EPAM University Programs
DevOps external course
Module 4 Linux & Bash Essentials
TASK 4.6
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1. *User management*. Here we suppose there are at least two users, namely, root and guest.
(i) Create a new user *user*
groupadd user
useradd -g user -s /bin/bash -d /home/user -m user
passwd user
id user
ls -ld /home/user

```
root@aku-ПК:~# useradd -g user -s /bin/bash -d /home/user -m user
root@aku-ПК:~# passwd user
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@aku-ПК:~# id user
uid=1001(user) gid=1001(user) groups=1001(user)
root@aku-ПК:~# ls -ld /home/user/
drwxr-xr-x 1 user user 512 Apr 24 00:25 /home/user/
root@aku-ПК:~#
```

(ii) Log in to the system as “user” (hint use **su**).

```
root@aku-ПК:~# su user
user@aku-ПК:/home/felexa$
```

(ii) Edit /**etc**/**passwd** to prevent user *user* from logging in to the system.

```
root@aku-ПК:~# usermod -s /sbin/nologin user
root@aku-ПК:~# su user
Cannot execute /sbin/nologin: No such file or directory
root@aku-ПК:~#
```

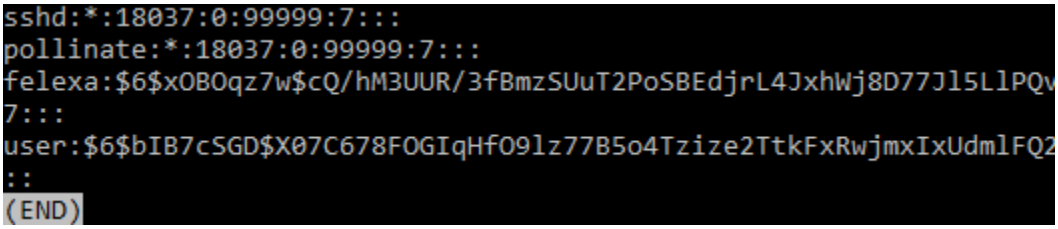
2. *Content of* **/etc/passwd** and **/etc/group**.
(i) Look through **/etc/passwd** and **/etc/group** (hint: use **less** or **cat**).
(ii) Get data from **/etc/passwd** and **/etc/group** about users: *root*, *guest*, *user* (hint: filter by **grep**).

```
root@aku-ПК:~# grep 'root\|user\|guest' /etc/passwd /etc/group
/etc/passwd:root:x:0:0:root:/root:/bin/bash
/etc/passwd:user:x:1001:1001::/home/user:/sbin/nologin
/etc/group:root:x:0:
/etc/group:users:x:100:
/etc/group:user:x:1001:
root@aku-ПК:~#
```

(iii)Parse **/etc/passwd** and **/etc/group** with cut.
cut -f1 -d: /etc/passwd
cut -f1,2 -d: /etc/passwd
cut -f1,7 -d: /etc/passwd
cut -f1 -d: /etc/group
cut -f1,2 -d: /etc/group

```
root@aku-ПК:~# cut -f1 -d: /etc/passwd | grep 'root\|user\|guest'
root
user
root@aku-ПК:~# cut -f1,2 -d: /etc/passwd | grep 'root\|user\|guest'
root:x
user:x
root@aku-ПК:~# cut -f1,7 -d: /etc/passwd | grep 'root\|user\|guest'
root:/bin/bash
user:/sbin/nologin
root@aku-ПК:~# cut -f1 -d: /etc/group | grep 'root\|user\|guest'
root
users
user
root@aku-ПК:~# cut -f1,2 -d: /etc/group | grep 'root\|user\|guest'
root:x
users:x
user:x
```

(iv) Try to call **less** on /**etc/shadow** and invoke
sudo less /etc/shadow
man -k shadow
man 5 shadow



Analyse content of /**etc/shadow** based on what you've found in **man** 5 shadow.

- User login name
- Hashed password
- POSIX
- Days since epoch of last password change
- Days until change allowed
- Days before change required
- Days warning for expiration
- Days after no logins before account is locked
- Days since epoch when account expires
- Reserved and unused

3. Dealing with **chmod**.
(i) An executable script. Open your favorite editor and put these lines into a file
#!/bin/bash
echo "Drugs are bad MKAY?"
Give name "script.sh" to the script and call to
chmod +x script.sh

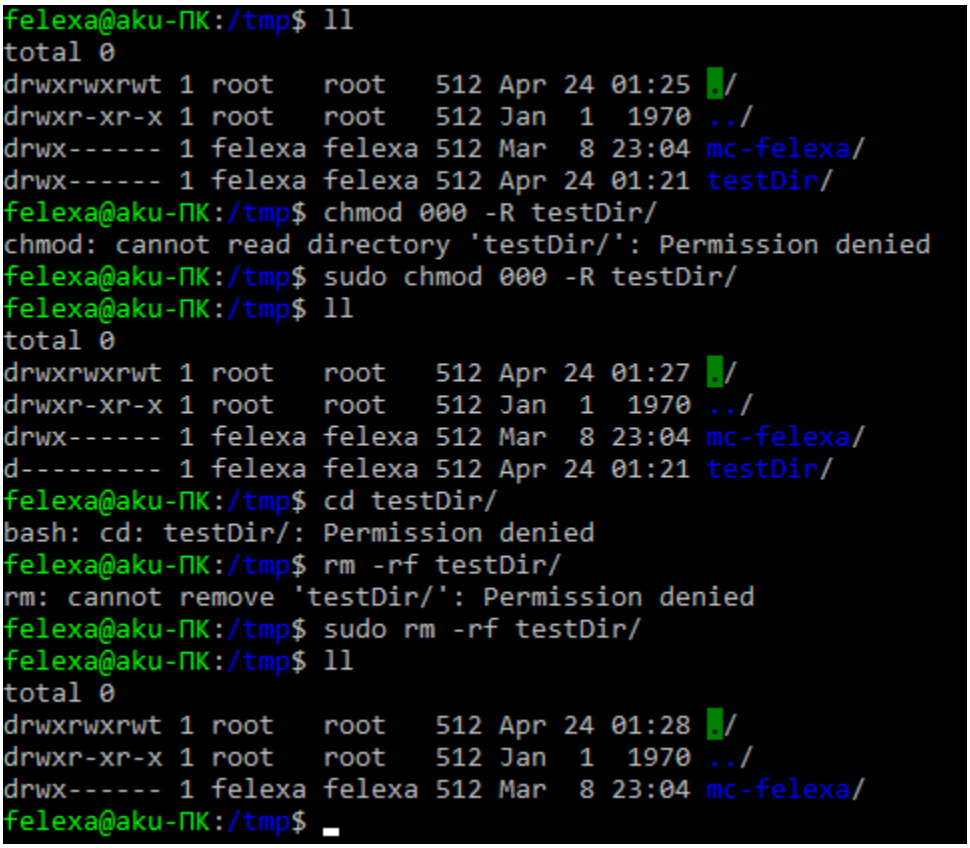
Then you are ready to execute the script: **./script.sh**

```
root@aku-ПК:~# nano script.sh
root@aku-ПК:~# ./script.sh
bash: ./script.sh: Permission denied
root@aku-ПК:~# chmod +x script.sh
root@aku-ПК:~# ./script.sh
“Drugs are bad MKAY?”
root@aku-ПК:~#
```

(ii) Suppose, you have logged in to the system as *guest*. Create directory “testDir” in the /**tmp**; put some file into testDir and prohibit user *user* from visiting this directory (i.e. “testDir”).

```
root@aku-ПК:/tmp# mkdir testDir
root@aku-ПК:/tmp# touch 123.txt
root@aku-ПК:/tmp# mv 123.txt testDir/
root@aku-ПК:/tmp# chmod -R 700 testDir/
root@aku-ПК:/tmp# su user
user@aku-ПК:/tmp$ cd testDir/
bash: cd: testDir/: Permission denied
user@aku-ПК:/tmp$
```

(iii) Test, if it possible to forbid an owner of some file to read to or write from this file.


felexa@aku-ПК:/tmp$ ll
total 0
drwxrwxrwt 1 root   root   512 Apr 24 01:25 ./
drwxr-xr-x 1 root   root   512 Jan 1 1970 ../
drwx------ 1 felexa felexa 512 Mar 8 23:04 mc-felexa/
drwx------ 1 felexa felexa 512 Apr 24 01:21 testDir/
felexa@aku-ПК:/tmp$ chmod 000 -R testDir/
chmod: cannot read directory 'testDir/': Permission denied
felexa@aku-ПК:/tmp$ sudo chmod 000 -R testDir/
felexa@aku-ПК:/tmp$ ll
total 0
drwxrwxrwt 1 root   root   512 Apr 24 01:27 ./
drwxr-xr-x 1 root   root   512 Jan 1 1970 ../
drwx------ 1 felexa felexa 512 Mar 8 23:04 mc-felexa/
d--------- 1 felexa felexa 512 Apr 24 01:21 testDir/
felexa@aku-ПК:/tmp$ cd testDir/
bash: cd: testDir/: Permission denied
felexa@aku-ПК:/tmp$ rm -rf testDir/
rm: cannot remove 'testDir/': Permission denied
felexa@aku-ПК:/tmp$ sudo rm -rf testDir/
felexa@aku-ПК:/tmp$ ll
total 0
drwxrwxrwt 1 root   root   512 Apr 24 01:28 ./
drwxr-xr-x 1 root   root   512 Jan 1 1970 ../
drwx------ 1 felexa felexa 512 Mar 8 23:04 mc-felexa/
felexa@aku-ПК:/tmp$