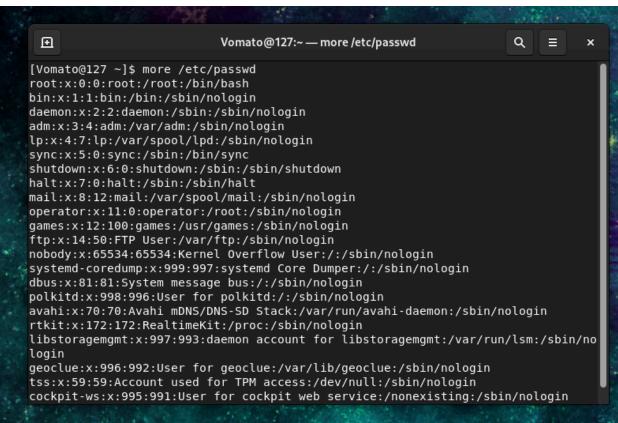1- The difference between cat and more command:
more prints out text enabling paging through each page at a time
cat prints out the text of files or multiple files its man page says it concatenates files to standard
output which in case of not having anything in stdout it contacts and prints it no nothing

```
[Vomato@127 ~]$ cat /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
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:998:996:User for polkitd:/:/sbin/nologin
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin
libstoragemgmt:x:997:993:daemon account for libstoragemgmt:/var/run/lsm:/sbin/no
```

```
Vomato@127:~ — more /etc/passwd                    Q  ≡  ×

[Vomato@127 ~]$ more /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
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:998:996:User for polkitd:/:/sbin/nologin
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin
libstoragemgmt:x:997:993:daemon account for libstoragemgmt:/var/run/lsm:/sbin/no
login
geoclue:x:996:992:User for geoclue:/var/lib/geoclue:/sbin/nologin
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin
cockpit-ws:x:995:991:User for cockpit web service:/nonexisting:/sbin/nologin
```

2- what is the difference between rmdir and rm

rm is the command for removing files or directories either empty or full directories as well as specifying empty dirs by -d

rmdir is specifically sued for removing empty dirs

```
[Vomato@127 ~]$ ls
bla   Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
[Vomato@127 ~]$ mkdir test_file
[Vomato@127 ~]$ ls
bla         Documents  Music      Public      test_file
Desktop  Downloads  Pictures  Templates  Videos
[Vomato@127 ~]$ rmdir test_file
[Vomato@127 ~]$ ls
bla   Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
[Vomato@127 ~]$
```

Rmdir cant remove a folder with files inside

```
[Vomato@127 ~]$ rmdir test_file
[Vomato@127 ~]$ ls
bla   Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
[Vomato@127 ~]$ mkdir test_file
[Vomato@127 ~]$ touch ./test_file/hello.txt
[Vomato@127 ~]$ rmdir test_file
rmdir: failed to remove 'test_file': Directory not empty
[Vomato@127 ~]$
```

Rmdir -p removes a folder with all its parents

```
[Vomato@127 dir1]$ cd ..
[Vomato@127 ~]$ ls dir1
dir12
[Vomato@127 ~]$ ls
bla  Desktop  dir1  docs  Documents  Downloads  man.txt  Music  oldpasswd  Pictures  Public  Templates  Videos
[Vomato@127 ~]$ rmdir -p dir1/dir12
[Vomato@127 ~]$ ls
bla  Desktop  docs  Documents  Downloads  man.txt  Music  oldpasswd  Pictures  Public  Templates  Videos
[Vomato@127 ~]$
```

4-make the current hierarchy in your home

```
[Vomato@127 ~]$ man mkdir
[Vomato@127 ~]$ mkdir -p dir1/dir11 dir1/dir12
[Vomato@127 ~]$ touch dir1/dir11/file1
[Vomato@127 ~]$ mkdir docs
[Vomato@127 ~]$ touch docs/mycv
[Vomato@127 ~]$ ls
bla       dir1  Documents  Music      Public     Videos
Desktop  docs  Downloads  Pictures  Templates
[Vomato@127 ~]$ cd dir1
[Vomato@127 dir1]$ ls
dir11   dir12
[Vomato@127 dir1]$ cd ..
[Vomato@127 ~]$ cd docs
[Vomato@127 docs]$ lss
bash: lss: command not found...
Similar command is: 'ls'
[Vomato@127 docs]$ ls
mycv
[Vomato@127 docs]$
```

4-a remove the dir11 using one command and what were your hurdles and how did you overcome it?

```
[Vomato@127 ~]$ rmdir dir1/dir11
rmdir: failed to remove 'dir1/dir11': Directory not empty
[Vomato@127 ~]$ rm -r dir1/dir11
```

Removing it right away is by typing its relative path to me in my home using rmdir wasnt valid since dir11 wasnt empty using rm -r was the correct option

4-b removing dir12 using the rm -p command
Well -p isnt an option for rm and if we want to remove an empty directory we can specify that using -d

```
[Vomato@127 ~]$ rm -d dir1/dir12
[Vomato@127 ~]$ cd dir1
[Vomato@127 dir1]$ ls
[Vomato@127 dir1]$
```

4-c write the path to docs relative and absolute and pwd

```
[Vomato@127 dir1]$ ls
[Vomato@127 dir1]$ pwd
/home/Vomato/dir1
[Vomato@127 dir1]$
```

the relative path would be ./docs/mycv the absolute path would be ~/docs/mycv since i am standing in my home directory they look pretty much the same

5- copying /etc/passwd to mypasswd

```
/home/Vomato/dir1
[Vomato@127 dir1]$ cp /etc/passwd ~/mypasswd
[Vomato@127 dir1]$ ls
[Vomato@127 dir1]$ cd ~
[Vomato@127 ~]$ ls
bla        dir1  Documents  Music      Pictures  Templates
Desktop  docs  Downloads  mypasswd  Public    Videos
```

6- renaming mypasswd to oldpasswd

```
[Vomato@127 ~]$ mv ./mypasswd oldpasswd
[Vomato@127 ~]$ ls
bla        dir1  Documents  Music      Pictures  Templates
Desktop  docs  Downloads  oldpasswd  Public    Videos
[Vomato@127 ~]$
```

7- 4 ways to go to home from /usr/bin
Manually checking where it is

```
[Vomato@127 bin]$ cd ..
[Vomato@127 usr]$ ls
bin  doc  games  include  lib  lib64  libexec  local  sbin  share  src  tmp
[Vomato@127 usr]$
[Vomato@127 usr]$ cd ..
[Vomato@127 /]$ s
bash: s: command not found...
[Vomato@127 /]$ ls
afs  boot  etc  home  lib64  mnt  proc  run   srv  tmp  var
bin  dev   ftp  lib    media  opt  root  sbin  sys  usr
[Vomato@127 /]$ cd home
[Vomato@127 home]$ ls
ftpuser  iredadmin  iredapd  vmail  Vomato
[Vomato@127 home]$ cd Vomato
[Vomato@127 ~]$ ls
bla        dir1  Documents  Music      Pictures  Templates
Desktop  docs  Downloads  oldpasswd  Public    Videos
[Vomato@127 ~]$
```

After knowing where it is you can go simply by typing this

```
[Vomato@127 bin]$ cd ../../home/Vomato
[Vomato@127 ~]$ ls
bla      dir1  Documents  Music      Pictures  Templates
Desktop  docs  Downloads  oldpasswd  Public    Videos
[Vomato@127 ~]$
```

Simply using the telda to go to the home dir

```
[Vomato@127 ~]$ cd /usr/bin
[Vomato@127 bin]$ cd ~
[Vomato@127 ~]$ pwd
/home/Vomato
[Vomato@127 ~]$
```

Finally using - to get back to home if i have been there before navigating to usr/bin in which i indeed have been

```
[Vomato@127 ~]$ cd /usr/bin
[Vomato@127 bin]$ cd ~
[Vomato@127 ~]$ pwd
/home/Vomato
[Vomato@127 ~]$ cd -
/usr/bin
[Vomato@127 bin]$ cd -
/home/Vomato
```

8- list linux commands that start with w

```
[Vomato@127 ~]$ cd /usr/bin
[Vomato@127 bin]$ ls w*
w         watchgnupg  wget          which       wireplumber            write
wait      wavpack     whatis        whiptail    wnck-urgency-monitor   wvgain
wall      wc          whatis.man-db who         wpctl                  wvtag
watch     wdctl       whereis       whoami      wpexec                 wvunpack
[Vomato@127 bin]$
```

9- list 4 lines of /etc/passwd

```
head: cannot open '/etc/pass' for reading: No such file or directory
[Vomato@127 bin]$ 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
[Vomato@127 bin]$
```

10- list last 7 lines of /etc/passwd

```
[Vomato@127 bin]$ tail -7 /etc/passwd
amavis:x:973:972:Amavis email content filter:/var/spool/amavisd:/usr/sbin/nol
n
postgres:x:26:26:PostgreSQL Server:/var/lib/pgsql:/bin/bash
saslauth:x:972:76:Saslauthd user:/run/saslauthd:/sbin/nologin
mlmmj:x:971:971:mlmmj user:/var/spool/mlmmj:/sbin/nologin
vmail:x:2000:2000::/home/vmail:/sbin/nologin
iredadmin:x:2001:2001::/home/iredadmin:/sbin/nologin
iredapd:x:2002:2002::/home/iredapd:/sbin/nologin
[Vomato@127 bin]$
```

11- man of passwd followed by a cat of passwd

```
[Vomato@127 bin]$ man passwd; cat /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
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:998:996:User for polkitd:/:/sbin/nologin
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin
libstoragemgmt:x:997:993:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin
geoclue:x:996:992:User for geoclue:/var/lib/geoclue:/sbin/nologin
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin
cockpit-ws:x:995:991:User for cockpit web service:/nonexisting:/sbin/nologin
cockpit-wsinstance:x:994:990:User for cockpit-ws instances:/nonexisting:/sbin/nologin
colord:x:993:989:User for colord:/var/lib/colord:/sbin/nologin
sssd:x:992:988:User for sssd:/:/sbin/nologin
setroubleshoot:x:991:987:SELinux troubleshoot server:/var/lib/setroubleshoot:/sbin/nologin
pipewire:x:990:986:PipeWire System Daemon:/var/run/pipewire:/sbin/nologin
flatpak:x:989:985:User for flatpak system helper:/:/sbin/nologin
clevis:x:988:984:Clevis Decryption Framework unprivileged user:/var/cache/clevis:/usr/sbin/nologin
gdm:x:42:42::/var/lib/gdm:/sbin/nologin
gnome-initial-setup:x:987:982::/run/gnome-initial-setup/:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
chrony:x:986:981::/var/lib/chrony:/sbin/nologin
dnsmasq:x:985:980:Dnsmasq DHCP and DNS server:/var/lib/dnsmasq:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
systemd-oom:x:978:978:systemd Userspace OOM Killer:/:/usr/sbin/nologin
Vomato:x:1000:1000:Vomato:/home/Vomato:/bin/bash
ftpuser:x:1001:1001::/home/ftpuser:/bin/bash
dovecot:x:97:97:Dovecot IMAP server:/usr/libexec/dovecot:/sbin/nologin
dovenull:x:977:977:Dovecot - unauthorized user:/usr/libexec/dovecot:/sbin/nologin
postfix:x:89:89::/var/spool/postfix:/sbin/nologin
clamupdate:x:976:976:Clamav database update user:/var/lib/clamav:/sbin/nologin
clamscan:x:975:974:Clamav scanner user:/:/sbin/nologin
uwsgi:x:974:973:uWSGI daemon user:/run/uwsgi:/sbin/nologin
amavis:x:973:972:Amavis email content filter:/var/spool/amavisd:/usr/sbin/nologin
```
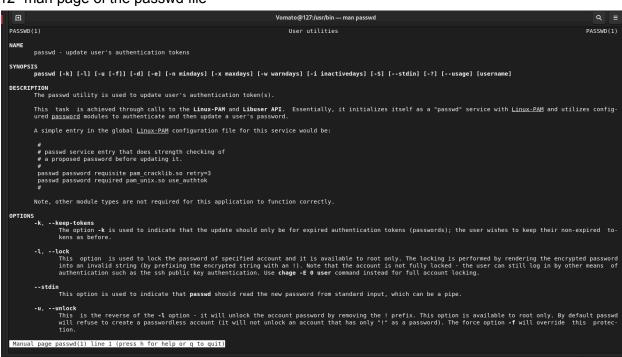
12- man page of the passwd file

```
                                    Vomato@127:/usr/bin — man passwd
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 initializes itself as a "passwd" service with Linux-PAM and utilizes config-
       ured 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
        #

       Note, other module types are not required for this application to function correctly.

OPTIONS
       -k, --keep-tokens
            The option -k is used to indicate that the update should only be for expired authentication tokens (passwords); the user wishes to keep their non-expired  to-
            kens as before.

       -l, --lock
            This  option  is used to lock the password of specified account and it is available to root only. The locking is performed by rendering the encrypted password
            into an invalid string (by prefixing the encrypted string with an !). Note that the account is not fully locked - the user can still log in by other means  of
            authentication such as the ssh public key authentication. Use chage -E 0 user command instead for full account locking.

       --stdin
            This option is used to indicate that passwd should read the new password from standard input, which can be a pipe.

       -u, --unlock
            This  is the reverse of the -l option - it will unlock the account password by removing the ! prefix. This option is available to root only. By default passwd
            will refuse to create a passwordless account (it will not unlock an account that has only "!" as a password). The force option -f will override  this  protec-
            tion.

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

13- search for all the mans that contains the keyword passwd
Either by using apropos to read them or man -K to search for them and read them

```
[Vomato@127 bin]$ apropos *passwd*
chgpasswd (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
gpasswd (1)            - administer /etc/group and /etc/gshadow
grub2-mkpasswd-pbkdf2 (1) - Generate a PBKDF2 password hash.
lpasswd (1)            - Change group or user password
openssl-passwd (1ossl) - compute password hashes
pam_localuser (8)      - require users to be listed in /etc/passwd
passwd (1)             - update user's authentication tokens
passwd (1ossl)         - OpenSSL application commands
passwd (5)             - password file
passwd2des (3)         - RFS password encryption
pwhistory_helper (8) - Helper binary that transfers password hashes from passwd or shadow to opasswd
saslpasswd2 (8)        - set a user's sasl password
smbpasswd (5)          - The Samba encrypted password file
[Vomato@127 bin]$ man -K *passwd*
--Man-- next: newgrp(1) [ view (return) | skip (Ctrl-D) | quit (Ctrl-C) ]
q^C
[Vomato@127 bin]$ ▊
```