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Problem Statement

Write a program in C to mimic the "passwd" command on Linux. This command will help the user to change the password. The encryption and decryption of the password is part of this project. You can use any simple encryption and decryption mechanism. The only argument is the name of the user for whom the password is being changed. This has to use 2 files passwd and shadow (You may need to create these 2 files so that the

encrypted password that is stored in the shadow file is as per the encryption/decryption

mechanism you have chosen.

Files before execution:

Passwd-

```
passwd - Notepad                              —    □    ×
File  Edit  Format  View  Help
root:x:0:0:root:/root:/bin/bash
Venkat:x:1:100:Venkat Raman:/home/Venkat:/bin/bash
Beena:x:2:100:Beena Ravi:/home/Beena:/bin/bash
Vignesh:x:3:100:Vignesh Raghu:/home/Vignesh:/bin/bash
Rakesh:x:4:100:Rakesh Kumar:/home/Rakesh:/bin/bash
```

Shadow-

shadow - Notepad

File   Edit   Format   View   Help

```
root:v44xY(7v:19063:0:99999:7:::
Venkat:z7rOD5:19063:0:99999:7:::
Beena:f7I=D:19063:0:99999:7:::
Vignesh:{5kRiw':19063:0:99999:7:::
Rakesh:Ywiv567:19063:0:99999:7:::
```

Executing program:

Case 1: Successful Run-

```
Command Prompt
Microsoft Windows [Version 10.0.18362.836]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\pradi>cd Documents\CProj

C:\Users\pradi\Documents\CProj>gcc server.c client.c

C:\Users\pradi\Documents\CProj>a
****Implementation of 'passwd' Linux command. Enter 'passwd' followed by user name to continue****

passwd Rakesh
Changing password for Rakesh
Current password:*******
Enter new password:**********
Re-enter new password:**********
 passwd: password successfully updated
C:\Users\pradi\Documents\CProj>_
```

```
Command Prompt

C:\Users\pradi\Documents\CProj>a
****Implementation of 'passwd' Linux command. Enter 'passwd' followed by user name to continue****

passwd root
Changing password for root
Current password:********
Enter new password:*******
Re-enter new password:*******
 passwd: password successfully updated
C:\Users\pradi\Documents\CProj>
```

Case 2:

Incorrect command/non existent user

```
Command Prompt

C:\Users\pradi\Documents\CProj>a
****Implementation of 'passwd' Linux command. Enter 'passwd' followed by user name to continue****

password Vignesh

Incorrect command/syntax. Program terminated.
C:\Users\pradi\Documents\CProj>a
****Implementation of 'passwd' Linux command. Enter 'passwd' followed by user name to continue****

passwd NewUser

User not found. Program terminated. (Refer User List file to see existing users)
C:\Users\pradi\Documents\CProj>
```

Case 3:

Incorrect existing password

```
Command Prompt

C:\Users\pradi\Documents\CProj>a
****Implementation of 'passwd' Linux command. Enter 'passwd' followed by user name to continue****

passwd Beena
Changing password for Beena
Current password:*****
Incorrect password. Prgram Terminated.
C:\Users\pradi\Documents\CProj>
```

Files after changing/execution:

Passwd:

```
passwd - Notepad
File  Edit  Format  View  Help
root:x:0:0:root:/root:/bin/bash
Venkat:x:1:100:Venkat Raman:/home/Venkat:/bin/bash
Beena:x:2:100:Beena Ravi:/home/Beena:/bin/bash
Vignesh:x:3:100:Vignesh Raghu:/home/Vignesh:/bin/bash
Rakesh:x:4:100:Rakesh Kumar:/home/Rakesh:/bin/bash
```

Shadow:

```
shadow - Notepad
File  Edit  Format  View  Help
root:Dv445Q7:19063:0:99999:7:::
Venkat:z7rOD5:19063:0:99999:7:::
Beena:f7I=D:19063:0:99999:7:::
Vignesh:{5kRiw':19063:0:99999:7:::
Rakesh:VeoiwlD567:19063:0:99999:7:::
```

Makefile:

Passwd.mk

```
passwd.mk
1    passwd:server.o client.o
2        gcc server.o client.o
3    server.o:server.c server.h
4        gcc -c server.c
5    client.c:client.c server.h
6        gcc -c client.c
```

Existing bugs:

Function strcmp() always returns 0 (Equal) even for different strings in file client.c , line 59

Constraints/Assumptions:

- User must exist in the passwd and shadow files (which have been synthetically made, as part of this project)
- Shadow file is accessible and not hidden as it ideally should be