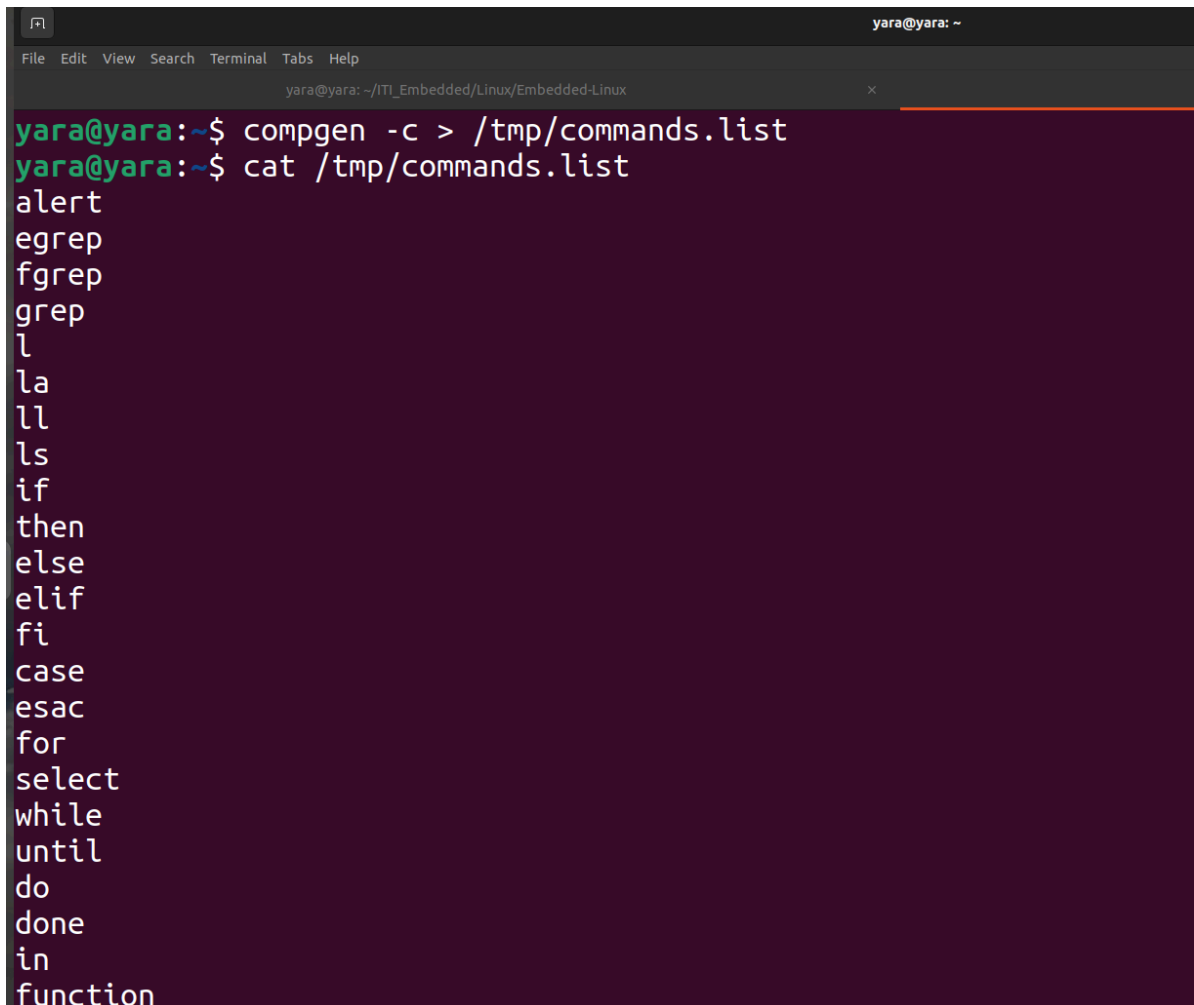


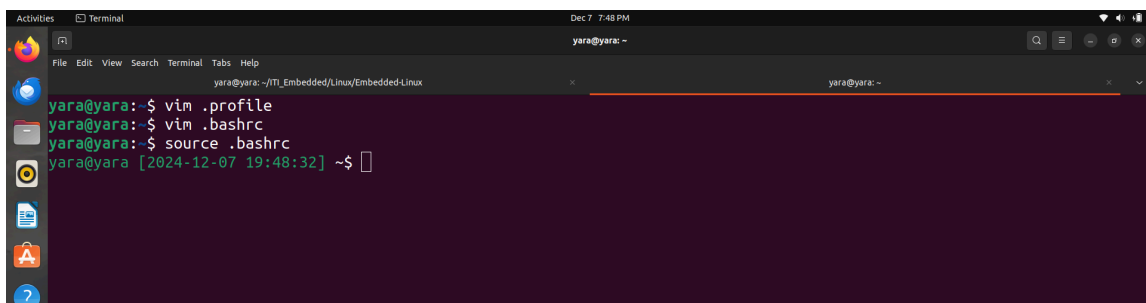
- Section 2 :

1. List the user commands and redirect the output to /tmp/commands.list

A terminal window titled 'yara@yara: ~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help) and a tab labeled 'yara@yara: ~/ITI_Embedded/Linux/Embedded-Linux'. The terminal shows the execution of 'compgen -c > /tmp/commands.list' followed by 'cat /tmp/commands.list', which outputs a list of shell built-in commands.

```
yara@yara:~$ compgen -c > /tmp/commands.list
yara@yara:~$ cat /tmp/commands.list
alert
egrep
fgrep
grep
l
la
ll
ls
if
then
else
elif
fi
case
esac
for
select
while
until
do
done
in
function
```

2. Edit in your profile to display date at login and change your prompt permanently

A terminal window titled 'yara@yara: ~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help) and a tab labeled 'yara@yara: ~/ITI_Embedded/Linux/Embedded-Linux'. The terminal shows the execution of 'vim .profile', 'vim .bashrc', and 'source .bashrc'. The prompt changes to '[2024-12-07 19:48:32] ~\$' after sourcing the files.

```
yara@yara:~$ vim .profile
yara@yara:~$ vim .bashrc
yara@yara:~$ source .bashrc
yara@yara [2024-12-07 19:48:32] ~$
```


4. What happens

a. `cat filename1 | cat filename2`

it will show the text in filename2 , because the second command takes all it's arguments and ignore what before piping

```
yara@yara:~$ cat file1.txt
hello1
yara@yara:~$ cat file2.txt
hello2
yara@yara:~$ cat file1.txt | cat file2.txt
hello2
yara@yara:~$
```

b. `ls | rm`

this command shows error because the formatting rm taking arguments doesn't match what comes out of ls

```
yara@yara:~$ ls | rm
rm: missing operand
Try 'rm --help' for more information.
yara@yara:~$ rm --help
Usage: rm [OPTION]... [FILE]...
```

c. `ls /etc/passwd | wc -l`

```
yara@yara:~$ ls /etc/passwd | wc -l
1
yara@yara:~$ wc -l --help
Usage: wc [OPTION]... [FILE]...
  or: wc [OPTION]... --files0-from=F
Print newline, word, and byte counts for each FILE, and a total line if
more than one FILE is specified. A word is a non-zero-length sequence of
characters delimited by white space.

With no FILE, or when FILE is -, read standard input.

The options below may be used to select which counts are printed, always in
the following order: newline, word, character, byte, maximum line length.
  -c, --bytes          print the byte counts
  -m, --chars          print the character counts
  -l, --lines          print the newline counts
  --files0-from=F      read input from the files specified by
                        NUL-terminated names in file F;
                        If F is - then read names from standard input
```

5. Write a command to search for all files on the system that, its name is “.profile”.

```
Activities Terminal Dec 8 11:10 PM yara@yara: -
yara@yara:~$ locate .profile
/etc/skel/.profile
/home/yara/.profile
/snap/core20/2434/etc/skel/.profile
/snap/core20/2434/usr/share/base-files/dot.profile
/snap/core20/2434/usr/share/base-files/dot.profile.md5sums
/snap/core20/2434/usr/share/linbian/profiles/dpkg/main.profile
/snap/core20/2434/usr/share/opensc/asepcos.profile
/snap/core20/2434/usr/share/opensc/authentic.profile
/snap/core20/2434/usr/share/opensc/cardos.profile
/snap/core20/2434/usr/share/opensc/cyberflex.profile
/snap/core20/2434/usr/share/opensc/entersafe.profile
/snap/core20/2434/usr/share/opensc/epass2003.profile
/snap/core20/2434/usr/share/opensc/flex.profile
/snap/core20/2434/usr/share/opensc/gids.profile
/snap/core20/2434/usr/share/opensc/gpk.profile
/snap/core20/2434/usr/share/opensc/ias_adele_admin1.profile
/snap/core20/2434/usr/share/opensc/ias_adele_admin2.profile
/snap/core20/2434/usr/share/opensc/ias_adele_common.profile
/snap/core20/2434/usr/share/opensc/iasecc.profile
/snap/core20/2434/usr/share/opensc/iasecc_admin_eid.profile
/snap/core20/2434/usr/share/opensc/iasecc_generic_oberthur.profile
/snap/core20/2434/usr/share/opensc/iasecc_generic_pki.profile
/snap/core20/2434/usr/share/opensc/incrypto34.profile
/snap/core20/2434/usr/share/opensc/isoApplet.profile
/snap/core20/2434/usr/share/opensc/jcop.profile
/snap/core20/2434/usr/share/opensc/mtocos.profile
/snap/core20/2434/usr/share/opensc/muscle.profile
/snap/core20/2434/usr/share/opensc/myeid.profile
/snap/core20/2434/usr/share/opensc/oberthur.profile
/snap/core20/2434/usr/share/opensc/openpgp.profile
/snap/core20/2434/usr/share/opensc/pkcs15.profile
/snap/core20/2434/usr/share/opensc/rutoken.profile
/snap/core20/2434/usr/share/opensc/rutoken_ecp.profile
/snap/core20/2434/usr/share/opensc/rutoken_lite.profile
/snap/core20/2434/usr/share/opensc/sc-hsm.profile
/snap/core20/2434/usr/share/opensc/setcos.profile
/snap/core20/2434/usr/share/opensc/starcos.profile
/snap/core20/2434/usr/share/opensc/uestcos.profile
```

6. List the inode numbers of /, /etc, /etc/hosts.

```
yara@yara:~$ ls -li /
12 bin 1 dev 13 lib 16 libx32 3801089 mnt 1048577 root 3932161 snap 262145 tmp
1310721 boot 2621441 etc 14 lib32 11 lost+found 4718593 opt 1 run 131073 srv 4325377 usr
5767169 cdrom 3276801 home 15 lib64 3670017 media 1 proc 17/sbin 1 sys 4194305 var
```

```
yara@yara:~$ ls -li /etc
2621448 acpi 2621593 e2scrub.conf 2621505 kernel 2621522 openvpn 2621642 shadow-
2621578 adduser.conf 2621481 emacs 2622775 kernel-img.conf 2621523 opt 2621654 shells
2621449 alsa 2621594 environment 2621612 kernel-loops.conf 2621639 os-release 2621550 skel
2621450 alternatives 2621482 environment.d 2621508 ldap 2621445 PackageKit 2621551 snmp
2621579 anacrontab 2621595 ethertypes 2623411 ld.so.cache 2621640 pam.conf 2621552 speech-dispatcher
2621580 app.conf 2621483 firefox 2621614 ld.so.conf 2621524 pam.d 2621553 ssh
2621451 apm 2621484 fonts 2621507 ld.so.conf.d 2621641 papersize 2621554 ssl
2621452 apparmor 2621596 fprintd.conf 2621615 legal 2623228 passwd 2624435 subgid
2621453 apparmor.d 2621442 fstab 2621616 libao.conf 2624424 passwd- 2621656 subgid-
2621454 appport 2621597 fuse.conf 2621617 libaudit.conf 2621525 ncncia 2624434 subuid
2621581 appstream.conf 2621485 fwupd 2621509 libblockdev 2621526 perl 2624429 subuid-
2621455 apt 2621598 gai.conf 2621510 libnl-3 2621527 pkc 2621657 sudo.conf
2621456 avahi 2621486 gdb 2621511 libpaper.d 2621528 pm 2621659 sudoers
2621582 bash.bashrc 2621487 gdm3 2621512 libreoffice 2621643 pnm2ppa.conf 2621556 sudoers.d
2621583 bash_completion 2621488 geoclue 2621618 locale.alias 2621529 polkit-1 2621658 sudo_logsrvd.conf
2621457 bash_completion.d 2621489 ghostscript 2624420 locale.gen 2621530 ppp 2621660 sysctl.conf
2621584 bindresvport.blacklist 2622704 gitconfig 2621620 localtime 2621950 prime-discrete 2621557 sysctld
2621458 binfmt.d 2621490 glvnd 2621513 logcheck 2622142 printcap 2621558 systemd
2621459 bluetooth 2621491 gnome 2621621 login.defs 2621644 profile 2621559 terminfo
2621585 brlapi.key 2621492 groff 2621622 logrotate.conf 2621531 profile.d 2621560 thermalid
2621460 brltty 2623423 group 2621514 logrotate.d 2621645 protocols 2621561 thunderbird
2621586 brltty.conf 2621600 group- 2621623 lsb-release 2621532 nulse 2621661 timezone
2621461 ca-certificates 2621493 grub.d 2621624 machine-id 2621533 python3 2621562 tmpfiles.d
2622126 ca-certificates.conf 2623225 gshadow 2621625 magic 2621534 python3.10 2621563 ubuntu-advantage
2621587 ca-certificates.conf.dpkg-old 2624425 gshadow- 2621626 magic.mime 2621535 rc0.d 2621662 ucf.conf
2621462 chatscripts 2621494 gss 2621811 mailcap 2621536 rc1.d 2621564 udev
2621464 console-setup 2621495 gtk-2.0 2621628 mailcap.order 2621537 rc2.d 2621565 udisks2
2621465 cracklib 2621496 gtk-3.0 2621629 manpath.config 2621538 rc3.d 2621566 ufw
2621466 cron.d 2621601 hdparm.conf 2621630 mime.types 2621539 rc4.d 2623320 updatedb.conf
2621467 cron.daily 2621602 host.conf 2621631 mke2fs.conf 2621540 rc5.d 2621567 update-manager
2621468 cron.hourly 2621603 hostid 2621443 ModemManager 2621541 rc6.d 2621568 update-motd.d
2621469 cron.monthly 2621604 hostname 2621516 modprobe.d 2621542 rc5.d 2621569 update-notifier
2621589 crontab 2621605 hosts 2621632 modules 2621646 resolv.conf 2621446
```

```
yara@yara:~$ ls -li /etc/hosts
2621605 /etc/hosts
```

7. Create a symbolic link of /etc/passwd in /boot.

```
yara@yara:~$ ln -s /etc/passwd /boot/passwd_link
ln: failed to create symbolic link '/boot/passwd_link': Permission denied
yara@yara:~$ sudo ln -s /etc/passwd /boot/passwd_link
yara@yara:~$ ls -l /boot/passwd_link
lrwxrwxrwx 1 root root 11 Dec  8 23:17 /boot/passwd_link -> /etc/passwd
yara@yara:~$
```

8. Create a hard link of /etc/passwd in /boot. Could you? Why?

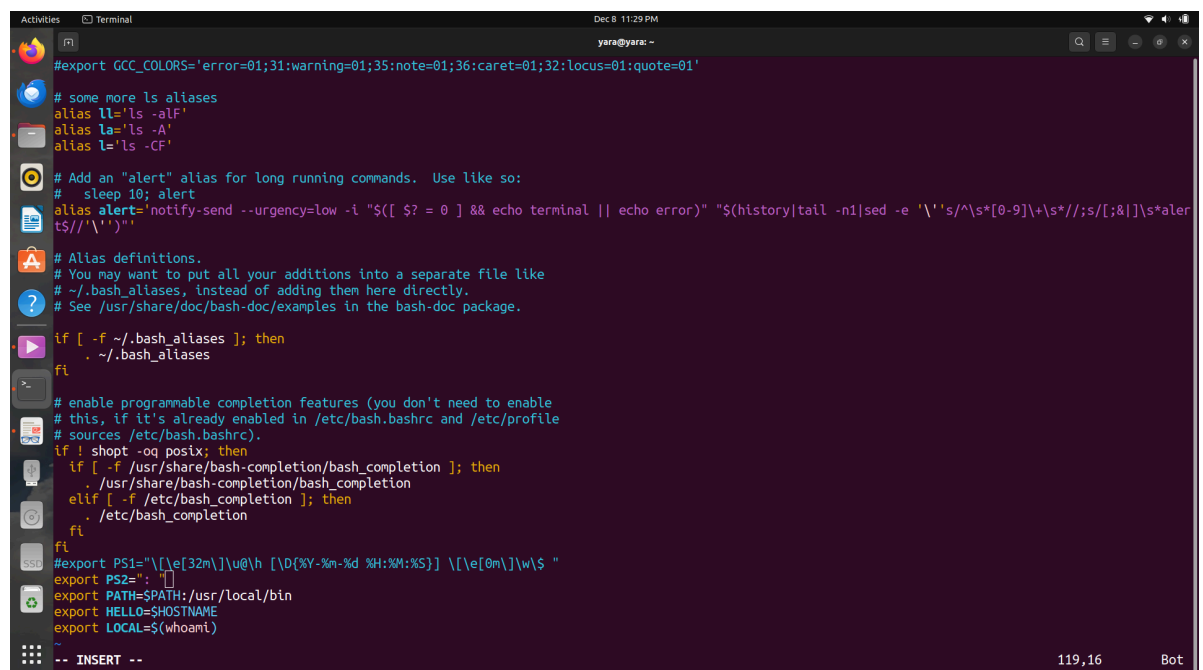
Yes I could , because memory in my device not split into 2 devices

```
yara@yara:~$ sudo ln /etc/passwd /boot/passwd_hardlink
yara@yara:~$ ls -li /etc/passwd /boot/passwd_hardlink
2623228 /boot/passwd_hardlink 2623228 /etc/passwd
yara@yara:~$
```

9. Echo \ , change the prompt from ">" to ":".

```
yara@yara:~$ vim .bashrc
yara@yara:~$ source .bashrc
yara@yara:~$ echo \
:

```



The screenshot shows a terminal window with the .bashrc file content. The file includes various aliases, a function for long running commands, and alias definitions. The prompt is currently ">".

```
export GCC_COLORS='error=01;31;warning=01;35;note=01;36;caret=01;32;locus=01;quote=01'

# some more ls aliases
alias ll='ls -alF'
alias la='ls -A'
alias l='ls -CF'

# Add an "alert" alias for long running commands. Use like so:
# sleep 10; alert
alias alert='notify-send --urgency=low -i "${[ $? = 0 ]} && echo terminal || echo error" "${history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[\&]]\s*aler
t$/\s*\''"'

# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
    if [ -f /usr/share/bash-completion/bash_completion ]; then
        . /usr/share/bash-completion/bash_completion
    elif [ -f /etc/bash_completion ]; then
        . /etc/bash_completion
    fi
fi

#export PS1="\[\e[32m\]\u@\h [\D{\%Y-\%m-\%d %H:%M:%S}] \[\e[0m\]\w\$ "
export PS2=": "
export PATH=$PATH:/usr/local/bin
export HELLO=$HOSTNAME
export LOCAL=$(whoami)
-- INSERT --
```