Q10)Write a C program to mimic passwd command.
OUTPUTS:
NOTE: In the shadow file and passwd file text, the user I'm going to be doing changes on ,is in bigger font and is highlighted in BOLD.

shadow file

root:!:18349:0:99999:7:::
daemon:*:18113:0:99999:7:::
bin:*:18113:0:99999:7:::
sys:*:18113:0:99999:7:::
sync:*:18113:0:99999:7:::
games:*:18113:0:99999:7:::
man:*:18113:0:99999:7:::
lp:*:18113:0:99999:7:::
mail:*:18113:0:99999:7:::
news:*:18113:0:99999:7:::
uucp:*:18113:0:99999:7:::
proxy:*:18113:0:99999:7:::
www-data:*:18113:0:99999:7:::
backup:*:18113:0:99999:7:::
list:*:18113:0:99999:7:::
irc:*:18113:0:99999:7:::
gnats:*:18113:0:99999:7:::
nobody:*:18113:0:99999:7:::
systemd-network:*:18113:0:99999:7:::
systemd-resolve:*:18113:0:99999:7:::
syslog:*:18113:0:99999:7:::
messagebus:*:18113:0:99999:7:::
_apt:*:18113:0:99999:7:::
uuidd:*:18113:0:99999:7:::
avahi-autoipd:*:18113:0:99999:7:::
usbmux:*:18113:0:99999:7:::
dnsmasq:*:18113:0:99999:7:::
rtkit:*:18113:0:99999:7:::
cups-pk-helper:*:18113:0:99999:7:::
speech-dispatcher:!:18113:0:99999:7:::
whoopsie:*:18113:0:99999:7:::
kernoops:*:18113:0:99999:7:::
saned:*:18113:0:99999:7:::
pulse:*:18113:0:99999:7:::
avahi:*:18113:0:99999:7:::
colord:*:18113:0:99999:7:::
hplip:*:18113:0:99999:7:::
geoclue:*:18113:0:99999:7:::
gnome-initial-setup:*:18113:0:99999:7:::
gdm:*:18113:0:99999:7:::
akshay:dnvkdbjn456:18349:0:99999:7:::
vboxadd:!:18349::::::

passwd file

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:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106::/home/syslog:/usr/sbin/nologin
messagebus:x:103:107::/nonexistent:/usr/sbin/nologin
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:105:111::/run/uuidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:114:119::/var/lib/saned:/usr/sbin/nologin
pulse:x:115:120:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
avahi:x:116:122:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
geoclue:x:119:124::/var/lib/geoclue:/usr/sbin/nologin
gnome-initial-setup:x:120:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:121:125:Gnome Display Manager:/var/lib/gdm3:/bin/false

akshay:x:1000:1000:Akshay,,,:/home/akshay:/bin/bash

vboxadd:x:999:1::/var/run/vboxadd:/bin/false

CASE 1:
WHEN THE USERNAME ENTERED DOESNT EXIST


```
akshay@akshay-VirtualBox: ~/Assignment
File Edit View Search Terminal Help
akshay@akshay-VirtualBox:~/Assignment$ ./a aks
The user you want to change password for is: aks
USER NOT FOUND
akshay@akshay-VirtualBox:~/Assignment$
```

CASE 2:WHEN USER IS FOUND BUT CURRENT PASSWORD IS WRONG


```
akshay@akshay-VirtualBox: ~/Assignment
File Edit View Search Terminal Help
akshay@akshay-VirtualBox:~/Assignment$ ./a aks
The user you want to change password for is: aks
USER NOT FOUND
akshay@akshay-VirtualBox:~/Assignment$ ./a akshay
The user you want to change password for is: akshay
USER FOUND
Enter the current password: bce201394
Wrong password
akshay@akshay-VirtualBox:~/Assignment$
```

CASE 3: WHEN <u>USER IS FOUND AND CURRENT PASSWORD IS CORRECT</u>
The password must be within 8 and 12 characters long.


```
akshay@akshay-VirtualBox: ~/Assignment
File Edit View Search Terminal Help
akshay@akshay-VirtualBox:~/Assignment$ gedit client.c
akshay@akshay-VirtualBox:~/Assignment$ make -f p1.mk
gcc -c server.c
gcc -c client.c
gcc server.o client.o -o a
akshay@akshay-VirtualBox:~/Assignment$ ./a akshay
The user you want to change password for is: akshay
USER FOUND
Enter the current password: akshaygk123
Enter the new password: bce
Password length must be between 8 and 12 characters!
Enter the new password: bce201394
Confirm your password: bce201394
Password changed Succesfully!!

akshay@akshay-VirtualBox:~/Assignment$
```

Shadow file after this password change

root:!:18349:0:99999:7:::
daemon:*:18113:0:99999:7:::
bin:*:18113:0:99999:7:::
sys:*:18113:0:99999:7:::
sync:*:18113:0:99999:7:::
games:*:18113:0:99999:7:::
man:*:18113:0:99999:7:::
lp:*:18113:0:99999:7:::
mail:*:18113:0:99999:7:::
news:*:18113:0:99999:7:::
uucp:*:18113:0:99999:7:::
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systemd-resolve:*:18113:0:99999:7:::
syslog:*:18113:0:99999:7:::
messagebus:*:18113:0:99999:7:::
_apt:*:18113:0:99999:7:::
uuidd:*:18113:0:99999:7:::
avahi-autoipd:*:18113:0:99999:7:::
usbmux:*:18113:0:99999:7:::
dnsmasq:*:18113:0:99999:7:::
rtkit:*:18113:0:99999:7:::
cups-pk-helper:*:18113:0:99999:7:::
speech-dispatcher:!:18113:0:99999:7:::
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saned:*:18113:0:99999:7:::
pulse:*:18113:0:99999:7:::
avahi:*:18113:0:99999:7:::
colord:*:18113:0:99999:7:::
hplip:*:18113:0:99999:7:::
geoclue:*:18113:0:99999:7:::
gnome-initial-setup:*:18113:0:99999:7:::
gdm:*:18113:0:99999:7:::

akshay:efh5346<7:18349:0:99999:7:::
vboxadd:!:18349::::::

- **After the password changed from akshaygk123 to bce201394, the old encrpyted password is replaced by the encryption of bce201394.**

CASE 4: WHEN USER IS FOUND, CURRENT PASSWORD ENTERED CORRECTLY BUT WRONG TEXT ENTERED DURING CONFIRMING PASSWORD.

```
akshay@akshay-VirtualBox:~/Assignment$ ./a akshay
The user you want to change password for is: akshay
USER FOUND
Enter the current password: bce201394
Enter the new password: akshaygk123
Confirm your password: akshaygk


Not Matching! Please Enter the same password!
 akshay@akshay-VirtualBox:~/Assignment$
```

ERROR HANDLING IN THE PROGRAM:

One area where errors could occur in this program is while opening the files and for some reason if the file isnt opening, it is handled with suitable statements and errnn.h header file is being used for that.