Terminal Interface

What is Unix ?

Unix was originally developed as a multitasking system for minicomputers and mainframes in the mid-1970s. It has since grown to become one of the most widely used operating systems anywhere, despite its sometimes confusing interface and lack of central standardization.

History of Unix

The history of Unix begins at AT&T Bell Labs in the late 1960s with a small team of programmers looking to write a multi-tasking, multi-user operating system for the PDP-7

The PDP-7 was a minicomputer produced by Digital Equipment Corporation (With a cost of US$72,000)

What Is the terminal?

The terminal is the ultimate seat of power on your computer. Using the terminal, you can perform amazing feats of wizardry and speed, taming your computer and getting it to do precisely what you want. Unfortunately, the price of this power is complexity: nobody ever said that ruling your computer would be easy.

Mac OS X/ Unix

The Mac command line is a program called Terminal. It lives in the /Applications/Utilities/ folder. To find it, go to your Applications folder. Near the bottom, there is a folder called Utilities. Go inside, and one of the applications listed is called Terminal. Double-click that application to open it.

Windows

Unfortunately, you will have to install your own command line program. Windows comes with a command line called CMD, but it is non-standard and more difficult to use. Therefore, Windows user will be downloading git bash.

Git Bash

Git Bash is an application for Microsoft Windows environments which provides an emulation layer for a Git command line experience

How to open the command line

Mac users hold command and space at the same time
Then enter the word **terminal** and click enter

Windows users Click on the Windows search box located next to the Start button.
Then enter the word **gitbash**

What's a command

An instruction for the terminal to be executed.

Change directory

cd (Change Directory) command is one of the most important and most widely used command

Command: cd

Example:

cd Desktop

Home Directory

The directory in which you find yourself when you first login is called your home directory. You will be doing much of your work in your home directory and subdirectories that you'll be creating to organize your files. You can go in your home directory anytime using the following command:
You can go in your home directory anytime using the following
Command: cd ~
Click enter

```
[amrood]$cd ~
[amrood]$
```

Print Working Directory

The pwd command prints the name of the present/current working directory (PWD - Print Working Directory:

You can see what directory your currently in at anytime using the following
Command: pwd
Click enter

```
himanshu@ansh:~$ pwd
/home/himanshu
```

List contents in your current directory

Lists all contents in the present working directory

You can see all the content in the present within a directory anytime using the following
Command: ls
Click enter

```
# ls

0001.pcap        Desktop    Downloads         index.html   install.log.syslog  Pictures  Tem
anaconda-ks.cfg  Documents  fbcmd_update.php  install.log  Music               Public    Vid
```

List of hidden files

List all files including hidden file starting with '.'

You can see all the files including hidden files present within a directory anytime using the following

Command: ls -la
Click enter

Example of ls -la

```
Sumairs-MacBook-Pro:~ Syntax$ ls -al
total 56
drwxr-xr-x+ 27 Syntax  staff    918 Mar  7 19:31 .
drwxr-xr-x   6 root    admin    204 Mar  1 10:52 ..
-r--------   1 Syntax  staff      7 Mar  1 10:49 .CFUserTextEncoding
-rw-r--r--@  1 Syntax  staff  10244 Mar  7 18:58 .DS_Store
drwx------  13 Syntax  staff    442 Mar  7 19:02 .Trash
-rw-r--r--   1 Syntax  staff     43 Mar  2 15:08 .bash_history
drwxr-xr-x  12 Syntax  staff    408 Mar  7 18:39 .bash_sessions
drwxr-xr-x   8 Syntax  staff    272 Mar  1 15:24 .eclipse
drwxr-xr-x   3 Syntax  staff    102 Mar  1 15:21 .oracle_jre_usage
drwxr-xr-x   8 Syntax  staff    272 Mar  1 15:24 .p2
drwxr-xr-x   3 Syntax  staff    102 Mar  1 15:24 .tooling
-rw-------   1 Syntax  staff    631 Mar  7 18:49 .viminfo
drwxr-xr-x   3 Syntax  staff    102 Mar  1 15:14 .zoomus
drwxr-xr-x   3 Syntax  staff    102 Mar  7 19:31 1
drwx------   3 Syntax  staff    102 Mar  1 10:53 Applications
drwx------+ 18 Syntax  staff    612 Mar  7 19:36 Desktop
drwx------+  4 Syntax  staff    136 Mar  2 09:46 Documents
drwx------+  6 Syntax  staff    204 Mar  3 15:00 Downloads
drwx------@ 51 Syntax  staff   1734 Mar  1 18:33 Library
drwx------+  3 Syntax  staff    102 Mar  1 10:49 Movies
drwx------+  3 Syntax  staff    102 Mar  1 10:49 Music
drwx------+  3 Syntax  staff    102 Mar  1 10:49 Pictures
drwxr-xr-x+  5 Syntax  staff    170 Mar  1 10:49 Public
drwxr-xr-x   3 Syntax  staff    102 Mar  1 15:23 eclipse
drwxr-xr-x   6 Syntax  staff    204 Mar  1 15:39 eclipse-workspace
-rw-r--r--   1 Syntax  staff     22 Mar  7 18:49 test.txt
drwxr-xr-x   3 Syntax  staff    102 Mar  7 19:26 test1
```

Creating a file

You can use vi/vim editor to create ordinary files on any Unix system. You simply need to give following

Command: vi filename.extension or vim filename.extension

Click enter

Example:

Test.txt

Test.pdf

Test.xlsx

Example of vi

```
Arifs-MacBook-Pro:~ arif$ vi test.txt
```

```
|
~
~
~
~
~
~
~
~
~
~
~
~
"testfile" [New File]
```

Adding text to a file

After executing the command: vi test.txt
We're in position to add text
By hold **shift** and **i** at the same time the editor allows us to insert text
i means insert
Once we're finish hit **esc** and **:wq! | w** means write**, q** means quit
This will save our text we have added to the file

Step One

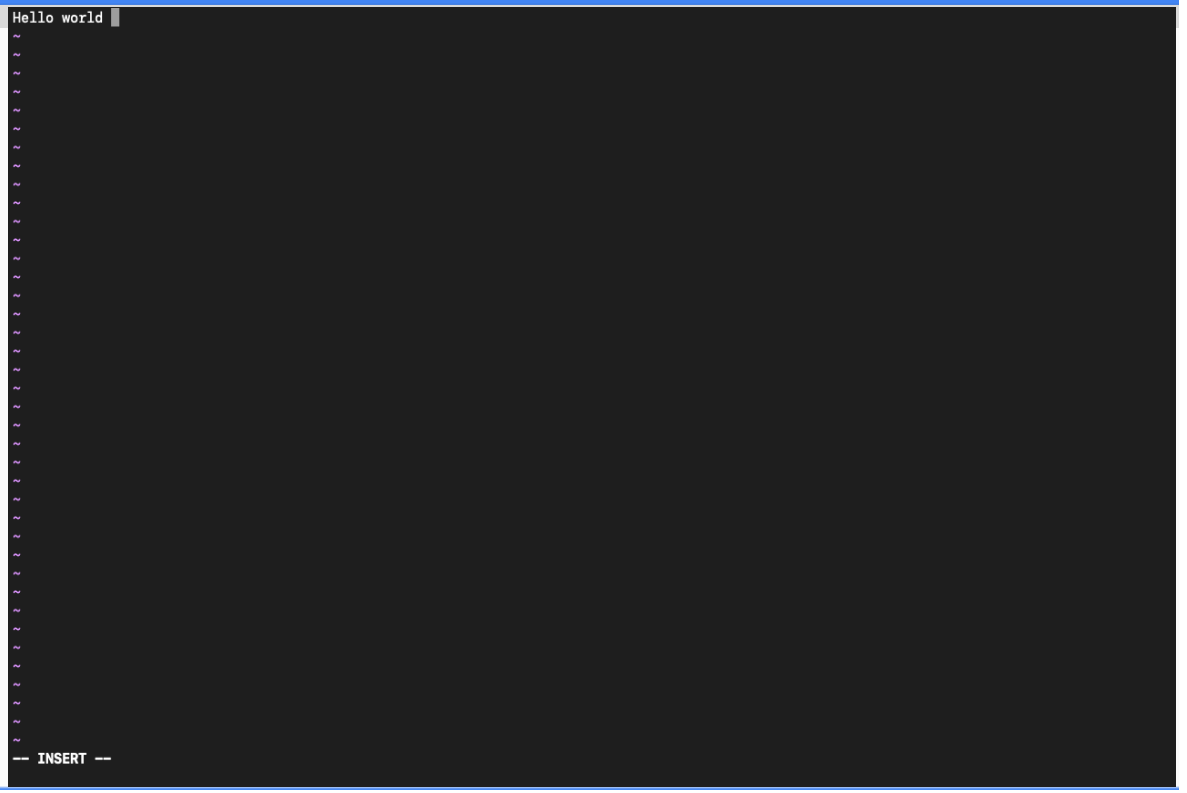
Command: **vi** Hello.txt
Click enter

Step Two

Commad: **hold shift and i at the same time**

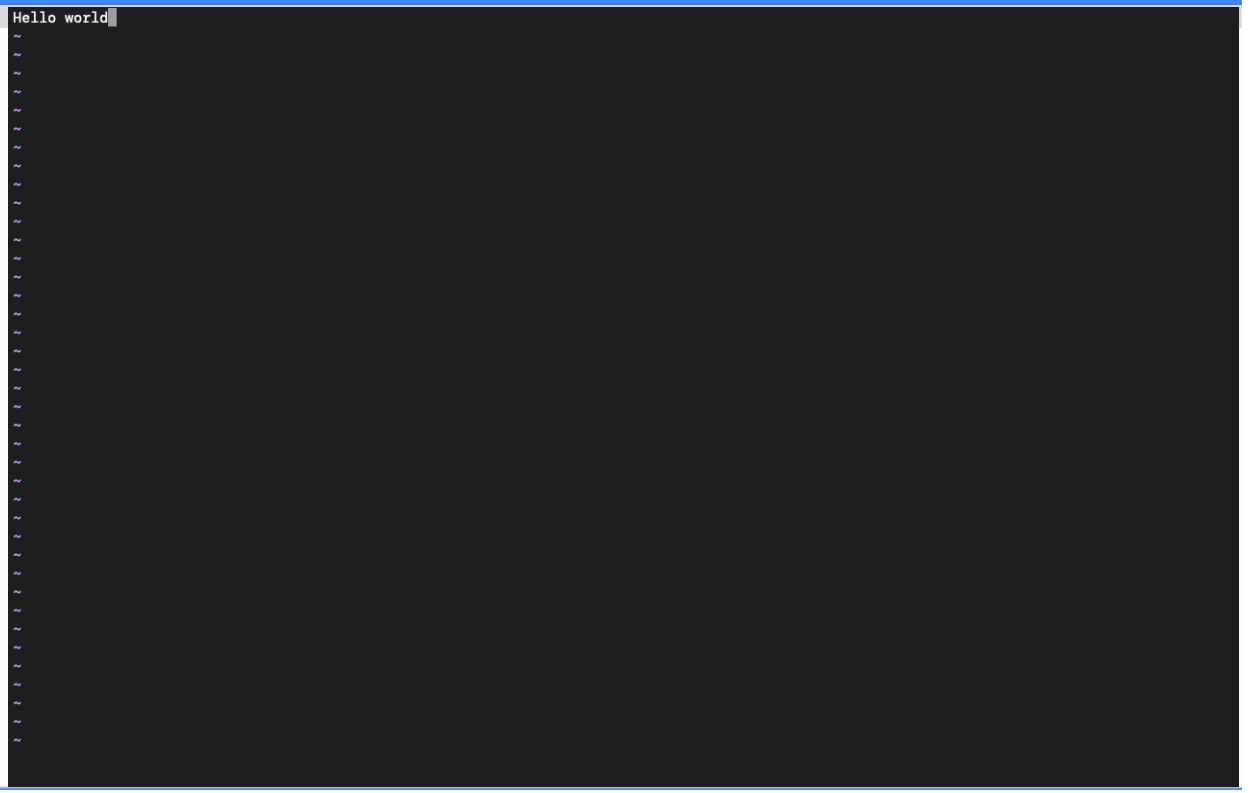
Step Three

Enter any text



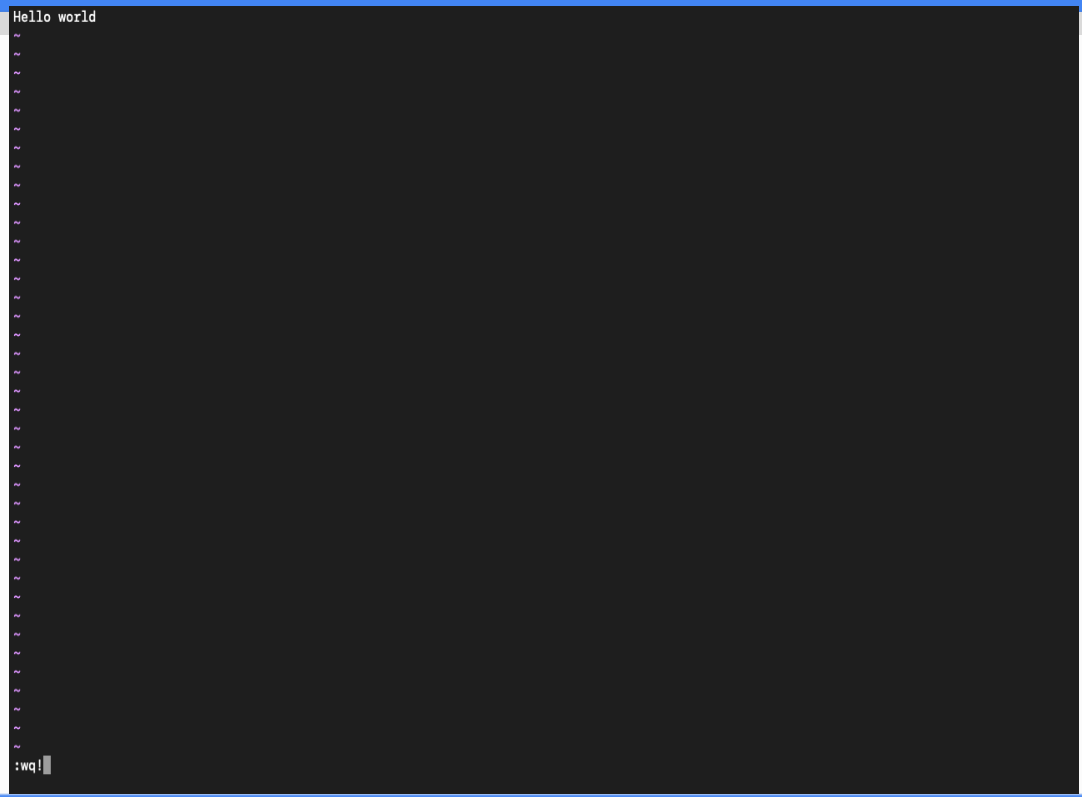
Step Four

Command: Hit **esc**



Step Five

Commad: **:wq!**
Click enter
Which means write and quite



View information within a file

You can use cat command to see the content of a file **Command: cat** filename.extensions. Following is the simple example to see the content of above created file:
Command: cat Hello.txt
Click enter

Example of cat command

```
Arifs-MacBook-Pro:~ arif$ vi Hello.txt
Arifs-MacBook-Pro:~ arif$ cat Hello
cat: Hello: No such file or directory
Arifs-MacBook-Pro:~ arif$ cat Hello.txt
Hello world
Arifs-MacBook-Pro:~ arif$
```

Editing an existing file

vim command will allow you to edit an existing file

Command: vim Hello.txt

Click enter

Afterwards follow the same steps for Used by vi command

Creating a directory

Directories are created by the following
Command: **mkdir directoryName (mk**-make, **dir**- directory)
Click enter
Examples: mkdir Test

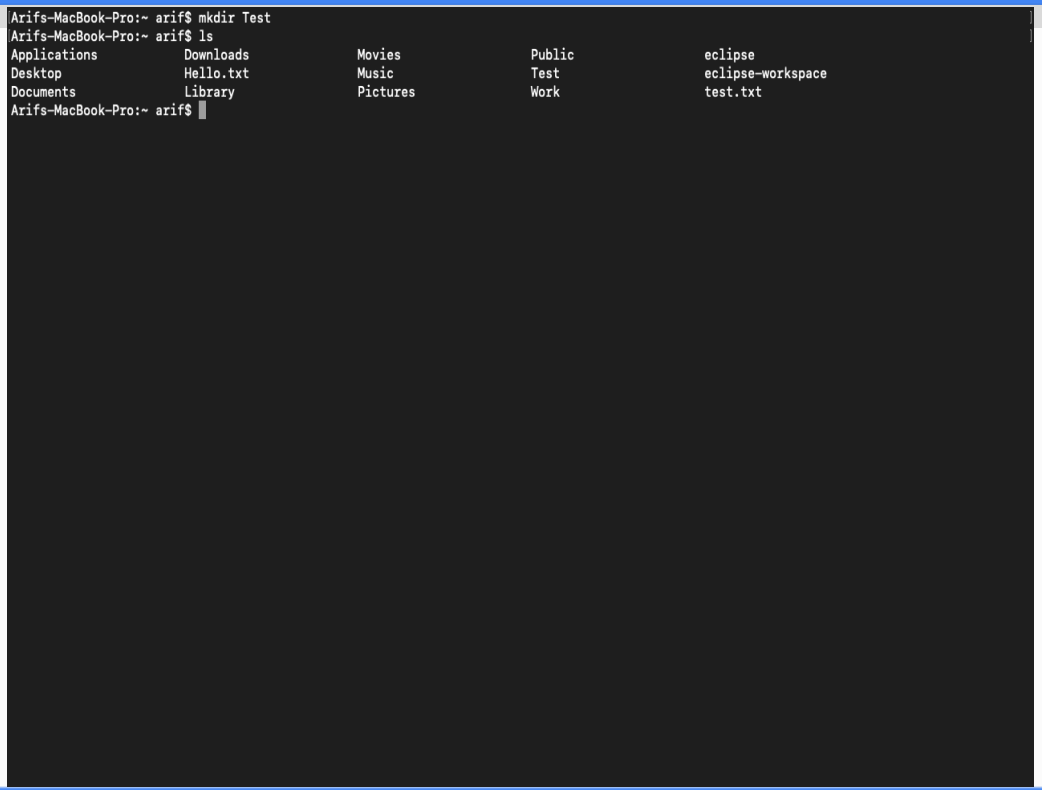
Step 1 for the mkdir command

Step 2 for the mkdir command

Use the ls command to view the newly created directory

Command: ls

Click enter



Moving into another directory

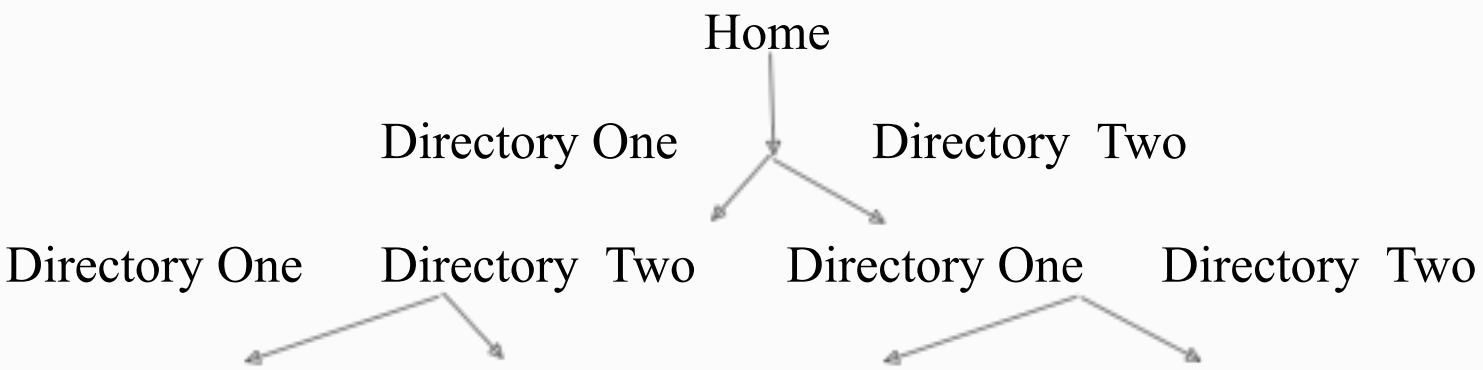
You can use cd command and **directoryName** to move into another directory.However, you can only move from one directory to another, if the directory you want to move into lives inside the current directory.

Examples:

The Home directory has these following directories:

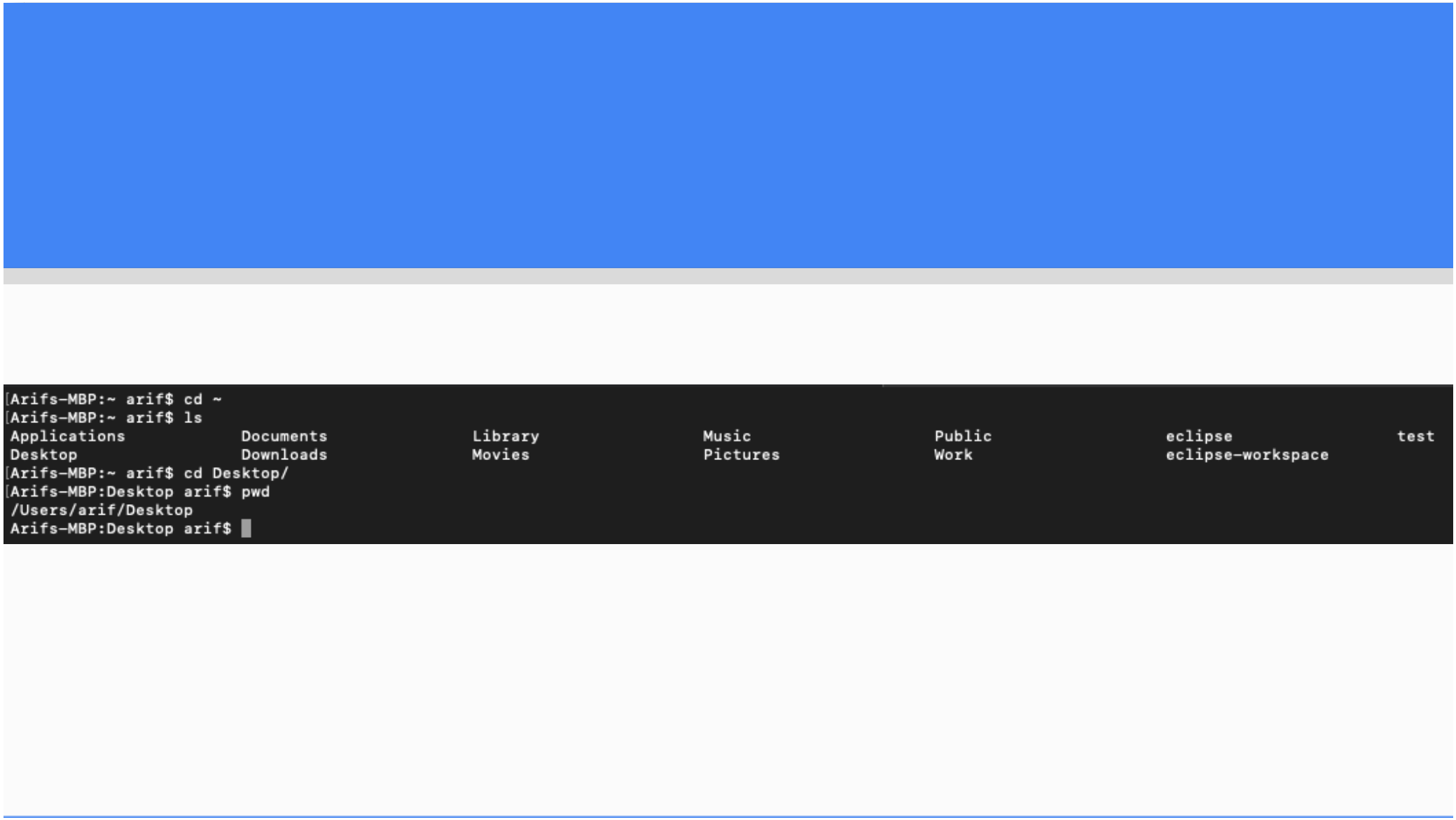
Documents Library Music Public Work

Example of how directories work



Example moving into another directory

Start at the home directory
Command: cd ~
Look for the list of directories under this directory
Command: ls
Now move to the Desktop directory
Command: cd Desktop
Check what directory your in now
Command: pwd


[Arifs-MBP:~ arif$ cd ~
[Arifs-MBP:~ arif$ ls
Applications Documents Library Music Public eclipse test
Desktop Downloads Movies Pictures Work eclipse-workspace
[Arifs-MBP:~ arif$ cd Desktop/
[Arifs-MBP:Desktop arif$ pwd
/Users/arif/Desktop
Arifs-MBP:Desktop arif$

Moving from directory to another directory

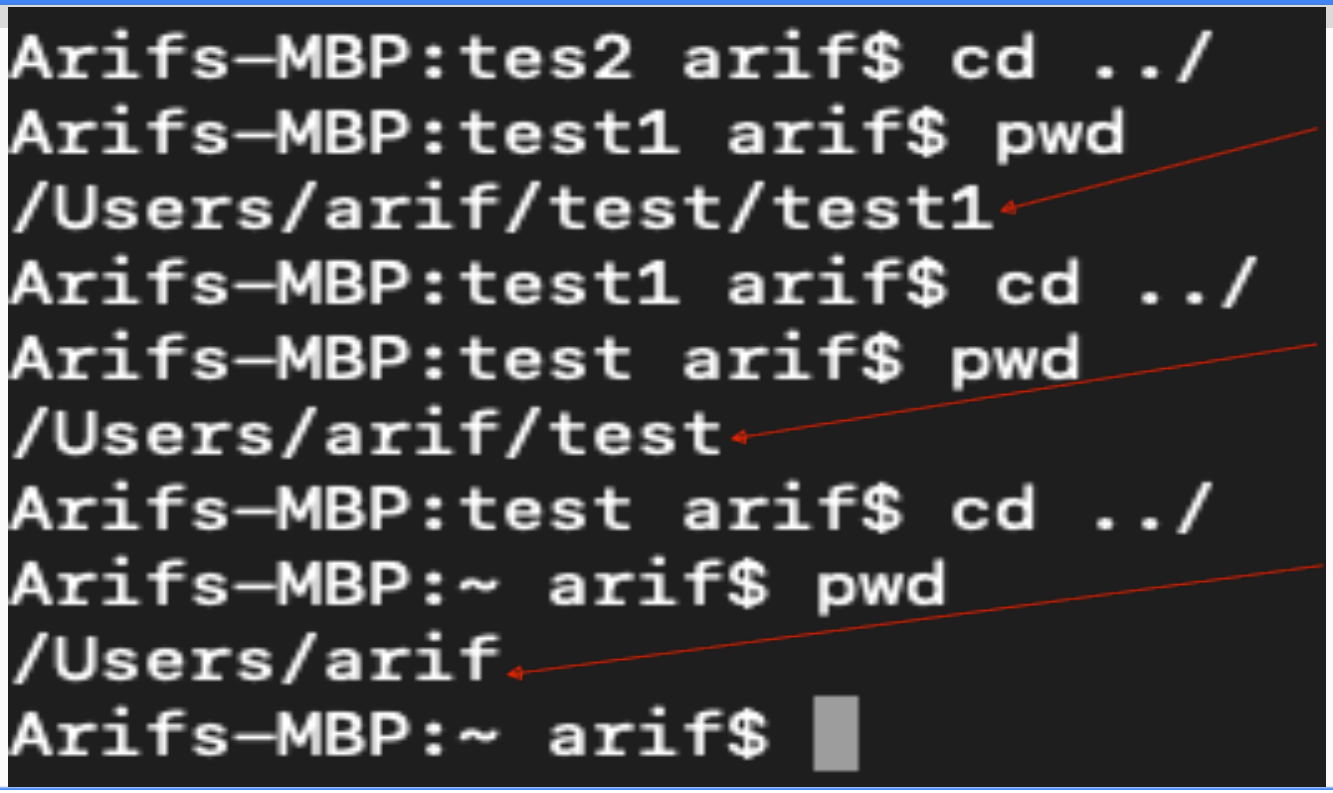
One level below

If you want to go back just one level, enter the command: **cd ../**

Two levels below

If you want to go back two levels, enter the command: **cd ../../**

Now you have the idea, and for sure you know how to go back three, four, five... and more levels below the current directory.


Arifs-MBP:tes2 arif$ cd ../
Arifs-MBP:test1 arif$ pwd
/Users/arif/test/test1
Arifs-MBP:test1 arif$ cd ../
Arifs-MBP:test arif$ pwd
/Users/arif/test
Arifs-MBP:test arif$ cd ../
Arifs-MBP:~ arif$ pwd
/Users/arif
Arifs-MBP:~ arif$

Deleting a file

To remove (or delete) a file from a directory.You simply need to give following
Command: rm -rf filename.extensions
Click enter
Example: rm -rf test.txt

Use the ls command to view that the file is no longer present within the directory

```
Arifs-MBP:~ arif$ rm -rf test.txt
Arifs-MBP:~ arif$ ls
Applications        Documents       Library         Music           Public          Work            eclipse-workspace
Desktop             Downloads       Movies          Pictures        Test            eclipse
Arifs-MBP:~ arif$
```