

- What is the difference between `cat` and `more` command?
`cat` : is a command to show all content of a file.
`more` : is a command to show content of a file but screen by screen.

```
[Eng.mahmoud@mahmoud ~]$ cat file1  
dfklnsdln ,.fnmsdkl
```

```
sdfgfdg
```

```
[Eng.mahmoud@mahmoud ~]$ more file1  
dfklnsdln ,.fnmsdkl
```

```
sdfgfdg
```

```
--More-- (82%)
```

- What is the difference between `rm` and `rmdir` using `man`?

rm : a command to remove a file and can remove directory by option (-d)

rmdir : a command to remove empty directory

```
[Eng.mahmoud@mahmoud ~]$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$ mkdir mamoud
[Eng.mahmoud@mahmoud ~]$ ls
Desktop Documents Downloads mamoud Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$ rm -d mamoud
[Eng.mahmoud@mahmoud ~]$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$ mkd
mkdict mkdir mkdosfs mkdumprd
[Eng.mahmoud@mahmoud ~]$ mkdir mahmoud
[Eng.mahmoud@mahmoud ~]$ ls
Desktop Documents Downloads mahmoud Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$ rmdir mahmoud
[Eng.mahmoud@mahmoud ~]$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$
```

- Create the following hierarchy under your home directory

```
[Eng.mahmoud@mahmoud ~]$ pwd
/home/Eng.mahmoud
[Eng.mahmoud@mahmoud ~]$ mkdir -p dir1/dir11 dir1/dir12 docs
[Eng.mahmoud@mahmoud ~]$ ls
Desktop dir1 docs Documents Downloads Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$ ls dir1
dir11 dir12
[Eng.mahmoud@mahmoud ~]$ touch dir1/dir11/file1 docs/mycv
[Eng.mahmoud@mahmoud ~]$ ls dir1/dir11
file1
[Eng.mahmoud@mahmoud ~]$ ls docs
mycv
```

a- Remove `dir11` in one-step. What did you notice?

And how did you overcome that?

```
[Eng.mahmoud@mahmoud ~]$ rmdir dir1/dir11
rmdir: failed to remove 'dir1/dir11': Directory not empty
[Eng.mahmoud@mahmoud ~]$ rm -r dir1/dir11
[Eng.mahmoud@mahmoud ~]$ ls dir1
dir12
```

b- Then remove `dir12` using `rmdir -p` command. State what happened to the hierarchy (Note: you are in your home directory).

```
[Eng.mahmoud@mahmoud ~]$ ls
Desktop dir1 docs Documents Downloads Music Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$ ls dir1
dir12
[Eng.mahmoud@mahmoud ~]$ rmdir -p dir1/dir12
[Eng.mahmoud@mahmoud ~]$ ls
Desktop docs Documents Downloads Music Pictures Public Templates Videos
```

c- The output of the command `pwd` was `/home /user`.

Write the absolute and relative path for the file `mycv`.

```
[Eng.mahmoud@mahmoud ~]$ pwd
/home/Eng.mahmoud
[Eng.mahmoud@mahmoud ~]$ cd /home/Eng.mahmoud/docs/
[Eng.mahmoud@mahmoud docs]$ pwd
/home/Eng.mahmoud/docs
[Eng.mahmoud@mahmoud docs]$ ls
mycv
[Eng.mahmoud@mahmoud docs]$ cd
[Eng.mahmoud@mahmoud ~]$ pwd
/home/Eng.mahmoud
[Eng.mahmoud@mahmoud ~]$ cd docs
[Eng.mahmoud@mahmoud docs]$ pwd
/home/Eng.mahmoud/docs
[Eng.mahmoud@mahmoud docs]$ ls
mycv
[Eng.mahmoud@mahmoud docs]$
```

- Copy the `/etc/passwd` file to your home directory making its name is `mypasswd`.

```
[Eng.mahmoud@mahmoud bin]$ cd
[Eng.mahmoud@mahmoud ~]$ cp /etc/passwd mypasswd
[Eng.mahmoud@mahmoud ~]$ ls
Desktop docs Documents Downloads Music mypasswd Pictures Public Templates Videos
[Eng.mahmoud@mahmoud ~]$
```

- Rename this new file to be `oldpasswd`.

```
[Eng.mahmoud@mahmoud ~]$ mv mypasswd oldpasswd
[Eng.mahmoud@mahmoud ~]$ ls
Desktop docs Documents Downloads Music oldpasswd Pictures Public Templates Videos
```

- You are in `/usr/bin`, list four ways to go to your home directory

```
[Eng.mahmoud@mahmoud ~]$ cd /usr/bin
[Eng.mahmoud@mahmoud bin]$ pwd
/usr/bin
[Eng.mahmoud@mahmoud bin]$ cd /home
[Eng.mahmoud@mahmoud home]$ cd Eng.mahmoud
[Eng.mahmoud@mahmoud ~]$ cd /usr/bin
[Eng.mahmoud@mahmoud bin]$ cd
[Eng.mahmoud@mahmoud ~]$ cd -
/usr/bin
[Eng.mahmoud@mahmoud bin]$ cd /home/Eng.mahmoud
[Eng.mahmoud@mahmoud ~]$ cd -
/usr/bin
[Eng.mahmoud@mahmoud bin]$ cd ../../home/Eng.mahmoud
```

- List Linux commands in `/usr/bin` that start with letter w

```
[Eng.mahmoud@mahmoud ~]$ ls /usr/bin/w*
/usr/bin/w          /usr/bin/wavpack  /usr/bin/whereis  /usr/bin/wnck-urgency-monitor  /usr/bin/wvunpack
/usr/bin/wait       /usr/bin/wc       /usr/bin/which    /usr/bin/word-list-compress
/usr/bin/wall       /usr/bin/wdctl    /usr/bin/whiptail /usr/bin/write
/usr/bin/watch      /usr/bin/wget     /usr/bin/who      /usr/bin/wvgain
/usr/bin/watchgnupg /usr/bin/whatis   /usr/bin/whoami   /usr/bin/wvtag
[Eng.mahmoud@mahmoud ~]$
```

- Display the first 4 lines of `/etc/passwd`

```
[Eng.mahmoud@mahmoud ~]$ head -4 /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
```

- Display the last 7 lines of `/etc/passwd`

```
[Eng.mahmoud@mahmoud ~]$ tail -7 /etc/passwd
colord:x:976:976:User for colord:/var/lib/colord:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
gdm:x:42:42:./var/lib/gdm:/sbin/nologin
gnome-initial-setup:x:975:975:./run/gnome-initial-setup:/sbin/nologin
tcpdump:x:72:72:./:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/ssh:/sbin/nologin
Eng.mahmoud:x:1000:1000:mahmoud hassan:/home/Eng.mahmoud:/bin/bash
[Eng.mahmoud@mahmoud ~]$
```

- Display the man pages of `passwd` the command and the file sequentially in one command.

```
[Eng.mahmoud@mahmoud ~]$ man -s1 passwd;man -s5 passwd
```

```
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PASSWD(1) User utilities PASSWD(1)

NAME
passwd - update user's authentication tokens

SYNOPSIS
passwd [-k] [-l] [-u [-f]] [-d] [-e] [-n mindays] [-x maxdays] [-w warndays] [-i inactivedays]
[-S] [--stdin] [-?] [--usage] [username]

DESCRIPTION
The passwd utility is used to update user's authentication token(s).

This task is achieved through calls to the Linux-PAM and Libuser API. Essentially, it initial-
izes itself as a "passwd" service with Linux-PAM and utilizes configured password modules to
authenticate and then update a user's password.

A simple entry in the global Linux-PAM configuration file for this service would be:

#
# passwd service entry that does strength checking of
# a proposed password before updating it.
#
passwd password requisite pam_cracklib.so retry=3
passwd password required pam_unix.so use_authtok
#

Manual page passwd(1) line 1 (press h for help or q to quit)
```

```
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PASSWD(5) Linux Programmer's Manual PASSWD(5)

NAME
passwd - password file

DESCRIPTION
The /etc/passwd file is a text file that describes user login accounts for the system. It
should have read permission allowed for all users (many utilities, like ls(1) use it to map
user IDs to usernames), but write access only for the superuser.

In the good old days there was no great problem with this general read permission. Everybody
could read the encrypted passwords, but the hardware was too slow to crack a well-chosen pass-
word, and moreover the basic assumption used to be that of a friendly user-community. These
days many people run some version of the shadow password suite, where /etc/passwd has an 'x'
character in the password field, and the encrypted passwords are in /etc/shadow, which is read-
able by the superuser only.

If the encrypted password, whether in /etc/passwd or in /etc/shadow, is an empty string, login
is allowed without even asking for a password. Note that this functionality may be intention-
ally disabled in applications, or configurable (for example using the "nullok" or "nonull"
arguments to pam_unix.so).

If the encrypted password in /etc/passwd is "*NP*" (without the quotes), the shadow record
should be obtained from an NIS+ server.

Manual page passwd(5) line 1 (press h for help or q to quit)
```

- Display the man page of the passwd file

```
[Eng.mahmoud@mahmoud ~]$ man -s5 passwd
```

```
Activities Terminal Nov 22 10:35 PM Eng.mahmoud@localhost-
File Edit View Search Terminal Help
PASSWD(5) Linux Programmer's Manual PASSWD(5)

NAME
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    If the encrypted password in /etc/passwd is "*NP*" (without the quotes), the shadow record should be obtained from an NIS+ server.

Manual page passwd(5) line 1 (press h for help or q to quit)
```

- Display a list of all the commands that contain the keyword `passwd` in their man page.

```
[Eng.mahmoud@mahmoud ~]$ man -k passwd
chgpaswd (8) - update group passwords in batch mode
chpasswd (8) - update passwords in batch mode
fgetpwent_r (3) - get passwd file entry reentrantly
getpwent_r (3) - get passwd file entry reentrantly
gpaswd (1) - administer /etc/group and /etc/gshadow
grub2-mkpasswd-pbkdf2 (1) - Generate a PBKDF2 password hash.
lpaswd (1) - Change group or user password
openssl-passwd (1ssl) - compute password hashes
pam_localuser (8) - require users to be listed in /etc/passwd
passwd (1) - update user's authentication tokens
passwd (5) - password file
passwd2des (3) - RFS password encryption
pwhistory_helper (8) - Helper binary that transfers password hashes from passwd or shadow to opaswd
saslpaswd2 (8) - set a user's sasl password
smbpasswd (5) - The Samba encrypted password file
sslpaswd (1ssl) - compute password hashes
userpasswd (1) - A graphical tool to allow users to change their passwords.
vncpasswd (1) - change the VNC password
```