

OPERATING SYSTEM

LAB MANUAL: 3

Question#1:

- a. Use the pwd command to find out what directory you are in.

Answer:

```
nimra@ubuntu:~/Desktop$ cd
nimra@ubuntu:~$ pwd
/home/nimra
nimra@ubuntu:~$
```

- b. If you are not in your home directory (/home/USERNAME) then use cd without any arguments to go there, and do pwd again.

Answer:

```
/home/nimra
nimra@ubuntu:~$ cd
nimra@ubuntu:~$
```

- c. Use cd to visit the root directory, and list the files there. You should see home among the list.

Answer:

```
nimra@ubuntu:~$ cd /
nimra@ubuntu:/$ ls
bin    dev    lib    libx32  mnt    root  snap    sys    var
boot  etc    lib32  lost+found  opt    run    srv      tmp
cdrom  home  lib64  media    proc   sbin   swapfile  usr
nimra@ubuntu:/$ cd
nimra@ubuntu:~$
```

- d. Change into the directory called home and again list the files present. There should be one directory for each user, including the user you are logged in as (you can use whoami to check that).

Answer:

```
nimra@ubuntu:/$ cd home
nimra@ubuntu:/home$ ls
nimra  poetry
nimra@ubuntu:/home$ whoami
nimra
nimra@ubuntu:/home$ █
```

- e. Change into your home directory to confirm that you have gotten back to where you started.

Answer:

```
nimra@ubuntu:/home$ cd nimra
nimra@ubuntu:~$ pwd
/home/nimra
nimra@ubuntu:~$ █
```

Question#2:

- a. Create a text file in your home directory called shakespeare, containing the following text: Shall I compare thee to a summer's day? Thou art more lovely and more temperate .

Answer:

```
nimra@ubuntu:~/Desktop$ cd
nimra@ubuntu:~$ cd ..
nimra@ubuntu:/home$ sudo su
[sudo] password for nimra:
root@ubuntu:/home# cat > shakespeare.txt
Shall I compare thee to a summer's day ?
Thou art more lovely and more temperate
root@ubuntu:/home# ls -a
.  ..  nimra  poetry  shakespeare.txt
root@ubuntu:/home# █
```

- b. Rename it to sonnet-18.txt.

Answer:

```
root@ubuntu:/home# mv shakespeare.txt sonnet-18.txt
root@ubuntu:/home# ls -a
.  ..  nimra poetry sonnet-18.txt
root@ubuntu:/home#
```

- c. Make a new directory in your home directory, called poetry.

Answer:

```
root@ubuntu:/home# mkdir Poetry
```

- d. Move the poem file into the new directory.

Answer:

```
root@ubuntu:/home# mv sonnet-18.txt Poetry/sonnet-18.txt
root@ubuntu:/home# ls -a
.  ..  nimra poetry Poetry
root@ubuntu:/home#
```

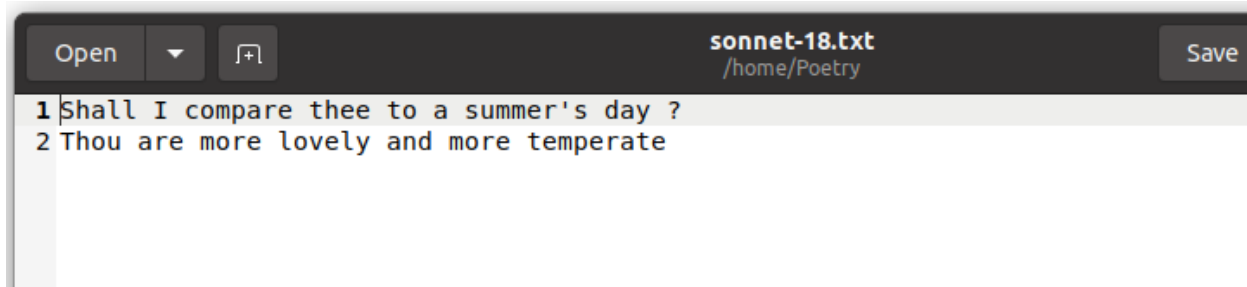
- e. Try to find a graphical directory-browsing program, and find your home directory with it. You should also be able to use it to explore some of the system directories.

Answer:

```
root@ubuntu:/home# cd Poetry
root@ubuntu:/home/Poetry# ls
sonnet-18.txt
root@ubuntu:/home/Poetry# xdg-open sonnet-18.txt
```

- f. Find a text editor program and use it to display and edit the sonnet.

Answer:

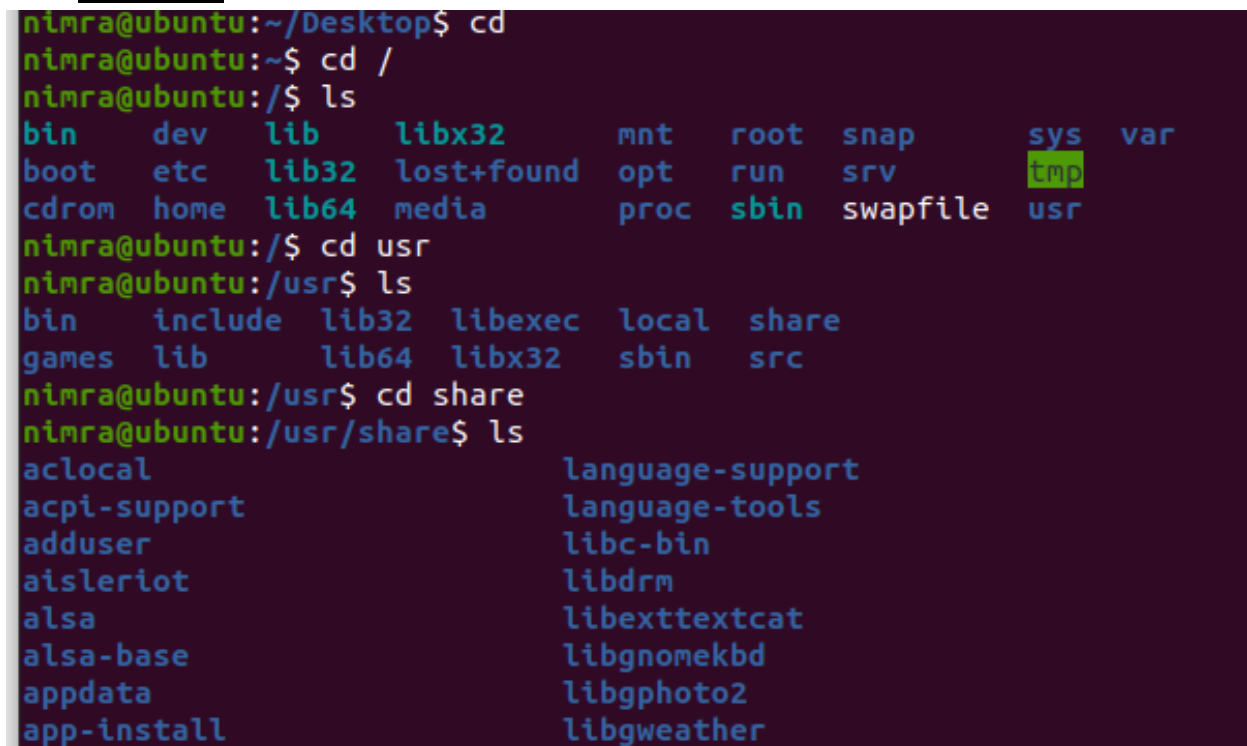
A screenshot of a text editor window. The title bar shows 'sonnet-18.txt' and the file path '/home/Poetry'. The editor has a dark theme. The text content is:

```
1 Shall I compare thee to a summer's day ?
2 Thou are more lovely and more temperate
```

Question#3:

- a. From your home directory, list the files in the directory /usr/share.

Answer:

A screenshot of a terminal window with a dark background. The user 'nimra' is at an 'ubuntu' machine. The commands and their outputs are:

```
nimra@ubuntu:~/Desktop$ cd
nimra@ubuntu:~$ cd /
nimra@ubuntu:/$ ls
bin    dev    lib    libx32  mnt    root   snap    sys    var
boot   etc    lib32  lost+found  opt    run    srv      tmp
cdrom  home   lib64  media    proc   sbin   swapfile  usr
nimra@ubuntu:/$ cd usr
nimra@ubuntu:/usr$ ls
bin    include  lib32  libexec  local  share
games  lib      lib64  libx32   sbin   src
nimra@ubuntu:/usr$ cd share
nimra@ubuntu:/usr/share$ ls
aclocal                    language-support
acpi-support               language-tools
adduser                    libc-bin
aisleriot                  libdrm
alsa                       libexttextcat
alsa-base                  libgnomekbd
appdata                    libgphoto2
app-install                libgweather
```

base-passwd	lightdm
bash-completion	lintian
binfmts	linux-sound-base
branding	locale
brltty	locale-langpack
bug	locales
ca-certificates	m2300w
calendar	man
cmake	man-db
cogl	maven-repo
color	media-player-info
colord	menu
common-licenses	metainfo
consolefonts	mime
console-setup	mime-info
consoletrans	misc
cups	mobile-broadband-provider-info
dbus-1	ModemManager

dconf	mousetweaks
debconf	mozilla
debhelper	mysql-common
debianutils	mythes
defaults	nano
desktop-directories	nautilus-share
dict	netplan
dictionaries-common	open-vm-tools
distro-info	openvpn
djvu	orca
dns	org.gnome.Characters
dnsmasq-base	os-prober
doc	p11-kit
doc-base	package-data-downloads
dpkg	PackageKit
drirc.d	pan
emacs	pam-configs
emacsens-common	perl
enchant-2	perl5
eog	perl-openssl-defaults
evince	pixmaps
evolution-data-server	pkgconfig
file	pkg-config-crosswrapper
file-roller	pkg-config-dpkghook

```

hal
help
help-langpack
hplip
hunspell
hyphen
i18n
ibus
ibus-table
icons
im-config
indicators
info
initramfs-tools
iptables
iso-codes
java
kde4
update-manager
update-notifier
upstart
usb-creator
usb_modeswitch
vala
vim
vulkan
wayland-sessions
X11
xdg-desktop-portal
xml
xml-core
xsessions
yelp
yelp-xsl
zenity
zoneinfo

```

- b. Change to that directory, and use `pwd` to check that you are in the right place. List the files in the current directory again, and then list the files in the directory called `doc`.

Answer:

```

nimra@ubuntu:/usr/share$ pwd
/usr/share
nimra@ubuntu:/usr/share$ ls
aclocal
acpi-support
adduser
aisleriot
alsa
alsa-base
appdata
app-install
application-registry
applications
apport
apturl
aspell
avahi
backgrounds
base-files
base-passwd
bash-completion
binfmts
branding
brlty
language-support
language-tools
libc-bin
libdrm
libexttextcat
libgnomekbd
libgphoto2
libgweather
libinput
liblangtag
liblouis
liblouisutdm
libreoffice
librevenge
libthai
libwacom
lightdm
lintian
linux-sound-base
locale
locale-langpack

```

console-setup	mime-info
consoletrans	misc
cups	mobile-broadband-provider-info
dbus-1	ModemManager
dconf	mousetweaks
debconf	mozilla
debhelper	mysql-common
debianutils	mythes
defaults	nano
desktop-directories	nautilus-share
dict	netplan
dictionaries-common	open-vm-tools

distro-info	openvpn
djvu	orca
dns	org.gnome.Characters
dnsmasq-base	os-prober
doc	p11-kit
doc-base	package-data-downloads
dpkg	PackageKit
drirc.d	pam
emacs	pam-configs
emacsens-common	perl
enchant-2	perl5
eog	perl-openssl-defaults
evince	pixmaps
evolution-data-server	pkgconfig
file	pkg-config-crosswrapper
file-roller	pkg-config-dpkghook
fish	plymouth
fontconfig	pnm2ppa

gettext	rhythmbox
ghostscript	rsync
gir-1.0	rsyslog
glib-2.0	rygel
glvnd	seahorse
gnome	secureboot
gnome-background-properties	sensible-utils
gnome-bluetooth	session-migration
gnome-control-center	sgml
gnome-logs	sgml-base
gnome-mahjongg	sgml-data
gnome-mines	snmp
gnome-session	software-properties
gnome-settings-daemon	sounds
gnome-shell	speech-dispatcher
gnome-system-monitor	ssl-cert

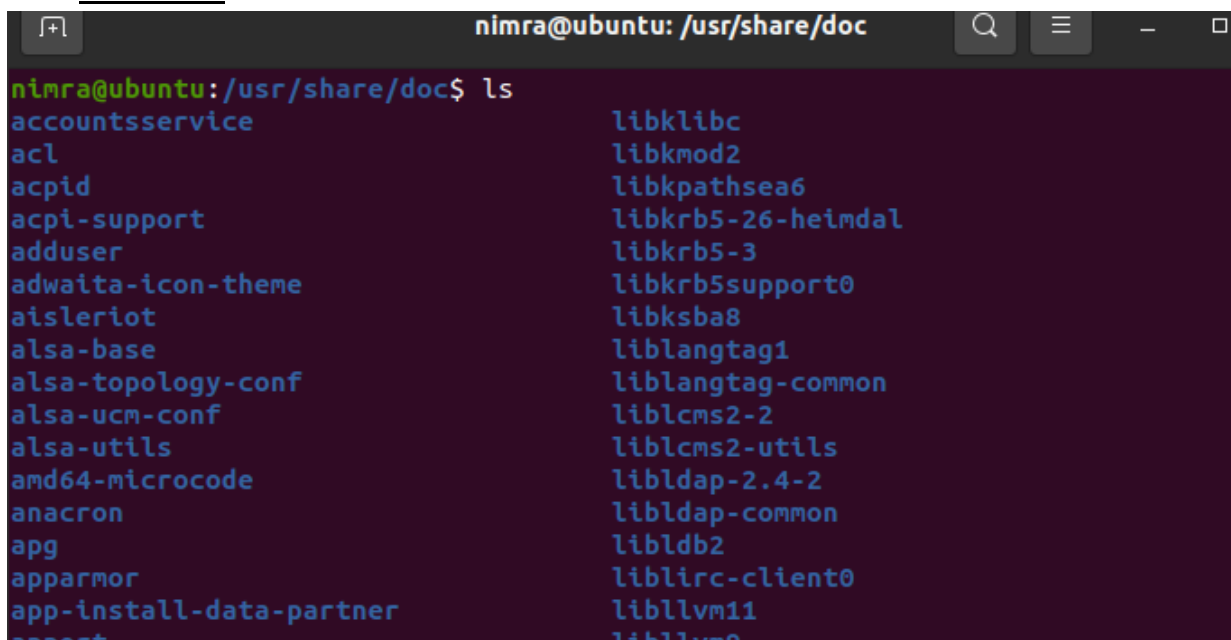
```

nimra@ubuntu:/usr/share$ cd doc
nimra@ubuntu:/usr/share/doc$ ls
accountsservice      libklibc
acl                  libkmod2
acpid                libkpathsea6
acpi-support          libkrb5-26-heimdal
adduser              libkrb5-3
adwaita-icon-theme   libkrb5support0
aisleriot             libksba8
alsa-base            liblangtag1
alsa-topology-conf   liblangtag-common
alsa-ucm-conf         liblcms2-2
alsa-utils           liblcms2-utils
amd64-microcode       libldap-2.4-2
anacron              libldap-common
apg                  libldb2
apparmor             liblirc-client0
app-install-data-partner libllvm11
appport              libllvm9
appport-gtk          libltdb0

```

- c. Next list the files in the parent directory, and the directory above that.

Answer:



```

nimra@ubuntu: /usr/share/doc
nimra@ubuntu:/usr/share/doc$ ls
accountsservice      libklibc
acl                  libkmod2
acpid                libkpathsea6
acpi-support          libkrb5-26-heimdal
adduser              libkrb5-3
adwaita-icon-theme   libkrb5support0
aisleriot             libksba8
alsa-base            liblangtag1
alsa-topology-conf   liblangtag-common
alsa-ucm-conf         liblcms2-2
alsa-utils           liblcms2-utils
amd64-microcode       libldap-2.4-2
anacron              libldap-common
apg                  libldb2
apparmor             liblirc-client0
app-install-data-partner libllvm11
appport              libllvm9
appport-gtk          libltdb0

```


- d. Try the following command, and make sure you understand the result: `$ echo ~`

Answer:

```
nimra@ubuntu:/usr/share/doc$ pwd
/usr/share/doc
nimra@ubuntu:/usr/share/doc$ cd /usr
nimra@ubuntu:/usr$ echo ~
/home/nimra
```

- e. Use `cat` to display the contents of a text file which resides in your home directory (create one if you haven't already), using the `~/` syntax to refer to it. It shouldn't matter what your current directory is when you run the command.

Answer:

```
nimra@ubuntu:/usr$ cat ~/sonnet-18.txt
cat: /home/nimra/sonnet-18.txt: No such file or directory
nimra@ubuntu:/usr$ cat ~/Poetry/sonnet-18.txt
cat: /home/nimra/Poetry/sonnet-18.txt: No such file or directory
nimra@ubuntu:/usr$
```

Question#4:

- a. Use the `hostname` command, with no options, to print the hostname of the machine you are using.

Answer:

```
nimra@ubuntu:~$ hostname
ubuntu
nimra@ubuntu:~$
```

- b. Use `man` to display some documentation on the `hostname` command. Find out how to make it print the IP address of the machine instead of the hostname. You will need to scroll down the man page to the 'Options' section.

Answer:

```
nimra@ubuntu:~$ man hostname
nimra@ubuntu:~$ hostname -i
127.0.1.1
nimra@ubuntu:~$
```

- c. Use the `locate` command to find files whose name contains the text 'hostname'. Which of the filenames printed contain the actual hostname program itself? Try running it by entering the program's absolute path to check that you really have found it.

Answer:

```
nimra@ubuntu:~$ locate hostname
/etc/hostname
/home/nimra/.local/share/Trash/files/Q1 Part (hostname).png
/home/nimra/.local/share/Trash/info/Q1 Part (hostname).png.trashinfo
/snap/core18/1988/bin/hostname
/snap/core18/1988/etc/hostname
/snap/core18/1988/etc/writable/hostname
/snap/core18/1988/lib/systemd/systemd-hostnamed
/snap/core18/1988/lib/systemd/system/dbus-org.freedesktop.hostname1.service
/snap/core18/1988/lib/systemd/system/hostname.service
/snap/core18/1988/lib/systemd/system/systemd-hostnamed.service
/snap/core18/1988/usr/bin/hostnamectl
/snap/core18/1988/usr/lib/python3/dist-packages/cloudinit/config/cc_set_hostname.py
/snap/core18/1988/usr/lib/python3/dist-packages/cloudinit/config/cc_update_hostname.py
/snap/core18/1988/usr/lib/python3/dist-packages/cloudinit/config/__pycache__/cc_set_hostname.cpython-36.pyc
/snap/core18/1988/usr/lib/python3/dist-packages/cloudinit/config/__pycache__/cc_update_hostname.cpython-36.pyc
/snap/core18/1988/usr/lib/python3/dist-packages/cloudinit/distros/parsers/hostname.py
```

```

/usr/share/bash-completion/completions/hostname
/usr/share/bash-completion/completions/hostnamectl
/usr/share/dbus-1/system-services/org.freedesktop.hostname1.service
/usr/share/dbus-1/system.d/org.freedesktop.hostname1.conf
/usr/share/doc/hostname
/usr/share/doc/hostname/changelog.gz
/usr/share/doc/hostname/copyright
/usr/share/man/man1/hostname.1.gz
/usr/share/man/man1/hostnamectl.1.gz
/usr/share/man/man1/nmtui-hostname.1.gz
/usr/share/man/man5/hostname.5.gz
/usr/share/man/man7/hostname.7.gz
/usr/share/man/man8/systemd-hostnamed.8.gz
/usr/share/man/man8/systemd-hostnamed.service.8.gz
/usr/share/polkit-1/actions/org.freedesktop.hostname1.policy
/usr/share/zsh/vendor-completions/_hostnamectl
/usr/src/linux-headers-5.8.0-43-generic/include/config/default/hostname.h
/usr/src/linux-headers-5.8.0-44-generic/include/config/default/hostname.h
/var/lib/dpkg/info/hostname.list
/var/lib/dpkg/info/hostname.md5sums
nimra@ubuntu:~$ cd /usr/share/doc/hostname
nimra@ubuntu:/usr/share/doc/hostname$ ls
changelog.gz  copyright
nimra@ubuntu:/usr/share/doc/hostname$

```

Question#5:

- The * wildcard on its own is expanded by the shell to a list of all the files in the current directory. Use the echo command to see the result (but make sure you are in a directory with a few files or directories first).

Answer:

```

nimra@ubuntu:~/Desktop$ cd
nimra@ubuntu:~$ cd ..
nimra@ubuntu:/home$ cd Poetry
nimra@ubuntu:/home/Poetry$ echo *
sonnet-18.txt
nimra@ubuntu:/home/Poetry$ █

```

- b. Use quoting to make echo print out an actual * symbol.

Answer:

```
nimra@ubuntu:/home/Poetry$ echo "*"
*
nimra@ubuntu:/home/Poetry$
```

- c. Augment the poetry directory you created earlier with another file, sonnet-29.txt:

When in disgrace with Fortune and men's eyes,
I all alone between my outcast state,

Answer:

```
nimra@ubuntu:~/Poetry$ cat > sonnet-18.txt
Shall I compare thee to summer day's ?
Thou is more lovely and more temperate.
nimra@ubuntu:~/Poetry$ cat > sonnet-29.txt
When in disgrace with fourtune and Man's eyes,
I all alone between my outcast state,
```

- d. Use the cat command to display both of the poems, using a wildcard.

Answer:

```
nimra@ubuntu:~/Poetry$ cat *.txt
Shall I compare thee to summer day's ?
Thou is more lovely and more temperate.
When in disgrace with fourtune and Man's eyes,
I all alone between my outcast state,
nimra@ubuntu:~/Poetry$
```

```
nimra@ubuntu:~/Poetry$ cd
nimra@ubuntu:~$ ls
Desktop    Downloads  Pictures   Public     Videos
Documents  Music      Poetry     Templates
nimra@ubuntu:~$
```

- e. Finally, use the rm command to delete the poetry directory and the poems in it.

Answer:

```
nimra@ubuntu:~$ rm -r Poetry
nimra@ubuntu:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
nimra@ubuntu:~$ cd Poetry
bash: cd: Poetry: No such file or directory
nimra@ubuntu:~$
```

-----THE END-----