ASSIGNMENT 01 CONCEPTS OF OPERATING SYSTEMS
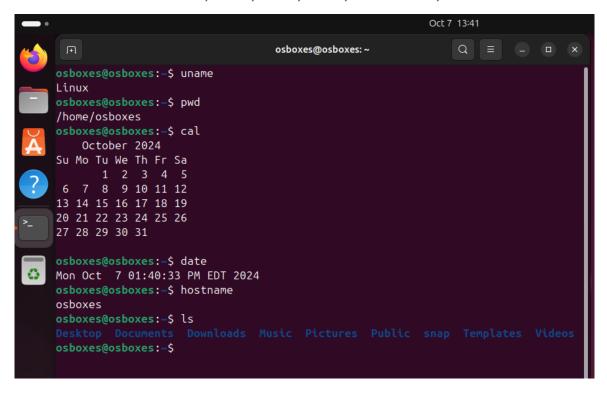
HARSH DIXIT

KD1-86691-HARSH

UNAME , PWD , CAL , DATE, HOSTNAME, LS

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

WC , TAC , REV

```
osboxes@osboxes:~$ cat > file.txt
Hello this is Harsh Dixit
osboxes@osboxes:~$ wc file.txt
 1  5 26 file.txt
osboxes@osboxes:~$ tac file.txt
Hello this is Harsh Dixit
osboxes@osboxes:~$ rev file.txt
tixiD hsraH si siht olleH
osboxes@osboxes:~$ tac file.txt
Hello this is Harsh Dixit
osboxes@osboxes:~$ cat >> file.txt
This is messi
This is sunbeam
osboxes@osboxes:~$ cat file.txt
Hello this is Harsh Dixit
This is messi
This is sunbeam
osboxes@osboxes:~$ tac file.txt
This is sunbeam
This is messi
Hello this is Harsh Dixit
osboxes@osboxes:~$ rev file.txt
tixiD hsraH si siht olleH
issem si sihT
maebnus si sihT
```

Sort , sort -n , rev

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

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:
*.lz4=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:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tzst=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:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35
```

```
;35:*.fli=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:*.dpkg-dist=00;90:*.dpkg-new=00;90:*.dpkg-old=00;90:*.dpkg-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
.MediaKeys.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
```

UNIQ

```
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
```