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Assignment 1

50 essential linux commands for Cloud Computing##

1. ls - List directories

```
$ ls
 config          Documents          Music              st
wallpapers
course           Downloads          Pictures           temp
'Course Work'    GitHub             Public             Templates
 Desktop         latency.conf.save  pulse.properties   Videos
```

2. pwd - Print working directory

```
$ pwd
/home/icyhotx
```

3. cd - Navigate through directories

```
$ cd Downloads
/Downloads$
```

4.mkdir [folder_name]- Command used to create directories

```
$ mkdir Temp
$ cd Temp
/Temp$
```

5. mv - Move or Rename files

```
$ mv Temp Cache
$ cd Cache
/Cache$
```

6. cp - For copying files in linux

```
$ mv Temp Cache
$ cd Cache
/Cache$
```

7. rm - delete files and directories (use -r to delete a directory)

```
$ rm -r Cache
```

8. touch - create a blank or empty file

```
$ touch temp.txt
```

9. cat - display content of the file

```
$ cat temp.txt
Hey there i'm a text file
```
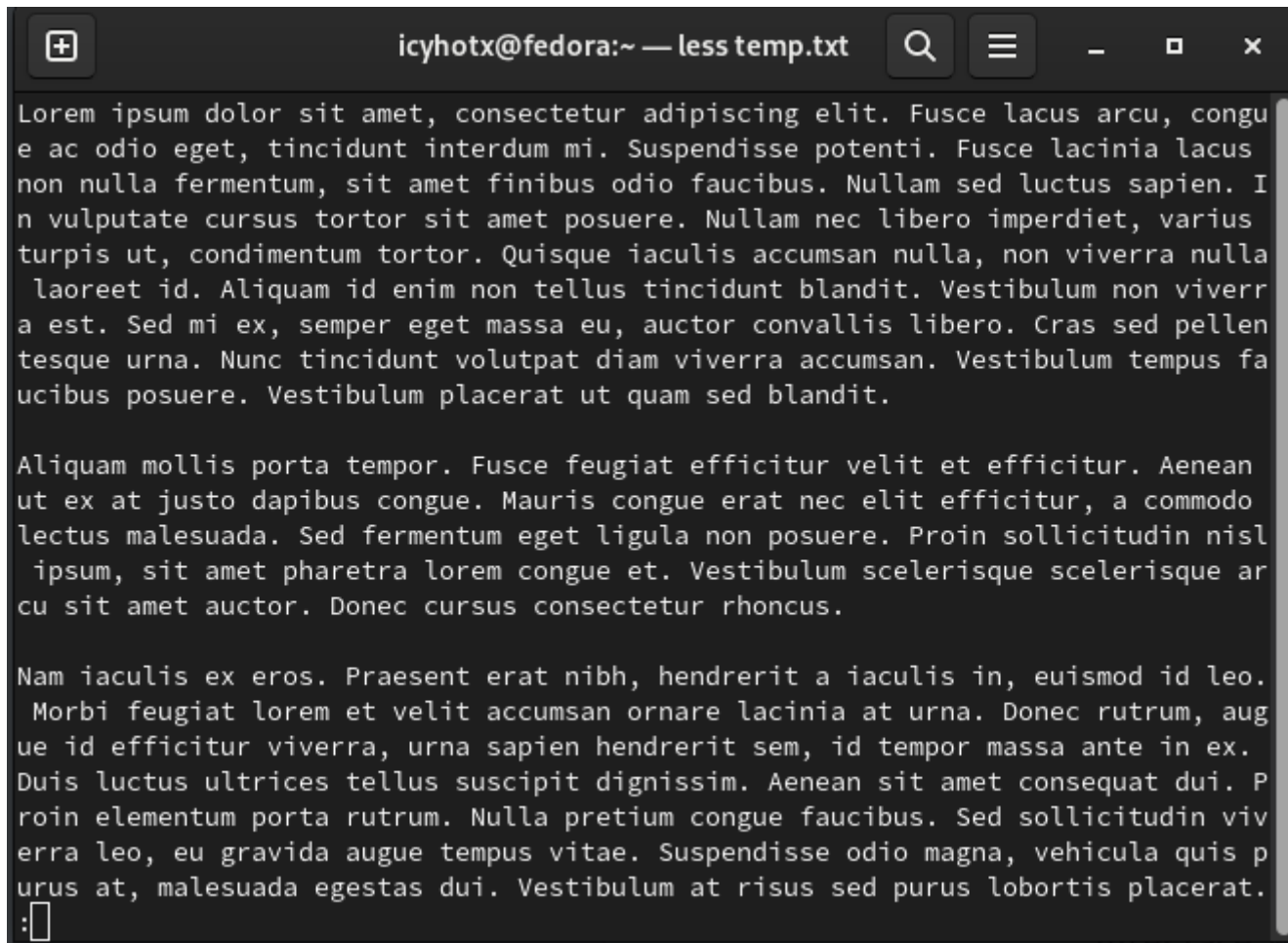
10. clear - clear the terminal display

```
$ clear
```

11. echo - prints any text that follows the command

```
$ echo 'Hey there'
Hey there
```

12. less - used to show paged output

```
$ less temp.txt
```

```
icyhotx@fedora:~ — less temp.txt

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce lacus arcu, congu
e ac odio eget, tincidunt interdum mi. Suspendisse potenti. Fusce lacinia lacus
non nulla fermentum, sit amet finibus odio faucibus. Nullam sed luctus sapien. I
n vulputate cursus tortor sit amet posuere. Nullam nec libero imperdiet, varius
turpis ut, condimentum tortor. Quisque iaculis accumsan nulla, non viverra nulla
 laoreet id. Aliquam id enim non tellus tincidunt blandit. Vestibulum non viverr
a est. Sed mi ex, semper eget massa eu, auctor convallis libero. Cras sed pellen
tesque urna. Nunc tincidunt volutpat diam viverra accumsan. Vestibulum tempus fa
ucibus posuere. Vestibulum placerat ut quam sed blandit.

Aliquam mollis porta tempor. Fusce feugiat efficitur velit et efficitur. Aenean
ut ex at justo dapibus congue. Mauris congue erat nec elit efficitur, a commodo
lectus malesuada. Sed fermentum eget ligula non posuere. Proin sollicitudin nisl
 ipsum, sit amet pharetra lorem congue et. Vestibulum scelerisque scelerisque ar
cu sit amet auctor. Donec cursus consectetur rhoncus.

Nam iaculis ex eros. Praesent erat nibh, hendrerit a iaculis in, euismod id leo.
 Morbi feugiat lorem et velit accumsan ornare lacinia at urna. Donec rutrum, aug
ue id efficitur viverra, urna sapien hendrerit sem, id tempor massa ante in ex.
Duis luctus ultrices tellus suscipit dignissim. Aenean sit amet consequat dui. P
roin elementum porta rutrum. Nulla pretium congue faucibus. Sed sollicitudin viv
erra leo, eu gravida augue tempus vitae. Suspendisse odio magna, vehicula quis p
urus at, malesuada egestas dui. Vestibulum at risus sed purus lobortis placerat.
:
```

13. man - access manual page for any command

```
$  man echo
```

```
ECHO(1)                          User Commands
ECHO(1)


NAME
       echo - display a line of text

SYNOPSIS
       echo [SHORT-OPTION]... [STRING]...
       echo LONG-OPTION


DESCRIPTION
       Echo the STRING(s) to standard output.

       -n     do not output the trailing newline

       -e     enable interpretation of backslash escapes

       -E     disable interpretation of backslash escapes (default)

       --help display this help and exit
```

/

```
          --version
                  output version information and exit

  Manual page echo(1) line 1 (press h for help or q to quit)
```

14. uname - get basic information about the OS

```
$ uname
Linux
```

15. tar - Command to extract and compress files in linux

```
$ ls
temp.txt temp1.txt
$ tar -cvzf temp.tar.gz temp.txt temp1.txt
temp.txt
temp1.txt
$ ls
temp.tar.gz temp.txt temp1.txt
```

16. whoami - get active username

```
$ whoami
icyhotx
```

17. head - prints first few lines from a file (default = 10)

```
$ head temp.txt --lines=2
Lorem ipsum dolor sit amet, consectetur adipiscing elit.
Ut nec quam id mauris tincidunt porta.
```

18. tail - prints last few lines from a file (default = 10)

```
$ tail temp.txt -- lines=2
Mauris eleifend mi sit amet dui consectetur tristique.
Sed aliquam lectus vel leo volutpat, eget efficitur neque finibus.
```

19. grep — Search for a string within an output

```
$ cat temp.txt | grep Lorem
Lorem ipsum dolor sit amet, consectetur adipiscing elit.
```

20. diff - find the difference between two files

```
$ diff temp.txt temp1.txt
176,177d175
< Mauris eleifend mi sit amet dui consectetur tristique.
< Sed aliquam lectus vel leo volutpat, eget efficitur neque finibus.
```

21. cmp — Allows you to check if two files are identical

```
$ cmp temp.txt temp1.txt
cmp: EOF on temp1.txt after byte 9758, line 175
```

22. comm — Combines the functionality of diff and cmp

```
$ comm temp.txt temp1.txt
```

23. sort — Linux command to sort the content of a file while outputting

```
$ sort temp.txt
```

```
 Aenean cursus nibh in arcu varius, et commodo ligula venenatis.
 Aenean et justo non nisl varius ullamcorper sit amet in metus.
 Aenean pellentesque est eget urna aliquam, non suscipit mauris convallis.
 Aenean semper dolor at urna auctor, at imperdiet augue varius.
 Aliquam eget ligula facilisis, tristique lectus at, iaculis orci.
 Aliquam elementum augue eget arcu iaculis bibendum.
 Aliquam et libero feugiat, ultrices risus in, euismod felis.
 Aliquam quis enim ullamcorper, eleifend nisi a, egestas libero.
 Aliquam ut lectus ut leo congue lacinia eu eget ipsum.
 Aliquam ut turpis nec lorem suscipit condimentum.
 Aliquam vel erat volutpat, auctor est at, mollis sapien.
 Aliquam venenatis libero interdum nulla maximus, sed pharetra ante maximus.
 Cras ac elit faucibus, ultricies lacus eget, fermentum nisi.
 Cras aliquet nulla sit amet facilisis maximus.
 Cras congue mi et elit condimentum dapibus.
 Cras mattis augue eu ex elementum, vel vehicula libero malesuada.
 Cras non ex ornare, commodo sapien tristique, lacinia elit.
 Cras non risus non lorem feugiat ornare.
 Cras sit amet tellus ultrices, vehicula augue ac, dapibus est.
```

```
Cras vel purus sagittis, auctor elit sit amet, facilisis metus.
Curabitur id mauris sit amet enim tempor tempus.
Curabitur nec augue aliquet, venenatis purus ultrices, feugiat massa.
```

24. export - export environment variables

```
$ export
```

```
declare -x COLORTERM="truecolor"
declare -x DBUS_SESSION_BUS_ADDRESS="unix:path=/run/user/1000/bus"
declare -x DEBUGINFOD_URLS="https://debuginfod.fedoraproject.org/ "
declare -x DESKTOP_SESSION="gnome"
declare -x DISPLAY=":0"
declare -x EDITOR="/usr/bin/nano"
declare -x GDMSESSION="gnome"
declare -x GDM_LANG="en_US.UTF-8"
declare -x GNOME_SETUP_DISPLAY=":1"
declare -x
GNOME_TERMINAL_SCREEN="/org/gnome/Terminal/screen/299b74ae_1fed_4707_8099_0
65be21b1482"
declare -x GNOME_TERMINAL_SERVICE=":1.225"
```

25. zip - used to zip files

```
$ zip temp.zip temp.txt temp1.txt
    adding: temp.txt (deflated 68%)
    adding: temp1.txt (deflated 68%)
```

26. unzip - used to unzip files

```
$ unzip temp.zip
Archive:  temp.zip
replace temp.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: temp.txt
replace temp1.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: temp1.txt
```

27. ssh - secure shell command

```
$ ssh
usage: ssh [-46AaCfGgKkMNnqsTtVvXxYy] [-B bind_interface]
           [-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
           [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
```

```
            [-i identity_file] [-J [user@]host[:port]] [-L address]
            [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
            [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
            [-w local_tun[:remote_tun]] destination [command [argument ...]]
```

28. service - to start and stop service

```
$ service sshd stop
Redirecting to /bin/systemctl stop sshd.service
$ service sshd start
Redirecting to /bin/systemctl start sshd.service
```

29. ps - display active process

```
$ ps
    PID TTY          TIME CMD
   7080 pts/0    00:00:00 bash
  12093 pts/0    00:00:00 ps
```

30. ds - Display diskfile system information

```
$ ps
```

Filesystem 1K-blocks Used Available Use% Mounted on /dev/nvme0n1p9 133170176 14346568 117771816 11% / devtmpfs 4096 0 4096 0% /dev tmpfs 8076376 7024 8069352 1% /dev/shm efivarfs 128 62 62 50% /sys/firmware/efi/efivars tmpfs 3230552 2188 3228364 1% /run /dev/nvme0n1p9 133170176 14346568 117771816 11% /home /dev/nvme0n1p8 996780 318532 609436 35% /boot /dev/nvme0n1p1 262144 67316 194828 26% /boot/efi tmpfs 8076376 2984 8073392 1% /tmp tmpfs 1615272 20912 1594360 2% /run/user/1000
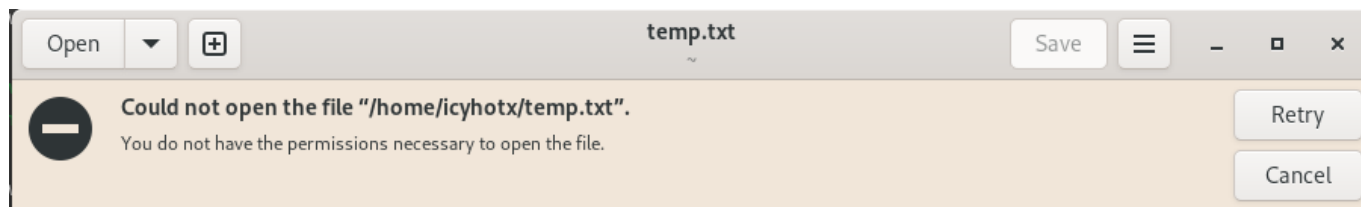
```
  31. chmod - to change permissions
      * r - read
      * w - write
      * x - execute

      * u - owner
      * g - group
      * o - others
```shell
$ chmod u-wrx text.txt
```

```
Open   ▼   ⊞                     temp.txt                  Save   ☰   _   ◻   ✕
                                     ~
  ⊖   Could not open the file "/home/icyhotx/temp.txt".                    Retry
      You do not have the permissions necessary to open the file.
                                                                          Cancel
```

32. chown — Command for granting ownership of files or folders

```
$ chown -c icyhotx temp.txt
```

33. ifconfig — Display network interfaces and IP addresses

```
$ ifconfig
```

```
eno2: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether 24:4b:fe:6e:a7:17  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 117  bytes 9170 (8.9 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 117  bytes 9170 (8.9 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

wlo1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.20.10.3  netmask 255.255.255.240  broadcast 172.20.10.15
        inet6 fe80::5015:a93a:343d:e0c0  prefixlen 64  scopeid 0x20<link>
        inet6 2401:4900:57a5:aa84:510d:7d95:a9a4:7686  prefixlen 64
scopeid 0x0<global>
        ether 40:ec:99:f4:cd:7e  txqueuelen 1000  (Ethernet)
        RX packets 290583  bytes 380219283 (362.6 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 79096  bytes 17442705 (16.6 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

34. wget - to download files directly from the internet

```
$ wget https://pbs.twimg.com/media/FX7XLgJXkAImUa6?format=jpg&name=large
[1] 13261
```

35. whereis — Locate the binary, source, and manual pages for a command

```
$ whereis kill
kill: /usr/bin/kill /usr/share/man/man1/kill.1.gz
/usr/share/man/man2/kill.2.gz
```

36. w - to check how many users logged into the linux

```
$ w
 16:25:54 up  1:56,  2 users,  load average: 0.91, 0.74, 0.63
USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
icyhotx  seat0     14:30    0.00s  0.00s   ?   /usr/libexec/gdm-wayland-
sessio
icyhotx  tty2      14:30    1:56m  0.01s  0.01s /usr/libexec/gnome-session-
bina
```

37. date -- used to check the current date, time in linux

```
$ date
Wed Feb  7 04:26:43 PM IST 2024
```

38. sudo — Command to escalate privileges in Linux

```
$ sudo su
[sudo] password for icyhotx:
/home/icyhotx#
```

39. cal - view in-line calendar

```
$ cal
    February 2024
Su Mo Tu We Th Fr Sa
           1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29
```

40. whatis - Find what a command is used for

```
$ whatis kill
kill (1)              - terminate a process
kill (2)              - send signal to a process
```

41. apt, yum, dnf, rpm - Package manage depending on distros

```
$ sudo dnf install spotify
```

42. top - View active processes live with their system usage

```
$ top
```

```
op - 16:35:40 up  2:06,  2 users,  load average: 0.88, 0.88, 0.73
Tasks: 396 total,   1 running, 394 sleeping,   0 stopped,   1 zombie
%Cpu(s):  2.3 us,  0.9 sy,  0.0 ni, 96.3 id,  0.1 wa,  0.3 hi,  0.1 si,
0.0 st
MiB Mem :  15774.2 total,   5331.4 free,   4408.9 used,   7054.6 buff/cache
MiB Swap:   8192.0 total,   8192.0 free,      0.0 used.  11365.2 avail Mem

    PID USER       PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+
COMMAND
   6930 icyhotx    20   0 1131.6g 194144 127004 S  22.2   1.2  11:42.46
brave
   3499 icyhotx    20   0   33.0g 206276 117756 S   7.9   1.3   7:16.22
brave
   2234 icyhotx    20   0 5376308 244140 117676 S   5.0   1.5   5:48.69
gnome-s+
   7061 icyhotx    20   0  849020  63888  40592 S   1.7   0.4   0:49.87
gnome-t+
   3345 icyhotx    20   0   32.7g 403292 199876 S   1.0   2.5   8:53.23
brave
   4910 icyhotx    20   0 1135.1g 286232  98344 S   1.0   1.8   7:21.66 code
  13749 icyhotx    20   0  226572   5248   3200 R   0.7   0.0   0:00.25 top
```

43. kill --Command to kill the process (PID)

```
$ kill
```

44. useradd - to add a user

```
$ sudo useradd priyanshu
```

45. su - to switch user

```
$ sudo su
Password:
root@fedora:/home/icyhotx# su priyanshu
priyanshu@fedora:/home/icyhotx#
```

46. userdel - used to delete a user

```
$ sudo su
Password:
root@fedora:/home/icyhotx# userdel priyanshu
root@fedora:/home/icyhotx#
```

47. chmod - powerful to manage users

```
root@fedora:/home/icyhotx# sudo usermod -e 2024-02-08 priyanshu
root@fedora:/home/icyhotx# sudo chage -l priyanshu
Last password change                      : Feb 07, 2024
Password expires                      : never
Password inactive                     : never
Account expires                       : Feb 08, 2024
Minimum number of days between password change     : 0
Maximum number of days between password change     : 99999
Number of days of warning before password expires  : 7
```

48. find - used to find files in a directory

```
$ find -name temp.txt
./temp.txt
```

49. curl - It is a command-line tool to transfer data to or from a server

```
$ curl https://www.google.com
```

50. uniq - remove duplicate lines from the file

```
$ uniq temp.txt
```