

## ASSIGNMENT 01 CONCEPTS OF OPERATING SYSTEMS

HARSH DIXIT

KD1-86691-HARSH

uname , pwd , cal , date, hostname, ls

```
Oct 7 13:41
osboxes@osboxes: ~
osboxes@osboxes:~$ uname
Linux
osboxes@osboxes:~$ pwd
/home/osboxes
osboxes@osboxes:~$ cal
  October 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 30 31
osboxes@osboxes:~$ date
Mon Oct  7 01:40:33 PM EDT 2024
osboxes@osboxes:~$ hostname
osboxes
osboxes@osboxes:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
osboxes@osboxes:~$
```

ECHO SHELL , CAL -Y

```
osboxes@osboxes:~$ echo $SHELL
/bin/bash
osboxes@osboxes:~$ cal -y

      2024
    January      February      March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
      1  2  3  4  5  6      1  2  3      1  2
 7  8  9 10 11 12 13  4  5  6  7  8  9 10  3  4  5  6  7  8  9
14 15 16 17 18 19 20 11 12 13 14 15 16 17 10 11 12 13 14 15 16
21 22 23 24 25 26 27 18 19 20 21 22 23 24 17 18 19 20 21 22 23
28 29 30 31      25 26 27 28 29      24 25 26 27 28 29 30
                                   31

    April      May      June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
      1  2  3  4  5  6      1  2  3  4      1
 7  8  9 10 11 12 13  5  6  7  8  9 10 11  2  3  4  5  6  7  8
14 15 16 17 18 19 20 12 13 14 15 16 17 18  9 10 11 12 13 14 15
21 22 23 24 25 26 27 19 20 21 22 23 24 25 16 17 18 19 20 21 22
28 29 30      26 27 28 29 30 31  23 24 25 26 27 28 29
                                   30

    July      August      September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
      1  2  3  4  5  6      1  2  3      1  2  3  4  5  6  7
 7  8  9 10 11 12 13  4  5  6  7  8  9 10  8  9 10 11 12 13 14
14 15 16 17 18 19 20 11 12 13 14 15 16 17 15 16 17 18 19 20 21
21 22 23 24 25 26 27 18 19 20 21 22 23 24 22 23 24 25 26 27 28
28 29 30 31      25 26 27 28 29 30 31 29 30
```

## MKDIR , LS -R

```

          July                August                September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6          1  2  3          1  2  3  4  5  6  7
  7  8  9 10 11 12 13    4  5  6  7  8  9 10    8  9 10 11 12 13 14
14 15 16 17 18 19 20   11 12 13 14 15 16 17   15 16 17 18 19 20 21
21 22 23 24 25 26 27   18 19 20 21 22 23 24   22 23 24 25 26 27 28
28 29 30 31           25 26 27 28 29 30 31   29 30

          October                November                December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
    1  2  3  4  5          1  2          1  2  3  4  5  6  7
  6  7  8  9 10 11 12    3  4  5  6  7  8  9    8  9 10 11 12 13 14
13 14 15 16 17 18 19   10 11 12 13 14 15 16   15 16 17 18 19 20 21
20 21 22 23 24 25 26   17 18 19 20 21 22 23   22 23 24 25 26 27 28
27 28 29 30 31       24 25 26 27 28 29 30   29 30 31

osboxes@osboxes:~$ mkdir dir
osboxes@osboxes:~$ ls
Desktop  dir  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
osboxes@osboxes:~$ mkdir dir1 dir2 dir3
osboxes@osboxes:~$ ls
Desktop  dir1  dir3  Downloads  Pictures  snap  Videos
dir      dir2  Documents  Music  Public  Templates
osboxes@osboxes:~$ ls -R
.:
Desktop  dir1  dir3  Downloads  Pictures  snap  Videos
dir      dir2  Documents  Music  Public  Templates

```

## RMDIR , MKDIR -P , CD , CD .. , CD ~ , CD - , TOUCH , CAT , CAT >

```

osboxes@osboxes:~$ rmdir dir3
osboxes@osboxes:~$ ls
Desktop  dir  dir1  dir2  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
osboxes@osboxes:~$ mkdir -p d1/d2/d3/d4
osboxes@osboxes:~$ ls
d1      dir  dir2  Downloads  Pictures  snap  Videos
Desktop  dir1  Documents  Music  Public  Templates
osboxes@osboxes:~$ ls d1
d2
osboxes@osboxes:~$ ls d2
ls: cannot access 'd2': No such file or directory
osboxes@osboxes:~$ ls d1/d2
d3
osboxes@osboxes:~$ ls d1/d2/d3
d4
osboxes@osboxes:~$ cd d1/d2/d3
osboxes@osboxes:~/d1/d2/d3$ cd ..
osboxes@osboxes:~/d1/d2$ cd ~
osboxes@osboxes:~$ cd -
/home/osboxes/d1/d2
osboxes@osboxes:~/d1/d2$ touch file.txt
osboxes@osboxes:~/d1/d2$ touch file1.txt file2.txt file3.txt
osboxes@osboxes:~/d1/d2$ cat > catfile.txt
Harsh Dixit
86691 KD1osboxes@osboxes:~/d1/d2$ cat catfile.txt
Harsh Dixit
86691 KD1osboxes@osboxes:~/d1/d2$

```

## CAT >>, RM

```
86691 KD1osboxes@osboxes:~/d1/d2$ cat > catfile.txt
Harsh Dixit 86691
Shivam Mahajan 86712
Shivansh Rawat 86703osboxes@osboxes:~/d1/d2$ cat catfile.txt
Harsh Dixit 86691
Shivam Mahajan 86712
Shivansh Rawat 86703osboxes@osboxes:~/d1/d2$ cat >> catfile.txt
Lionel Messi
Argentina GOAT
Lamine Yamal
Spain New Lalentosboxes@osboxes:~/d1/d2$ cat catfile.txt
Harsh Dixit 86691
Shivam Mahajan 86712
Shivansh Rawat 86703Lionel Messi
Argentina GOAT
Lamine Yamal
Spain New Lalentosboxes@osboxes:~/d1/d2$ rm file3.txt
osboxes@osboxes:~/d1/d2$ cp catfile.txt file1.txt
osboxes@osboxes:~/d1/d2$ cat file1.txt
Harsh Dixit 86691
Shivam Mahajan 86712
Shivansh Rawat 86703Lionel Messi
Argentina GOAT
Lamine Yamal
```

## CP, MV, LS -I

```
osboxes@osboxes:~$ ls
d1      dir  dir2      Downloads  Pictures  snap      Videos
Desktop dir1 Documents Music      Public    Templates
osboxes@osboxes:~$ cp file1.txt dir
cp: cannot stat 'file1.txt': No such file or directory
osboxes@osboxes:~$ ls d1/d2
catfile.txt d3 file1.txt file2.txt file.txt
osboxes@osboxes:~$ cd -
/home/osboxes/d1
osboxes@osboxes:~/d1$ cd d1/d2
bash: cd: d1/d2: No such file or directory
osboxes@osboxes:~/d1$ cd d1/d2/d3
bash: cd: d1/d2/d3: No such file or directory
osboxes@osboxes:~/d1$ cd ~
osboxes@osboxes:~$ cat > f1.txt
Harsh 86691 KDAC Os Concepts:)osboxes@osboxes:~$ mv f1.txt file01.txt
osboxes@osboxes:~$ cat file01.txt
Harsh 86691 KDAC Os Concepts:)osboxes@osboxes:~$ mkdir dir01 dir02 dir03
osboxes@osboxes:~$ mv file01.txt dir01
osboxes@osboxes:~$ ls dir01
file01.txt
osboxes@osboxes:~$ mv dir01 move
osboxes@osboxes:~$ ls move
file01.txt
osboxes@osboxes:~$ ls -li
8127292 d1      8127304 dir03      8126542 Downloads 8126544 Public
8126541 Desktop 8127290 dir1      8127299 move      8126470 snap
8127289 dir      8127291 dir2      8126546 Music      8126543 Templates
8127303 dir02    8126545 Documents 8126547 Pictures 8126548 Videos
```

## Ls -a, ls -A

```
osboxes@osboxes:~$ ls -a
.          .config  dir1      move      .ssh
..         d1       dir2      Music     .sudo_as_admin_successful
.bash_history Desktop  Documents Pictures  Templates
.bash_logout dir     Downloads .profile  Videos
.bashrc    dir02   .hiddenfile.txt Public
.cache     dir03   .local    snap
osboxes@osboxes:~$ touch .hiddenfile.txt
osboxes@osboxes:~$ cat > .hiddenfile.txt
This is my hidden file.
osboxes@osboxes:~$ ls -a
.          .config  dir1      move      .ssh
..         d1       dir2      Music     .sudo_as_admin_successful
.bash_history Desktop  Documents Pictures  Templates
.bash_logout dir     Downloads .profile  Videos
.bashrc    dir02   .hiddenfile.txt Public
.cache     dir03   .local    snap
osboxes@osboxes:~$ ls -A
.bash_history Desktop  Documents Pictures          Templates
.bash_logout  dir     Downloads .profile          Videos
.bashrc       dir02   .hiddenfile.txt Public
.cache        dir03   .local    snap
.config       dir1    move      .ssh
d1            dir2    Music     .sudo_as_admin_successful
```

## Cat -n, head, tail

```
osboxes@osboxes:~$ cat > numbers.txt
2
3
6
44
56
463
78
46
33
664
osboxes@osboxes:~$ cat -n numbers.txt
 1  2
 2  3
 3  6
 4 44
 5 56
 6 463
 7 78
 8 46
 9 33
10 664
osboxes@osboxes:~$ head numbers.txt
2
3
6
44
56
463
78
46
33
664
osboxes@osboxes:~$ tail numbers.txt
2
3
6
44
56
463
78
46
33
664
```

## Sort , sort -n , rev

```
osboxes@osboxes:~$ head -7 numbers.txt
2
3
6
44
56
463
78
osboxes@osboxes:~$ tail -4 numbers.txt
78
46
33
664
osboxes@osboxes:~$ rev numbers.txt
2
3
6
44
65
364
87
64
33
466
osboxes@osboxes:~$ sort numbers.txt
2
3
6
33
44
46
463
56
664
78
osboxes@osboxes:~$ sort -n numbers.txt
2
3
6
33
44
46
56
78
463
664
```

## Echo

```
osboxes@osboxes:~$ echo "Lionel Messi Lamine Yamal David Bechkam" | cut -d " " -f1
Lionel
osboxes@osboxes:~$ echo "Lionel Messi Lamine Yamal David Bechkam" | cut -d " " -f2,3
Messi Lamine
osboxes@osboxes:~$ echo "Lionel Messi Lamine Yamal David Bechkam" | cut -d " " -f2-5
Messi Lamine Yamal David
```

## Alias

```
osboxes@osboxes:~$ alias list="ls -l -i -a"
osboxes@osboxes:~$ list
total 108
8126466 drwxr-x-- 22 osboxes osboxes 4096 Oct  8 07:56 .
8126465 drwxr-xr-x  3 root    root    4096 Jun  3 20:19 ..
8127132 -rw-----  1 osboxes osboxes    0 Oct  7 08:50 .bash_history
8126469 -rw-r--r--  1 osboxes osboxes  220 Mar 31 2024 .bash_logout
8126467 -rw-r--r--  1 osboxes osboxes 3771 Mar 31 2024 .bashrc
8126478 drwx----- 10 osboxes osboxes 4096 Oct  7 09:06 .cache
8126549 drwx----- 12 osboxes osboxes 4096 Oct  7 09:06 .config
8127292 drwxrwxr-x  3 osboxes osboxes 4096 Oct  7 13:49 d1
8126541 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Desktop
8127289 drwxrwxr-x  2 osboxes osboxes 4096 Oct  7 13:44 dir
8127303 drwxrwxr-x  2 osboxes osboxes 4096 Oct  7 14:05 dir02
8127304 drwxrwxr-x  2 osboxes osboxes 4096 Oct  7 14:05 dir03
8127290 drwxrwxr-x  2 osboxes osboxes 4096 Oct  7 13:45 dir1
8127291 drwxrwxr-x  2 osboxes osboxes 4096 Oct  7 13:45 dir2
8126545 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Documents
8126542 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Downloads
8127305 -rw-rw-r--  1 osboxes osboxes   23 Oct  7 14:17 .hiddenfile.txt
8126475 drwx-----  4 osboxes osboxes 4096 Jun  3 20:20 .local
8127299 drwxrwxr-x  2 osboxes osboxes 4096 Oct  7 14:05 move
8126546 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Music
8127307 -rw-rw-r--  1 osboxes osboxes   29 Oct  8 07:57 numbers.txt
8126547 drwxr-xr-x  3 osboxes osboxes 4096 Oct  7 09:05 Pictures
8126468 -rw-r--r--  1 osboxes osboxes  807 Mar 31 2024 .profile
8126544 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Public
8126470 drwx-----  4 osboxes osboxes 4096 Oct  7 09:00 snap
8126599 drwx-----  2 osboxes osboxes 4096 Jun  3 20:20 .ssh
8126875 -rw-r--r--  1 osboxes osboxes    0 Jun  3 20:21 .sudo_as_admin_successful
8126543 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Templates
8126548 drwxr-xr-x  2 osboxes osboxes 4096 Jun  3 20:20 Videos
```

```
osboxes@osboxes:~/dir1$ touch file10.txt
osboxes@osboxes:~/dir1$ touch file1.txt
osboxes@osboxes:~/dir1$ ls
file10.txt  file1.txt
osboxes@osboxes:~/dir1$ list
total 8
8127290 drwxrwxr-x  2 osboxes osboxes 4096 Oct  8 10:03 .
8126466 drwxr-x--- 22 osboxes osboxes 4096 Oct  8 07:56 ..
8127309 -rw-rw-r--  1 osboxes osboxes    0 Oct  8 10:03 file10.txt
8127319 -rw-rw-r--  1 osboxes osboxes    0 Oct  8 10:03 file1.txt
osboxes@osboxes:~/dir1$ unalias list
osboxes@osboxes:~/dir1$ list
Command 'list' not found, but there are 22 similar ones.
```

uniq

```
osboxes@osboxes:~$ uniq numbers.txt
3
5
3
643
56
236
6543
6654
34
347
775
45
787
67
34
86
45
334
```



## env

```
osboxes@osboxes:~$ env
SHELL=/bin/bash
SESSION_MANAGER=local/osboxes:@/tmp/.ICE-unix/1852,unix/osboxes:/tmp/.ICE-unix/1852
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
GNOME_KEYRING_CONTROL=/run/user/1000/keyring
GNOME_SHELL_SESSION_MODE=ubuntu
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
MEMORY_PRESSURE_WRITE=c29tZSAyMDAwMDAgMjAwMDAwMAA=
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
GTK_MODULES=gail:atk-bridge
PWD=/home/osboxes
LOGNAME=osboxes
XDG_SESSION_DESKTOP=ubuntu
XDG_SESSION_TYPE=wayland
SYSTEMD_EXEC_PID=1989
XAUTHORITY=/run/user/1000/.mutter-Xwaylandauth.IDY8U2
HOME=/home/osboxes
USERNAME=osboxes
IM_CONFIG_PHASE=1
LANG=en_US.UTF-8
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=
30;43:ca=00:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:
*.lzh=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.dz=01;31:*.
gz=01;31:*.lrz=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tztst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz
2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace
=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wim=01;31:*.swm=01;31:*.dwm=01;31:*.esd=01;31:*.avif
=01;35:*.jpg=01;35:*.jpeg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:
*.tga=01;35:*.xhm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.nrx=01;35
;35:*.flr=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;3
5:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;
36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:*~=00;90:*#=00;90:*.bak=00;90:*.
crdownload=00;90:*.dpg=00;90:*.dpgk-dist=00;90:*.dpgk-new=00;90:*.dpgk-old=00;90:*.dpgk-tmp=00;90:*.old=00;90:*.orig=00;90:*.part=00
;90:*.rej=00;90:*.rpmnew=00;90:*.rpmorig=00;90:*.rpmsave=00;90:*.swp=00;90:*.tmp=00;90:*.ucf-dist=00;90:*.ucf-new=00;90:
*.ucf-old=00;90:
XDG_CURRENT_DESKTOP=ubuntu:GNOME
MEMORY_PRESSURE_WATCH=/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/session.slice/org.gnome.SettingsDaemon
.MediasKeys.service/memory.pressure
VTE_VERSION=7600
WAYLAND_DISPLAY=wayland-0
GNOME_TERMINAL_SCREEN=/org/gnome/Terminal/screen/c3236773_ea99_4c68_ba6d_c62af02a6cd7
GNOME_SETUP_DISPLAY=:1
LESSCLOSE=/usr/bin/lesspipe %s %s
XDG_SESSION_CLASS=user
TERM=xterm-256color
LESSOPEN=| /usr/bin/lesspipe %s
USER=osboxes
GNOME_TERMINAL_SERVICE=:1.94
DISPLAY=:0
SHLVL=1
GSM_SKIP_SSH_AGENT_WORKAROUND=true
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
DEBUGINFOD_URLS=https://debuginfod.ubuntu.com
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
_=/usr/bin/env
```

Ps , kill , factor , echo

```
osboxes@osboxes:~$ ps
  PID TTY          TIME CMD
  2579 pts/0    00:00:00 bash
  2684 pts/0    00:00:00 ps
osboxes@osboxes:~$ kill
kill: usage: kill [-s sigspec | -n signum | -sigspec] pid | jobspec ... or kill -l [sigspec]
osboxes@osboxes:~$ echo "Hello World this is Harsh Dixit"
Hello World this is Harsh Dixit
osboxes@osboxes:~$ factor 6
6: 2 3
```

## Uppercase , lowercase

```
osboxes@osboxes:~$ head -7 numbers.txt
3
5
3
643
56
236
6543
osboxes@osboxes:~$ head -7 numbers.txt | tail -4
643
56
236
6543
osboxes@osboxes:~$ echo "Sunbeam Karad"
Sunbeam Karad
osboxes@osboxes:~$ echo "Sunbeam Karad" | tr "a-z" "A-Z"
SUNBEAM KARAD
osboxes@osboxes:~$ echo "Sunbeam Karad" | tr "A-Z" "a-z"
sunbeam karad
osboxes@osboxes:~$ echo "New      Delhi"
New      Delhi
osboxes@osboxes:~$ echo "New      Delhi" | tr -s " "
New Delhi
osboxes@osboxes:~$ echo "New      Delhi" | tr " " "@"
New@@@@@Delhi
```

```
osboxes@osboxes:~$ uniq sorted.txt
236
3
334
34
347
45
5
56
643
6543
6654
67
775
787
86
osboxes@osboxes:~$ ls -w
ls: option requires an argument -- 'w'
Try 'ls --help' for more information.
osboxes@osboxes:~$ echo "Lets see error redirection."
Lets see error redirection.
osboxes@osboxes:~$ ls -w 2> lserr.txt
osboxes@osboxes:~$ cat lserr.txt
ls: option requires an argument -- 'w'
Try 'ls --help' for more information.
osboxes@osboxes:~$ touch textfile.txt
osboxes@osboxes:~$ cat > textfile.txt
osboxes@osboxes:~$ cat > textfile.txt
Leo Messi is the Goat
```