

Sean Gordon
CprE 431
Module 3 Lab

1. a. Hash type = 6 = SHA512
- b. Salt val = xgLS35S6
- c. **Passwords: -----**
Admin1: P@ssw0rd
User1: trustno1
User2: basketball
User3: pokemon
User4: batman
User5: qwerty12345

Using the script below:

```
#!/bin/bash
filename="100k-most-used-passwords-NIST.txt"
realHash="\$6\$xgLS35S6\$2UjEq.dUhICPw9zgDVJXcQYQp/9i1LPQt/8Zgu0uwngI5mVvB1
eKQG9SnVLjm00fkB4Jjb5VSAXGXjY4Cf5k90"
salt="xgLS35S6"

dos2unix $filename #Remove carriage returns, original hashed without them

count=1
while read -r line; do
    val="$(openssl passwd -6 -salt $salt $line)"
    echo "$count : $val" | cat -v

    if (test $val = $realHash); then
        echo "Correct Password: $line"
        break; fi

    count=$((count+1))
done < $filename
```

2. (a) Here is a screenshot of the commands to add all 3 groups

```
admin1@CPRE-431:~$ sudo addgroup allstaff
[sudo] password for admin1:
Adding group `allstaff' (GID 1006) ...
Done.
admin1@CPRE-431:~$ sudo addgroup prog
Adding group `prog' (GID 1007) ...
Done.
admin1@CPRE-431:~$ sudo addgroup mgmt
Adding group `mgmt' (GID 1008) ...
Done.
```

The users were then added to the group

```
admin1@CPRE-431:~$ sudo adduser user1 allstaff
Adding user `user1' to group `allstaff' ...
Adding user user1 to group allstaff
Done.
admin1@CPRE-431:~$ sudo adduser user2 allstaff
Adding user `user2' to group `allstaff' ...
Adding user user2 to group allstaff
Done.
admin1@CPRE-431:~$ sudo adduser user3 allstaff
Adding user `user3' to group `allstaff' ...
Adding user user3 to group allstaff
Done.
admin1@CPRE-431:~$ sudo adduser user4 allstaff
Adding user `user4' to group `allstaff' ...
Adding user user4 to group allstaff
Done.
admin1@CPRE-431:~$ sudo adduser user1 prog
Adding user `user1' to group `prog' ...
Adding user user1 to group prog
Done.
admin1@CPRE-431:~$ sudo adduser user2 prog
Adding user `user2' to group `prog' ...
Adding user user2 to group prog
Done.
admin1@CPRE-431:~$ sudo adduser user3 prog
Adding user `user3' to group `prog' ...
Adding user user3 to group prog
Done.
admin1@CPRE-431:~$ sudo adduser user3 mgmt
Adding user `user3' to group `mgmt' ...
Adding user user3 to group mgmt
Done.
admin1@CPRE-431:~$ sudo adduser user4 mgmt
Adding user `user4' to group `mgmt' ...
Adding user user4 to group mgmt
Done.
```

And are listed here

```
admin1@CPRE-431:~$ cat /etc/group | grep allstaff
allstaff:x:1006:user1,user2,user3,user4
admin1@CPRE-431:~$ cat /etc/group | grep prog
prog:x:1007:user1,user2,user3
admin1@CPRE-431:~$ cat /etc/group | grep mgmt
mgmt:x:1008:user3,user4
```

(b) Here the permissions were changed per file

```
admin1@CPRE-431:/home$ sudo chmod 711 *
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp prog user1/code
admin1@CPRE-431:/home$ sudo chmod 770 user1/code
admin1@CPRE-431:/home$ sudo chgrp prog user1/code/source_code.txt
admin1@CPRE-431:/home$ sudo chmod 760 user1/code/source_code.txt
admin1@CPRE-431:/home$ sudo chgrp prog user1/code/myapp.exe
admin1@CPRE-431:/home$ sudo chmod 710 user1/code/myapp.exe
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp staff user1/documentation
admin1@CPRE-431:/home$ sudo chmod 750 user1/documentation
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chmod 744 user1/schedule.txt
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp prog user2/code
admin1@CPRE-431:/home$ sudo chmod 770 user2/code
admin1@CPRE-431:/home$ sudo chgrp prog user2/code/source_code.txt
admin1@CPRE-431:/home$ sudo chmod 760 user2/code/source_code.txt
admin1@CPRE-431:/home$ sudo chgrp prog user2/code/myapp.exe
admin1@CPRE-431:/home$ sudo chmod 710 user2/code/myapp.exe
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp staff user2/documentation
admin1@CPRE-431:/home$ sudo chmod 750 user2/documentation
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chmod 744 user2/schedule.txt
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp prog user3/code
admin1@CPRE-431:/home$ sudo chmod 770 user3/code
admin1@CPRE-431:/home$ sudo chgrp prog user3/code/source_code.txt
admin1@CPRE-431:/home$ sudo chmod 760 user3/code/source_code.txt
admin1@CPRE-431:/home$ sudo chgrp prog user3/code/myapp.exe
admin1@CPRE-431:/home$ sudo chmod 710 user3/code/myapp.exe
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp staff user3/documentation
admin1@CPRE-431:/home$ sudo chmod 750 user3/documentation
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chmod 744 user3/schedule.txt
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp mgmt user3/finance
admin1@CPRE-431:/home$ sudo chmod 700 user3/finance
admin1@CPRE-431:/home$ sudo chgrp mgmt user3/finance/business.txt
admin1@CPRE-431:/home$ sudo chmod 700 user3/finance/business.txt
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$
admin1@CPRE-431:/home$ sudo chgrp mgmt user4/finance
admin1@CPRE-431:/home$ sudo chmod 700 user4/finance
admin1@CPRE-431:/home$ sudo chgrp mgmt user4/finance/business.txt
admin1@CPRE-431:/home$ sudo chmod 700 user4/finance/business.txt
```


With the resulting permissions appearing below

```
admin1@CPRE-431:/home$ sudo ls -l
total 24
drwx--x--x 17 admin1 admin1 4096 Sep 19 14:26 admin1
drwx--x--x 16 user1 user1 4096 Sep 30 2019 user1
drwx--x--x 17 user2 user2 4096 Sep 30 2019 user2
drwx--x--x 18 user3 user3 4096 Sep 30 2019 user3
drwx--x--x 16 user4 user4 4096 Sep 30 2019 user4
drwx--x--x 14 user5 user5 4096 Sep 30 2019 user5
admin1@CPRE-431:/home$ sudo ls -l user3
total 44
drwxrwx--- 2 user3 prog 4096 Sep 30 2019 code
drwx----- 2 user3 user3 4096 Sep 30 2019 Desktop
drwxr-x--- 2 user3 staff 4096 Sep 30 2019 documentation
drwx----- 2 user3 user3 4096 Sep 30 2019 Documents
drwx----- 2 user3 user3 4096 Sep 30 2019 Downloads
drwx----- 2 user3 mgmt 4096 Sep 30 2019 finance
drwx----- 2 user3 user3 4096 Sep 30 2019 Music
drwx----- 2 user3 user3 4096 Sep 30 2019 Pictures
drwx----- 2 user3 user3 4096 Sep 30 2019 Public
-rwxr--r-- 1 user3 user3 0 Sep 30 2019 schedule.txt
drwx----- 2 user3 user3 4096 Sep 30 2019 Templates
drwx----- 2 user3 user3 4096 Sep 30 2019 Videos
admin1@CPRE-431:/home$ sudo ls -l user3/code
total 0
-rwx--x--- 1 user3 prog 0 Sep 30 2019 myapp.exe
-rwxrw---- 1 user3 prog 0 Sep 30 2019 source_code.txt
admin1@CPRE-431:/home$ sudo ls -l user3/documentation
total 0
-rw----- 1 user3 user3 0 Sep 30 2019 notes.txt
admin1@CPRE-431:/home$ sudo ls -l user3/finance
total 0
-rwx----- 1 user3 mgmt 0 Sep 30 2019 business.txt
```

Here some testing is done to ensure permissions are correct

```
user1@CPRE-431:~$ ls
code      documentation  Downloads  Pictures  schedule.txt  Videos
Desktop   Documents      Music      Public    Templates
user1@CPRE-431:~$ cd ../user2
user1@CPRE-431:/home/user2$ ls
ls: cannot open directory '.': Permission denied
user1@CPRE-431:/home/user2$ cat schedule.txt
user1@CPRE-431:/home/user2$ cd code
user1@CPRE-431:/home/user2/code$ ls
myapp.exe  source_code.txt
user1@CPRE-431:/home/user2/code$ cd ../documentation
bash: cd: ../documentation: Permission denied
user1@CPRE-431:/home/user2/code$
```

```
user3@CPRE-431:~$ ls
code      documentation  Downloads  Music      Public      Templates
Desktop   Documents      finance    Pictures    schedule.txt  Videos
user3@CPRE-431:~$ cat finance/business.txt
user3@CPRE-431:~$
user3@CPRE-431:~$ cat ../user4/finance/business.txt
cat: ../user4/finance/business.txt: Permission denied
user3@CPRE-431:~$
user3@CPRE-431:~$ cd ../user1/code
user3@CPRE-431:/home/user1/code$ ls
myapp.exe  source_code.txt
user3@CPRE-431:/home/user1/code$
```