

C Project

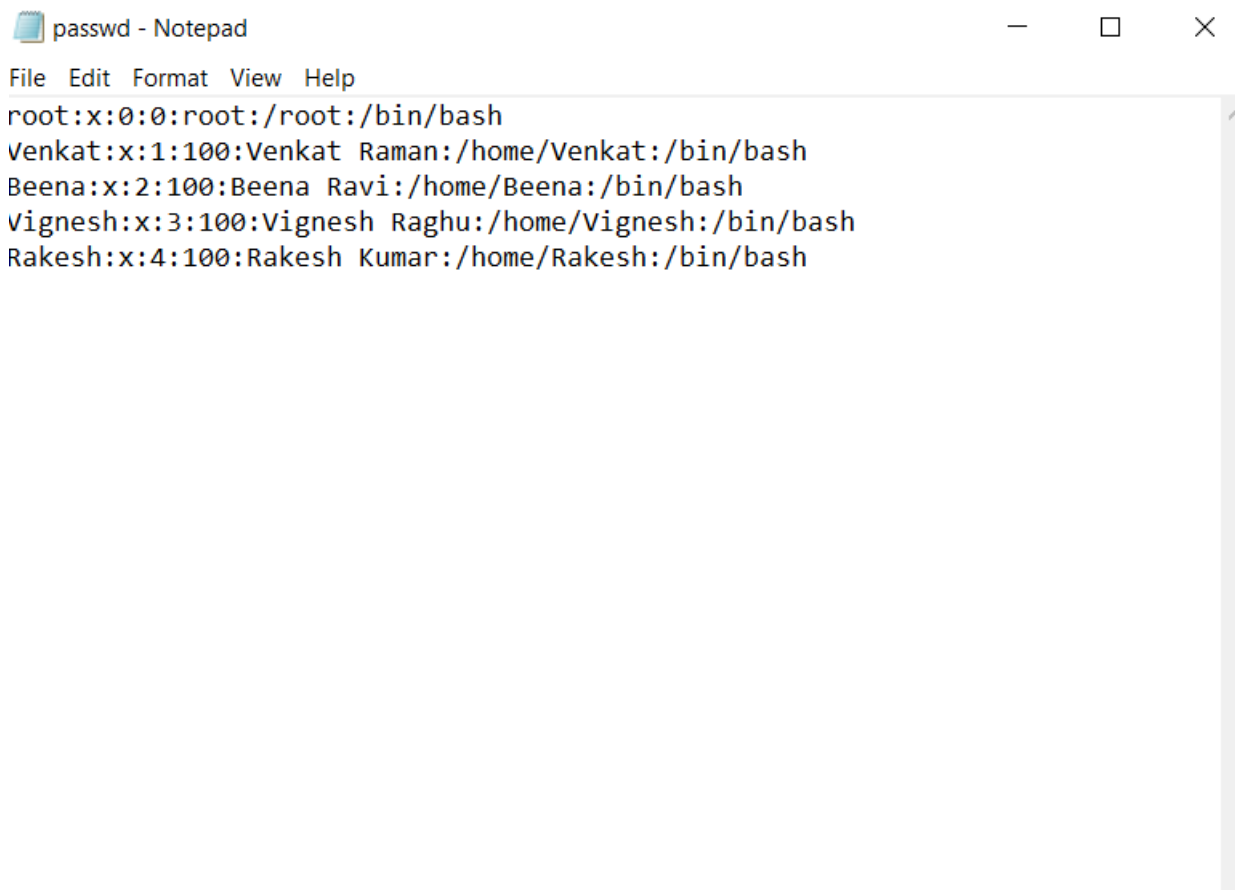
Pradish Kapur
PES2UG19CS286

Project #10

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-

```
C:\> 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>_
```

```
C:\> 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****

passwd 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. Program 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:Veoiw1D567:19063:0:99999:7:::
```

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