

1. List the available shells in your system.

```
bash: cd: /etc/shells: not a directory
samaa@ubuntu:~$ cat /etc/shells
# /etc/shells: valid login shells
/bin/sh
/bin/dash
/bin/bash
/bin/rbash
samaa@ubuntu:~$ printenv
```

2. List the environment variables in your current shell.

```
/bin/rbash
samaa@ubuntu:~$ printenv
XDG_VTNR=7
XDG_SESSION_ID=c2
CLUTTER_IM_MODULE=xim
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/samaa
SESSION=ubuntu
GPG_AGENT_INFO=/home/samaa/.gnupg/S.gpg-agent:0:1
TERM=xterm-256color
SHELL=/bin/bash
XDG_MENU_PREFIX=gnome-
VTE_VERSION=4205
QT_LINUX_ACCESSIBILITY_ALWAYS_ON=1
WINDOWID=27262986
UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1393
GNOME_KEYRING_CONTROL=
GTK_MODULES=gail:atk-bridge:unity-gtk-module
USER=samaa
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=30;41:tw=30;42:ow=34;42:st=37;4
4: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:*.t7
z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=0
1;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz
```

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

Set, env, printenv.

```
samaa@ubuntu:~$ printenv HOME
/home/samaa
samaa@ubuntu:~$
```

4. Display your current shell name.

```
for more details see ps(1).
samaa@ubuntu:~$ echo $SHELL
/bin/bash
samaa@ubuntu:~$
```

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

```
samaa@ubuntu:~$ compgen -c
alert
egrep
fgrep
grep
l
la
ll
ls
if
then
else
elif
fi
case
esac
for
select
while
until
do
done
in
function
time
{
}
!
[[
```

```
samaa@ubuntu:~$ compgen -c >/tmp/commands.list
samaa@ubuntu:~$ 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
time
{
}
!
[[
```

6. Get all the users names whose first character in their login is 'g'.

```
@ubuntu: ~  
samaa@ubuntu:~$ grep '^g*' /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin  
bin:x:2:2:bin:/bin:/usr/sbin/nologin  
sys:x:3:3:sys:/dev:/usr/sbin/nologin  
sync:x:4:65534:sync:/bin:/bin/sync  
games:x:5:60:games:/usr/games:/usr/sbin/nologin  
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin  
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin  
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin  
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin  
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin  
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin  
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin  
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin  
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin  
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin  
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
```

```
samaa@ubuntu:~$ less /etc/passwd g*  
samaa@ubuntu:~$ cat /etc/passwd | cut -d ":" -f 1 | egrep "^g"  
games  
gnats
```

7. Save the output of the last command in a file.

```
samaa@ubuntu:~$ less /etc/passwd g*  
samaa@ubuntu:~$ cat /etc/passwd | cut -d ":" -f 1 | egrep "^g"  
games  
gnats  
samaa@ubuntu:~$ cat /etc/passwd | cut -d ":" -f 1 | egrep "^g"> gfile.txt  
samaa@ubuntu:~$ ls  
Desktop  docs      Downloads  gfile.txt  oldpasswd  Public  Videos  
dir1     Documents examples.desktop  Music      Pictures  Templates  
samaa@ubuntu:~$ cat gfile.txt  
games  
gnats  
samaa@ubuntu:~$
```

8. Write two commands:

First: to search for all files on the system that named .bash_profile.

```
samaa@ubuntu:~$  
samaa@ubuntu:~$ locate .bash_profile  
/usr/share/doc/adduser/examples/adduser.local.conf.examples/skel/dot.bash_profile  
samaa@ubuntu:~$
```

```
samaa@ubuntu:~$ find / -name .bash_profile -type f
find: '/root': Permission denied
find: '/run/udisks2': Permission denied
find: '/run/lightdm': Permission denied
find: '/run/cups/certs': Permission denied
find: '/run/sudo': Permission denied
find: '/run/systemd/inaccessible': Permission denied
find: '/lost+found': Permission denied
find: '/var/log/speech-dispatcher': Permission denied
find: '/var/spool/rsyslog': Permission denied
find: '/var/spool/cron/crontabs': Permission denied
find: '/var/spool/cups': Permission denied
find: '/var/cache/lightdm/dmrc': Permission denied
find: '/var/cache/cups': Permission denied
find: '/var/cache/apt/archives/partial': Permission denied
find: '/var/cache/ldconfig': Permission denied
find: '/var/tmp/systemd-private-a54fa6a11fb7496288483293d0a1e5fe-rtkit-daemon.service-RisLFI': Permission denied
find: '/var/tmp/systemd-private-a54fa6a11fb7496288483293d0a1e5fe-colord.service-XcNxyL': Permission denied
find: '/var/tmp/systemd-private-ea3d328c402646079c7e5098eaf0e46b-rtkit-daemon.service-J6AZYP': Permission denied
find: '/var/tmp/systemd-private-ea3d328c402646079c7e5098eaf0e46b-colord.service-WAqAG5': Permission denied
find: '/var/tmp/systemd-private-ea3d328c402646079c7e5098eaf0e46b-systemd-timesyncd.service-906ZDe': Permission denied
find: '/var/tmp/systemd-private-a54fa6a11fb7496288483293d0a1e5fe-systemd-timesyncd.service-JR7R83': Permission denied
```

9. Display the number “ID” of users who are logged now to the system.

For all users

```
samaa@ubuntu:~$ id
uid=1000(samaa) gid=1000(samaa) groups=1000(samaa),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),113(lpadmin),128(sambashare)
samaa@ubuntu:~$
```

```
samaa@ubuntu:~$ tail -n 5 /etc/passwd
pulse:x:117:124:PulseAudio daemon,,,:/var/run/pulse:/bin/false
rtkit:x:118:126:RealtimeKit,,,:/proc:/bin/false
saned:x:119:127::/var/lib/saned:/bin/false
usbmux:x:120:46:usbmux daemon,,,:/var/lib/usbmux:/bin/false
samaa:x:1000:1000:Samaa,,,:/home/samaa:/bin/bash
samaa@ubuntu:~$ tail -n 1 /etc/passwd
samaa:x:1000:1000:Samaa,,,:/home/samaa:/bin/bash
samaa@ubuntu:~$ id -c
id: invalid option -- 'c'
Try 'id --help' for more information.
samaa@ubuntu:~$ id -u
1000
```

10. Create a user account with the following attribute

- username: islam
- Fullname/comment: Islam Askar
- Password: islam

```
samaa@ubuntu:~$ sudo su
[sudo] password for samaa:
root@ubuntu:/home/samaa# useradd islam
root@ubuntu:/home/samaa# passwd islam
Enter new UNIX password:
passwd: password updated successfully
root@ubuntu:/home/samaa# usermod -c "Islam Askar" islam
root@ubuntu:/home/samaa# passwd islam
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ubuntu:/home/samaa#
```

11. Create a user account with the following attribute

- Username: baduser
- Full name/comment: Bad User
- Password: baduser

```
root@ubuntu:/home/samaa# useradd baduser
root@ubuntu:/home/samaa# passwd baduser
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ubuntu:/home/samaa# usermod -c "Bad User" baduser
root@ubuntu:/home/samaa#
```

12. Create a supplementary (Secondary) group called pgroup with group ID of 30000.

```
root@ubuntu:/home/samaa# groupadd -g 30000 pgroup
groupadd: group 'pgroup' already exists
```

13. Create a supplementary group called badgroup

```
root@ubuntu:/home/samaa# groupadd badgroup
root@ubuntu:/home/samaa# usermod -c "Bad User" baduser
```

14. Add islam user to the pgroup group as a supplementary group

```
root@ubuntu:/home/samaa# usermod -aG pgroup islam
root@ubuntu:/home/samaa#
```

15. Modify the password of islam's account to password

```
root@ubuntu:/home/samaa# groupadd badgroup
root@ubuntu:/home/samaa# usermod -aG pgroup islam
root@ubuntu:/home/samaa# passwd islam
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@ubuntu:/home/samaa#
```

16. Modify islam's account so the password expires after 30 days

```
root@ubuntu:/home/samaa# chage -m 30 islam
root@ubuntu:/home/samaa#
root@ubuntu:/home/samaa# chage -E 2021-12-28 islam
```

17. Lock baduser account so he can't log in.

18. Delete baduser account.

19. Delete the supplementary group called badgroup.

```
root@ubuntu:/home/samaa# chage -m 30 islam
root@ubuntu:/home/samaa# usermod -L baduser
root@ubuntu:/home/samaa# userdel baduser
root@ubuntu:/home/samaa# groupdel badgroup
root@ubuntu:/home/samaa#
```