

# CSI4139 LAB 3 Report

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Task 1:

A

```
kkool@LAPTOP-LJRCBL6K:~$ more /etc/passwd
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:/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:/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:
/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/
nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/syste
md:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
kkool@LAPTOP-LJRCBL6K:~$ |
```

I used more to display the contents of the passwd file, such that it has its own sort of menu, taking up the screen. It seems like password contains whether or not there is a password for different folder or processes.

B

```
kkool@LAPTOP-LJRCBL6K:~$ more /etc/shadow
more: cannot open /etc/shadow: Permission denied
kkool@LAPTOP-LJRCBL6K:~$
```

I tried using more on the shadow file but I didn't have enough access.

C

```
kkool@LAPTOP-LJRCBL6K:~$ sudo more /etc/shadow
[sudo] password for kkool:
root:*:19683:0:99999:7:::
daemon:*:19683:0:99999:7:::
bin:*:19683:0:99999:7:::
sys:*:19683:0:99999:7:::
sync:*:19683:0:99999:7:::
games:*:19683:0:99999:7:::
man:*:19683:0:99999:7:::
lp:*:19683:0:99999:7:::
mail:*:19683:0:99999:7:::
news:*:19683:0:99999:7:::
uucp:*:19683:0:99999:7:::
proxy:*:19683:0:99999:7:::
www-data:*:19683:0:99999:7:::
backup:*:19683:0:99999:7:::
list:*:19683:0:99999:7:::
irc:*:19683:0:99999:7:::
gnats:*:19683:0:99999:7:::
nobody:*:19683:0:99999:7:::
systemd-network:*:19683:0:99999:7:::
systemd-resolve:*:19683:0:99999:7:::
messagebus:*:19683:0:99999:7:::
systemd-timesync:*:19683:0:99999:7:::
syslog:*:19683:0:99999:7:::
_apt:*:19683:0:99999:7:::
uuidd:*:19683:0:99999:7:::
tcpdump:*:19683:0:99999:7:::
kkool:$y$j9T$JRhM2FzAWaq3ueSnxCRqr/$9hMT3DsLemDruUjVtOmkyDB//ezcDlqQqJHjllnB7fC:1
9985:0:99999:7:::
postgres:$y$j9T$KSXtqYp0mH2yG/F3okM8D/$ciudC4rjXL7YsN6U/MKUd3W5Dkttsp0gWZtROHqnCl
2:19990:0:99999:7:::
kkool@LAPTOP-LJRCBL6K:~$
```

I tried the command again after using sudo, which gives me super user access, assuming you type in the password correctly.

Task 2:

Pt 1

A

```
kkool@LAPTOP-LJRCBL6K:~$ sudo apt-get install apache2-utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapr1 libaprutil1
The following NEW packages will be installed:
  apache2-utils libapr1 libaprutil1
```

B

```
kkool@LAPTOP-LJRCBL6K:~$ htpasswd -sc htpasswd-sha1 slice
New password:
Re-type new password:
Adding password for user slice
kkool@LAPTOP-LJRCBL6K:~$ htpasswd -s htpasswd-sha1 bob
New password:
Re-type new password:
Adding password for user bob
kkool@LAPTOP-LJRCBL6K:~$ htpasswd -s htpasswd-sha1 charlie
New password:
Re-type new password:
Adding password for user charlie
kkool@LAPTOP-LJRCBL6K:~$
```

C

```
kkool@LAPTOP-LJRCBL6K:~$ ls
ciphertext.txt      file.txt      postgresql-8.1.7
decrypted.txt       htpasswd-sha1 postgresql-8.1.7.tar
decrypted_file.txt  key.txt       test_file_to_encrypt.txt
encrypted_file.txt key_aes.txt
kkool@LAPTOP-LJRCBL6K:~$ cat htpasswd-sha1
slice:{SHA}2jmj7l5rSw0yVb/vlWAYkK/YBwk=
bob:{SHA}qUqP5cyxm6YcTAhz05Hph5gvu9M=
charlie:{SHA}xBl10drhzGmxatiJK4x3Fk6Eyjk=
kkool@LAPTOP-LJRCBL6K:~$ |
```

Pt 2

```
import subprocess
import time

def verify(user:str, password: str) -> bool:
    p = subprocess.run(f'htpasswd -b -v htpasswd-sha1 {user} {password}', shell=True)
    return p.returncode == 0

user = "charlie"
start = time.time()
with open('password_list.txt','rt') as f:

    for password in f.readlines():
        if verify(user, password) == True:
            end = time.time()
            print(f'Cracked {user} with: {password}')
            print(f'Time Elapsed: {end - start}')
            break
```

```
kkool@LAPTOP-LJRCBL6K:~$ python3 verify_password.py
Cracked alice with: monkey

Time Elapsed: 0.07008051872253418
kkool@LAPTOP-LJRCBL6K:~$ python3 verify_password.py
Cracked bob with: qwerty

Time Elapsed: 0.02003169059753418
kkool@LAPTOP-LJRCBL6K:~$ python3 verify_password.py
Cracked charlie with: password

Time Elapsed: 0.01581406593322754
kkool@LAPTOP-LJRCBL6K:~$
```

Task 3:

```
import subprocess
import time

✓ def verify(user:str, digestNum: int, password: str) -> bool:
    digest = ["sha1", "sha256", "md5"]
    p = subprocess.run(f'htpasswd -b -v htpasswd-{digest[digestNum]} {user} {password}', shell=True, stdout=subprocess.PIPE, stderr=subprocess.PIPE)
    return p.returncode == 0

✓ def crack(loopNum: int):
    start = time.time()
    user = "alice"
    digest = ["sha1", "sha256", "md5"]
    with open('password_list.txt','rt') as f:
        for password in f.readlines():
            if verify(user,loopNum, password) == True:
                end = time.time()
                print(f'Cracked {user} {digest[loopNum]} with: {password}')
                print(f'Time Elapsed: {end - start}')
                break

    for i in range(3):
        crack(i)
```

```
✓ str) -> bool:
    d-{digest[digestNum]} {user} {password}', shell=True, stdout=subprocess.PIPE, stderr=subprocess.PIPE)

    ✓ = True:
        loopNum]} with: {[password]}'')
        art}'')

    ✓
```

```
kkool@LAPTOP-LJRCBL6K:~$ python3 verify_password.py
Cracked alice sha1 with: monkey

Time Elapsed: 0.06638932228088379
Cracked alice sha256 with: marine

Time Elapsed: 4.248983860015869
Cracked alice md5 with: kitten

Time Elapsed: 4.18412446975708
kkool@LAPTOP-LJRCBL6K:~$
```