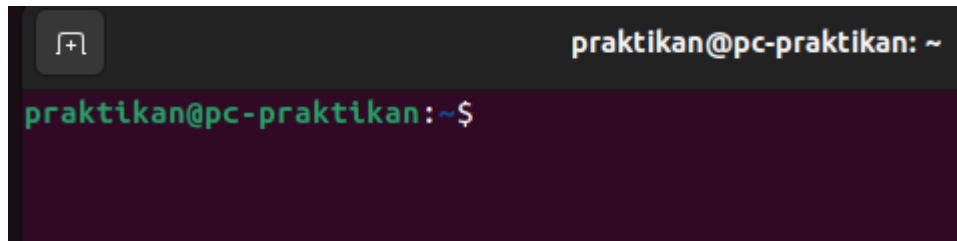


## 1. Terminal Linux



```
praktikan@pc-praktikan: ~$
```

- 
- Arti dari *praktikan@* adalah username ubuntu di komputer ini, dan *pc-praktikan* adalah nama dari komputer, dan saat ini terminal berada di direktori *~* dengan user level biasa bukan root (root #, user\$)

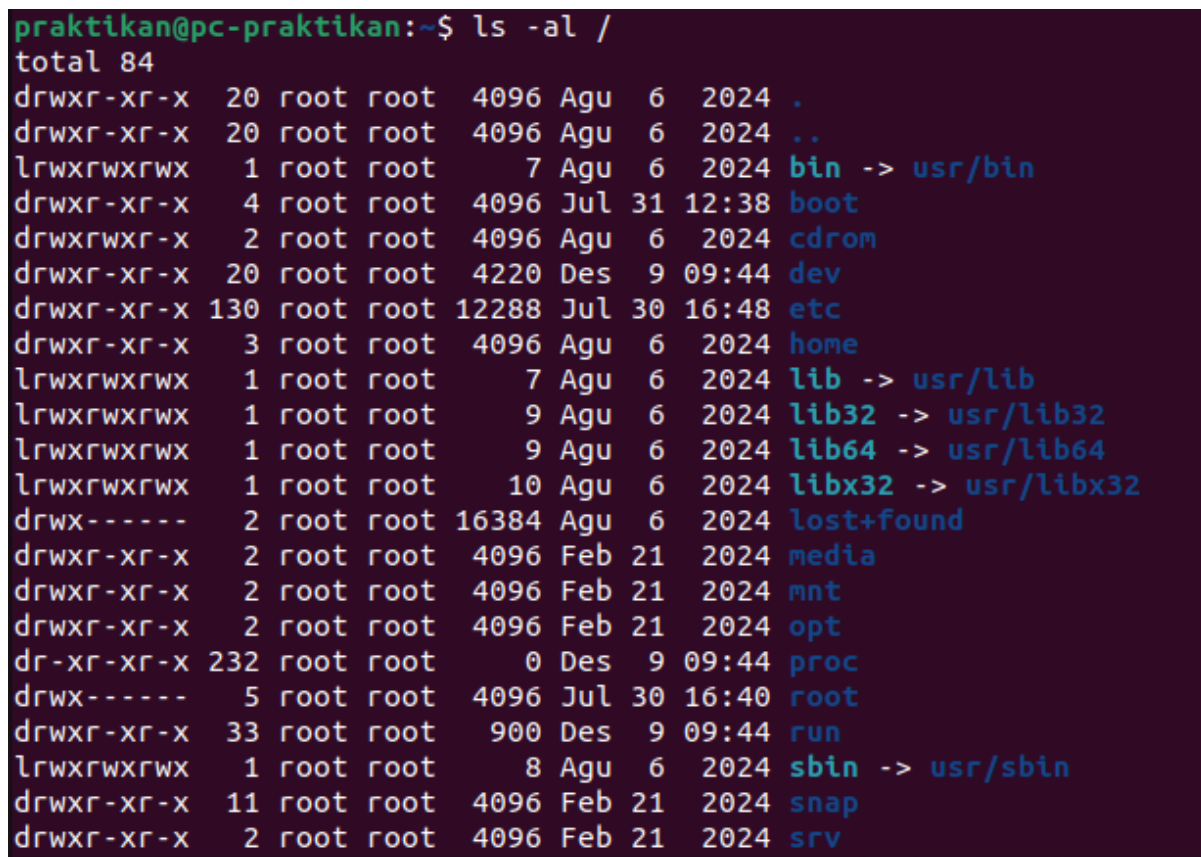
## 2. Perintah pertama

- Perintah ls



```
praktikan@pc-praktikan:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
```

- Opsi yang dapat di gunakan pada ls adalah “-al”, dan dapat menggunakan parameter direktori misa “/” maka root, namun pada kasus kali ini **tidak ada** option dan parameter yang di gunakan
- ls adalah perintah linux umun untuk melihat list dari di direktori / list storage, atau posisi direktori terminal pada saat ini kemudian melihat keseluruhan direkori yang ada



```
praktikan@pc-praktikan:~$ ls -al /
total 84
drwxr-xr-x 20 root root 4096 Agu 6 2024 .
drwxr-xr-x 20 root root 4096 Agu 6 2024 ..
lrwxrwxrwx 1 root root 7 Agu 6 2024 bin -> usr/bin
drwxr-xr-x 4 root root 4096 Jul 31 12:38 boot
drwxrwxr-x 2 root root 4096 Agu 6 2024 cdrom
drwxr-xr-x 20 root root 4220 Des 9 09:44 dev
drwxr-xr-x 130 root root 12288 Jul 30 16:48 etc
drwxr-xr-x 3 root root 4096 Agu 6 2024 home
lrwxrwxrwx 1 root root 7 Agu 6 2024 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Agu 6 2024 lib32 -> usr/lib32
lrwxrwxrwx 1 root root 9 Agu 6 2024 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 10 Agu 6 2024 libx32 -> usr/libx32
drwx----- 2 root root 16384 Agu 6 2024 lost+found
drwxr-xr-x 2 root root 4096 Feb 21 2024 media
drwxr-xr-x 2 root root 4096 Feb 21 2024 mnt
drwxr-xr-x 2 root root 4096 Feb 21 2024 opt
dr-xr-xr-x 232 root root 0 Des 9 09:44 proc
drwx----- 5 root root 4096 Jul 30 16:40 root
drwxr-xr-x 33 root root 900 Des 9 09:44 run
lrwxrwxrwx 1 root root 8 Agu 6 2024 sbin -> usr/sbin
drwxr-xr-x 11 root root 4096 Feb 21 2024 snap
drwxr-xr-x 2 root root 4096 Feb 21 2024 srv
```

- 
- 
- 
- 
- Option nya adalah “-al” dan parameter “/”

- f. Fungsi dari perintah “ls -al / “ adalah perintah list storage dengan option “-al” dan opsi “/” dimana “-al” untuk melihat detail lengkap dari direktori seperti permission (drwxr-xr-x, dll), posisi file, ukuran, tanggal, dll, dan “/” merujuk para direktori dasar atau root
- g. Perbedaan pada perintah A dan E adalah perintah A adalah command list storage tanpa argumen option dan parameter, jadi menampilkan list storage secara langsung dan sederhana, sedangkan perintah E menampilkan list storage dengan detail/properti lengkap dari direktori yang ingin di lihat.

### 3. Filetree

```
praktikan@pc-praktikan:~$ pwd
/home/praktikan
praktikan@pc-praktikan:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
praktikan@pc-praktikan:~$ cd Music/
praktikan@pc-praktikan:~/Music$ pwd
/home/praktikan/Music
praktikan@pc-praktikan:~/Music$
```

a.

- b. Pada perintah pwd kali ini tidak menggunakan option dan parameter, namun pwd sendiri memiliki option dengan detail di bawah ini

```
praktikan@pc-praktikan:~/Music$ help pwd
pwd: pwd [-LP]
    Print the name of the current working directory.

Options:
  -L      print the value of $PWD if it names the current working
          directory
  -P      print the physical directory, without any symbolic links

By default, `pwd' behaves as if `-L' were specified.

Exit Status:
Returns 0 unless an invalid option is given or the current directory
cannot be read.
```

Dimana -L adalah direktori saat ini (default pwd -L) dan pwd -P untuk print direktori saat ini tanpa nama simbol pada direktori

- c. Fungsi dari pwd adalah untuk melihat posisi direktori/ filetree direktori kita di terminal saat ini (print working directory).

### 4. Change Directory (cd)

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

a.

- b. Pada kasus ini tidak menggunakan option dan parameter menggunakan “/”, namun dengan perintah `help cd` kita dapat melihat argument yang dapat digunakan

```
praktikan@pc-praktikan:/$ help cd
cd: cd [-L|[-P [-e]] [-@]] [dir]
    Change the shell working directory.

    Change the current directory to DIR.  The default DIR is the value of the
    HOME shell variable.

    The variable CDPATH defines the search path for the directory containing
    DIR.  Alternative directory names in CDPATH are separated by a colon (:).
    A null directory name is the same as the current directory.  If DIR begins
    with a slash (/), then CDPATH is not used.

    If the directory is not found, and the shell option `cdable_vars' is set,
    the word is assumed to be a variable name.  If that variable has a value,
    its value is used for DIR.

Options:
  -L      force symbolic links to be followed: resolve symbolic
          links in DIR after processing instances of `..'
  -P      use the physical directory structure without following
          symbolic links: resolve symbolic links in DIR before
          processing instances of `..'
  -e      if the -P option is supplied, and the current working
          directory cannot be determined successfully, exit with
          a non-zero status
  -@      on systems that support it, present a file with extended
          attributes as a directory containing the file attributes

The default is to follow symbolic links, as if `-L' were specified.
`..' is processed by removing the immediately previous pathname component
back to a slash or the beginning of DIR.

Exit Status:
Returns 0 if the directory is changed, and if $PWD is set successfully when
-P is used; non-zero otherwise.
```

- c. Yang di lakukan `cd /` adalah berpindah direktori ke root, pada screenshot terminal saya berada dari direktori `root/home/music` berpindah ke `root` file

## 5. Direktori Khusus

a. The terminal shows a user at the root prompt. They enter 'cd ~' to move to the home directory. Then they enter 'ls' and see a list of directories including Desktop, Documents, Downloads, Music, Pictures, Public, snap, Templates, and Videos. They then enter 'cd /' to return to the root. Finally, they enter 'ls' and see a list of system directories including bin, cdrom, etc, lib, lib64, lost+found, mnt, proc, run, snap, sys, usr, boot, dev, home, lib32, libx32, media, opt, root, sbin, srv, tmp, and var.

Perintah `cd ~` adalah change direktori ke home sedangkan `cd /` adalah berpindah ke root

b. The terminal shows a user at the root prompt. They enter 'cd ~' to move to the home directory. Then they enter 'ls' and see a list of directories including Desktop, Documents, Downloads, Music, Pictures, Public, snap, Templates, and Videos. They then enter 'cd /' to return to the root. Finally, they enter 'ls' and see a list of system directories including bin, cdrom, etc, lib, lib64, lost+found, mnt, proc, run, snap, sys, usr, boot, dev, home, lib32, libx32, media, opt, root, sbin, srv, tmp, and var. They then enter 'cd home' to move to the home directory. They enter 'ls' and see the directory 'praktikan'. They then enter 'cd praktikan' to move into the 'praktikan' directory. They enter 'ls' and see a list of directories including Desktop, Documents, Downloads, Music, Pictures, Public, snap, Templates, and Videos. They then enter 'pwd' and see '/home/praktikan'. They then enter 'cd ..' to move back to the home directory. They enter 'ls' and see a list of directories including bin, cdrom, etc, lib, lib64, lost+found, mnt, proc, run, snap, sys, usr, boot, dev, home, lib32, libx32, media, opt, root, sbin, srv, tmp, and var. They then enter 'cd /proc/self' to move to the /proc/self directory. They enter 'ls' and see a list of files including cwd, exe, fd, fdinfo, root, self, and symlink. They then enter 'cd ../../..' to move back to the root directory. Finally, they enter 'ls' and see a list of system directories including bin, cdrom, etc, lib, lib64, lost+found, mnt, proc, run, snap, sys, usr, boot, dev, home, lib32, libx32, media, opt, root, sbin, srv, tmp, and var.

Kita mulai dari root berpindah ke `proc/self` dan untuk kembali ke root kita perlu naik 2 direktori, seperti screenshot di atas, jadi jika hanya menggunakan `cd ..` maka itu di jalankan 2x atau dapat menggunakan `cd ../../..`

6. Copy, rename dan delete file

```
praktikan@pc-praktikan:~$ ls
Desktop  Downloads  Pictures  snap      Videos
Documents Music      Public   Templates
praktikan@pc-praktikan:~$ cp /proc/cpuinfo /home/praktikan
praktikan@pc-praktikan:~$ ls
cpuinfo  Documents  Music      Public  Templates
Desktop  Downloads  Pictures  snap    Videos
praktikan@pc-praktikan:~$
```

- a.
- b. Dapat di lihat pada screenshot dengan ls kita dapat melihat kalau cpuinfo sudah di copy

```
praktikan@pc-praktikan:~$ ls
cpuinfo  Documents  Music      Public  Templates
Desktop  Downloads  Pictures  snap    Videos
praktikan@pc-praktikan:~$ cp /proc/uptime /home/praktikan
praktikan@pc-praktikan:~$ ls
cpuinfo  Documents  Music      Public  Templates  Videos
Desktop  Downloads  Pictures  snap    uptime
praktikan@pc-praktikan:~$
```

- c.
- d. Pada screenshot di atas dapat di lihat melalui ls
- e. Menghapus uptime

```
praktikan@pc-praktikan:~$ ls
cpuinfo  Documents  Music      Public  Templates  Videos
Desktop  Downloads  Pictures  snap    uptime
praktikan@pc-praktikan:~$ rm uptime
rm: remove write-protected regular file 'uptime'? Y
praktikan@pc-praktikan:~$ ls
cpuinfo  Documents  Music      Public  Templates
Desktop  Downloads  Pictures  snap    Videos
praktikan@pc-praktikan:~$
```

- f. Dapat dilihat pada screenshot di atas sudah di hapus dan di buktikan dengan perintah ls

```
praktikan@pc-praktikan:~$ ls
cpuinfo  Documents  Music      Public  Templates
Desktop  Downloads  Pictures  snap    Videos
praktikan@pc-praktikan:~$ mv cpuinfo infocpu
praktikan@pc-praktikan:~$ ls
Desktop  Downloads  Music      Public  Templates
Documents infocpu    Pictures  snap    Videos
praktikan@pc-praktikan:~$
```

- g.
- Menggunakan perintah mv seperti pada screenshot

## 7. Make Directory

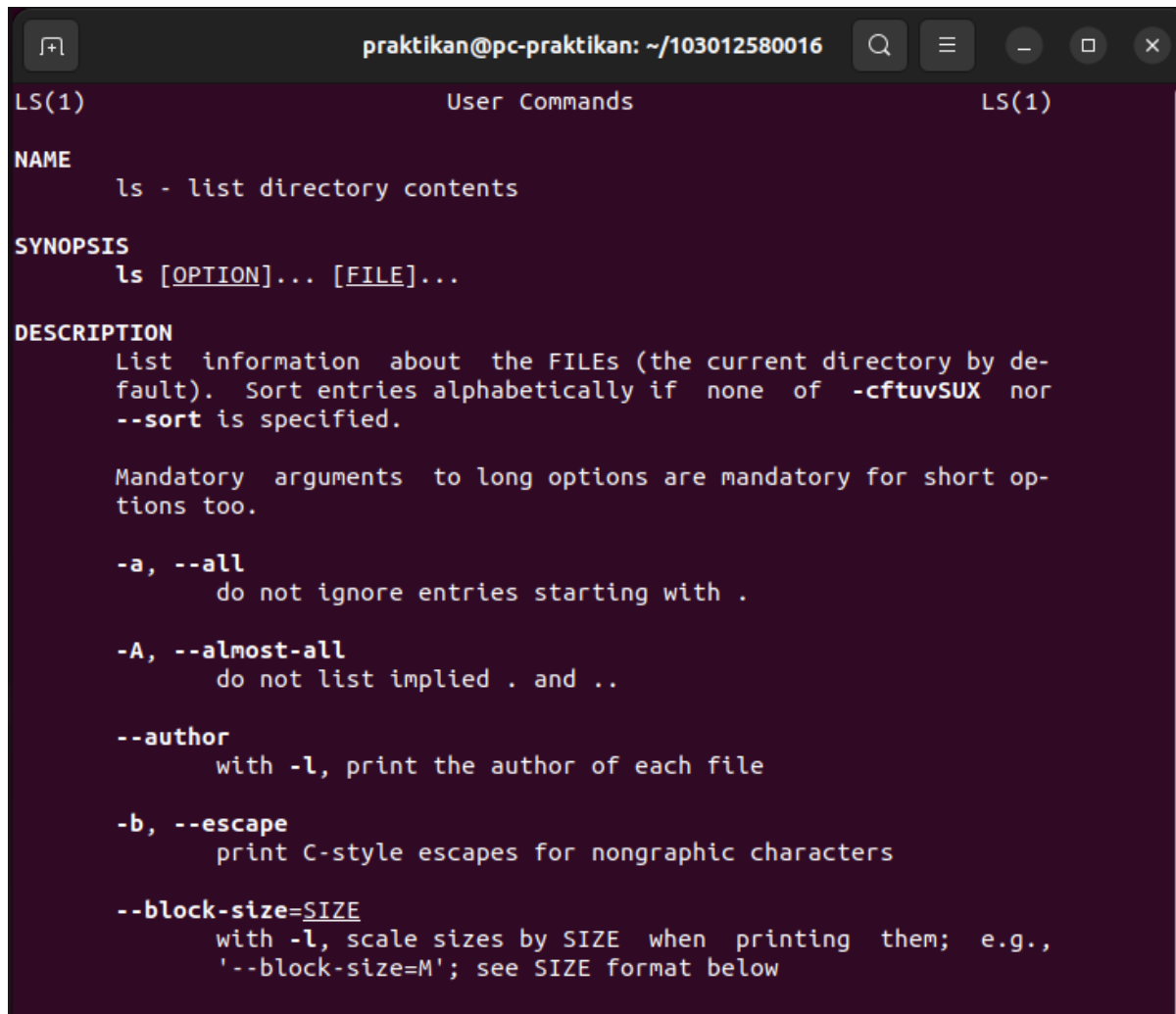
```
praktikan@pc-praktikan:~$ ls
Desktop  Downloads  Music      Public    Templates
Documents infocpu    Pictures   snap      Videos
praktikan@pc-praktikan:~$ mkdir 103012580016
praktikan@pc-praktikan:~$ ls
103012580016 Documents infocpu  Pictures snap      Videos
Desktop     Downloads Music    Public   Templates
praktikan@pc-praktikan:~$
```

a.

```
praktikan@pc-praktikan:~$ ls
103012580016 Documents infocpu  Pictures snap      Videos
Desktop     Downloads Music    Public   Templates
praktikan@pc-praktikan:~$ mkdir 103012580016/brindawan
praktikan@pc-praktikan:~$ ls
103012580016 Documents infocpu  Pictures snap      Videos
Desktop     Downloads Music    Public   Templates
praktikan@pc-praktikan:~$ cd 103012580016/
praktikan@pc-praktikan:~/103012580016$ ls
brindawan
praktikan@pc-praktikan:~/103012580016$
```

b.

## 8. Membaca manual



```
praktikan@pc-praktikan: ~/103012580016
LS(1)                                User Commands                                LS(1)

NAME
  ls - list directory contents

SYNOPSIS
  ls [OPTION]... [FILE]...

DESCRIPTION
  List information about the FILES (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

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

  -a, --all
      do not ignore entries starting with .

  -A, --almost-all
      do not list implied . and ..

  --author
      with -l, print the author of each file

  -b, --escape
      print C-style escapes for nongraphic characters

  --block-size=SIZE
      with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below
```

- Dengan “man ls” atau manual list storage
- Dalam “man ls” di jelaskan fungsi dari ls adalah “list directory content” atau direktori apa saja yang ada dalam path ini
- Richard M. Stallman dan David MacKenzie
- Argumen -h untuk human readable
- Dengan -R



```

CP(1)                                User Commands                                CP(1)

NAME
    cp - copy files and directories

SYNOPSIS
    cp [OPTION]... [-I] SOURCE DEST
    cp [OPTION]... SOURCE... DIRECTORY
    cp [OPTION]... -t DIRECTORY SOURCE...

DESCRIPTION
    Copy SOURCE to DEST, or multiple SOURCE(s) to DIRECTORY.

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

    -a, --archive
        same as -dR --preserve=all

```

- f.
- g. Fungsinya untuk copy dari source/sumber ke destiny/tujuan, dapan juga dari multiple source/sumber
- h. Torbjor Grandlud, David MacKenzie, dan Jim Meyering

```

-v, --verbose
    explain what is being done

```

i.

Atau

```

praktikan@pc-praktikan:~$ cp /proc/cpuinfo /home/praktikan -v
'/proc/cpuinfo' -> '/home/praktikan/cpuinfo'
praktikan@pc-praktikan:~$ ls
103012580016 Desktop Downloads Music Public Templates
cpuinfo Documents infocpu Pictures snap Videos
praktikan@pc-praktikan:~$

```

- j. Dengan -i

## 9. Pipe

```

praktikan@pc-praktikan:/$ cat /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:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin

```

- a.
- b. Print isi dari file



- ```
praktikan@pc-praktikan:/$ cat /etc/passwd | grep daemon
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
```
- c.
- ```
praktikan@pc-praktikan:/$ cat /etc/passwd | grep root
root:x:0:0:root:/root:/bin/bash
nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
```
- d.
- ```
praktikan@pc-praktikan:/$
```
- e.
- ```
praktikan@pc-praktikan:/$ cat /etc/passwd | grep nobody
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
```
- f.

## 10. Redirection

- ```
praktikan@pc-praktikan:/$ cd /
praktikan@pc-praktikan:/$ ls -al > /home/praktikan/result.txt
praktikan@pc-praktikan:/$ cat > /home/praktikan/result.txt
^C
praktikan@pc-praktikan:/$ cat /home/praktikan/result.txt
praktikan@pc-praktikan:/$ ls -al > /home/praktikan/result.txt
praktikan@pc-praktikan:/$ cat /home/praktikan/result.txt
total 84
drwxr-xr-x 20 root root 4096 Agu 6 2024 .
drwxr-xr-x 20 root root 4096 Agu 6 2024 ..
lrwxrwxrwx 1 root root 7 Agu 6 2024 bin -> usr/bin
```
- a.

Menyimpan hasil ls -al di simpan pada result.txt

- b. Berada di home/praktikan

```

praktikan@pc-praktikan:/$ cd /etc
praktikan@pc-praktikan:/etc$ ls -al > /home/praktikan/result.txt
praktikan@pc-praktikan:/etc$ cat /home/praktikan/result.txt
total 1156
drwxr-xr-x 130 root root 12288 Jul 30 16:48 .
drwxr-xr-x 20 root root 4096 Agu 6 2024 ..
drwxr-xr-x 3 root root 4096 Feb 21 2024 acpi
-rw-r--r-- 1 root root 3028 Feb 21 2024 adduser.conf
drwxr-xr-x 3 root root 4096 Feb 21 2024 alsa
drwxr-xr-x 2 root root 4096 Jul 30 16:48 alternatives
-rw-r--r-- 1 root root 335 Mar 23 2022 anacrontab
-rw-r--r-- 1 root root 433 Mar 23 2022 apg.conf
drwxr-xr-x 5 root root 4096 Feb 21 2024 apm
drwxr-xr-x 3 root root 4096 Jul 30 16:24 apparmor
drwxr-xr-x 8 root root 4096 Jul 30 16:28 apparmor.d
drwxr-xr-x 4 root root 4096 Jul 30 16:25 appport
-rw-r--r-- 1 root root 769 Feb 22 2022 appstream.conf
drwxr-xr-x 8 root root 4096 Jul 30 16:43 apt
drwxr-xr-x 3 root root 4096 Feb 21 2024 avahi

```

- c. Sama seperti sebelumnya, hanya isi file nya di replace

- d. Fungsi dari > adalah print

```

praktikan@pc-praktikan:/$ cd /
praktikan@pc-praktikan:/$ ls -al >> /home/praktikan/result1.txt
praktikan@pc-praktikan:/$ cat /home/praktikan/result1.txt
total 84
drwxr-xr-x 20 root root 4096 Agu 6 2024 .
drwxr-xr-x 20 root root 4096 Agu 6 2024 ..
lrwxrwxrwx 1 root root 7 Agu 6 2024 bin -> usr/bin
drwxr-xr-x 4 root root 4096 Jul 31 12:38 boot
drwxrwxr-x 2 root root 4096 Agu 6 2024 cdrom
drwxr-xr-x 20 root root 4220 Des 9 09:44 dev
drwxr-xr-x 130 root root 12288 Jul 30 16:48 etc
drwxr-xr-x 3 root root 4096 Agu 6 2024 home
lrwxrwxrwx 1 root root 7 Agu 6 2024 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Agu 6 2024 lib32 -> usr/lib32
lrwxrwxrwx 1 root root 9 Agu 6 2024 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 10 Agu 6 2024 libx32 -> usr/libx32
drwx----- 2 root root 16384 Agu 6 2024 lost+found
drwxr-xr-x 2 root root 4096 Feb 21 2024 media
drwxr-xr-x 2 root root 4096 Feb 21 2024 mnt

```

- e.

```

praktikan@pc-praktikan:/etc$ ls -al >> /home/praktikan/result1.txt
praktikan@pc-praktikan:/etc$ cat /home/praktikan/result1.txt
total 84
drwxr-xr-x  20 root root  4096 Agu  6  2024 .
drwxr-xr-x  20 root root  4096 Agu  6  2024 ..
lrwxrwxrwx   1 root root    7 Agu  6  2024 bin -> usr/bin
drwxr-xr-x   4 root root  4096 Jul 31 12:38 boot
drwxrwxr-x   2 root root  4096 Agu  6  2024 cdrom
drwxr-xr-x  20 root root 4220 Des  9 09:44 dev
drwxr-xr-x 130 root root 12288 Jul 30 16:48 etc
drwxr-xr-x   3 root root  4096 Agu  6  2024 home
lrwxrwxrwx   1 root root    7 Agu  6  2024 lib -> usr/lib
lrwxrwxrwx   1 root root    9 Agu  6  2024 lib32 -> usr/lib32
lrwxrwxrwx   1 root root    9 Agu  6  2024 lib64 -> usr/lib64
lrwxrwxrwx   1 root root   10 Agu  6  2024 libx32 -> usr/libx32
drwx-----  2 root root 16384 Agu  6  2024 lost+found
drwxr-xr-x   2 root root  4096 Feb 21  2024 media
drwxr-xr-x   2 root root  4096 Feb 21  2024 mnt
drwxr-xr-x   2 root root  4096 Feb 21  2024 opt

```

f.

g. Perbedaan > dan >>, jika > maka replace, dan >> menambahkan

11. Waktu tidak cukuppppp kebanyakan awkawkawk