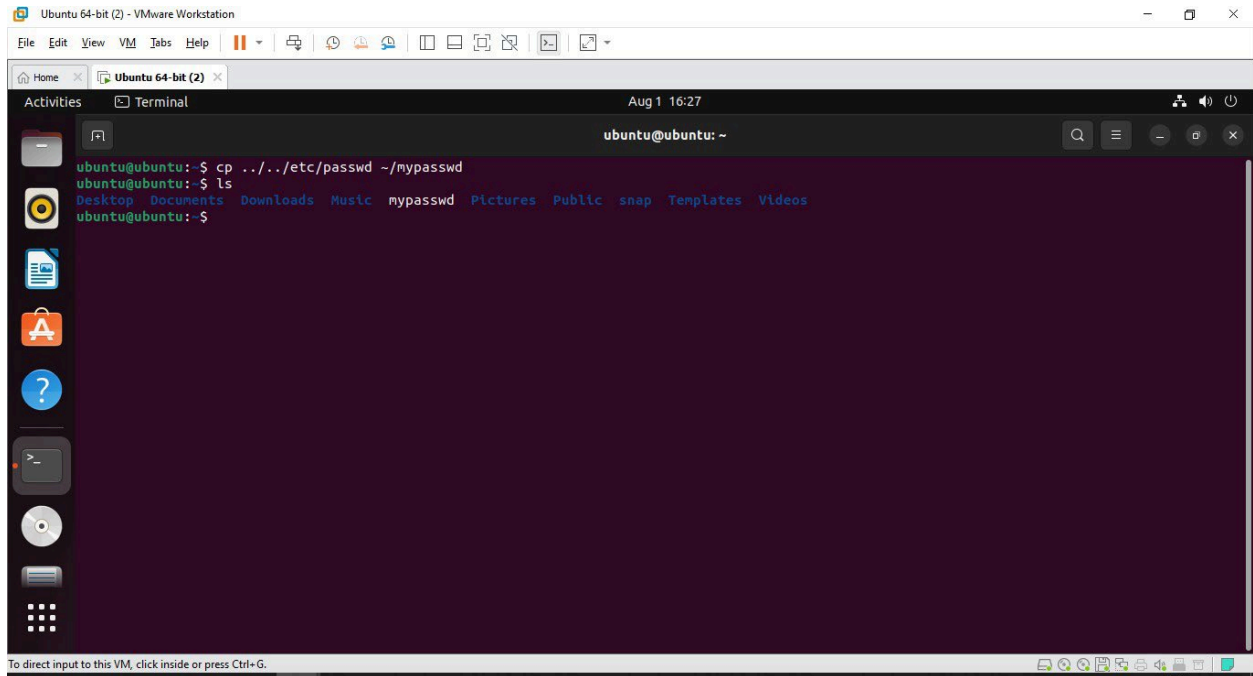


Lab 1

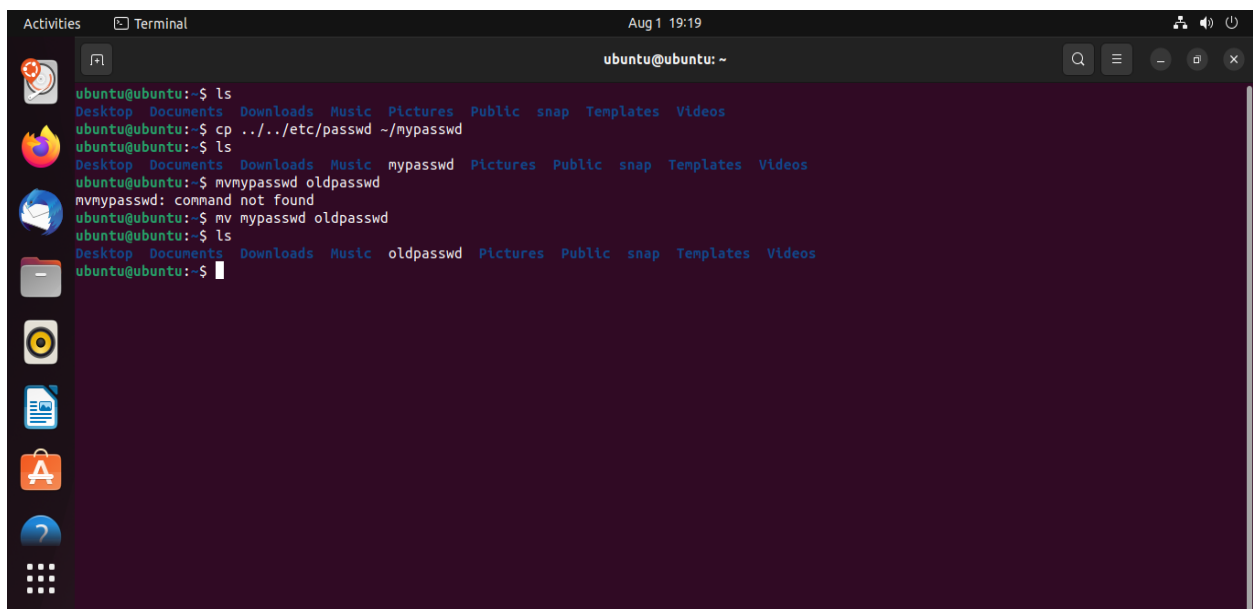
5. Copy the /etc/passwd file to your home directory



The screenshot shows a terminal window titled "Ubuntu 64-bit (2) - VMware Workstation". The terminal output is as follows:

```
ubuntu@ubuntu:~$ cp ../../etc/passwd ~/mypasswd
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music mypasswd Pictures Public snap Templates Videos
ubuntu@ubuntu:~$
```

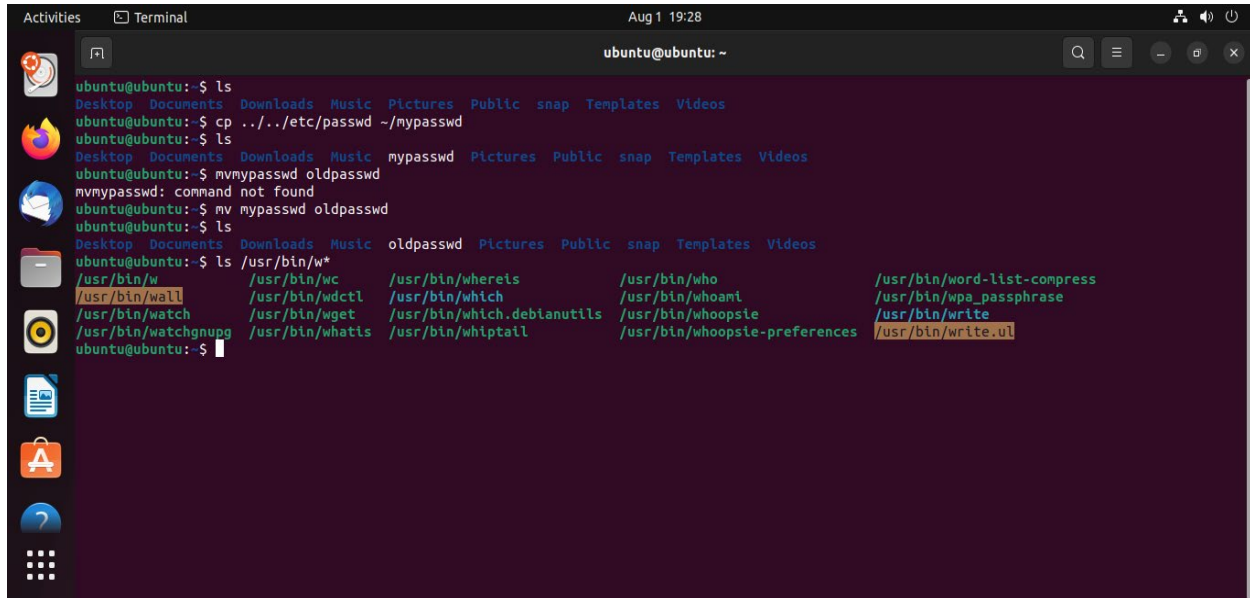
6. Rename this new file to be oldpasswd.



The screenshot shows a terminal window titled "Ubuntu 64-bit (2) - VMware Workstation". The terminal output is as follows:

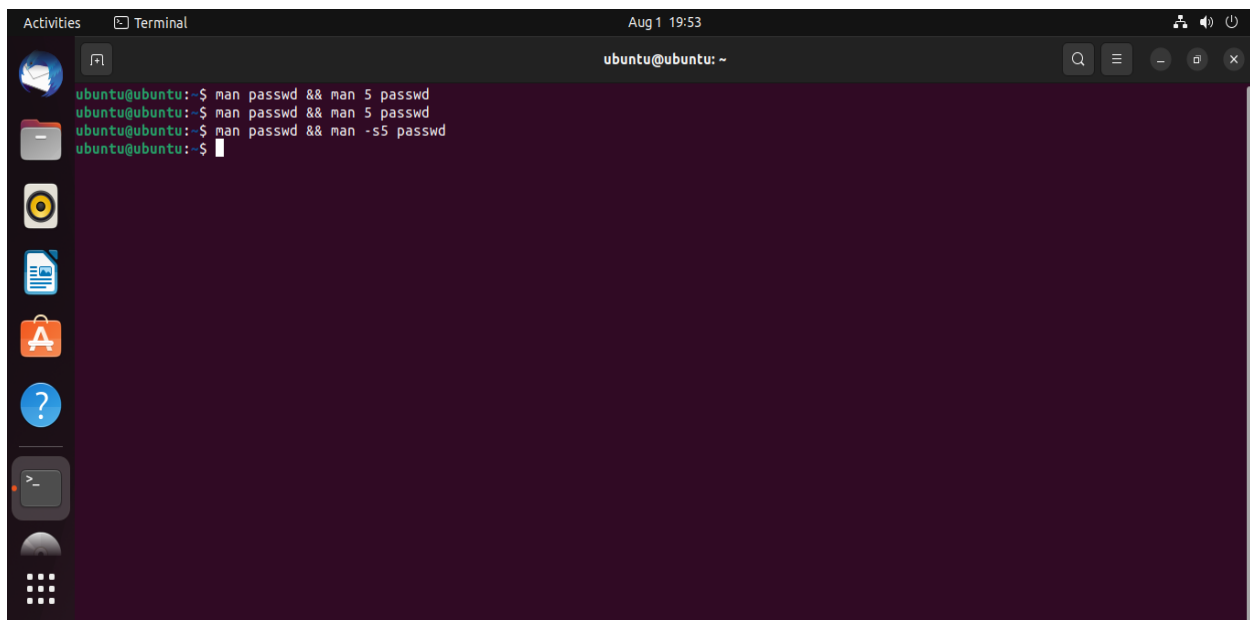
```
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
ubuntu@ubuntu:~$ cp ../../etc/passwd ~/mypasswd
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music mypasswd Pictures Public snap Templates Videos
ubuntu@ubuntu:~$ mv mypasswd oldpasswd
mv mypasswd: command not found
ubuntu@ubuntu:~$ mv mypasswd oldpasswd
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music oldpasswd Pictures Public snap Templates Videos
ubuntu@ubuntu:~$
```

8. List Linux commands in /usr/bin that start with letter w

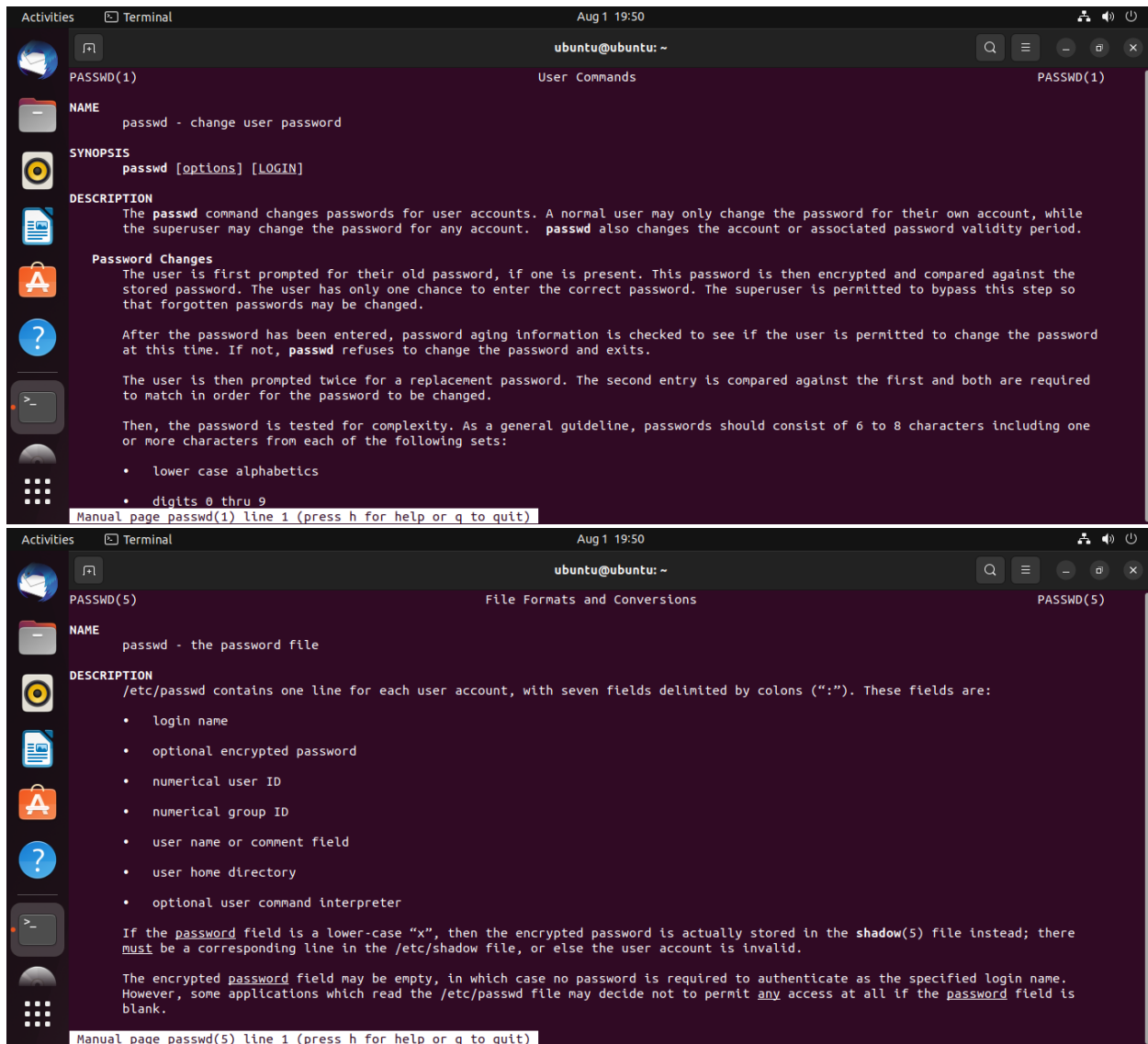


```
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
ubuntu@ubuntu:~$ cp ../../etc/passwd ~/mypasswd
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music mypasswd Pictures Public snap Templates Videos
ubuntu@ubuntu:~$ mv mypasswd oldpasswd
mvmyspasswd: command not found
ubuntu@ubuntu:~$ mv mypasswd oldpasswd
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music oldpasswd Pictures Public snap Templates Videos
ubuntu@ubuntu:~$ ls /usr/bin/w*
/usr/bin/w      /usr/bin/wc      /usr/bin/whereis  /usr/bin/who      /usr/bin/word-list-compress
/usr/bin/wall   /usr/bin/wdctl   /usr/bin/which     /usr/bin/whoami   /usr/bin/wpa_passphrase
/usr/bin/watch  /usr/bin/wget    /usr/bin/which.debianutils /usr/bin/whoopie   /usr/bin/write
/usr/bin/watchnups /usr/bin/whatls /usr/bin/whiptail  /usr/bin/whoopie-preferences /usr/bin/write.ul
```

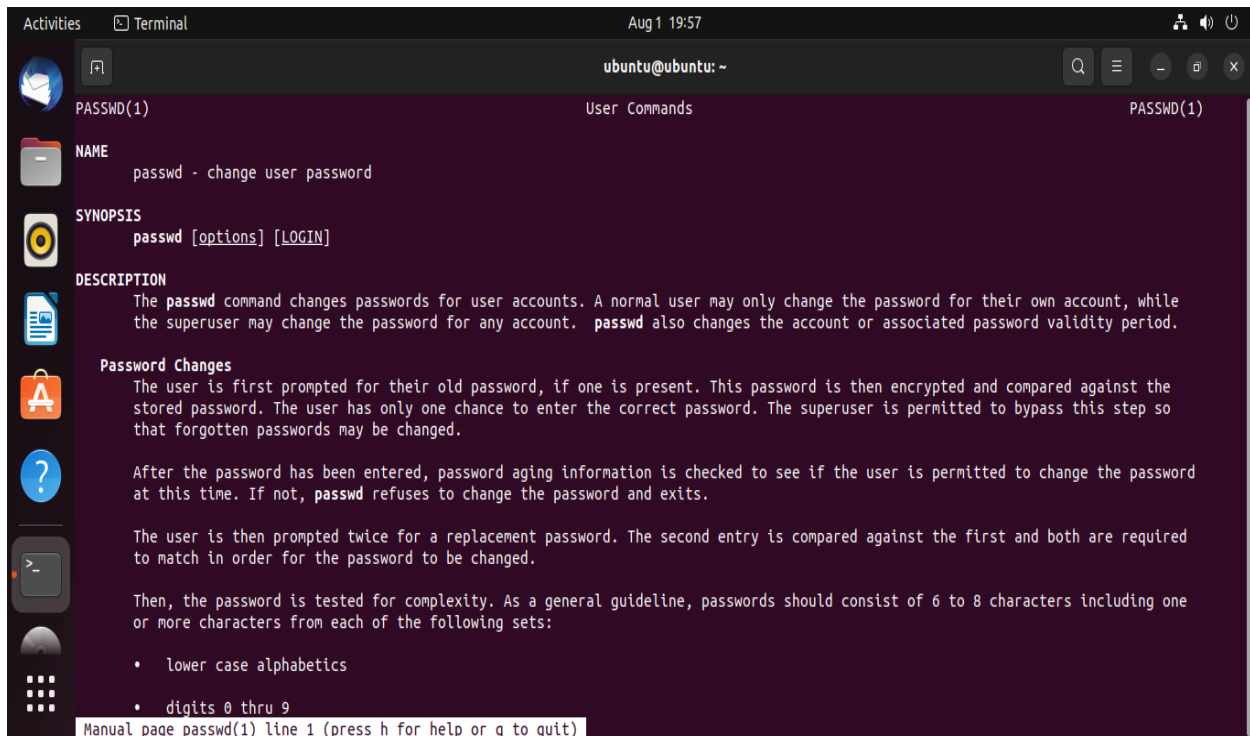
11. Display the man pages of passwd the command and the file sequentially in one command.



```
ubuntu@ubuntu:~$ man passwd && man 5 passwd
ubuntu@ubuntu:~$ man passwd && man 5 passwd
ubuntu@ubuntu:~$ man passwd && man -s5 passwd
ubuntu@ubuntu:~$
```



12.Display the man page of the passwd file.



A terminal window titled "Terminal" with the date "Aug 1 19:57". The prompt is "ubuntu@ubuntu: ~". The terminal displays the man page for the "passwd" command. The page is titled "PASSWD(1) User Commands PASSWD(1)". It includes sections for NAME, SYNOPSIS, DESCRIPTION, and Password Changes. The DESCRIPTION section explains that the passwd command changes passwords for user accounts, and the Password Changes section describes the prompts and requirements for changing a password.

```
PASSWD(1) User Commands PASSWD(1)
NAME
passwd - change user password

SYNOPSIS
passwd [options] [LOGIN]

DESCRIPTION
The passwd command changes passwords for user accounts. A normal user may only change the password for their own account, while the superuser may change the password for any account. passwd also changes the account or associated password validity period.

Password Changes
The user is first prompted for their old password, if one is present. This password is then encrypted and compared against the stored password. The user has only one chance to enter the correct password. The superuser is permitted to bypass this step so that forgotten passwords may be changed.

After the password has been entered, password aging information is checked to see if the user is permitted to change the password at this time. If not, passwd refuses to change the password and exits.

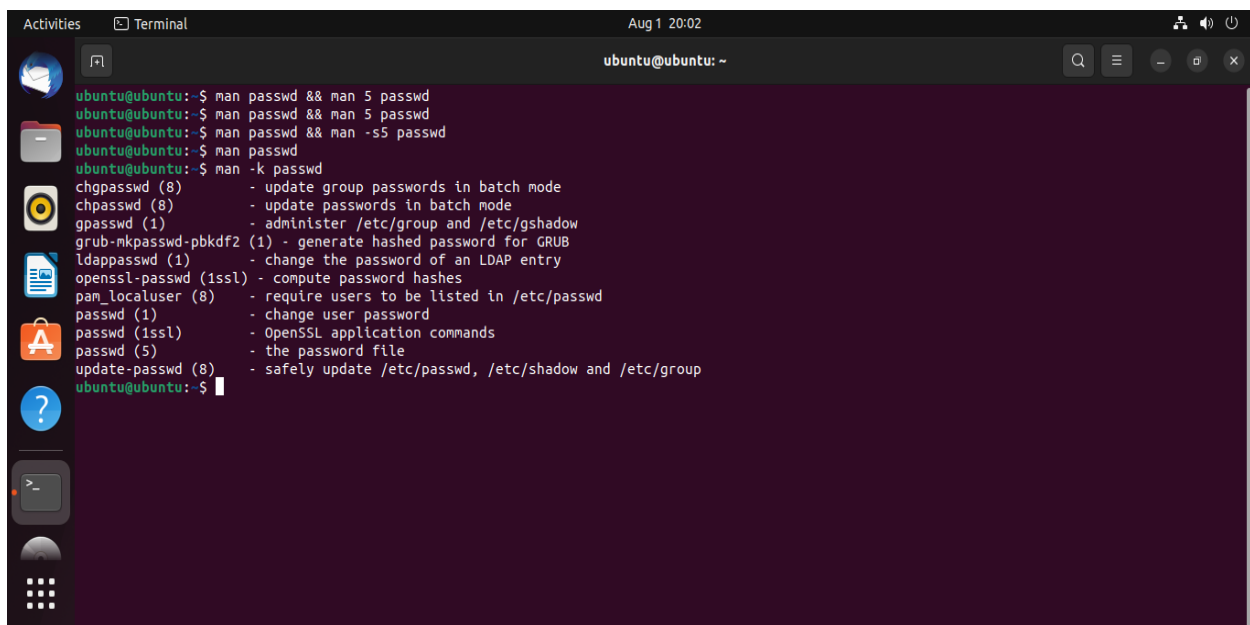
The user is then prompted twice for a replacement password. The second entry is compared against the first and both are required to match in order for the password to be changed.

Then, the password is tested for complexity. As a general guideline, passwords should consist of 6 to 8 characters including one or more characters from each of the following sets:

• lower case alphabets
• digits 0 thru 9

Manual page passwd(1) line 1 (press h for help or q to quit)
```

13. Display a list of all the commands that contain the keyword passwd in their man page.



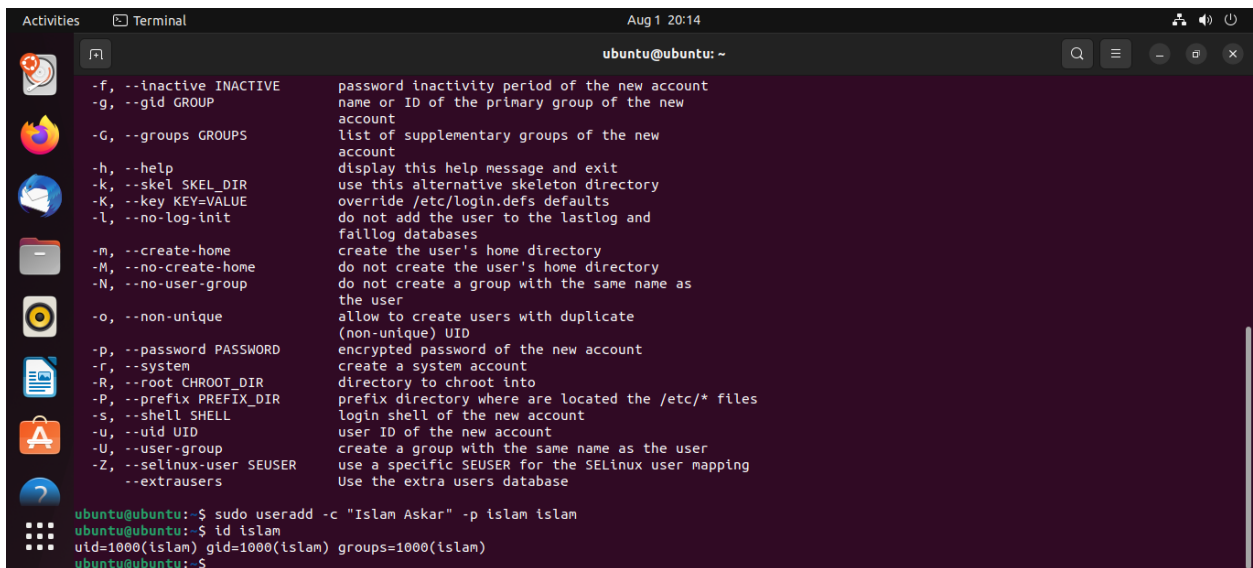
A terminal window titled "Terminal" with the date "Aug 1 20:02". The prompt is "ubuntu@ubuntu: ~". The terminal displays the output of the command "man passwd && man 5 passwd". The output lists various password-related commands and their descriptions, including chpasswd, gpasswd, grub-mkpasswd-pbkdf2, ldappasswd, openssl-passwd, pam_localuser, passwd, and update-passwd.

```
ubuntu@ubuntu:~$ man passwd && man 5 passwd
ubuntu@ubuntu:~$ man passwd && man 5 passwd
ubuntu@ubuntu:~$ man passwd && man -s5 passwd
ubuntu@ubuntu:~$ man passwd
ubuntu@ubuntu:~$ man -k passwd
chpasswd (8) - update group passwords in batch mode
chpasswd (8) - update passwords in batch mode
gpasswd (1) - administer /etc/group and /etc/gshadow
grub-mkpasswd-pbkdf2 (1) - generate hashed password for GRUB
ldappasswd (1) - change the password of an LDAP entry
openssl-passwd (1ssl) - compute password hashes
pam_localuser (8) - require users to be listed in /etc/passwd
passwd (1) - change user password
passwd (1ssl) - OpenSSL application commands
passwd (5) - the password file
update-passwd (8) - safely update /etc/passwd, /etc/shadow and /etc/group
ubuntu@ubuntu:~$
```

Lab 2

1. Create a user account with the following attribute

- username: islam
- Fullname/comment: Islam Askar
- Password: islam

A terminal window titled 'Terminal' with the date 'Aug 1 20:14' and the prompt 'ubuntu@ubuntu: ~'. The terminal displays the help text for the 'useradd' command, listing various options like --inactive, --gid, --groups, --help, --skel, --key, --no-log-init, --create-home, --no-create-home, --no-user-group, --non-unique, --password, --system, --root, --prefix, --shell, --uid, --user-group, --selinux-user, and --extrausers. Below the help text, the user executes the command 'sudo useradd -c "Islam Askar" -p islam islam'. The prompt changes to 'ubuntu@ubuntu:~\$' and then 'ubuntu@ubuntu:~#'. The user then runs 'id islam', which outputs 'uid=1000(islam) gid=1000(islam) groups=1000(islam)'. Finally, the user runs 'exit', returning to the 'ubuntu@ubuntu:~\$' prompt.

```
ubuntu@ubuntu: ~  
-f, --inactive INACTIVE    password inactivity period of the new account  
-g, --gid GROUP            name or ID of the primary group of the new  
                           account  
-G, --groups GROUPS        list of supplementary groups of the new  
                           account  
-h, --help                display this help message and exit  
-k, --skel SKEL_DIR        use this alternative skeleton directory  
-K, --key KEY=VALUE        override /etc/login.defs defaults  
-l, --no-log-init          do not add the user to the lastlog and  
                           faillog databases  
-m, --create-home          create the user's home directory  
-M, --no-create-home       do not create the user's home directory  
-N, --no-user-group        do not create a group with the same name as  
                           the user  
-o, --non-unique           allow to create users with duplicate  
                           (non-unique) UID  
-p, --password PASSWORD    encrypted password of the new account  
-r, --system              create a system account  
-R, --root CHROOT_DIR      directory to chroot into  
-P, --prefix PREFIX_DIR    prefix directory where are located the /etc/* files  
-s, --shell SHELL          login shell of the new account  
-u, --uid UID              user ID of the new account  
-U, --user-group           create a group with the same name as the user  
-Z, --selinux-user SEUSER  use a specific SEUSER for the SELinux user mapping  
                           Use the extra users database  
ubuntu@ubuntu:~$ sudo useradd -c "Islam Askar" -p islam islam  
ubuntu@ubuntu:~$ id islam  
uid=1000(islam) gid=1000(islam) groups=1000(islam)  
ubuntu@ubuntu:~$
```

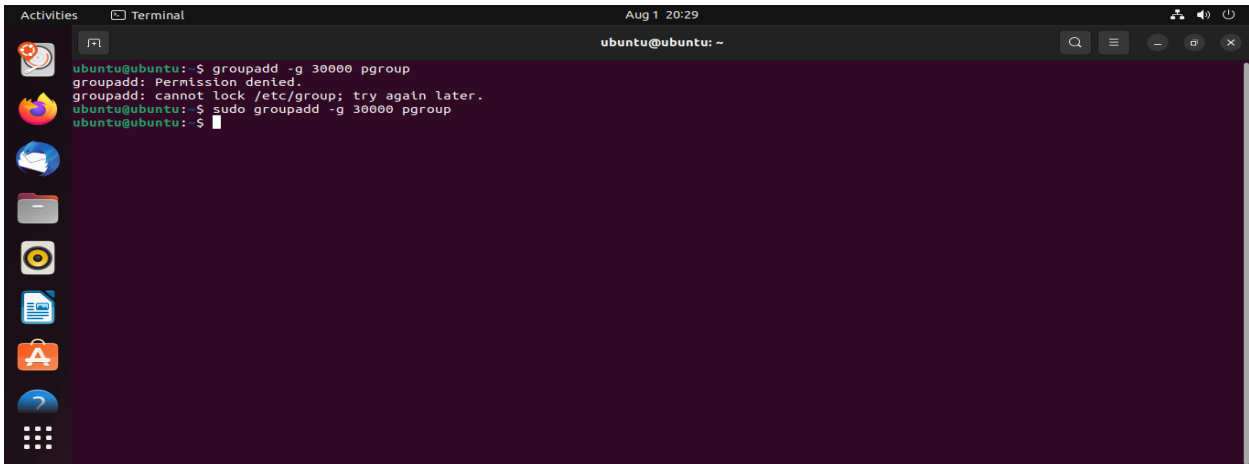
2. Create a user account with the following attribute

- Username: baduser
- Full name/comment: Bad User
- Password: baduser

```
Activities Terminal Aug 1 20:18 ubuntu@ubuntu: -

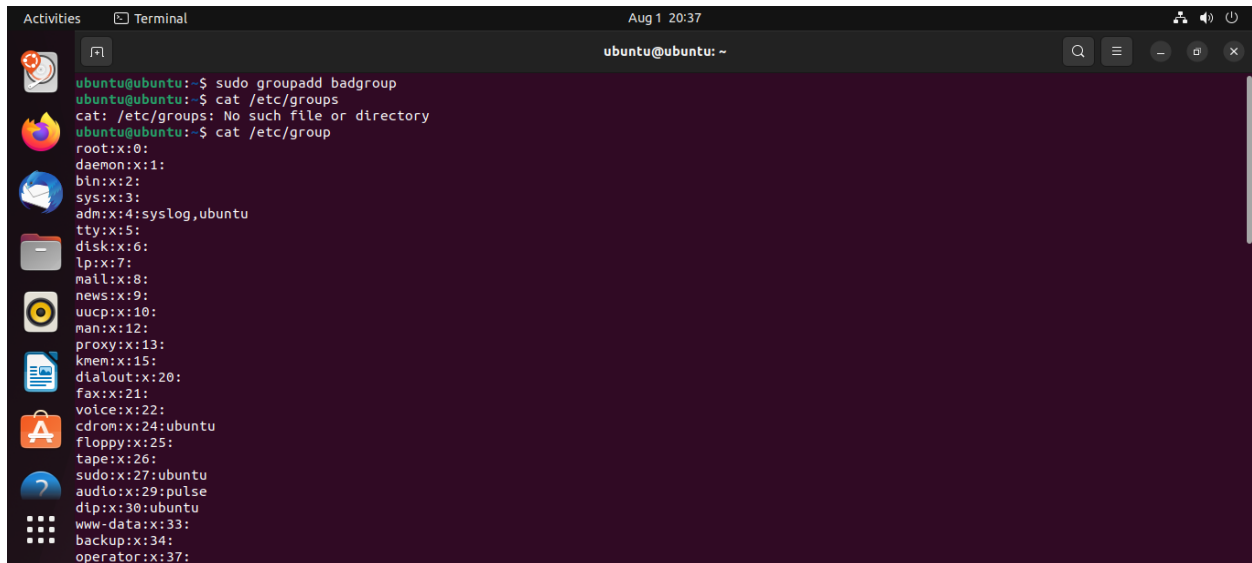
ubuntu@ubuntu:~$ sudo useradd -c "Islam Askar" -p islam islam
ubuntu@ubuntu:~$ id islam
uid=1000(islam) gid=1000(islam) groups=1000(islam)
ubuntu@ubuntu:~$ sudo useradd -c "Bad User" -p baduser baduser
ubuntu@ubuntu:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/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:Listing 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/systemd:/usr/sbin/nologin
syslog:x:104:111:/:home/syslog:/usr/sbin/nologin
_apt:x:105:65534:/:nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111:/:home/syslog:/usr/sbin/nologin
_apt:x:105:65534:/:nonexistent:/usr/sbin/nologin
tss:x:106:112:TPM software stack,,,:/var/lib/tpm:/bin/false
uidd:x:107:115:/:run/uidd:/usr/sbin/nologin
systemd-oom:x:108:116:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:117:/:nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
whoopsie:x:117:124:/:nonexistent:/bin/false
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
fwupd-refresh:x:120:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
saned:x:122:129:/:var/lib/saned:/usr/sbin/nologin
colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:124:131:/:var/lib/geoclue:/usr/sbin/nologin
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:126:65534:/:run/gnome-initial-setup:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
ubuntu:x:999:999:LIVE session user,,,:/home/ubuntu:/bin/bash
islam:x:1000:1000:Islam Askar:/home/islam:/bin/sh
baduser:x:1001:1001:Bad User:/home/baduser:/bin/sh
ubuntu@ubuntu:~$
```

3. Create a supplementary (Secondary) group called pgroup with group ID of 30000

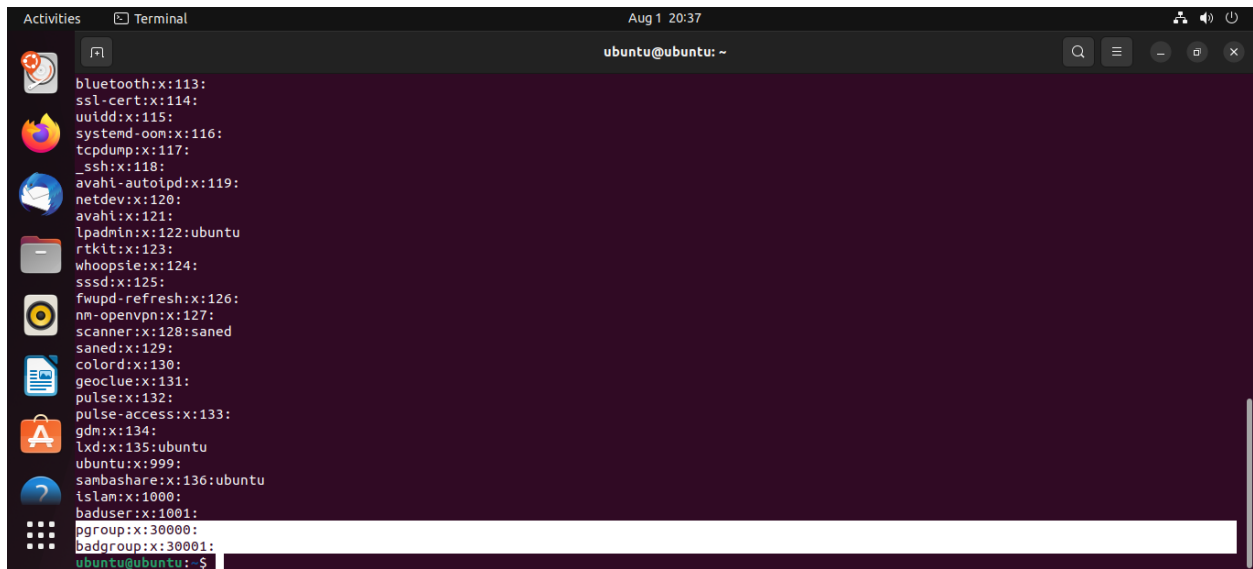


```
ubuntu@ubuntu: ~  
$ groupadd -g 30000 pgroup  
groupadd: Permission denied.  
groupadd: cannot lock /etc/group; try again later.  
ubuntu@ubuntu: ~$ sudo groupadd -g 30000 pgroup  
ubuntu@ubuntu: ~$
```

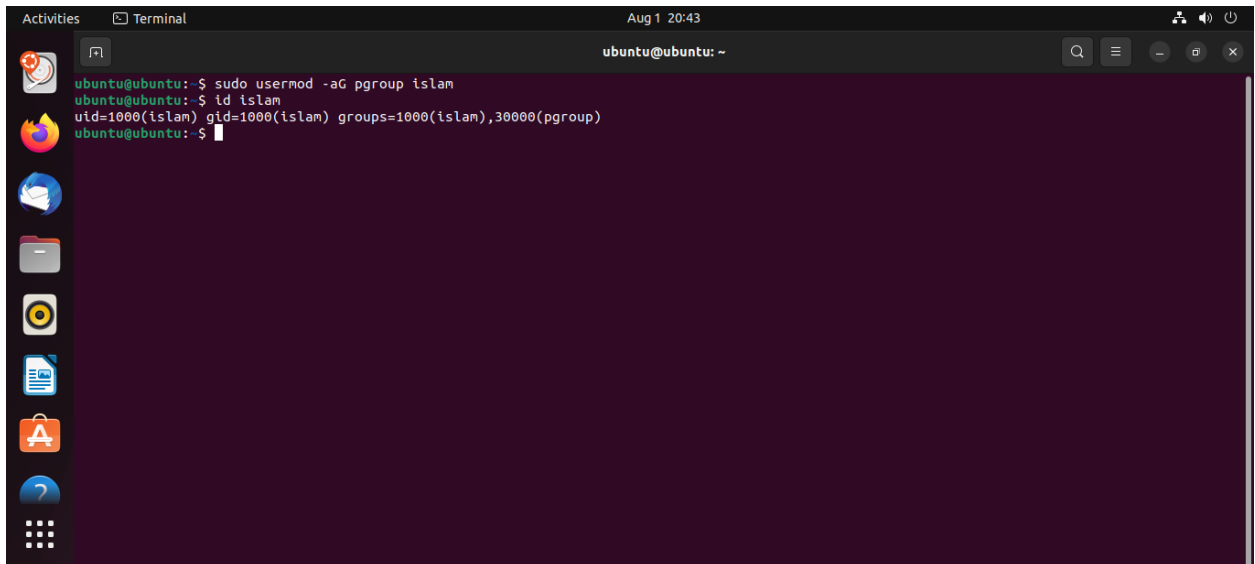
4. Create a supplementary group called badgroup



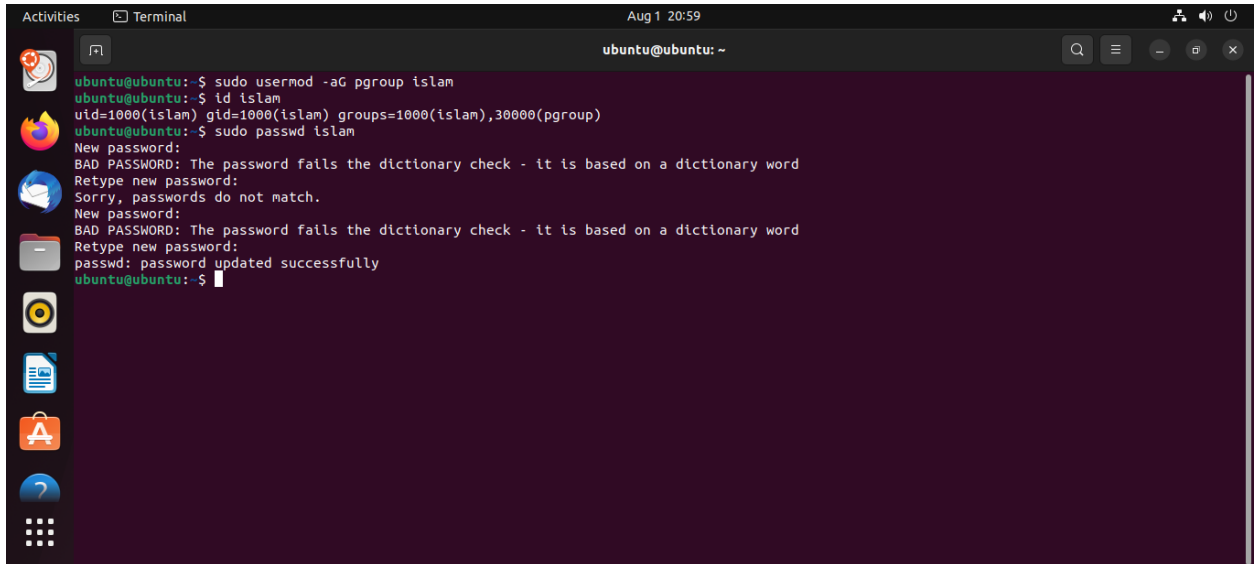
```
ubuntu@ubuntu: ~$ sudo groupadd badgroup  
ubuntu@ubuntu: ~$ cat /etc/groups  
cat: /etc/groups: No such file or directory  
ubuntu@ubuntu: ~$ cat /etc/group  
root:x:0:  
daemon:x:1:  
bin:x:2:  
sys:x:3:  
adm:x:4:syslog,ubuntu  
tty:x:5:  
disk:x:6:  
lp:x:7:  
mail:x:8:  
news:x:9:  
uucp:x:10:  
man:x:12:  
proxy:x:13:  
kmem:x:15:  
dialout:x:20:  
fax:x:21:  
voice:x:22:  
cdrom:x:24:ubuntu  
floppy:x:25:  
tape:x:26:  
sudo:x:27:ubuntu  
audio:x:29:pulse  
dip:x:30:ubuntu  
www-data:x:33:  
backup:x:34:  
operator:x:37:
```

A terminal window titled 'Terminal' with the date 'Aug 1 20:37' and the prompt 'ubuntu@ubuntu: ~'. The terminal displays a list of system users and groups, including bluetooth, ssl-cert, uuidd, systemd-oom, tcpdump, ssh, avahi-autoipd, netdev, avahi, lpadmin, rtkit, whoopsie, sssd, fwupd-refresh, nm-openvpn, scanner, saned, colord, geoclue, pulse, pulse-access, gdm, lxd, ubuntu, sambashare, islam, baduser, pgroup, and badgroup. The prompt is 'ubuntu@ubuntu:~\$'.

5. Add islam user to the pgroup group as a supplementary group

A terminal window titled 'Terminal' with the date 'Aug 1 20:43' and the prompt 'ubuntu@ubuntu: ~'. The terminal shows the command 'sudo usermod -aG pgroup islam' being executed. The prompt changes to 'ubuntu@ubuntu:~\$'. The command 'id islam' is then executed, showing the output 'uid=1000(islam) gid=1000(islam) groups=1000(islam),30000(pgroup)'. The prompt is 'ubuntu@ubuntu:~\$'.

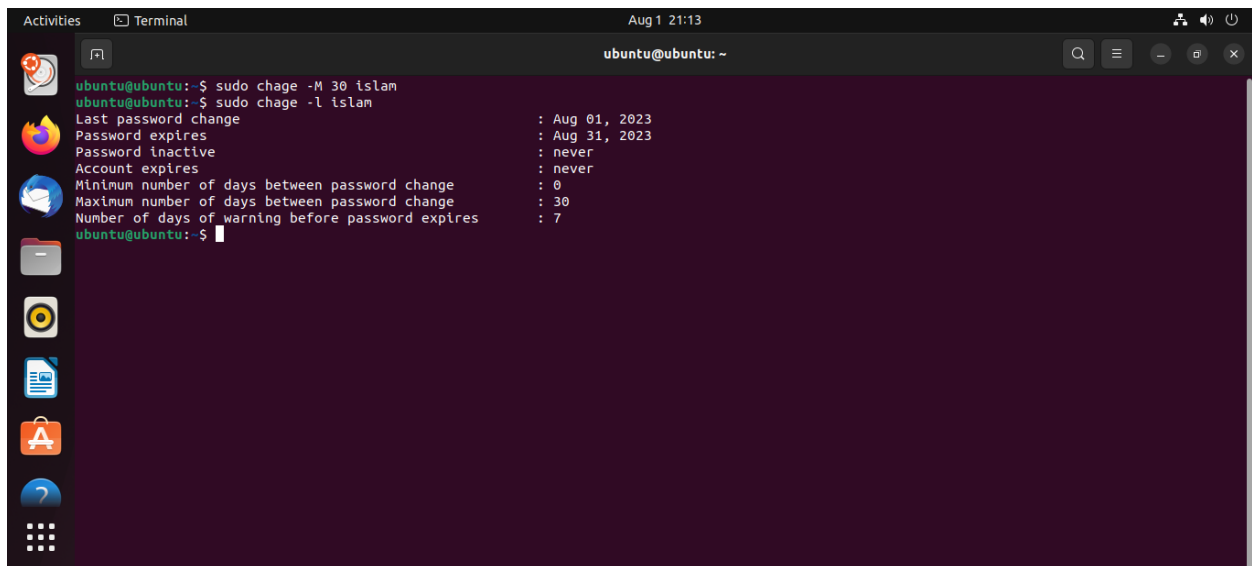
6. Modify the password of islam's account to password



A terminal window titled 'Terminal' with a timestamp of 'Aug 1 20:59'. The user 'ubuntu@ubuntu: ~' is at the prompt. The following commands and outputs are shown:

```
ubuntu@ubuntu:~$ sudo usermod -aG pgroup islam
ubuntu@ubuntu:~$ id islam
uid=1000(islam) gid=1000(islam) groups=1000(islam),30000(pgroup)
ubuntu@ubuntu:~$ sudo passwd islam
New password:
BAD PASSWORD: The password falls the dictionary check - it is based on a dictionary word
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password falls the dictionary check - it is based on a dictionary word
Retype new password:
passwd: password updated successfully
ubuntu@ubuntu:~$
```

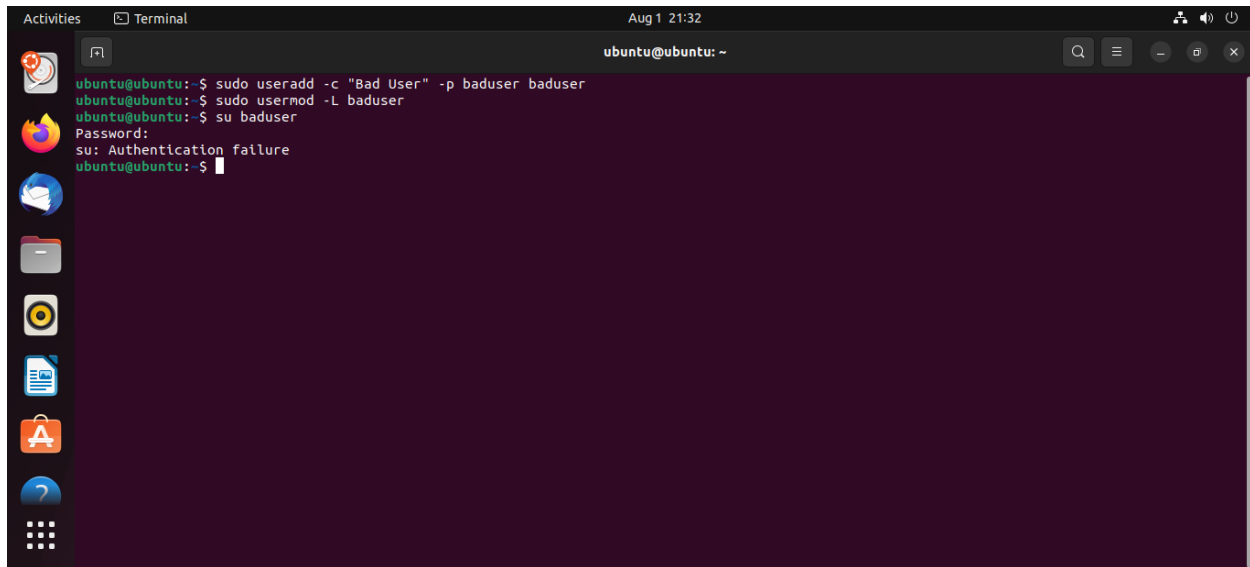
7. Modify islam's account so the password expires after 30 days



A terminal window titled 'Terminal' with a timestamp of 'Aug 1 21:13'. The user 'ubuntu@ubuntu: ~' is at the prompt. The following commands and outputs are shown:

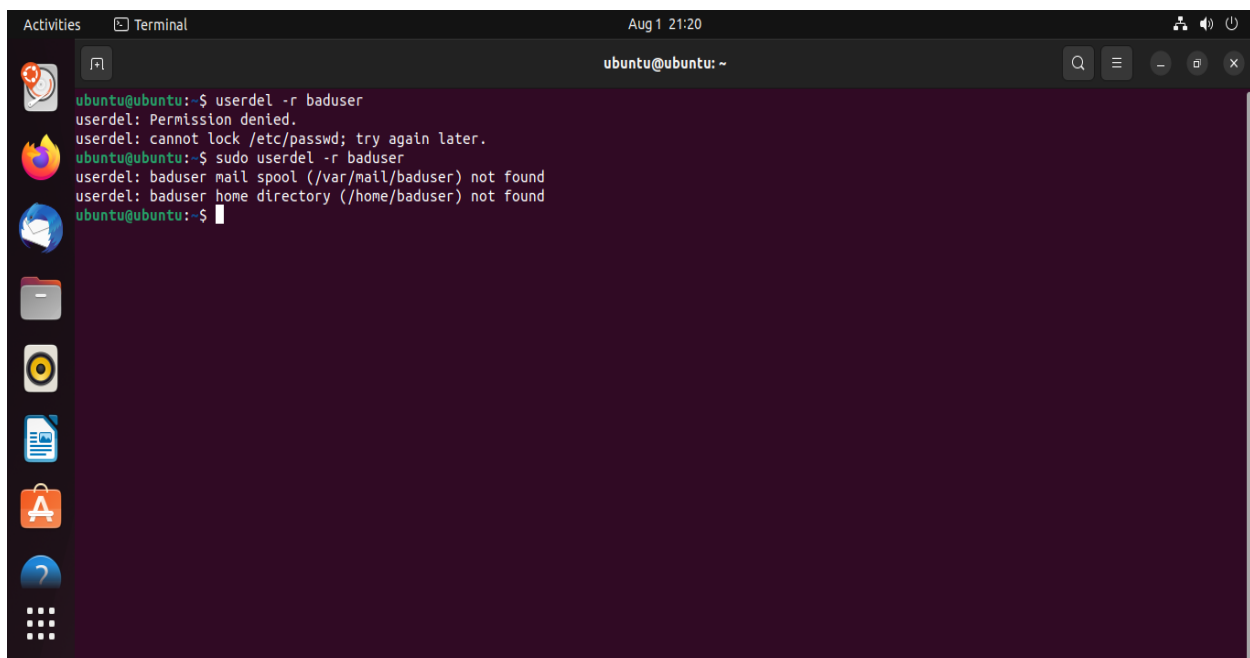
```
ubuntu@ubuntu:~$ sudo chage -M 30 islam
ubuntu@ubuntu:~$ sudo chage -l islam
Last password change           : Aug 01, 2023
Password expires               : Aug 31, 2023
Password inactive              : never
Account expires                : never
Minimum number of days between password change : 0
Maximum number of days between password change : 30
Number of days of warning before password expires : 7
ubuntu@ubuntu:~$
```

8. Lock bad user account so he can't log in

A terminal window titled 'Terminal' with a dark background. The prompt is 'ubuntu@ubuntu: ~'. The user has entered several commands: 'sudo useradd -c "Bad User" -p baduser baduser', 'sudo usermod -L baduser', and 'su baduser'. The 'su' command prompts for a password, and the user enters 'baduser'. The system responds with 'su: Authentication failure'. The prompt returns to 'ubuntu@ubuntu: ~'.

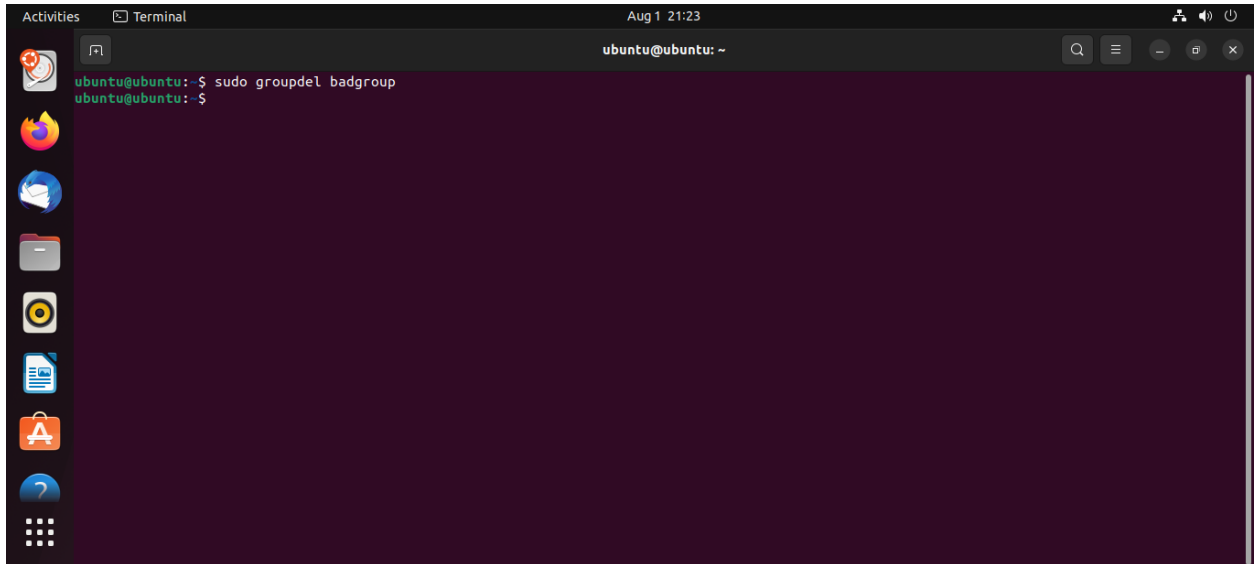
```
ubuntu@ubuntu:~$ sudo useradd -c "Bad User" -p baduser baduser
ubuntu@ubuntu:~$ sudo usermod -L baduser
ubuntu@ubuntu:~$ su baduser
Password:
su: Authentication failure
ubuntu@ubuntu:~$
```

9. Delete bad user account

A terminal window titled 'Terminal' with a dark background. The prompt is 'ubuntu@ubuntu: ~'. The user enters 'userdel -r baduser', which results in 'userdel: Permission denied.' and 'userdel: cannot lock /etc/passwd; try again later.'. Then, the user enters 'sudo userdel -r baduser', which results in 'userdel: baduser mail spool (/var/mail/baduser) not found' and 'userdel: baduser home directory (/home/baduser) not found'. The prompt returns to 'ubuntu@ubuntu: ~'.

```
ubuntu@ubuntu:~$ userdel -r baduser
userdel: Permission denied.
userdel: cannot lock /etc/passwd; try again later.
ubuntu@ubuntu:~$ sudo userdel -r baduser
userdel: baduser mail spool (/var/mail/baduser) not found
userdel: baduser home directory (/home/baduser) not found
ubuntu@ubuntu:~$
```

10.Delete the supplementary group called badgroup



A screenshot of a Linux terminal window. The window title is "Terminal" and it shows the date and time "Aug 1 21:23". The prompt is "ubuntu@ubuntu: ~". The command "sudo groupdel badgroup" has been entered and executed. The prompt has changed to "ubuntu@ubuntu: ~" again. The terminal window is dark-themed with a dark purple background. On the left side, there is a vertical dock with several application icons: a red and white icon, a Firefox icon, a blue and white icon, a folder icon, a yellow and black icon, a blue and white icon, an orange and white icon, a blue and white icon, and a grid of dots. The top of the window has a dark bar with the "Terminal" title, the date and time, and some system icons on the right.

```
ubuntu@ubuntu: ~  
$ sudo groupdel badgroup  
ubuntu@ubuntu: ~  
$
```