```
$ cmp -l file1.txt file2.txt
```

To limit the number of bytes we want to compare

```
$ cmp -n 500 file1.txt file2.txt
```

#57 colrm

colrm - remove columns from a file

```
$ cat number.txt
123456789
```

```
$ colrm 4 6 < number.txt
123789
```

it will remove 4 5 and 6 column in the line

```
$ colrm 1 3 < number.txt
456789
```

it will remove 1 2 and 3 column in the line

#58 column

column - columnate lists

To display the information of the text file in form of columns

```
$ column employee.txt
```

To List File Content in Tabular Format

```
$ column -t employee.txt
```

To convert file rows into columns

```
$ column -x employee.txt
```

#59 comm

comm - compare two sorted files line by line

```
$ cat file1.txt
D1
D2
S1
S2
X1

$ cat file2.txt
D1
D2
S1
Z1
$ comm file1.txt file2.txt
```

To display first column

```
$ comm -23 file1.txt file2.txt
```

To display second column

```
$ comm -13 file1.txt file2.txt
```

To display third column

```
$ comm -12 file1.txt file2.txt
```

#60 compgen

compgen - is a bash built-in command which is used to list all the commands that could be executed in the Linux system

To list all commands available to be directly executed.

```
$ compgen -c
```

To search for commands having a specific keyword

```
$ compgen -c | grep reminna
```

To count total number of commands available for use

```
$ compgen -c | wc -l
```

To list all the bash alias

```
$ compgen -a
```

To list all the bash built-ins

```
$ compgen -b
```

To list all the bash keywords

```
$ compgen -k
```

To list all the bash functions

```
$ compgen -A function
```

#61 convert

convert - convert between image formats as well as resize an image,blur, crop, despeckle, dither, draw on, flip, join, re-sample

```
$ convert picture.jpg picture.png

$ convert picture.png picture.jpg

$ convert picture.jpg -rotate 45 picture.png

$ convert picture.png -flip picture.png

$ convert picture.jpg -font courier -fill black -pointsize 50 -annotate +50+50 'ILUGC' picture.jpg

$ convert picture.jpg picture_flip.jpg -append appended.jpg
```

#62 cpio

cpio - copy files to and from archives

To create a *.cpio file

```
$ ls | cpio -ov > my_files.cpio
```

To extract a *.cpio file

```
$ cpio -iv < my_files.cpio
```

To create *.tar archive file using cpio

```
$ ls | cpio -ov -H tar > myfiles.tar
```

To extract *.tar archive file using cpio

```
$ cpio -iv -F myfiles.tar
```

To create a *.cpio archive with selected files

```
$ find . -iname "*.txt" | cpio -ov > myfiles.cpio
```

To create a *.tar archive with selected files

```
$ find . -iname "*.txt" | cpio -ov -H tar > myfiles.cpio
```

To only view *.tar archive file using cpio

```
$ cpio -it -F myfiles.tar
```

#63 cp

cp - copy files and directories

To copy file to a directory

```
$ cp file_name /opt/
```

To copying multiple files to a directory

```
$ cp file1_name file2_name file3_name /opt
```

To copying the files interactively

```
$ cp -i file_name /opt
```

To verbose output during copy command

```
$ cp -v file_name /opt
```

To copying a directory or folder

```
$ cp -r /home/klug /opt/backup
```

To archive files and directory during copy

```
$ cp -a /home/klug /opt/backup/
```

To copy only when source file is newer than the target file

```
$ cp -v -u  file_*.txt /opt/backup/
```

To create symbolic links using cp command

```
$ cp -s /home/klug/file1.txt /opt/backup/
```

To create hard link using cp command

```
$ cp -l /home/klug/file.txt /opt/backup/
```

To copy attributes from source to destination

```
$ cp --attributes-only /home/klug/file.txt  /opt/backup/
```

To preserve mode, ownership and timestamps when copying

```
$ cp -p file.txt /opt/backup/
```

To copy the files and directory forcefully

```
$ cp -f file.txt /opt/backup
```

#64 cracklib-check

cracklib-check - Check passwords using libcrack2

```
$ echo "abcdef123456" | cracklib-check
$ echo "password" | cracklib-check
$ echo "Wsd234$#@" | cracklib-check
```

or

```
$ cracklib-check<<<"Wsd234$#@"
```

#65 crontab

crontab - maintain crontab files for individual users

To list crontab entries

```
$ crontab -l
```

To edit the crontab entry

```
$ crontab -e
```

To list scheduled cron jobs

```
$ crontab -u ilugc -l
```

To remove scheduled jobs without confirmation

```
$ crontab -r
```

To prompt before deleting crontab

```
$ crontab -i -r
```

To schedule Jobs for Specific Time

```
$ crontab -e
00 09 * * * /home/ilugc/mycode.sh
```

To disable email notification.

```
$ crontab -e

* * * * * >/dev/null 2>&1
```

#66 ctrlaltdel

ctrlaltdel - set the function of the Ctrl-Alt-Del combination

```
$ sudo ctrlaltdel
soft
```

To set ctrlaltdel function to hard

```
$ sudo ctrlaltdel hard
hard
```

#67 csplit

csplit - split a file into sections determined by context lines

```
$ cat file.txt
one
two
three
four
five
six
```

To split file.txt into two parts (second part from 4 th line)

```
$ csplit file.txt 4
```

two files named xx00 and xx01 created

To prefix in abc in place of ‘xx’ in output

```
$ csplit -f abc file.txt 4
$ ls
$ cat abc00
$ cat abc01
```

#68 curl

curl - transfer a URL

```
$ curl https://www.ilugc.in
```

To display a progress meter during use to indicate the transfer rate, amount of data transferred, time left, etc

```
$ curl -# -O ftp://ftp.mysite.com/file.zip
```

To resumes download which has been stopped when downloading large files was interrupted

```
$ curl -C - -O ftp://mysite.int/10000MB.zip
```

To limit the upper bound of the rate of data transfer and keeps it around the given value in bytes.

```
$ curl --limit-rate 500K -O ftp://mysite.in/10000MB.zip
```

To download files from user authenticated FTP servers

```
$ curl -u username:P@ssword -O ftp://mysite.in/confidential.txt
```

To upload a file to the FTP server, use the -T followed by the name of the file to upload

```
$ curl -T file.zip -u username:P@ssword ftp://ftp.example.com/
```

#69 cut

cut - remove sections from each line of files

```
$ cat file.txt
Alpha is first line
Beta is second line
Charlie is third line
Delta is fourth line
```

To display 2nd character from each line of a file

```
$ cut -c2 file.txt
```

To extract first 3 characters of each line from file.txt

```
$ cut -c1-3 file.txt
```

To extract 7 characters from the beginning of each line in file.txt

```
$ cut -c-7 test.txt
```

To display only first field of each lines from a file using delimiter ":"

```
$ cut -d':' -f1 file_name
```

#70 dumpe2fs

dumpe2fs - dump ext2/ext3/ext4 filesystem information

To dump the file system information about a device

```
$ sudo dumpe2fs /dev/sda1
```

To display superblock information

```
$ sudo dumpe2fs -h /dev/sda1
```

To display Information of block groups

```
$ sudo dumpe2fs /dev/sda1
```

To view about superblocks

```
$ sudo dumpe2fs /dev/sda1 | grep -i superblock
```

#71 du

du - estimate file space usage

To check the disk usage summary of a directory

```
$ du /etc
```

```
$ du /home
```

To check disk usage in a human-readable format

```
$ du -h /etc
```

```
$ du -h /home/ilugc
```

To check the total usage size of a particular directory

```
$ du -sh /etc
```

To list the disk usage of all files in human readable format including directories

```
$ du -ah /home/ilugc
```

To print the grand total for a directory

```
$ du -ch /home/ilugc
```

To change the default block size output to Kilobytes, Megabytes or Gigabytes

```
$ du -BK /home/klug
```

```
$ du -BM /home/klug
```

```
$ du -BG /home/ilugc
```

To check the size of all the sub-directories in their current location

```
$ du -h --max-depth=1 /home/ilugc
```

or

```
$ du -h -d1 /home/ilugc
```

To exclude a particular type of file ex. python files while calculating the disk size

```
$ du -h --exclude="*.py" /home/ilugc/Documents
```

To check the disk usage of the last modification time

```
$ du -ha --time log
```

To show summary of size

```
$ du -s /home/ilugc/Documents
```

#72 dpkg-reconfigure

dpkg-reconfigure - reconfigure an already installed package

```
$ sudo dpkg-reconfigure -f package_name
$ sudo dpkg-reconfigure phpmyadmin
```

#73 dpkg-query

dpkg-query - a tool to query the dpkg database

Display package status details

```
$ dpkg-query -s apache2
```

List files 'owned' by package

```
$ dpkg-query -L apache2
```

List packages concisely

```
$ dpkg-query -l apache2
```

Show information on package

```
$ dpkg-query -W apache2
```

Find package owning file

```
$ dpkg-query -S apache2
```

#74 dpkg

dpkg - package manager for Debian

To install a package

```
$ sudo dpkg -i package_name.deb
```

To list all the installed packages

```
$ sudo dpkg -l
```

To remove a package

```
$ sudo dpkg -r flashpluginnonfree
```

To remove the package along with configuration file

```
$ sudo dpkg -p flashpluginnonfree
```

To view the content of a package

```
$ sudo dpkg -c package_name.deb
```

To check a package is installed or not

```
$ sudo dpkg -s package_name.deb
```

check the location of packages installed

```
$ sudo dpkg -L package_name.deb
```

To display dpkg licence

```
$ sudo dpkg --licence
```

#75 do-release-upgrade

do-release-upgrade - upgrade operating system to latest release

```
$ sudo apt update
$ sudo apt upgrade
```

```
$ do-release-upgrade
```

#76 domainname

domainname - show or set the system's NIS/YP domain name

To show alias names

```
$ domainame -a
```

To show all long host names (FQDNs)

```
$ domainname -A
```

To print DNS domain name

```
$ domainame -d
```

To print addresses for the host name

```
$ domainname -i
```

To show all addresses for the host

```
$ domainname -I
```

To show short host name

```
$ domainname -s
```

To show NIS/YP domain name

```
$ domainname -y
```

#77 dmsetup

dmsetup – low level logical volume management

To list the device mapper devices:

```
$ sudo dmsetup ls
```

To get information about any DM device

```
$ sudo dmsetup info /dev/VG01/LV01
```

To list the DM device dependencies

```
$ sudo dmsetup deps /dev/VG01/LV01
```

To get the status of a DM device

```
$ sudo dmsetup status /dev/VG01/LV01
```

To destroy the inactive table for a device

```
$ sudo dmsetup clear /dev/VG01/LV01
```

To remove all the devices

```
$ sudo dmsetup remove_all
```

To rename the device

```
$ dmsetup /dev/VG01/LV01 /dev/VG07/LV07
```

To output the table for a device

```
$ sudo dmsetup table /dev/VG01/LV01
```

#78 dmidecode

dmidecode - is a tool for dumping a computer's DMI (some say SMBIOS) table contents in a human-readable format

To get information about Processor

```
$ sudo dmidecode -t processor
```

To get hardware information

```
$ sudo dmidecode
```

To get BIOS information

```
$ sudo dmidecode -t bios
```

To print less verbose output

```
$ sudo dmidecode -q
```

To display the value of the given DMI string

```
$ sudo dmidecode -s processor-frequency
```

To get information about Baseboard

```
$ sudo dmidecode -t baseboard
```

To get information about Chassis

```
$ sudo dmidecode -t 3
```

To display the version

```
$ sudo dmidecode -V
```

To get DMI types

```
$ sudo dmidecode -t 6
```

To get the cache information

```
$ sudo dmidecode -t cache
```

To get memory Information

```
$ sudo dmidecode -t 16
```

To get the manufacturer, model and serial number

```
$ sudo dmidecode -t system
```

To Display Information of about Installed Physical Memory and DIMMs

```
$ sudo dmidecode -t 17
```

To find the maximum physical memory supported by your system

```
$ sudo dmidecode -t 16
```

#79 dmesg

dmesg - print or control the kernel ring buffer, it display message command and to display kernel-related messages

```
$ sudo dmesg | less
```

To read dmesg output in human readable format

```
$ sudo dmesg -H
```

To monitor real-time logs

```
$ sudo dmesg --follow
```

To print last or first 15 lines

```
$ sudo dmesg | head -15
$ sudo dmesg | tail -15
```

To search for a specific string or patterns

```
$ sudo dmesg | grep -i usb
```

To check for hard disk and will display the messages wherever sda is listed

```
$ sudo dmesg | grep -i sda
```

To list all the informational messages

```
$ sudo dmesg -l info
```

To display dmesg messages for eth0 user interface

```
$ sudo dmesg | grep -i eth0
```

#80 dirname

dirname - strip last component from file name

```
$ dirname /home/ilugc/myscript.sh
/home/ilugc

$ dirname -z /home/klug/autoscript.sh
/home/klug
```

#81 dir

dir - list directory contents

To display all the hidden files

```
$ dir -a
```

```
$ dir -A
```

To Displays author of all the files

```
$ dir -l --author
```

To list in single column

```
$ dir -1
```

To list with commas

```
$ dir -m
```

#82 dig

dig - DNS lookup utility

To perform a DNS lookup

```
$ dig ilugc.in
```

```
$ dig @8.8.8.8 google.com
```

To display only the IP address associated with the domain name

```
$ dig google.com +short
```

```
$ dig ilugc.in +short
```

The +trace option lists each different server the query goes through to its final destination

```
$ dig google.com +trace
```

To look up a domain name by its IP address

```
$ dig -x yy.zz.aa.bb
```

yy.zz.aa.bb ip address

Batch Mode for Reading Host Names From a File

store domain names in domain.txt and give input to dig command

```
$ dig -f domain.txt +short
```

#83 date

date - print or set the system date and time

date command displays the current date and time

```
$ date
```

To display the time in GMT/UTC time zone

```
$ date -u
```

To display the given date string in the format of date

```
$ date --date="1/04/2020"
$ date --date="April 2 2020"
```

To display past dates

```
$ date --date="3 year ago"
$ date --date="5 hours ago"
$date --date="1 month ago"
$ date --date="2 week ago"
$date --date="10 day ago"
```

To display future date

```
$date --date="next wed"
$ date --date="next month"
$date --date="2 day"
```

```
$date --date="1 year"
```

To set the system date and time

```
$date --set="Wed Apr 27 14:20:55 PDT 2022"
```

To display the date string present at each line of file in the date and time format

```
$ cat >> datefile
May 07 2022
Apr 03 2022
$ date --file=datefile
```

%D: Display date as mm/dd/yy.

%d: Display the day of the month (01 to 31).

%a: Displays the abbreviated name for weekdays (Sun to Sat).

%A: Displays full weekdays (Sunday to Saturday).

%h: Displays abbreviated month name (Jan to Dec).

%b: Displays abbreviated month name (Jan to Dec).

%B: Displays full month name(January to December).

%m: Displays the month of year (01 to 12).

%y: Displays last two digits of the year(00 to 99).

%Y: Display four-digit year.

%T: Display the time in 24 hour format as HH:MM:SS.

%H: Display the hour.

%M: Display the minute.

%S: Display the seconds.

```
$ date +%[format-option]

$ date "+%D"

$ date "+%D %T"

$ date "+%A %B %d %T %y"

$ date "+%Y/%m/%d"

$ date "+%Y-%m-%d"
```

#84 dd

dd - convert and copy a file

To backup the entire harddisk

```
$ dd if=/dev/sdc of=/dev/sdd
```

To create an image of a Hard Disk

```
$ dd if=/dev/hdb of=~/hdbdisk.img
```

To restore using the Hard Disk Image

```
$ dd if=hdcdisk.img of=/dev/hdd
```

To create a compressed disk image

```
$ dd if=/dev/sdb | gzip -c >/tmp/sdbdisk.img.gz
```

Backup a partition to another

```
$ dd if=/dev/sdb1 of=/dev/sdc1 bs=4096 conv=noerror,sync
```

To restore a disk or a partition image

```
$ dd if=/tmp/sdbdisk.img of=/dev/sdb
```

To restore compressed image

```
$ gzip -dc /tmp/sdcdisk.img.gz | dd of=/dev/sdc
```

To convert case of a file

```
$ cat file1
abcdefgh

$ dd if=~/file1 of=~/file2 conv=ucase

$ cat file2
ABCDEFGH

$ dd if=~/file2 of=~/file3 conv=lcase
```

#85 delgroup

delgroup - remove a user or group from the system

```
$ sudo delgroup group_name
$ sudo delgroup devops_group
```

#86 delpart

delpart - tell the kernel to forget about a partition

```
$ sudo umount /dev/sdb2
$ sudo delpart /dev/sdb 2
```

#87 deluser

deluser - remove a user or group from the system

To delete an user account

```
$ sudo deluser klug
```

To delete or account including deleting home directory

```
$ sudo deluser --remove-home klug
```

To delete account even while the user logged in

```
$ sudo deluser --force klug
```

To delete user account and backup home directory

```
$ sudo deluser --backup-to /backup_dir klug
```

#88 df

df - report file system disk space usage

To display all the file system

```
$ df -a
```

To display size in human readable format

```
$ df -h /home/klug
```

To get complete grand total

```
$ df -h --total
```

To display file type

```
$ df -T /home/ilugc
```

#89 diff

GNU diff - compare files line by line

```
$ cat a.txt
Apple
Banana
Grapes
Mango
Papaya

$ cat b.txt
Apple
Banana
Grapes
Mango
```

The change character can be one of the following:

a - Add the lines.

c - Change the lines.

d - Delete the lines.

```
$ diff a.txt b.txt
```

To view differences in context mode

```
$ diff -c f1.txt f2.txt
```

To view differences in unified mode

```
$ diff -u f1.txt f2.txt
```

To ignores case

```
$ diff -i f1.txt f2.txt
```

#90 diff3

GNU diff3 - compare three files line by line

```
$ cat f1.txt
Hello
This is f1 file.

$ cat f2.txt
This is f2 file.

$ cat f3.txt
This is f3 file.
```

==== : It means all the files are different.

====1 : File 1 is different.

====2 : File 2 is different.

====3 : File 3 is different.

```
$ diff3 f1.txt f2.txt f3.txt
```

treat all files as text

```
$ diff3 -a f1.txt f2.txt f3.txt
```

#91 e2fsck

e2fsck - check a Linux ext2/ext3/ext4 file system

To check a partition

```
$ sudo e2fsck /dev/sdc1
```

To perform automatic repair using e2fsck

```
$ sudo e2fsck -p /dev/sdc1
```

or

```
$ sudo e2fsck -y /dev/sdc1
```

To check only using e2fsck

```
$ sudo e2fsck -n /dev/sdc1
```

To force the filesystem check

```
$ sudo e2fsck -f /dev/sdc1
```

T0 display a progress bar during e2fsck check

```
$ sudo e2fsck -f -C 0 /dev/sdc1
```

#92 e2label

e2label - Change the label on an ext2/ext3/ext4 filesystem

To display or change the filesystem label on the ext2, ext3, or ext4 filesystem located on device

```
$ sudo e2label /dev/device
```

```
$ sudo e2label /dev/device new-label-name-here
```

To view the label name of partition

```
$ sudo e2label /dev/sdb1
```

To set label name of partition

```
$ sudo e2label /dev/sdb1 mypartition
```

To remove a partition label name by supplying an empty string

```
$ sudo e2label /dev/sdb1 ""
```

#93 e2mmpstatus

e2mmpstatus - it is used to check Multiple-Mount Protection (MMP) status of an ext4 filesystem with the mmp feature enabled. The specified filesystem can be a device name or an ext4 filesystem label or UUID

```
$ sudo e2mmpstatus /dev/sda1
```

or

```
$ sudo e2mmpstatus LABEL=label_name
```

or

```
$ sudo e2mmpstatus UUID=ccccccccccc-aaaaa-zzzzzzz-yyyyyy-xxxxxxx
```

#94 e4defrag

e4defrag - online defragmenter for ext4 filesystem

To defragment Linux partitions

$ sudo e4defrag <location>

or

$ sudo e4defrag <device>

$ sudo e4defrag /home/klug/directory

$ sudo e4defrag /dev/sdb2

To defragment your entire system

$ sudo -v e4defrag /

#95 ebook-convert

ebook-convert - tool to convert ebooks format

To convert .epub format to .docx

```
$ ebook-convert  book.epub book.docx
```

To convert .docx to .epub

```
$ ebook-convert book.docx book.epub
```

To convert .epub .mobi

```
$ ebook-convert book.epub book.mobi
```

#96 ebook-meta

ebook-meta - ebook-meta process tool

```
$ ebook-meta ebook_file [options]
```

To display the meta data of book

```
$ ebook-meta my_book.pdf
```

To change the meta data of publish date

```
$  ebook-meta -d 2020-04-04T01:00:00+00:00 my_book.pdf
$ ebook-meta my_book.pdf
```

To change the meta data of author

```
$ ebook-meta -a ilugc linux_book.pdf
```

To set publisher in meta data

```
$ ebook-meta -p FTE linux_book.pdf
```

#97 ebook-polish

ebook-polish – ebook-polish Polishing tries to minimize the changes to the internal code of your e-book

```
$ ebook-polish [options] input_file [output_file]
```

To compress the images losslessly in ebook with quality

```
$ ebook-polish -i input book.epub new_book.epub
```

Upgrade the internal structures of the book

upgrades EPUB 2 books to EPUB 3 books

```
$ ebook-polish -U input book.epub new_book.epub
```

#98 echo

echo - display a line of text

$ echo [string]

$ echo "Welcome to Linux"

To enable the interpretation of backslash escapes -e option

\b To removes all the spaces in between the text

$ echo -e "Welcome \bto \bLinux"

WelcometoLinux

\c To suppress trailing new line with backspace interpretor ‘-e‘ to

continue without emitting new line.

$ echo -e "Welcome \cto Linux"

Welcome

\n To create new line from where it is used.

$ echo -e "Welcome \nto \nLinux"

Welcome

to

Linux

\t To create horizontal tab spaces

```
$ echo -e "Welcome \tto \tLinux"
Welcome      to       Linux
```

\r To carriage return with backspace interpretor ‘-e‘ to have specified carriage return in output

```
$ echo -e "Welcome \rto Linux"
to Linux
```

\v To create vertical tab spaces

```
$ echo -e "Welcome \vto \vLinux"
Welcome
        to
           Linux
```

To print all files/folders

```
$ echo *
```

#99 ed

ed - line-oriented text editor

Type ed

```
$ ed
```

To get into insert mode press "a"

```
$ ed
a
this is line one
this is line two
this is line three
.
```

when you are done writing stop it by “.” (dot)

To view the last line enter “p” into the ed command prompt.

```
p
```

To print all the lines that we inserted in the buffer by using “,p”

```
,p
```

To save these lines into a file write “f [filename]”.

```
f myfile.txt
```

To write the data into the file and see how many bytes are written

```
w
```

To exit to the terminal by pressing “Q”

```
Q
```

To summarize all

```
$ ed
a
this is line one
this is line two
this is line three
.
p
this is line three
,p
this is line one
this is line two
this is line three
f myfile.txt
myfile.txt
w
53
Q
```

To check

```
$ cat myfile.txt
this is line one
this is line two
this is line three
```

#100 egrep

grep, egrep, fgrep, rgrep - print lines that match patterns

```
$ egrep [ options ] 'PATTERN' files
```

```
$ cat myfile.txt
this is line one
this is line two
this is line three
```

```
$ egrep this myfile.txt
this is line two
this is line three
```

To count and print the number of lines that matched the pattern and not the lines

```
$ egrep -c this myfile.txt
3
```

To Ignore the case of the pattern while matching

```
$ egrep -i this myfile.txt
This is line one
this is line two
this is line three
```

To Print only the names of the files that matched.

```
$ egrep -l this myfile.txt
```

myfile.txt

To Print only the names of the files that did not have the pattern quite opposite to -l

```
$ egrep -L this myfile.txt myfile
```

myfile

To recursively search for the pattern in all the files of the directory

```
$ egrep -r -i '.conf' .
```

. is current directory

To print each matched line along with the respective line numbers

```
$ egrep -n config myprogram.py
```

To print only the matched parts of the line and not the entire line for each match

```
$ egrep -o config myprogram.py
```

To search for matches till the count reaches number mentioned as argument

```
$ egrep -m 3 config myprogram.py
```