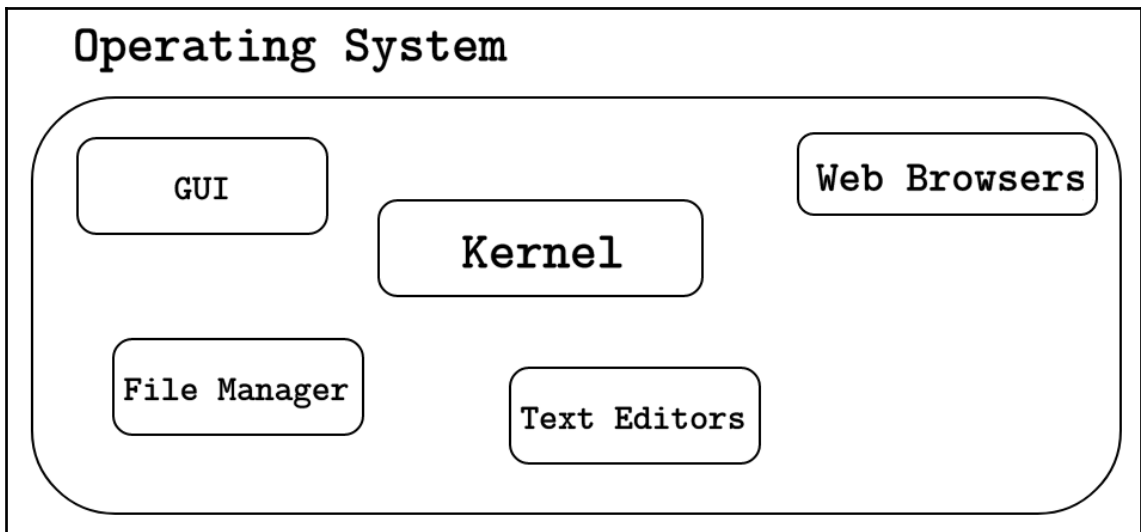


# Graphics Bundle

## Chapter 1: Your First Keystrokes




### Name and operating system

Please choose a descriptive name and destination folder for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

Name:

Machine Folder:

Type:  

Version:

### Memory size

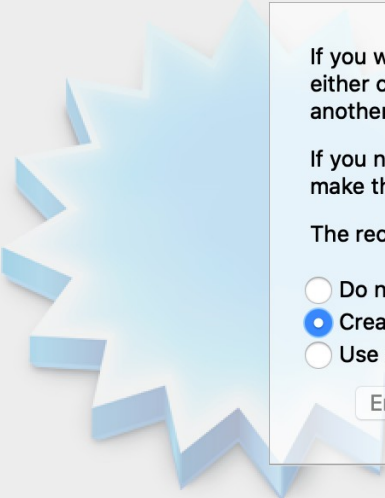
Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.

The recommended memory size is **1024 MB**.

MB

4 MB 8192 MB

### Hard disk




If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select one from the list or from another location using the folder icon.

If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.

The recommended size of the hard disk is **10.00 GB**.

Do not add a virtual hard disk  
 Create a virtual hard disk now  
 Use an existing virtual hard disk file

Empty ⌵ 

### Hard disk file type



Please choose the type of file that you would like to use for the new virtual hard disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.

VDI (VirtualBox Disk Image)  
 VHD (Virtual Hard Disk)  
 VMDK (Virtual Machine Disk)



### Storage on physical hard disk

Please choose whether the new virtual hard disk file should grow as it is used (dynamically allocated) or if it should be created at its maximum size (fixed size).

A **dynamically allocated** hard disk file will only use space on your physical hard disk as it fills up (up to a maximum **fixed size**), although it will not shrink again automatically when space on it is freed.


A **fixed size** hard disk file may take longer to create on some systems but is often faster to use.

Dynamically allocated  
 Fixed size

Go Back Continue Cancel

### File location and size

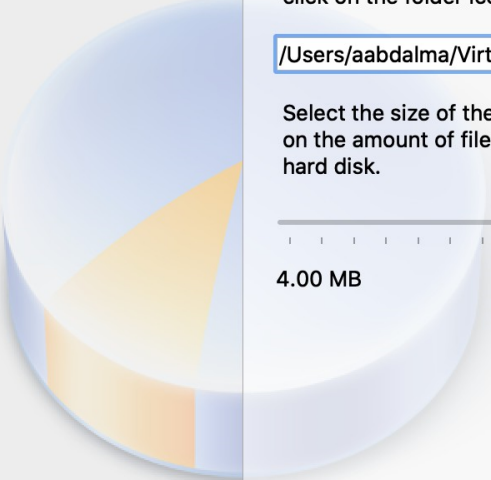
Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.

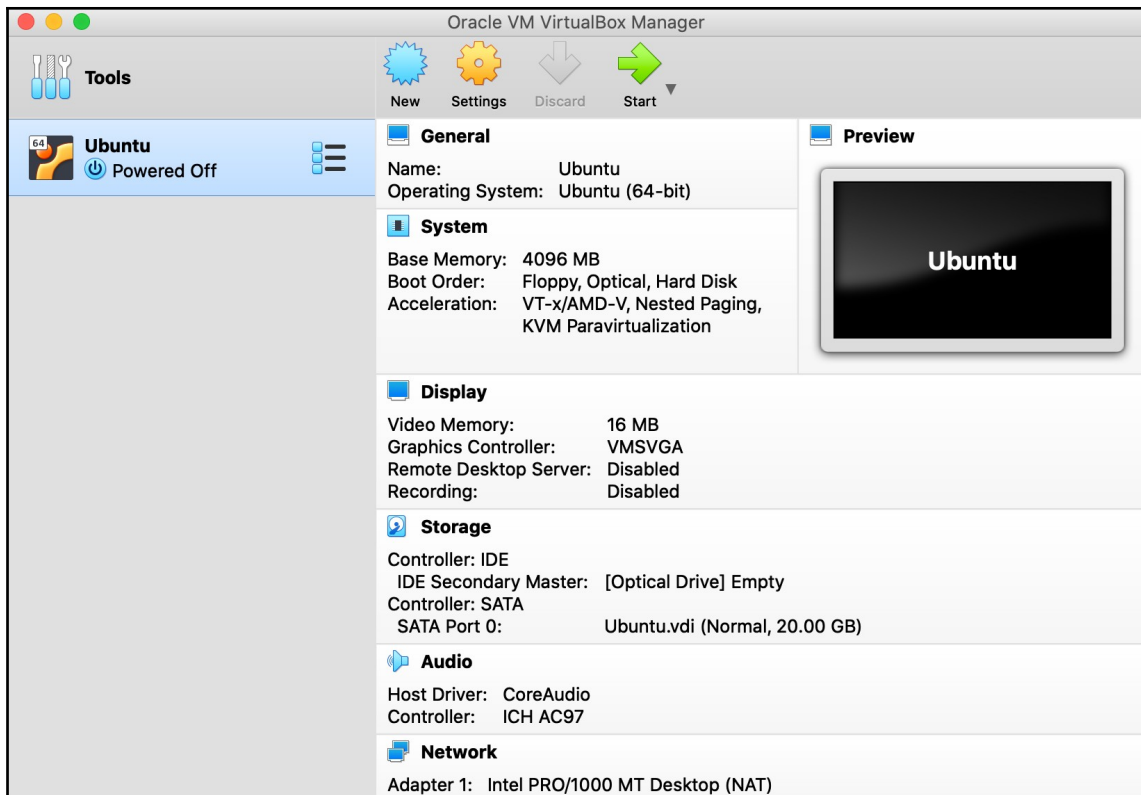


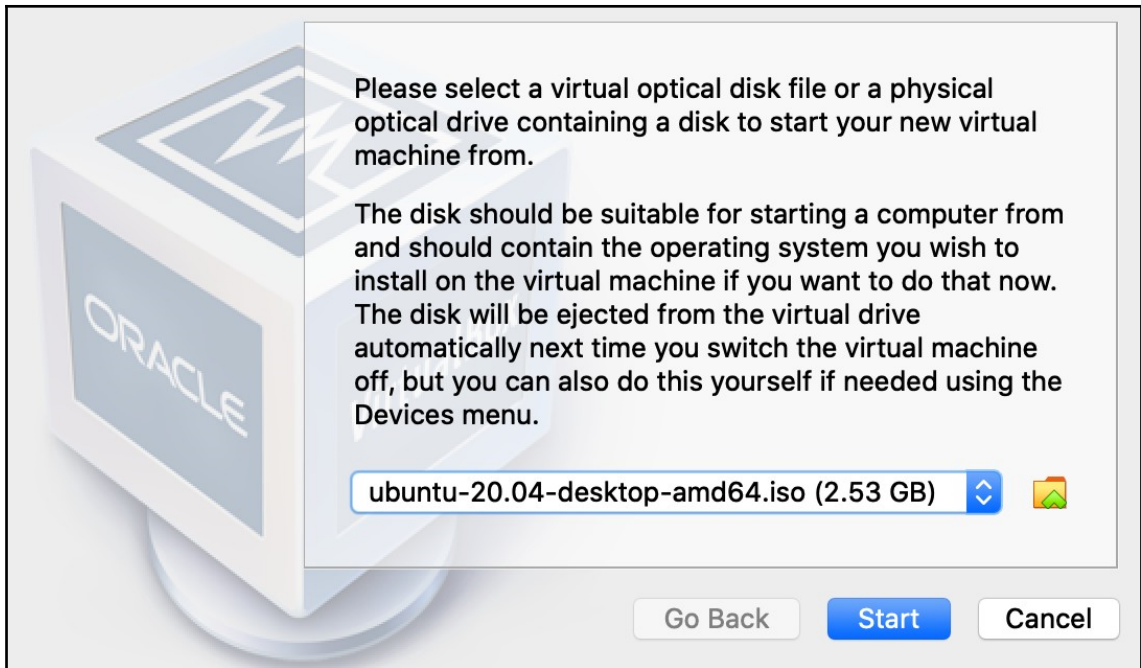
Select the size of the virtual hard disk in megabytes. This size is the limit on the amount of file data that a virtual machine will be able to store on the hard disk.

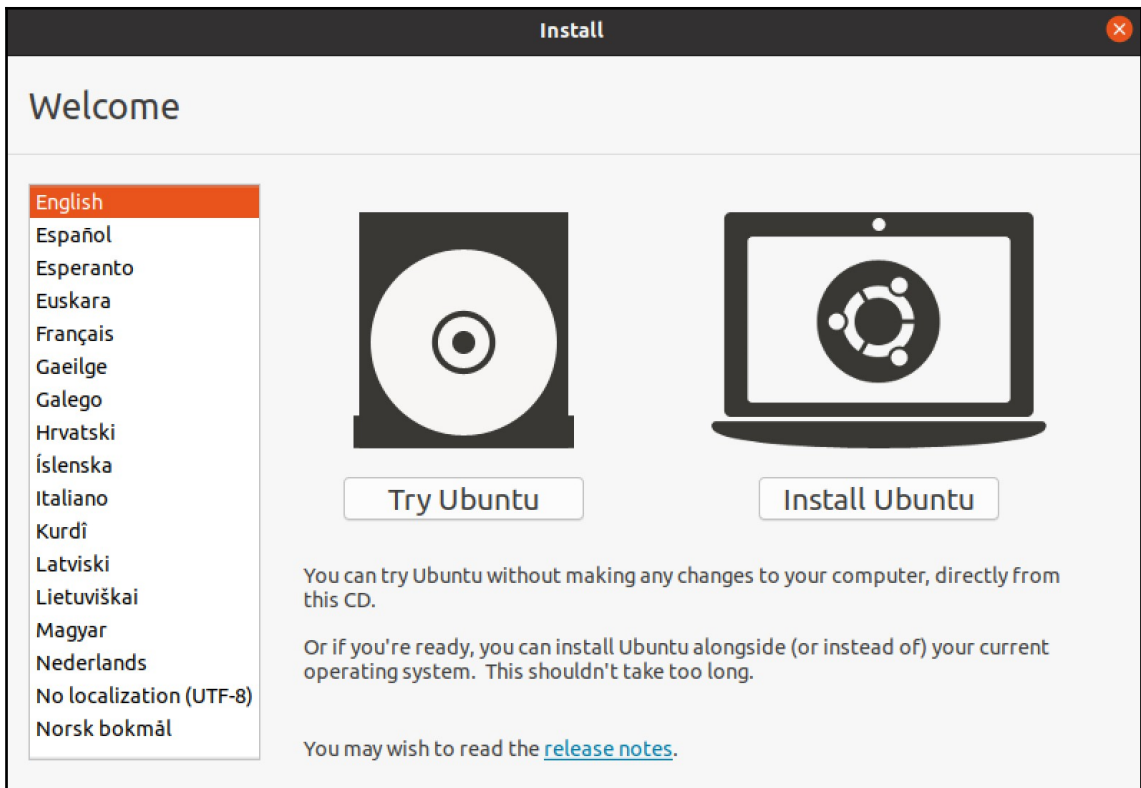
20.00 GB

4.00 MB 2.00 TB











**Install**

## Who are you?

Your name:  ✓

Your computer's name:  ✓  
The name it uses when it talks to other computers.

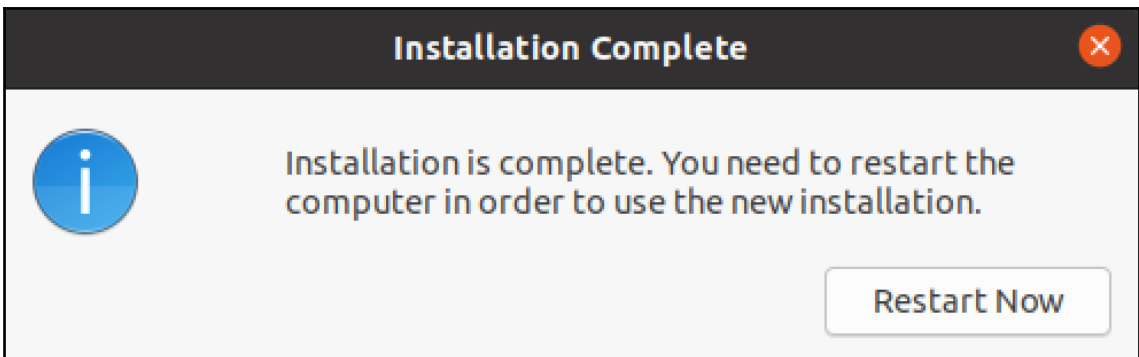
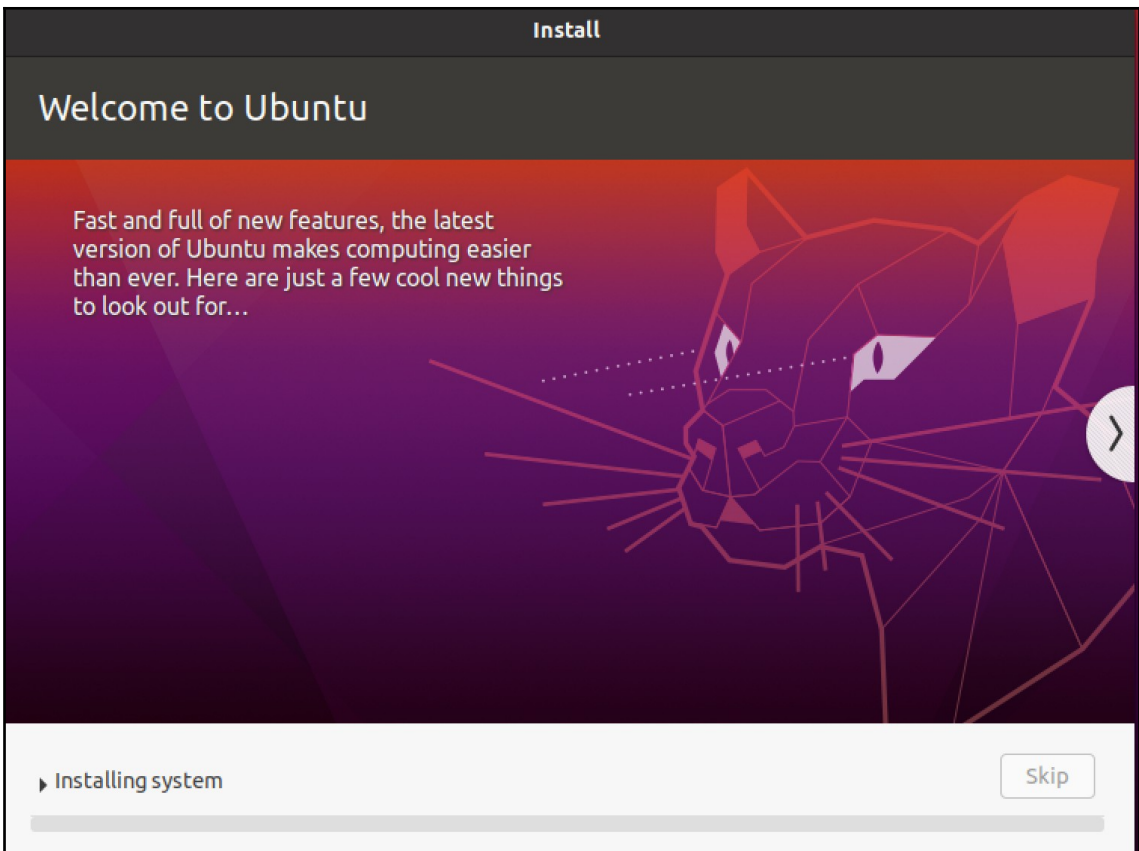
Pick a username:  ✓

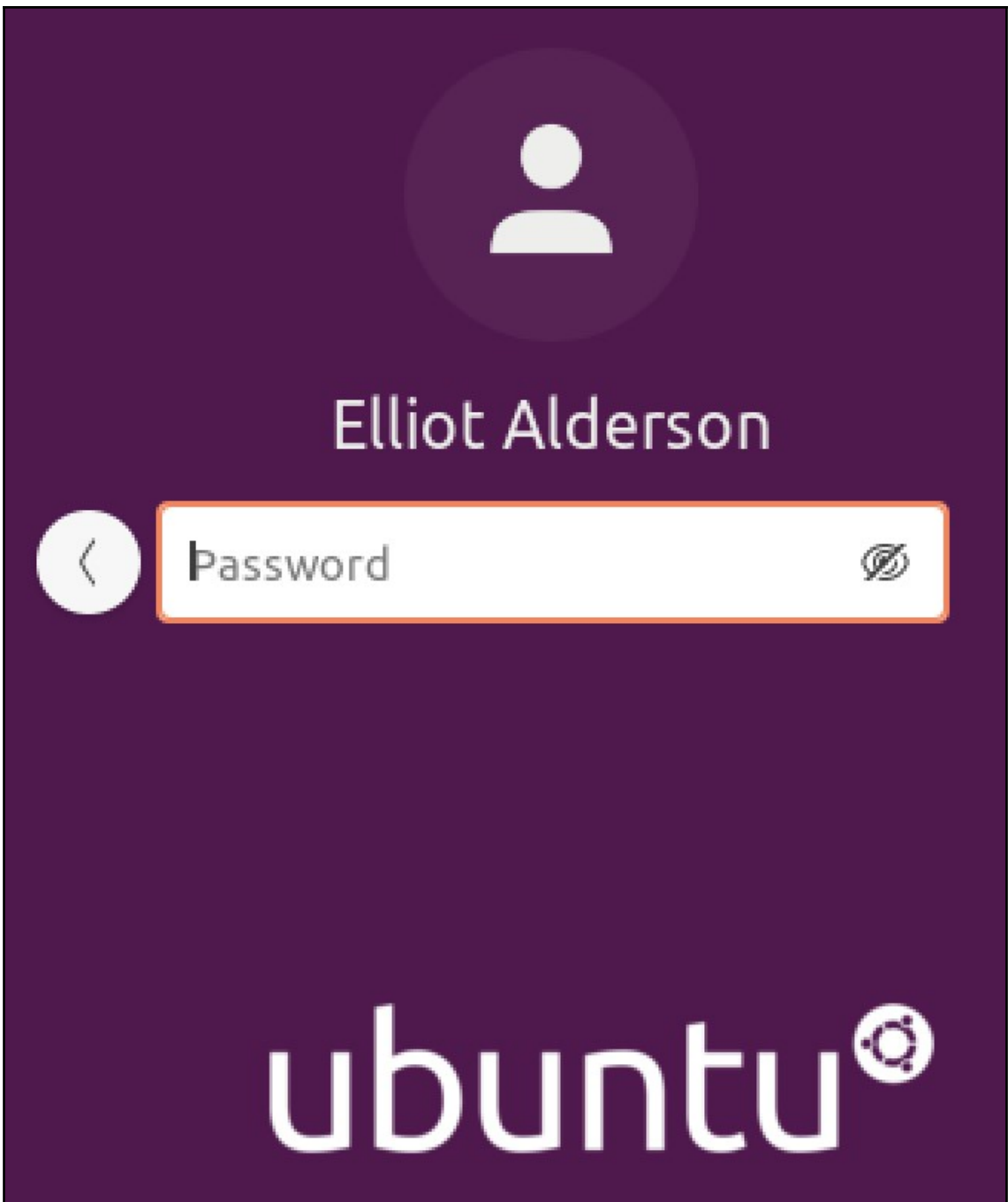
Choose a password:  Good password

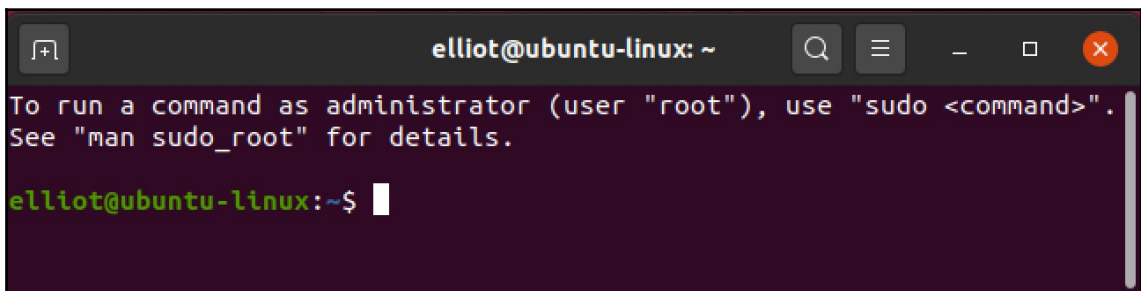
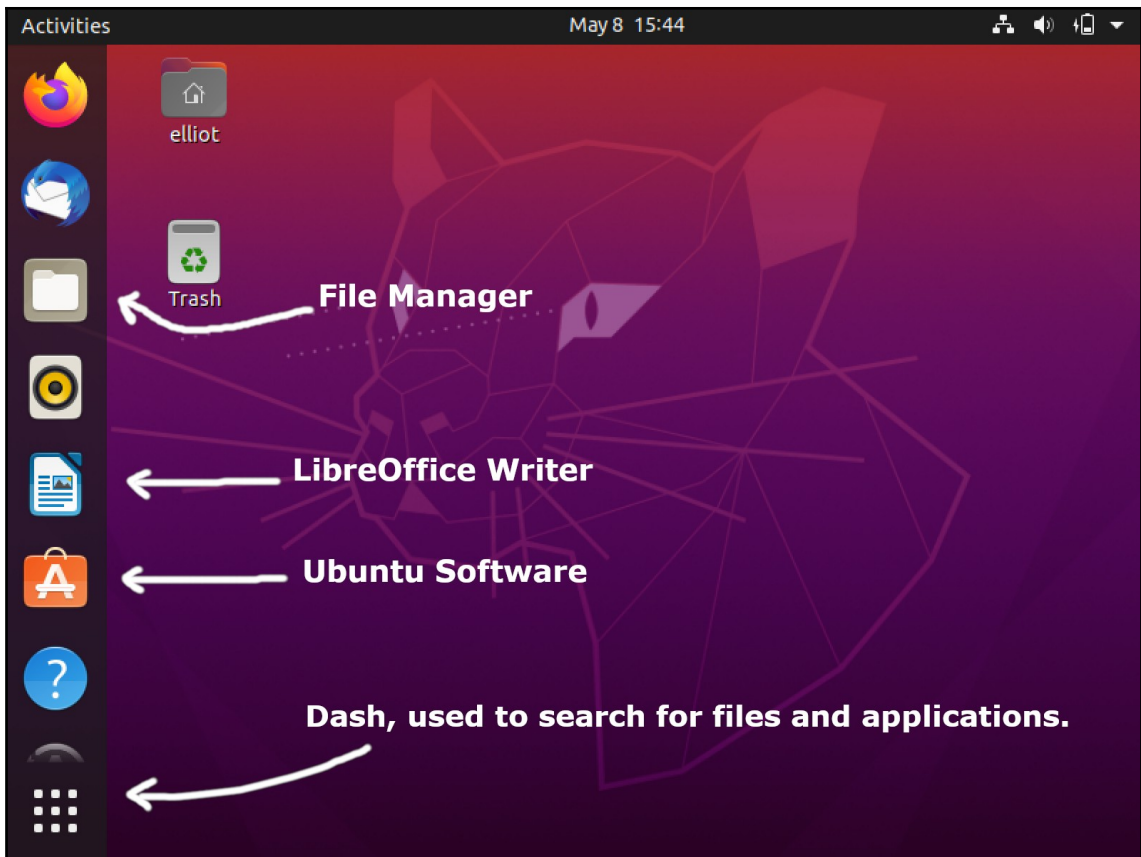
Confirm your password:  ✓

Log in automatically  
 Require my password to log in

● ● ● ● ● ● ●







```
[elliott@ubuntu-linux:~$ cal
      February 2020
Su Mo Tu We Th Fr Sa
                1
 2   3   4   5   6   7   8
 9  10  11  12  13  14  15
16  17  18  19  20  21  22
23  24  25  26  27  28  29
```

```
elliott@ubuntu-linux:~$ cal 2022
                2022
    January          February          March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
                1          1 2 3 4 5          1 2 3 4 5
 2 3 4 5 6 7 8    6 7 8 9 10 11 12    6 7 8 9 10 11 12
 9 10 11 12 13 14 15 13 14 15 16 17 18 19 13 14 15 16 17 18 19
16 17 18 19 20 21 22 20 21 22 23 24 25 26 20 21 22 23 24 25 26
23 24 25 26 27 28 29 27 28                27 28 29 30 31
30 31

    April          May          June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
                1 2          1 2 3 4 5 6 7          1 2 3 4
 3 4 5 6 7 8 9    8 9 10 11 12 13 14    5 6 7 8 9 10 11
10 11 12 13 14 15 16 15 16 17 18 19 20 21 12 13 14 15 16 17 18
17 18 19 20 21 22 23 22 23 24 25 26 27 28 19 20 21 22 23 24 25
24 25 26 27 28 29 30 29 30 31                26 27 28 29 30

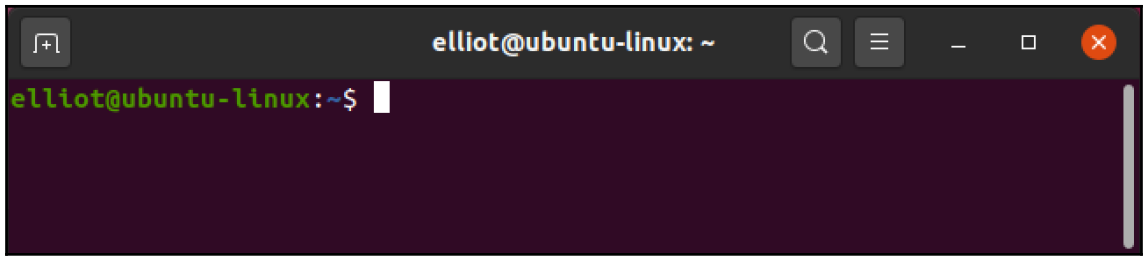
    July          August          September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
                1 2          1 2 3 4 5 6          1 2 3
 3 4 5 6 7 8 9    7 8 9 10 11 12 13    4 5 6 7 8 9 10
10 11 12 13 14 15 16 14 15 16 17 18 19 20 11 12 13 14 15 16 17
17 18 19 20 21 22 23 21 22 23 24 25 26 27 18 19 20 21 22 23 24
24 25 26 27 28 29 30 28 29 30 31                25 26 27 28 29 30
31

    October          November          December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
                1          1 2 3 4 5          1 2 3
 2 3 4 5 6 7 8    6 7 8 9 10 11 12    4 5 6 7 8 9 10
 9 10 11 12 13 14 15 13 14 15 16 17 18 19 11 12 13 14 15 16 17
16 17 18 19 20 21 22 20 21 22 23 24 25 26 18 19 20 21 22 23 24
23 24 25 26 27 28 29 27 28 29 30                25 26 27 28 29 30 31
30 31
```

```
elliott@ubuntu-linux:~$ cal feb 1993
February 1993
Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6
  7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28
```

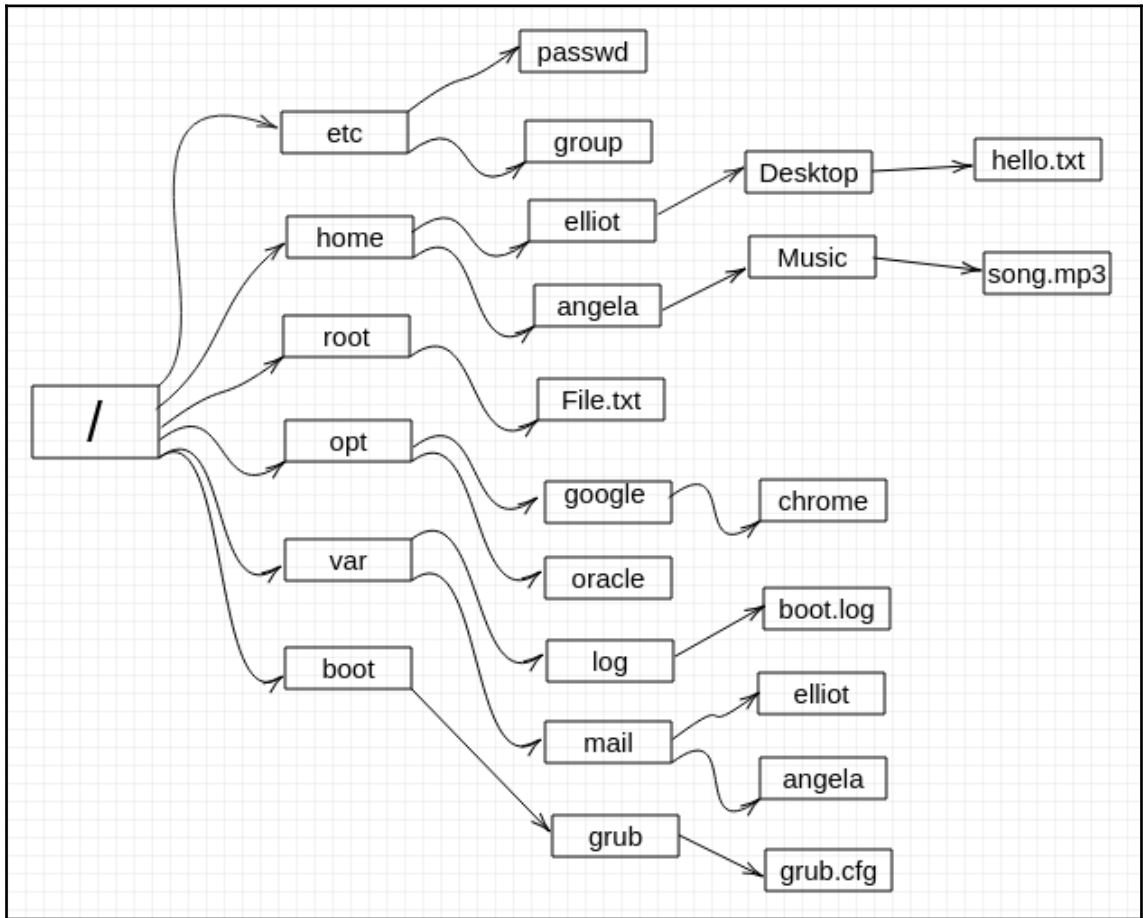
```
elliott@ubuntu-linux: ~
3  4  5  6  7  8  9  7  8  9 10 11 12 13  4  5  6  7  8  9 10
10 11 12 13 14 15 16 14 15 16 17 18 19 20 11 12 13 14 15 16 17
17 18 19 20 21 22 23 21 22 23 24 25 26 27 18 19 20 21 22 23 24
24 25 26 27 28 29 30 28 29 30 31  25 26 27 28 29 30
31

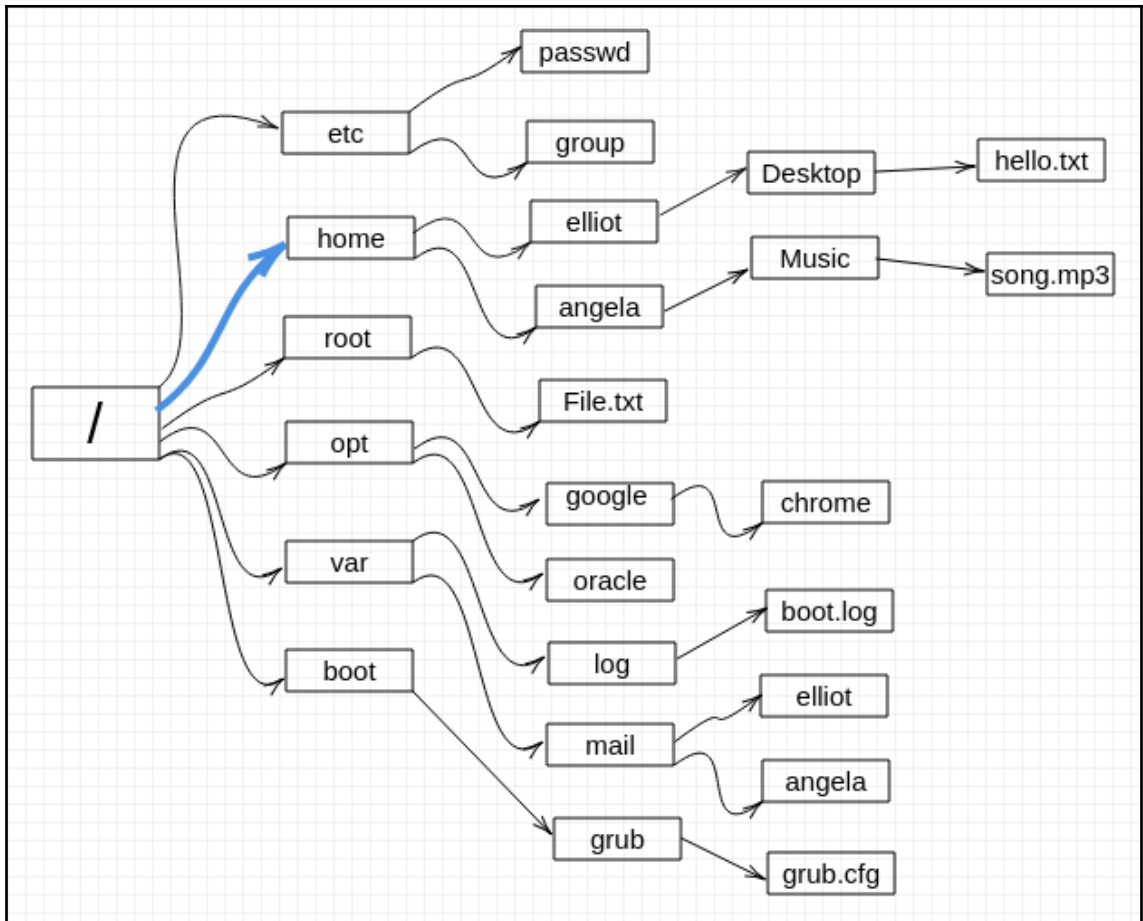
October November December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6  7  8  1  2  3  4  5  6  7  8  9 10
  2  3  4  5  6  7  8  6  7  8  9 10 11 12  4  5  6  7  8  9 10
  9 10 11 12 13 14 15 13 14 15 16 17 18 19 11 12 13 14 15 16 17
16 17 18 19 20 21 22 20 21 22 23 24 25 26 18 19 20 21 22 23 24
23 24 25 26 27 28 29 27 28 29 30  25 26 27 28 29 30 31
30 31
elliott@ubuntu-linux:~$ cal feb 1993
February 1993
Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6
  7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28
elliott@ubuntu-linux:~$ clear
```

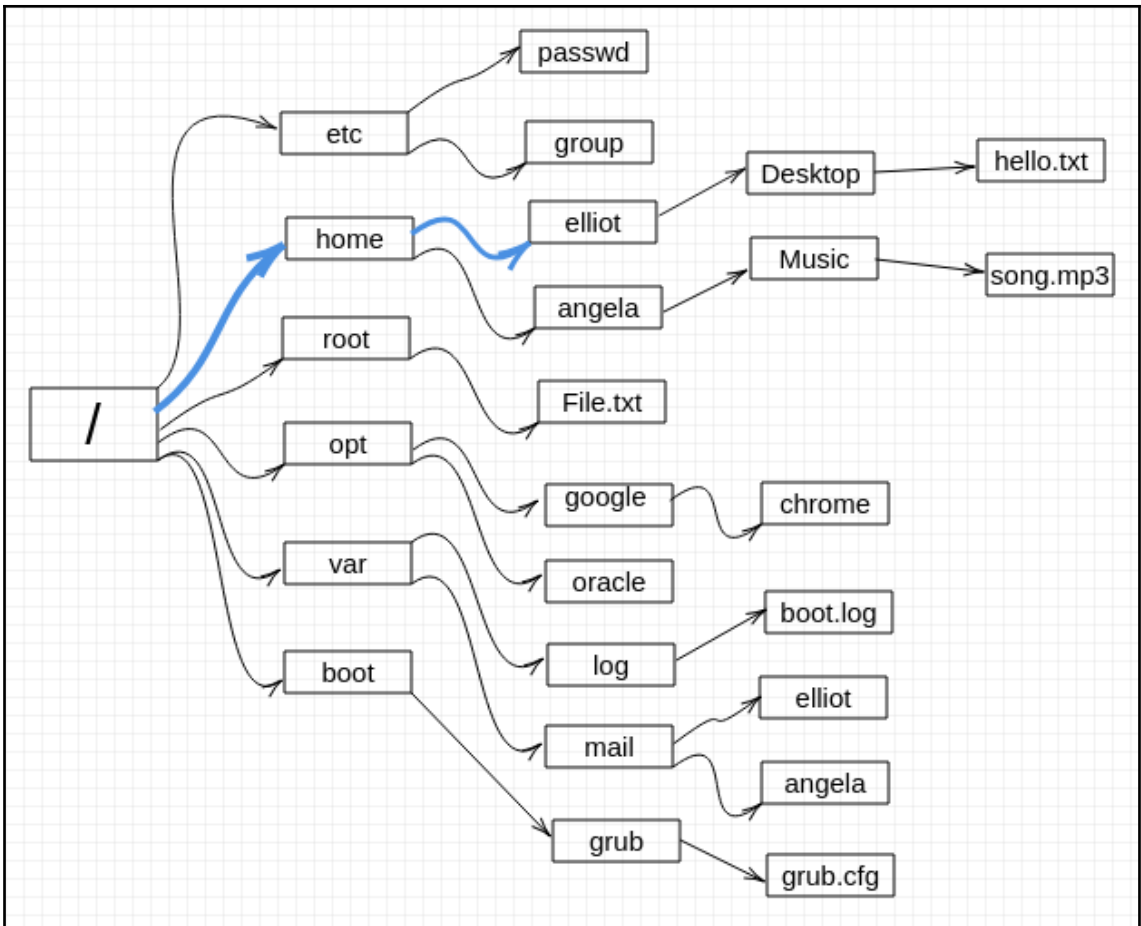


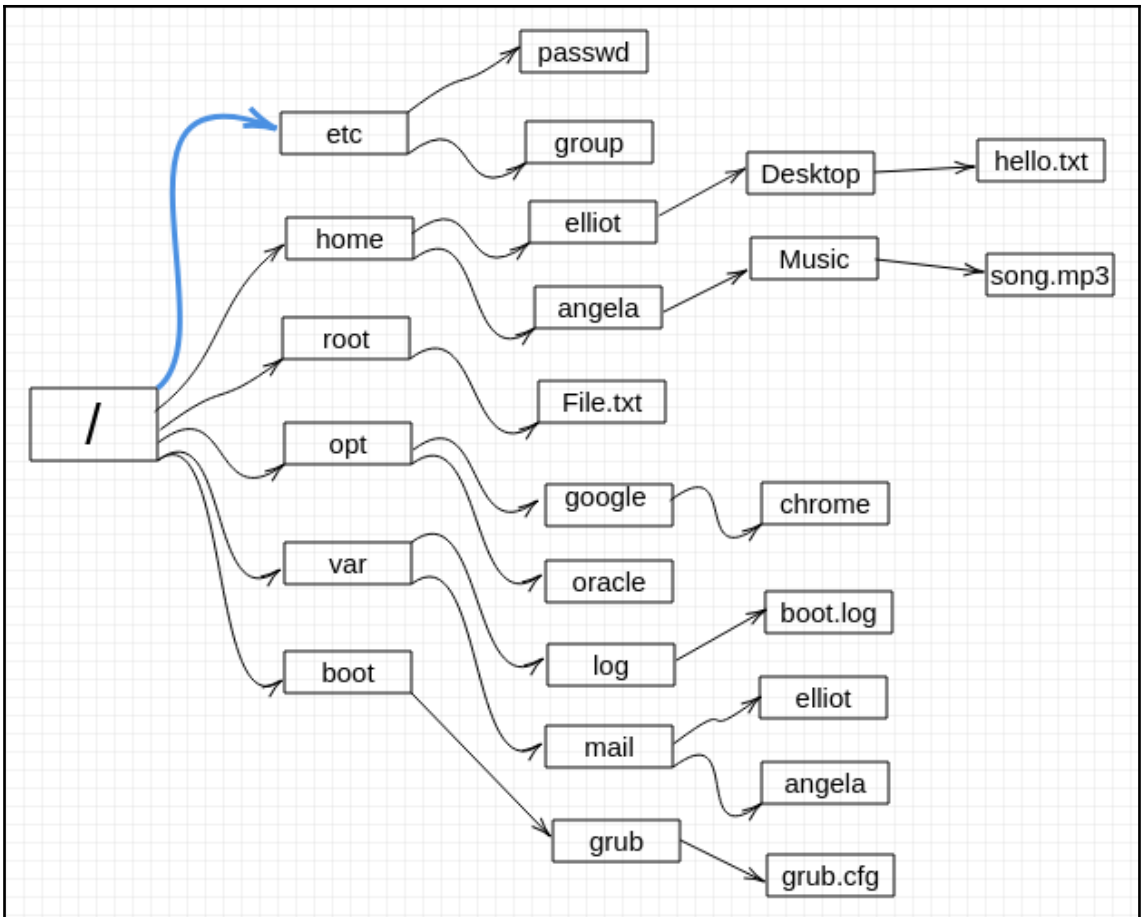


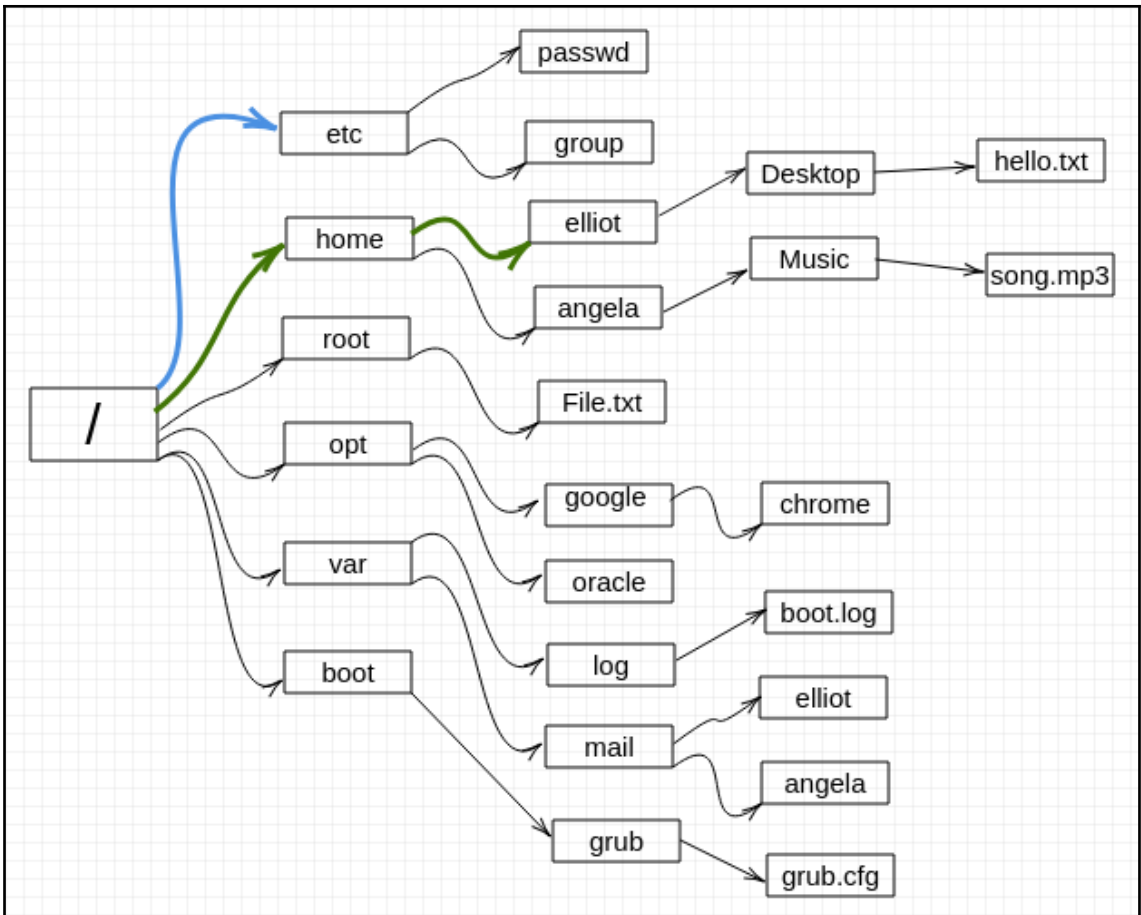
## Chapter 2: Climbing the Tree

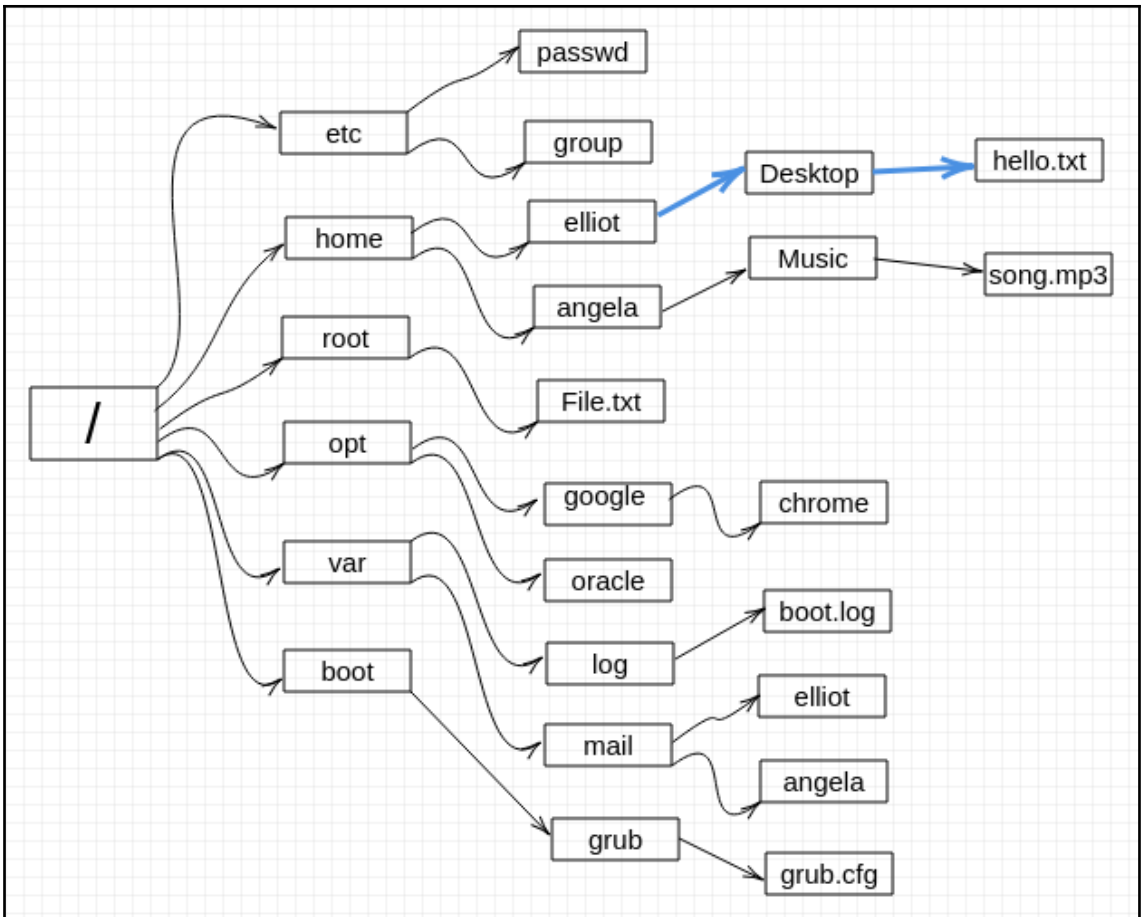


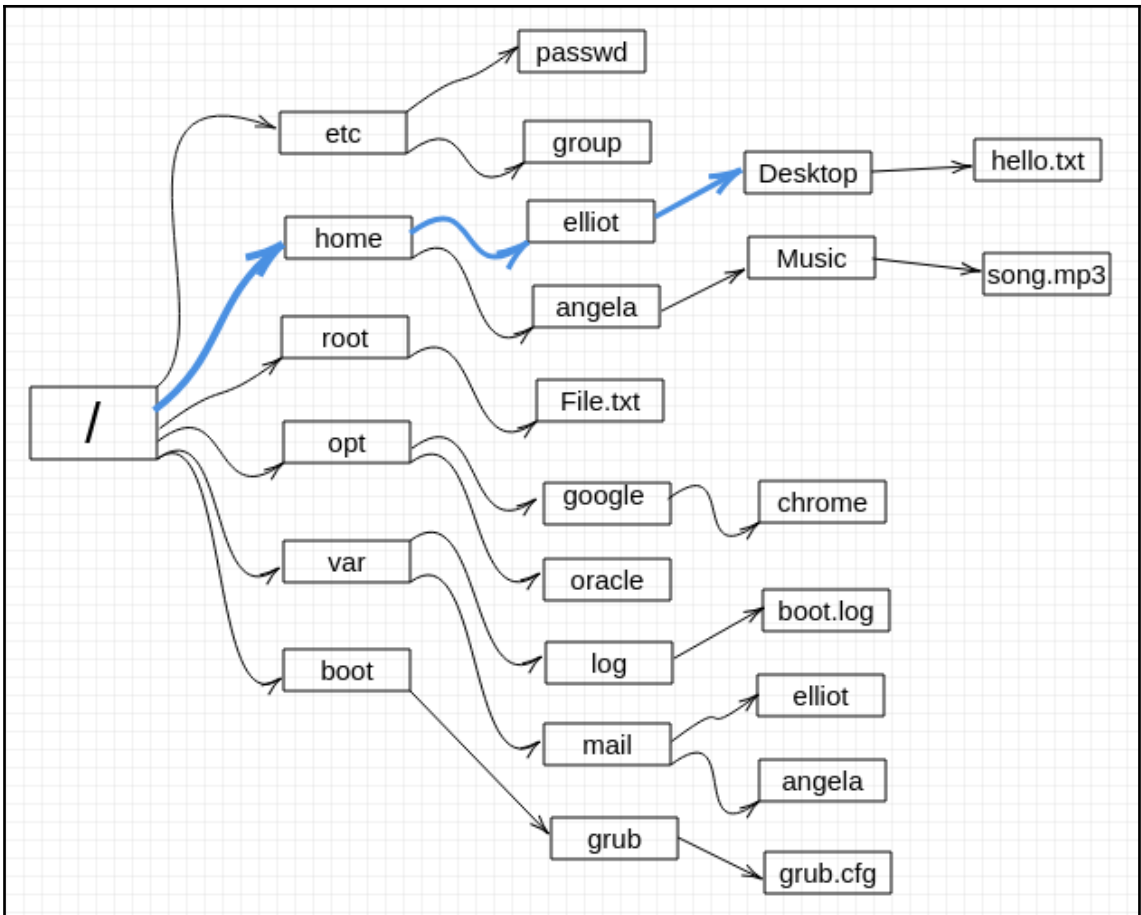


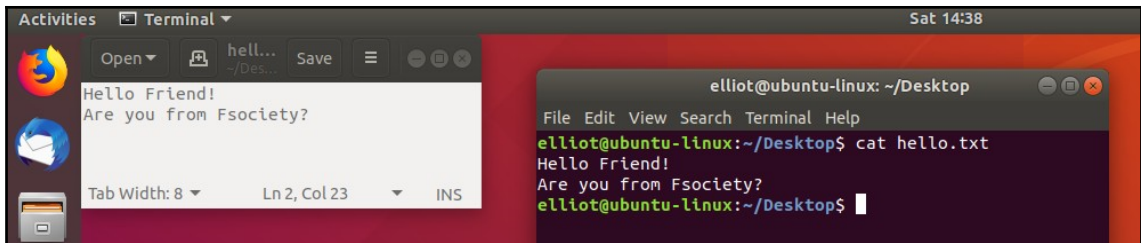
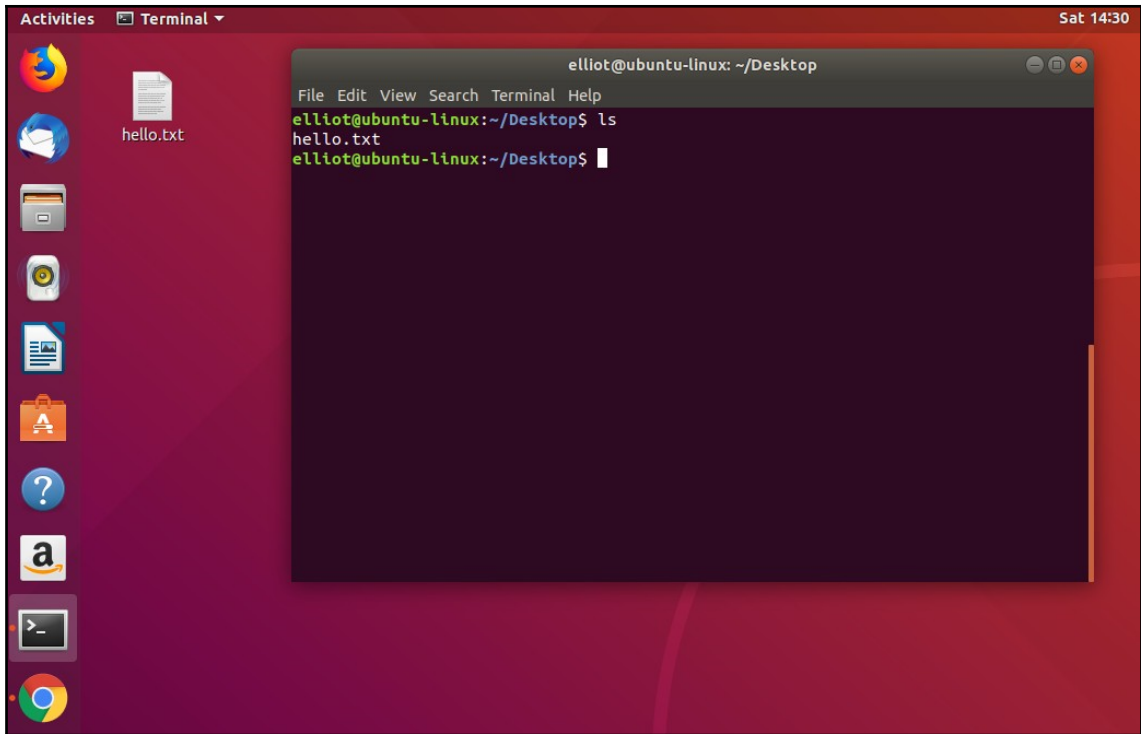




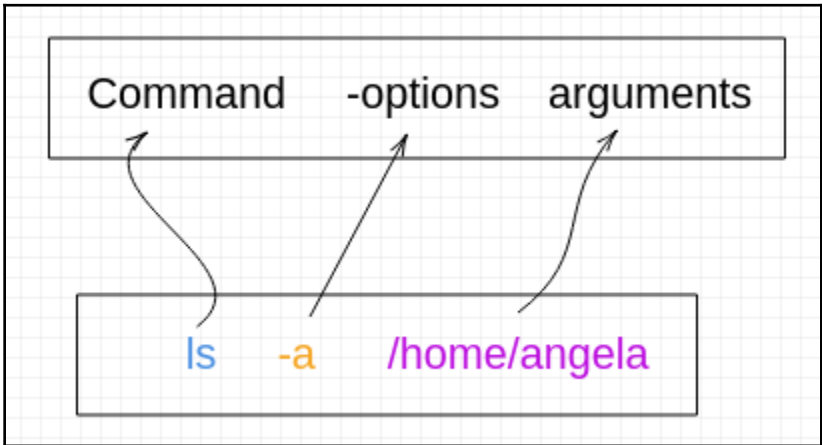
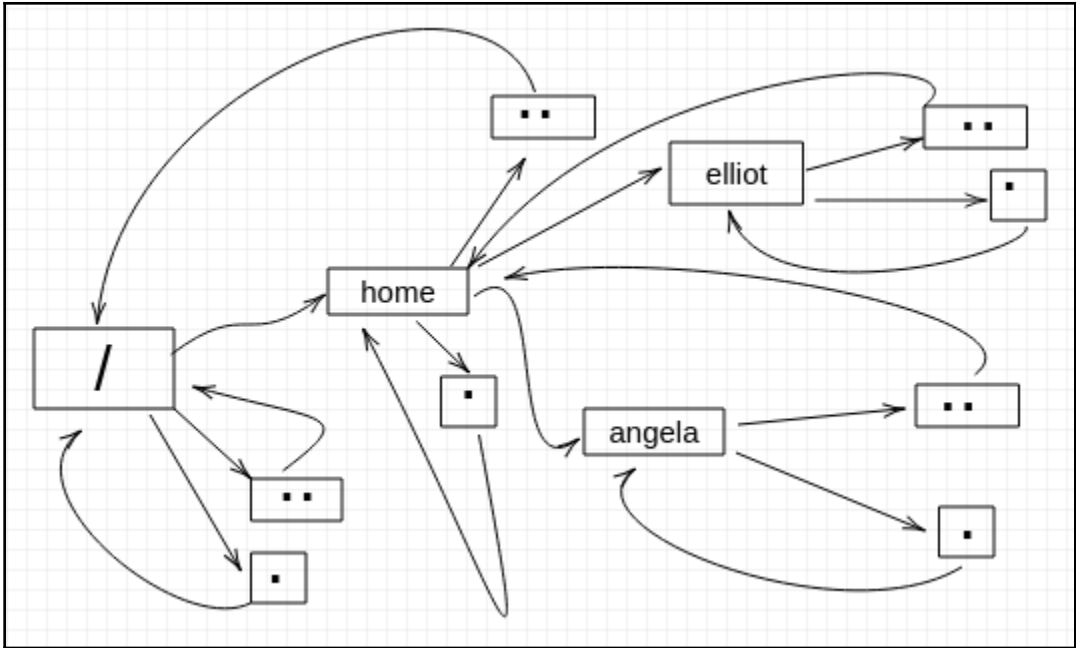


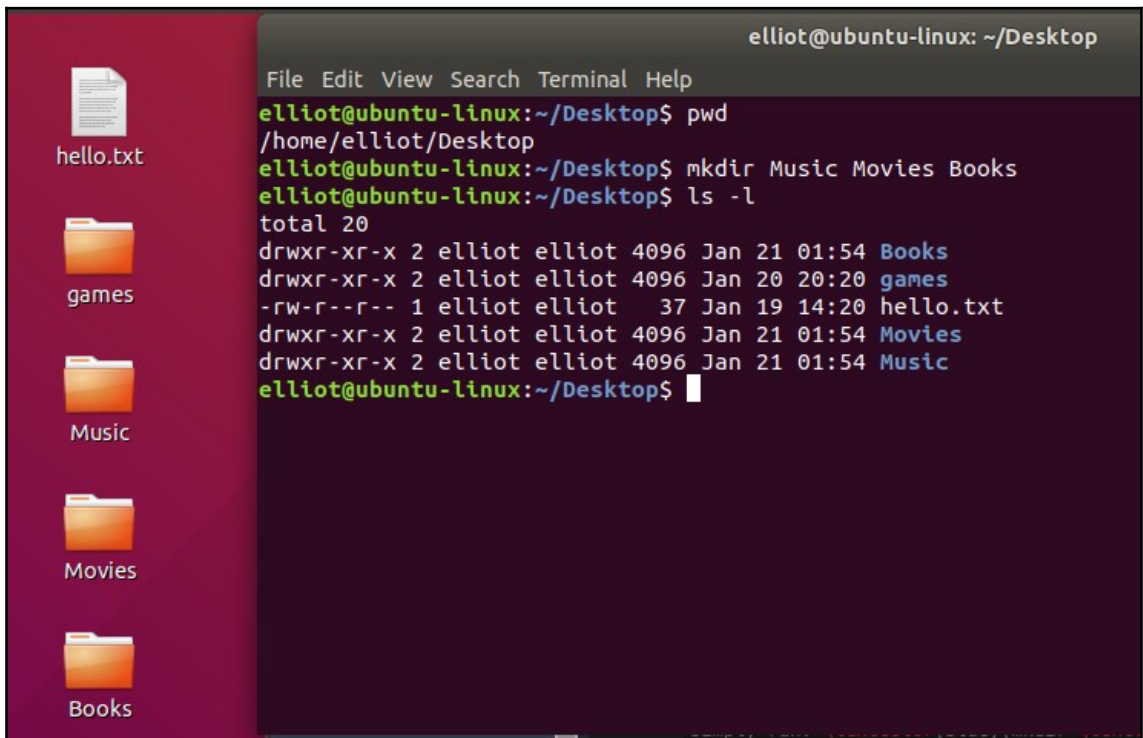
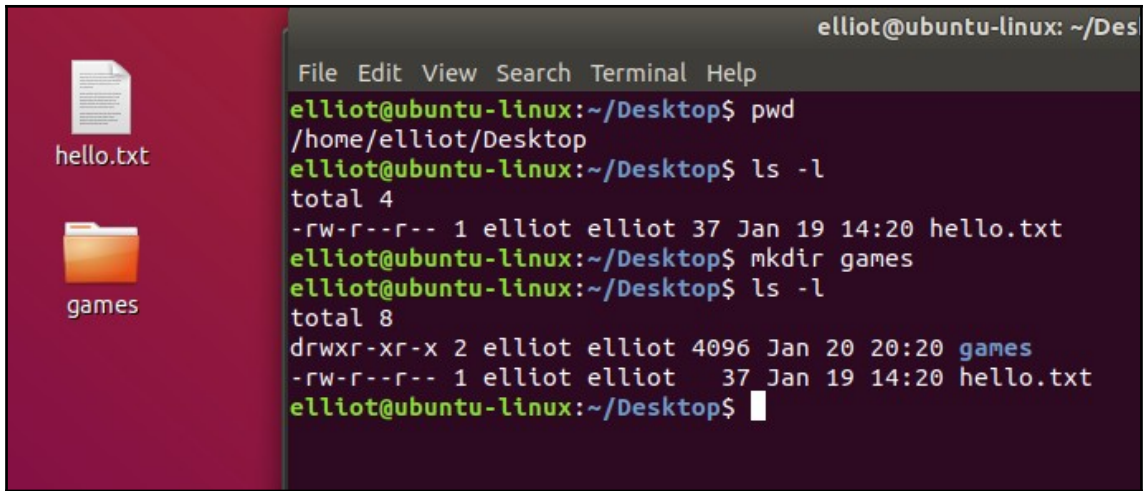












## Chapter 3: Meet the Editors

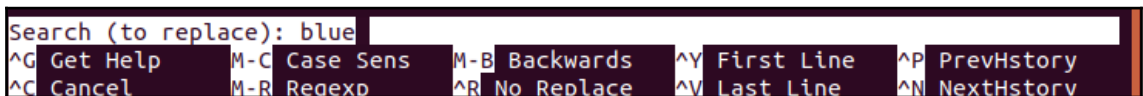
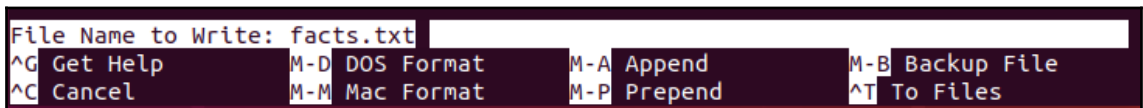
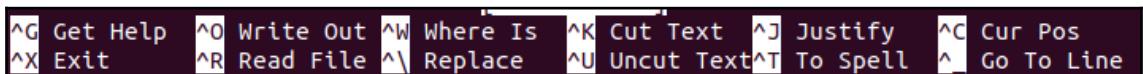
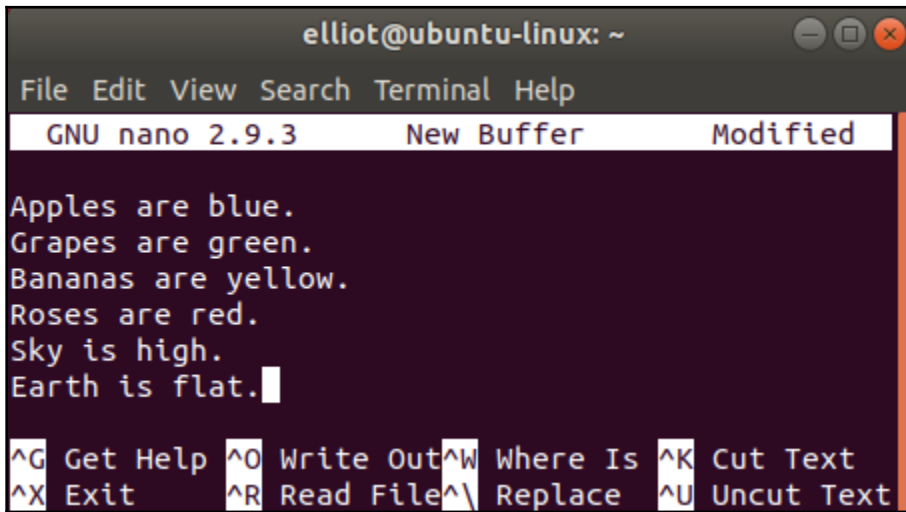
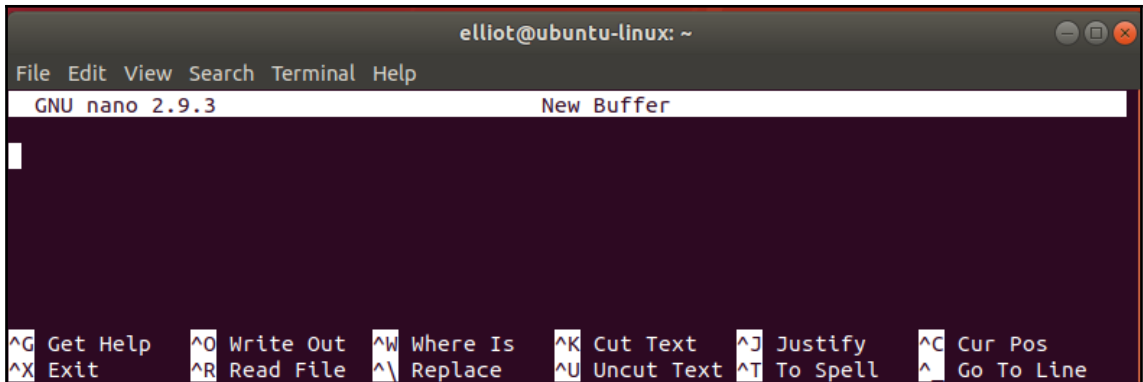


The image shows a terminal window titled "cpuinfo [Read-Only]" with a subtitle "/proc". The window contains a list of CPU-related system parameters and their values. The parameters include processor, vendor\_id, cpu family, model, model name, stepping, cpu MHz, cache size, physical id, siblings, core id, cpu cores, apicid, initial apicid, fpu, fpu\_exception, cpuid level, wp, flags, mmx, fxsr, sse, sse2, syscall, nx, rdtscp, lm, constant\_tsc, rep\_good, nopl, xtopology, nonstop\_tsc, cpuid, pni, pclmulqdq, monitor, ssse3, cx16, pcid, sse4\_1, sse4\_2, x2apic, movbe, popcnt, aes, xsave, avx, rdrand, hypervisor, lahf\_lm, abm, 3dnowprefetch, invpcid\_single, pti, fsgsbase, avx2, invpcid, rdseed, flush\_l1d, bugs, bogomips, clflush size, cache\_alignment, address sizes, and power management. The status bar at the bottom of the window shows "Plain Text", "Tab Width: 8", "Ln 17, Col 21", and "INS".

```
processor      : 0
vendor_id     : GenuineIntel
cpu family    : 6
model         : 61
model name    : Intel(R) Core(TM) i5-5300U CPU @ 2.30GHz
stepping      : 4
cpu MHz       : 2294.676
cache size    : 3072 KB
physical id   : 0
siblings      : 1
core id       : 0
cpu cores     : 1
apicid        : 0
initial apicid : 0
fpu           : yes
fpu_exception : yes
cpuid level   : 20
wp            : yes
flags         : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush
mmx fxsr sse sse2 syscall nx rdtscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid pni
pclmulqdq monitor ssse3 cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx rdrand
hypervisor lahf_lm abm 3dnowprefetch invpcid_single pti fsgsbase avx2 invpcid rdseed flush_l1d
bugs          : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf
bogomips      : 4589.35
clflush size  : 64
cache_alignment : 64
address sizes  : 39 bits physical, 48 bits virtual
power management:
```

```
processor>> : 0
vendor_id>> : GenuineIntel
cpu family>> : 6
model>> : 61
model name>> : Intel(R) Core(TM) i5-5300U CPU @ 2.30GHz|
stepping>> : 4
cpu MHz>> : 2294.676
cache size>> : 3072 KB
physical id>> : 0
siblings>> : 1
core id>> : 0
cpu cores>> : 1
apicid>> : 0
initial apicid>> : 0
fpu>> : yes
fpu_exception>> : yes
cpuid level>> : 20
wp>> : yes
flags>> : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 syscall nx rdtscp lm constant_tsc
rep_good nopl xtopology nonstop_tsc cpuid pni pclmulqdq monitor sse3 cx16
pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx rdrand hypervisor
lahf_lm abm 3dnowprefetch invpcid_single pti fsgsbase avx2 invpcid rdseed
flush_lli
bugs>> : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf
bogomips>> : 4589.35
clflush size>> : 64
cache alignment>> : 64
address sizes>> : 39 bits physical, 48 bits virtual
power management:
```

```
I love cats!
```



```
Replace with: red
^G Get Help      ^Y First Line    ^P PrevHistory
^C Cancel        ^V Last Line     ^N NextHistory
```

```
elliott@ubuntu-linux: ~
File Edit View Search Terminal Help
GNU nano 2.9.3 facts.txt

Apples are blue.
Grapes are green.
Bananas are yellow.
Roses are red.
Sky is high.
Earth is flat.

Replace this instance?
Y Yes           A All
N No           ^C Cancel
```

```
elliott@ubuntu-linux: ~
File Edit View Search Terminal Help
GNU nano 2.9.3 facts.txt Modified

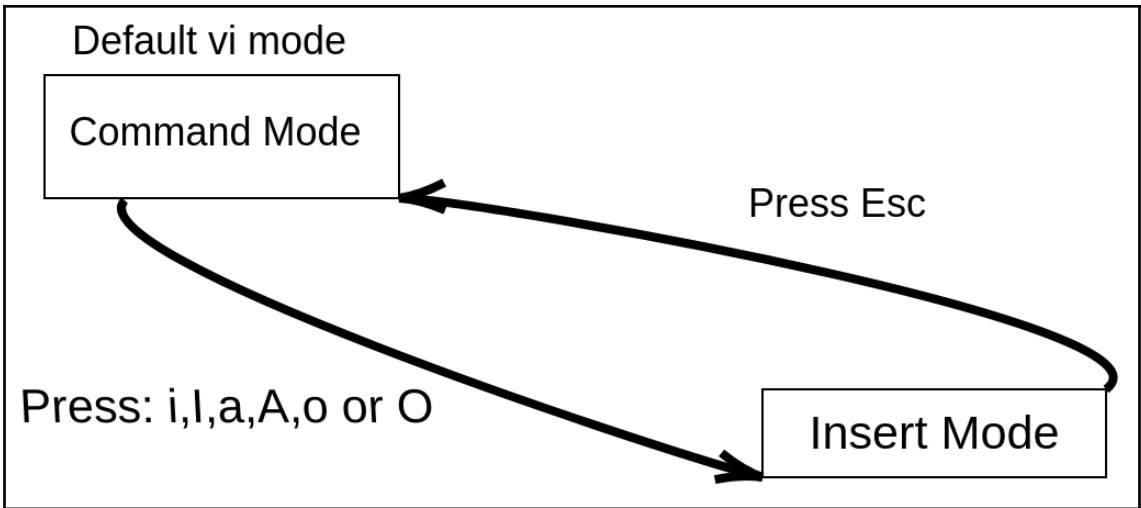
Apples are red.
Grapes are green.
Bananas are yellow.
Roses are red.
Sky is high.
Earth is flat.

^G Get Help    ^O Write Out    ^W Where Is    ^K Cut Text
^X Exit       ^R Read File    ^\ Replace     ^U Uncut Text
```

```
elliot@ubuntu-linux: ~
File Edit View Search Terminal Help
GNU nano 2.9.3 facts.txt Modified
Apples are red.
Grapes are green.
Bananas are yellow.
Roses are red.
Sky is high.
Earth is round.
[ Replaced 1 occurrence ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text
^X Exit ^R Read File ^\ Replace ^U Uncut Text
```












```
File Edit View Search Terminal Help
1 Apples are red.
2 Grapes are green.
3 Bananas are yellow.
4 Roses are red.
5 Sky is high.
6 Earth is round.
7 Linux is cool!
8 Roses are red.
9 Roses are red.
10 Roses are red.
```





```
1 Apples are red.  
2 Grapes are green.  
3 Bananas are yellow.  
4 Cherries are red.  
5 Sky is high.  
6 Earth is round.  
7 Linux is awesome!  
8 Cherries are red.  
9 Cherries are red.  
10 Cherries are red.  
~  
~  
~  
:wq|
```



## Chapter 5: Read Your Manuals!

```
TOUCH(1) User Commands
TOUCH(1)

NAME
touch - change file timestamps

SYNOPSIS
touch [OPTION]... FILE...

DESCRIPTION
Update the access and modification times of each FILE to the current time.

A FILE argument that does not exist is created empty, unless -c or -h is supplied.

A FILE argument string of - is handled specially and causes touch to change the times of the file associated with standard output.

Mandatory arguments to long options are mandatory for short options too.

-a      change only the access time

-c, --no-create
        do not create any files

-d, --date=STRING
        parse STRING and use it instead of current time

-f      (ignored)

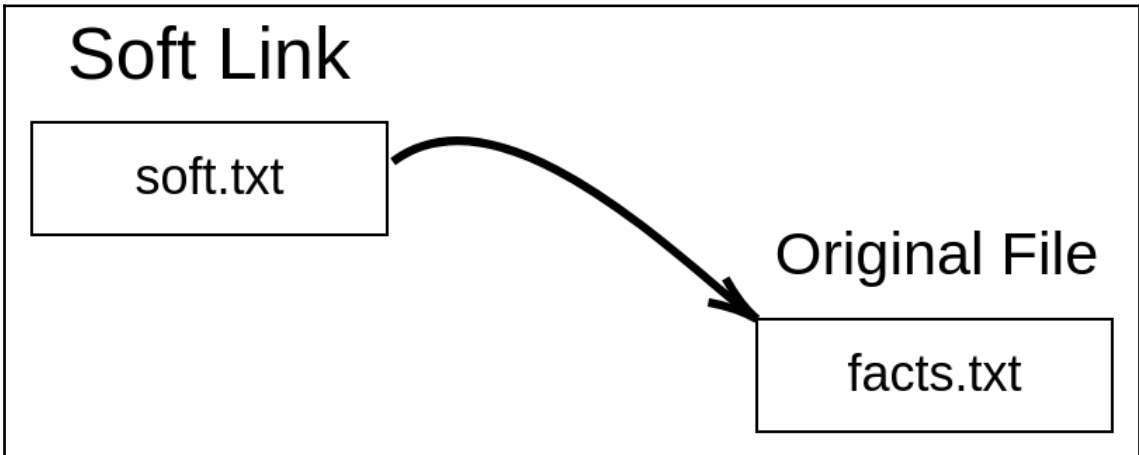
-h, --no-dereference
        affect each symbolic link instead of any referenced file (useful only on systems that can change the timestamps of a symlink)

-n      change only the modification time

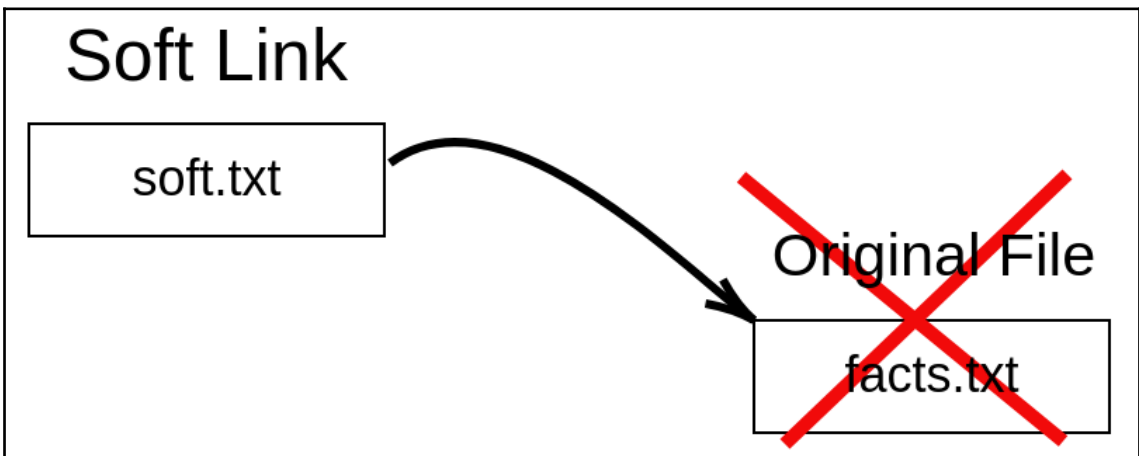
-r, --reference=FILE
        use this file's times instead of current time
```

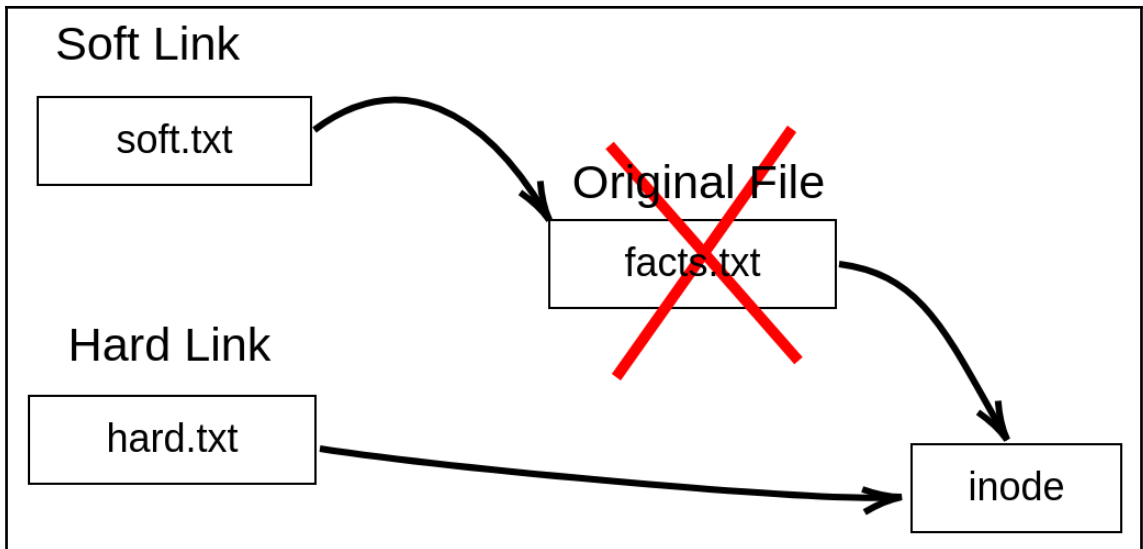
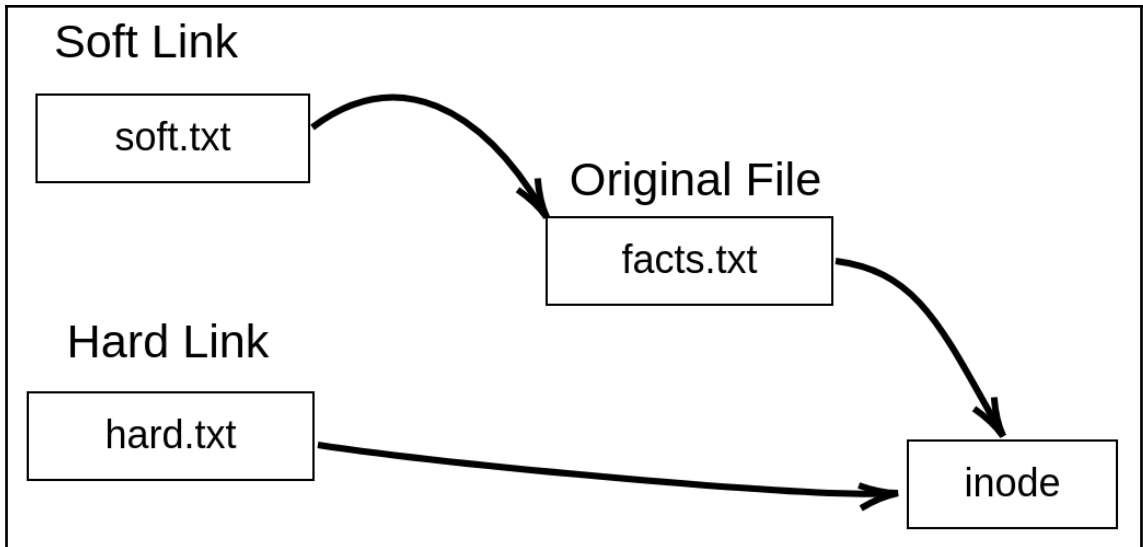


## Chapter 6: Hard versus Soft Links

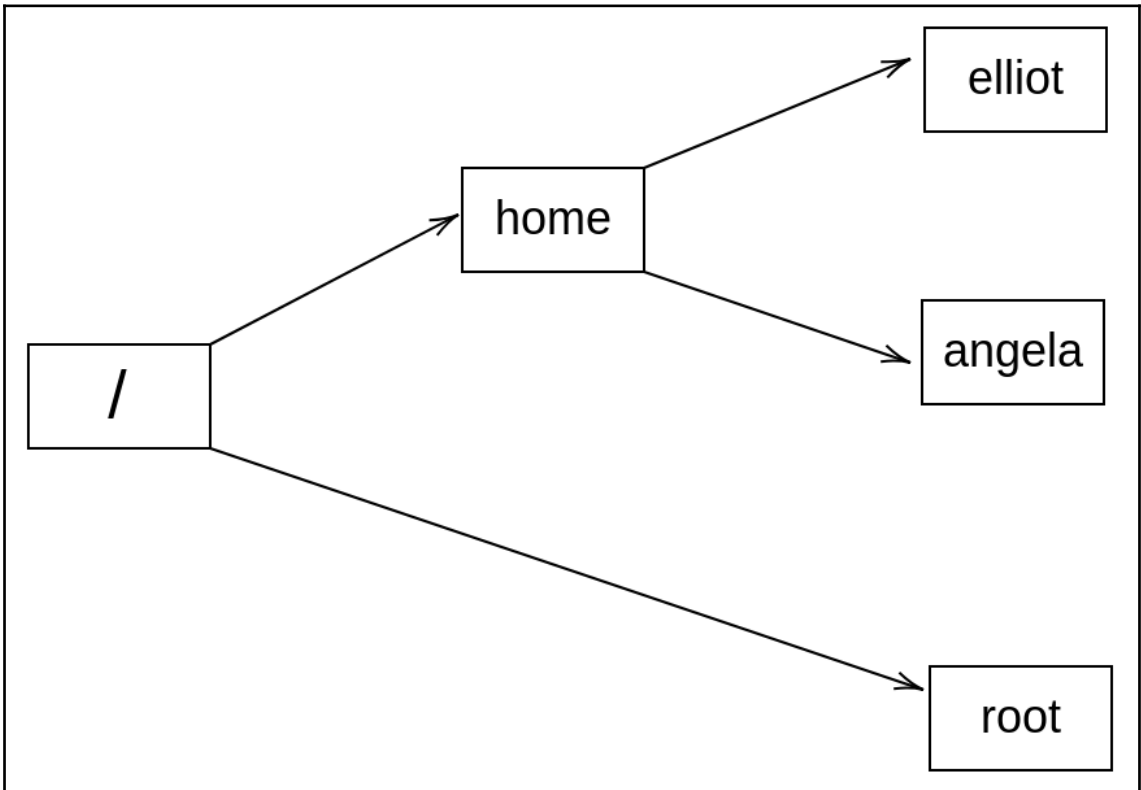


```
elliott@ubuntu-linux: ~  
File Edit View Search Terminal Help  
elliott@ubuntu-linux:~$ cat soft.txt  
cat: soft.txt: No such file or directory  
elliott@ubuntu-linux:~$ ls -l soft.txt  
lrwxrwxrwx 1 elliot elliot 9 Nov 28 18:33 soft.txt -> facts.txt  
elliott@ubuntu-linux:~$
```





## Chapter 7: Who Is Root?



## Chapter 8: Controlling the Population

```
1 2 3 4 5 6 7  
elliot:x:1000:1000:Elliot Alderson:/home/elliot:/bin/bash
```

```
1 2 3 4  
sudo:x:27:elliot
```

```
root@ubuntu-linux:~# id dummy  
uid=1004(dummy) gid=1004(dummy) groups=1004(dummy),1009(cartoon)  
Primary Secondary
```

```
smurf@ubuntu-linux:~$ ls -l mysmurf  
-rw-r--r-- 1 smurf developers 0 Oct 22 15:09 mysmurf  
    ↑      ↑  
  User   Group
```

### File

Read: Be able to view the file contents.

Write: Be able to edit the file contents.

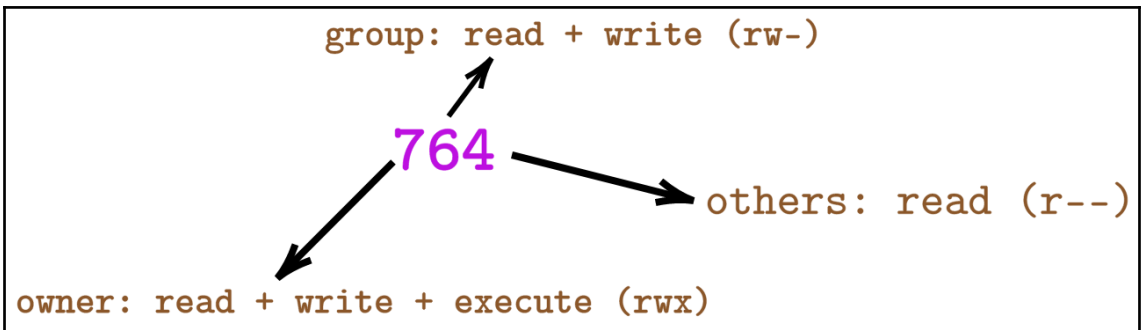
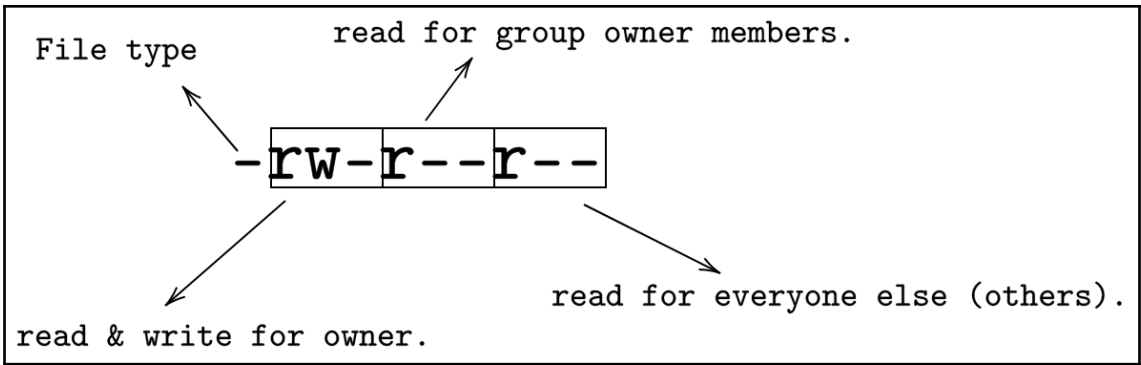
Execute: Be able to run the file (if executable).

### Directory

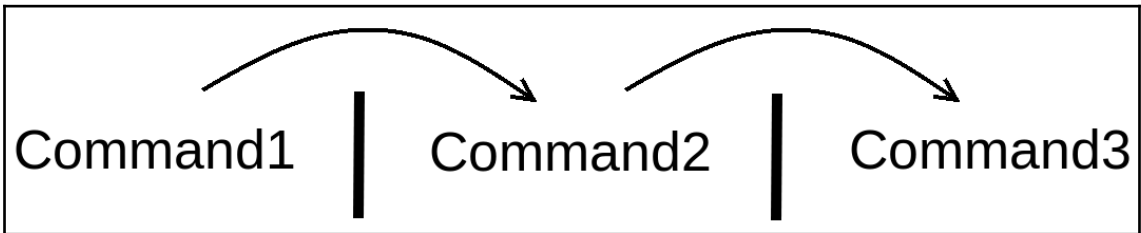
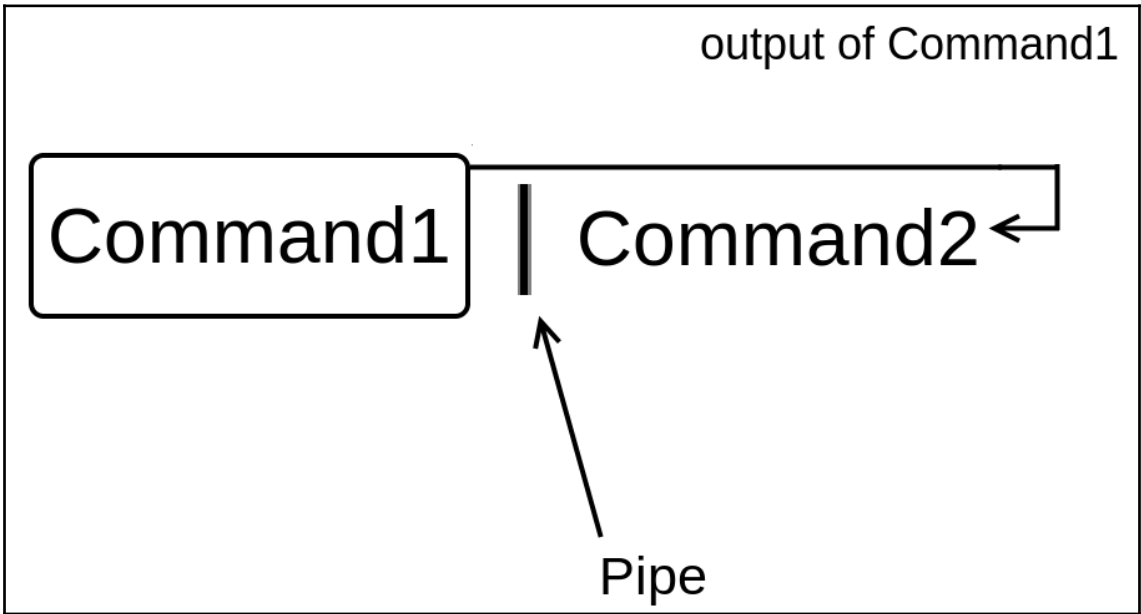
Read: Be able to list the directory contents.

Write: Be able to create and remove files in the directory.

Execute: Be able to change to the directory.



## Chapter 9: Piping and I/O Redirection

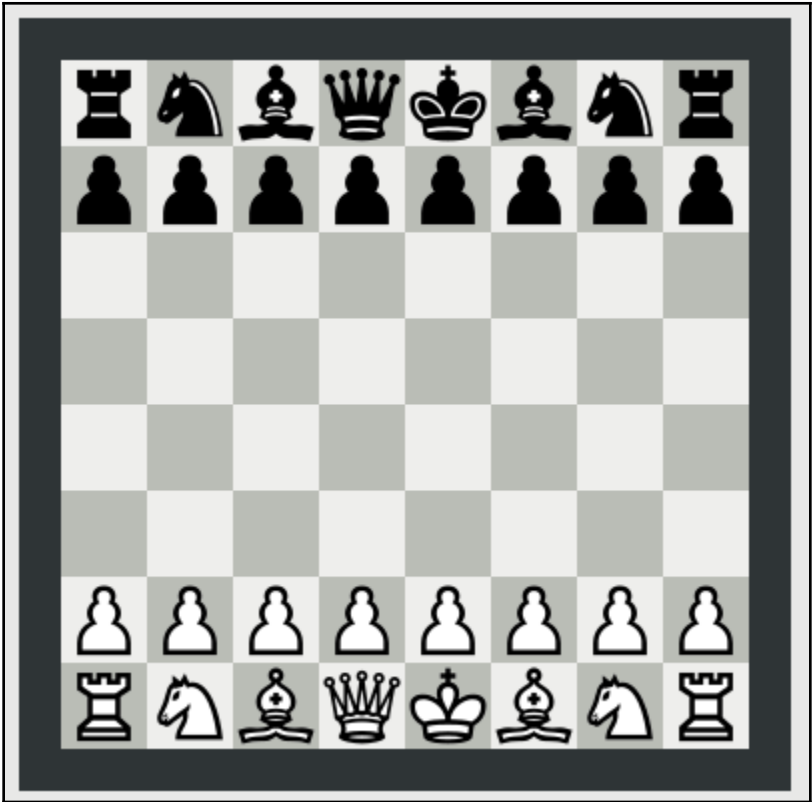


## Chapter 10: Analyzing and Manipulating Files

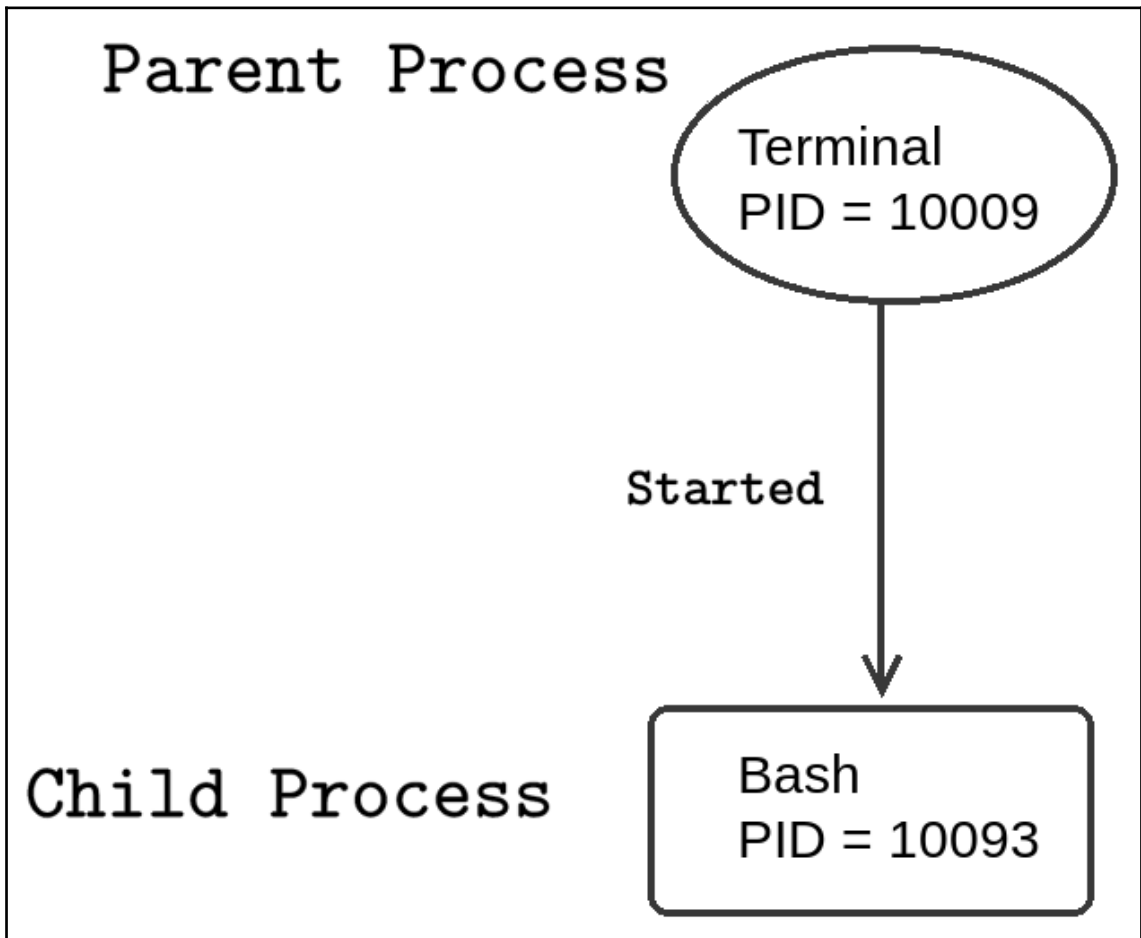
```
elliott@ubuntu-linux:~$ egrep d*g practice.txt
dog is a cute pet.
g
dg
ddg
dddg
elliott@ubuntu-linux:~$
```







## Chapter 13: Kill the Process

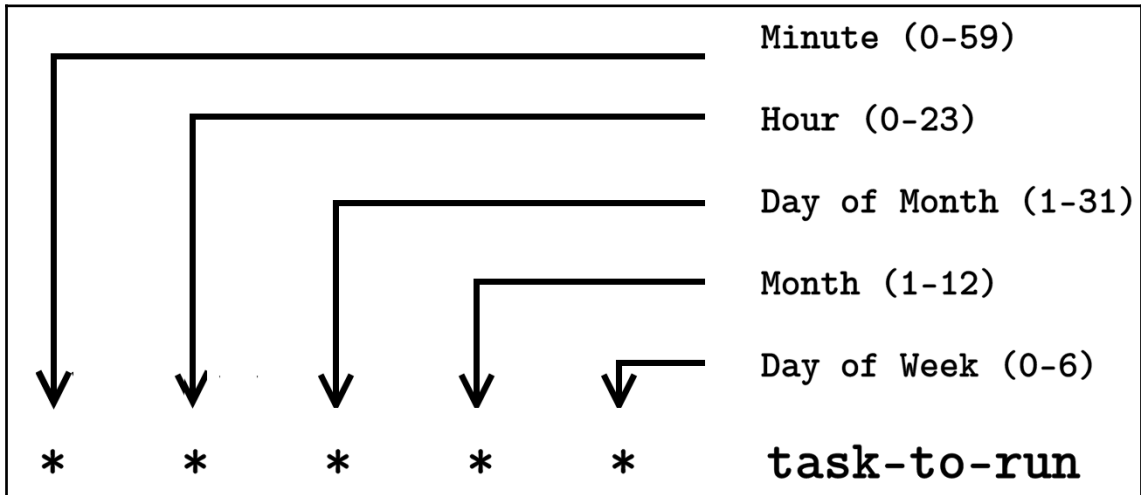




```
root@ubuntu-linux:/proc/6849# cd fd
root@ubuntu-linux:/proc/6849/fd# ls -l | tail
lrwx----- 1 elliot elliot 64 Nov 21 18:12 83 -> /home/elliot/.mozilla/firefox/places.sqlite-wal
lr-x----- 1 elliot elliot 64 Nov 21 18:12 84 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/favicons.sqlite
lrwx----- 1 elliot elliot 64 Nov 21 18:12 85 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/favicons.sqlite-wal
lrwx----- 1 elliot elliot 64 Nov 21 18:12 86 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/content-prefs.sqlite
lrwx----- 1 elliot elliot 64 Nov 21 18:12 88 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/webappsstore.sqlite
lr-x----- 1 elliot elliot 64 Nov 21 18:12 89 -> /usr/lib/firefox/browser/features
/formautofill@mozilla.org.xpi
lr-x----- 1 elliot elliot 64 Nov 21 18:12 9 -> /dev/shm/org.mozilla.ipc.6849.5 (deleted)
lrwx----- 1 elliot elliot 64 Nov 21 18:12 90 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/webappsstore.sqlite-wal
lr-x----- 1 elliot elliot 64 Nov 21 18:12 92 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/webappsstore.sqlite
lrwx----- 1 elliot elliot 64 Nov 21 18:12 93 -> /home/elliot/.mozilla/firefox/wkgfiatj.default
/webappsstore.sqlite-wal
```

```
root@ubuntu-linux:~# lsof -p 6849 | tail
lsof: WARNING: can't stat() fuse.gvfsd-fuse file system /run/user/1000/gvfs
Output information may be incomplete.
firefox 6849 elliot 164u    unix 0xffff918255ae1c00      0t0 77045 type=SEQPACKET
firefox 6849 elliot 165u    unix 0xffff918255ae1800      0t0 77046 type=SEQPACKET
firefox 6849 elliot 166r    REG          0,23      58086   48 /dev/shm/org.mozilla.ipc.6849.41
firefox 6849 elliot 168u    unix 0xffff918255ae2000      0t0 77049 type=STREAM
firefox 6849 elliot 170r    REG          0,23      21518   49 /dev/shm/org.mozilla.ipc.6849.42
firefox 6849 elliot 172r    REG          0,23      170     50 /dev/shm/org.mozilla.ipc.6849.43
firefox 6849 elliot 174r    REG          0,23      1918    51 /dev/shm/org.mozilla.ipc.6849.44
firefox 6849 elliot 176r    REG          0,23      1772    52 /dev/shm/org.mozilla.ipc.6849.45
firefox 6849 elliot 178r    REG          0,23      20920   53 /dev/shm/org.mozilla.ipc.6849.46
firefox 6849 elliot 180r    REG          0,23      5808    54 /dev/shm/org.mozilla.ipc.6849.47
```

## Chapter 17: You Need a Cron Job



## Chapter 19: Create Your Own Commands

```
elliott@ubuntu-linux:~$ date
Mon Nov  4 13:34:04 CST 2019
      November 2019
Su Mo Tu We Th Fr Sa
                1  2
 3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
```

```
elliott@ubuntu-linux:~$ memory
      total      used      free      shared  buff/cache  available
Mem:   3.8G      233M    3.3G      672K      282M      3.4G
Swap:   0B         0B         0B
elliott@ubuntu-linux:~$ date
Mon Nov  4 13:35:59 CST 2019
      November 2019
Su Mo Tu We Th Fr Sa
                1  2
 3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
```

## Chapter 20: Everyone Needs Disk Space

