Lab 4

List the available shells in your system.

```
[esraatark@localhost admin1]$ cat /etc/shells
/bin/sh
/bin/bash
/usr/bin/sh
/usr/bin/bash
[esraatark@localhost admin1]$
```

List the environment variables in your current shell.

```
[esraatark@localhost admin1]$ env
SHELL=/bin/bash
HISTCONTROL=ignoredups
HISTSIZE=1000
HOSTNAME=localhost
PWD=/home/esraatark/admin1
LOGNAME=esraatark
HOME=/home/esraatark
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=01;37;41:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:s
t=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.l
ha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;3
1:*.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:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ea
r=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:*.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:*.m
ov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.webp=01
;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nu
v=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:
*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;3
5:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=01;36:*.au=01;36:*.flac=
01;36:*.m4a=01;36:*.mid=01;36:*.midi=01;36:*.mka=01;36:*.mp3=01;36:*.mpc=01;36:*
```

List all of the environment variables for the bash shell.

```
[esraatark@localhost admin1]$ printenv
SHELL=/bin/bash
HISTCONTROL=ignoredups
HISTSIZE=1000
HOSTNAME=localhost
PWD=/home/esraatark/admin1
LOGNAME=esraatark
HOME=/home/esraatark
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=01;37;41:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:s
t=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.l
ha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;3
1:*.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:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ea
r=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:*.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:*.m
ov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.webp=01
;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nu
v=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:
*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;3
5:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=01;36:*.au=01;36:*.flac=
01;36:*.m4a=01;36:*.mid=01;36:*.midi=01;36:*.mka=01;36:*.mp3=01;36:*.mpc=01;36:*
.ogg=01;36:*.ra=01;36:*.wav=01;36:*.oga=01;36:*.opus=01;36:*.spx=01;36:*.xspf=01
;36:
```

What are the commands that list the value of a specific variable?

echo $VARIABLE_NAME: Commonly used to display a specific variable's value.
printenv VARIABLE_NAME: Directly shows the value of a specific environment variable.
env | grep VARIABLE_NAME: Lists a specific environment variable using grep.
set | grep VARIABLE_NAME: Lists shell variables and functions, filtered with grep.

Display your current shell name.

```
[esraatark@localhost admin1]$ basename $SHELL
bash
```

State the initialization files of: sh, ksh, bash.

sh:

Login: /etc/profile, ~/.profile

ksh:

Login: /etc/profile, ~/.profile

Non-login: ~/.kshrc

 bash:

Login: /etc/profile, ~/.bash_profile (or ~/.profile)

Non-login: ~/.bashrc

Logout: ~/.bash_logout

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

10.Execute the following command :

echo \ then press enter

What is the purpose of \ ?

The backslash (\) is used as an escape character. It tells the shell to escape the next character. However, in this case, the backslash is not followed by a character, so it causes the shell to

expect more input from you. The echo command does not output anything, and the prompt changes to >.

Notice the prompt ">" what is that? and how can you change it from ">" to ":".

the > prompt is displayed when the shell expects more input to complete a command. It appears when you have entered a command that the shell cannot execute because it's incomplete. In this case, the shell is expecting you to finish the command (i.e., provide the rest of the string after the backslash). The shell remains in this state until you complete the command or cancel it

```
esraatark@localhost:~$ export PS2=":"
esraatark@localhost:~$ echo \
:

esraatark@localhost:~$
```

Create a Bash shell alias named ls for the "ls –l" command

```
esraatark@localhost:~$ alias ls='ls -l'
esraatark@localhost:~$ ls
total 4
drwxr-xr-x. 7 esraatark esraatark   79 Dec 29 14:35 admin1
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Desktop
d---------. 2 esraatark esraatark    6 Dec 29 13:49 dir
drwxr-xr-x. 2 esraatark esraatark   18 Dec 24 09:11 Documents
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Downloads
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Music
-rw-r-x-wx. 1 esraatark esraatark 1973 Dec 24 11:24 passwd
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Pictures
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Public
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Templates
drwxr-xr-x. 2 esraatark esraatark    6 Dec 23 18:34 Videos
```

Issue the command sleep 100:

```
esraatark@localhost:~$ sleep 100
```

This will make the terminal wait (sleep) for 100 seconds.

Stop the last command.

```
^Z
[1]+  Stopped                 sleep 100
esraatark@localhost:~$
```

Resume the last command in the background

```
esraatark@localhost:~$ bg
[1]+ sleep 100 &
esraatark@localhost:~$ █
```

Issue the jobs command and see its output.

```
esraatark@localhost:~$ jobs
[1]+  Running                 sleep 100 &
esraatark@localhost:~$
```

Send the sleep command to the foreground and send it again to the background.

```
esraatark@localhost:~$ sleep 100
^Z
[2]+  Stopped                 sleep 100
esraatark@localhost:~$ fg %1
sleep 100
^Z
[1]+  Stopped                 sleep 100
esraatark@localhost:~$ bg %1
[1]+ sleep 100 &
```

Kill the sleep command.

```
esraatark@localhost:~$ sleep 100
^Z[4]   Terminated              sleep 100

[5]+  Stopped                 sleep 100
esraatark@localhost:~$ bg
[5]+ sleep 100 &
esraatark@localhost:~$ jobs
[2]-  Stopped                 sleep 100
[3]+  Stopped                 sleep 100
[5]   Running                 sleep 100 &
esraatark@localhost:~$ ps
   PID TTY          TIME CMD
  2775 pts/0    00:00:00 bash
  3068 pts/0    00:00:00 bash
  3191 pts/0    00:00:00 bash
  4508 pts/0    00:00:00 sleep
  4509 pts/0    00:00:00 sleep
  4516 pts/0    00:00:00 sleep
  4517 pts/0    00:00:00 ps
esraatark@localhost:~$ kill 4516
```

Display your processes only

```
esraatark@localhost:~$ ps -u $USER
   PID TTY          TIME CMD
  2056 ?        00:00:00 systemd
  2058 ?        00:00:00 (sd-pam)
  2074 ?        00:00:00 gnome-keyring-d
  2080 tty2     00:00:00 gdm-wayland-ses
  2084 ?        00:00:00 dbus-broker-lau
  2086 ?        00:00:00 dbus-broker
  2089 tty2     00:00:00 gnome-session-b
  2119 ?        00:00:00 gnome-session-c
  2120 ?        00:00:00 gnome-session-b
  2138 ?        00:01:07 gnome-shell
  2147 ?        00:00:00 gvfsd
  2152 ?        00:00:00 gvfsd-fuse
  2154 ?        00:00:00 at-spi-bus-laun
  2164 ?        00:00:00 dbus-broker-lau
  2166 ?        00:00:00 dbus-broker
  2183 ?        00:00:00 gnome-shell-cal
  2185 ?        00:00:00 xdg-permission-
```

Display all processes except yours

```
esraatark@localhost:~$ ps -e --no-headers | grep -v "^$USER"
     1 ?        00:00:02 systemd
     2 ?        00:00:00 kthreadd
     3 ?        00:00:00 pool_workqueue_
     4 ?        00:00:00 kworker/R-rcu_g
     5 ?        00:00:00 kworker/R-rcu_p
     6 ?        00:00:00 kworker/R-slub_
     7 ?        00:00:00 kworker/R-netns
     9 ?        00:00:00 kworker/0:0H-events_highpri
    10 ?        00:00:00 kworker/u512:0-events_unbound
    11 ?        00:00:00 kworker/R-mm_pe
    12 ?        00:00:00 kworker/u512:1-netns
    13 ?        00:00:00 rcu_tasks_kthre
    14 ?        00:00:00 rcu_tasks_rude_
    15 ?        00:00:00 rcu_tasks_trace
```

Use the pgrep command to list your processes only

```
esraatark@localhost:~$ pgrep -u $USER
2056
2058
2074
2080
2084
2086
2089
2119
2120
2138
2147
2152
2154
2164
```

This will display the process IDs of all processes owned by your user.

Kill your processes only.

```
[esraatark@localhost ~]$ pkill -u $USER
```