Experiment 1

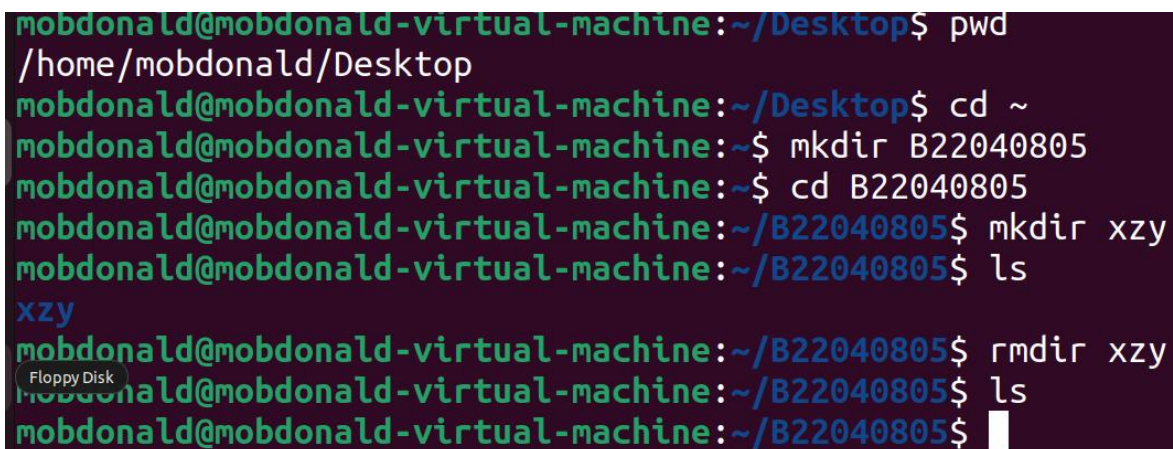## (1) Directory Operation

Enter the following commands in sequence:

```
$pwd
$cd ~
$mkdir your_studentID
$cd your_studentID
$mkdir your_name
$ls
$rmdir your_name
$ls
```

Save a screenshot of the above command along with the corresponding results, you must have your student number and name.

```
mobdonald@mobdonald-virtual-machine:~/Desktop$ pwd
/home/mobdonald/Desktop
mobdonald@mobdonald-virtual-machine:~/Desktop$ cd ~
mobdonald@mobdonald-virtual-machine:~$ mkdir B22040805
mobdonald@mobdonald-virtual-machine:~$ cd B22040805
mobdonald@mobdonald-virtual-machine:~/B22040805$ mkdir xzy
mobdonald@mobdonald-virtual-machine:~/B22040805$ ls
xzy
mobdonald@mobdonald-virtual-machine:~/B22040805$ rmdir xzy
mobdonald@mobdonald-virtual-machine:~/B22040805$ ls
mobdonald@mobdonald-virtual-machine:~/B22040805$ 
```

Floppy Disk

(2) File operation

Enter the following commands in sequence:

```
$cd ~
$touch yourname.txt
$ls
$echo "hello world" > yourname.txt
$cat yourname.txt
$cp yourname.txt yourname2.txt
$mv yourname.txt yourstudentid.txt
$ls
```

Save a screenshot of the above command along with the corresponding results, you must have your student number and name.

```
mobdonald@mobdonald-virtual-machine:~/Desktop$ cd ~
mobdonald@mobdonald-virtual-machine:~$ touch xzy.txt
mobdonald@mobdonald-virtual-machine:~$ ls
B22040805   Documents   Music       Public   Templates   xzy.txt
Desktop     Downloads   Pictures    snap     Videos
mobdonald@mobdonald-virtual-machine:~$ echo "hello world" > xzy.txt
mobdonald@mobdonald-virtual-machine:~$ cat xzy.txt
hello world
mobdonald@mobdonald-virtual-machine:~$ cp xzy.txt xzy2.txt
mobdonald@mobdonald-virtual-machine:~$ mv xzy.txt B22040805.txt
mobdonald@mobdonald-virtual-machine:~$ ls
B22040805        Desktop     Downloads   Pictures   snap        Videos
B22040805.txt    Documents   Music       Public     Templates   xzy2.txt
mobdonald@mobdonald-virtual-machine:~$ S
```

(3)User Management

Enter the following commands in sequence:

```
$whoami
$sudo su root
```

Enter the password of the current logged-in user, not the root password, and then enter:

```
#groupadd student
#whoami
#adduser yourstudentID
#usermod -g student yourstudentID
```

Follow the prompts to create the user and add the user to the student group.

Switch to the user.

```
#su yourstudentID
$cd ~
$touch yourname.txt
$ls -l
```

View the properties of the file, including the owner user and the group to which the owner user belongs.

```
mobdonald@mobdonald-virtual-machine:~$ whoami
mobdonald
mobdonald@mobdonald-virtual-machine:~$ sudo su root
[sudo] password for mobdonald:
root@mobdonald-virtual-machine:/home/mobdonald# groupadd student
root@mobdonald-virtual-machine:/home/mobdonald# whoami
root
root@mobdonald-virtual-machine:/home/mobdonald# adduser B22040805
adduser: Please enter a username matching the regular expression configured
via the NAME_REGEX[_SYSTEM] configuration variable.  Use the `--force-badname'
option to relax this check or reconfigure NAME_REGEX.
root@mobdonald-virtual-machine:/home/mobdonald# usermod -g student B22040805
usermod: user 'B22040805' does not exist
root@mobdonald-virtual-machine:/home/mobdonald# su B22040805
su: user B22040805 does not exist or the user entry does not contain all the required fields
root@mobdonald-virtual-machine:/home/mobdonald# cd ~
root@mobdonald-virtual-machine:~# touch xzy.txt
root@mobdonald-virtual-machine:~# ls -1
snap
xzy.txt
root@mobdonald-virtual-machine:~#
```

(4) Permission management

Enter the following commands in sequence:

```
$ touch demo
$ chmod 777 demo
$ chmod  a-x demo          # result is rw-rw-rw-
$ chmod  go-w demo         # result is rw-r--r--
$ chmod  g+w demo          # result is rw-rw-r--
$ chmod  a=   demo         # result is ---------
$ chmod  +t demo           # result is --------T
$ chmod  u+s demo          # result is --S-----T
$ chmod  u+rx demo         # result is r-S-----T
$ chmod  g+rws demo        # result is r-srwS--T
```

After entering each line, run ls -l demo to view the result.

```
mobdonald@mobdonald-virtual-machine:~/Desktop$ touch demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod 777 demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod a-x demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
-rw-rw-rw- 1 mobdonald mobdonald     0 11月 11 10:23  demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod go-w demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
-rw-r--r-- 1 mobdonald mobdonald     0 11月 11 10:23  demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod g+w demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
-rw-rw-r-- 1 mobdonald mobdonald     0 11月 11 10:23  demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod a= demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
---------- 1 mobdonald mobdonald     0 11月 11 10:23  demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod +t demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
---------T 1 mobdonald mobdonald     0 11月 11 10:23  demo
```

```
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod u+s demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
---S-----T 1 mobdonald mobdonald     0 11月 11 10:23  demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod u+rx demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
-r-s-----T 1 mobdonald mobdonald     0 11月 11 10:23  demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ chmod g+rws demo
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 76
-rwxrw-r-- 1 mobdonald mobdonald   114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald   302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald   122 10月 12 11:22  4-6.sh
-r-srwS--T 1 mobdonald mobdonald     0 11月 11 10:23  demo
```

(5) Other management

Create folder "others" in the main directory of the user, go to the folder, and create two files with the name of any file. Then run the following commands in sequence.

```
$tar -czvf backup.tar.gz others
$ls -l
$tar  -xzvf  backup.tar.gz
$ls -l
```

Observe changes in the process.

Create a textfile file and make it as follows:

```
no, I study in njupt.
this line ends with 00
this line ends with  .00
I am 25 years old.
He is 15. It is 16.00
wy is the short of my name.
```

Search for all lines beginning with the character "n" in the file textfile

```
$ grep  '^n'  textfile
```

Search the textfile for all linesending in ".00"

```
$ grep  '\.00$'  textfile
```

Search for all lines in the textfile that contain the number 5, followed by the character ".", followed by any character

```
$ grep  '5\..'  textfile
```

Search for all lines starting with the characters "w" and "y" in the file textfile

```
$ grep '^[wy]'textfile
```

```
mobdonald@mobdonald-virtual-machine:~/Desktop$ tar -czvf backup.tar.gz others
others/
others/xh/
others/jl/
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 84
-rwxrw-r-- 1 mobdonald mobdonald    114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald    302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald    122 10月 12 11:22  4-6.sh
-rw-rw-r-- 1 mobdonald mobdonald    151 11月 11 10:45  backup.tar.gz
-r-srwS--T 1 mobdonald mobdonald      0 11月 11 10:23  demo
-rwxrwxr-x 1 mobdonald mobdonald 16216 10月 30 14:48  eb
-rw-rw-r-- 1 mobdonald mobdonald   1578 10月 30 14:47  eb.c
-rwxrwxr-x 1 mobdonald mobdonald 16088 10月 30 14:26  examplea
-rw-rw-r-- 1 mobdonald mobdonald    445 10月 30 14:26  examplea.c
-rwxrwxr-x 1 mobdonald mobdonald 16008 10月 30 14:21  hello
-rw-rw-r-- 1 mobdonald mobdonald    144 10月 30 14:21  hello.c
-rw-rw-r-- 1 mobdonald mobdonald      0 10月 24 09:33  make
drwxrwxr-x 2 mobdonald mobdonald   4096  5月 18 16:18 'New Folder'
drwxrwxr-x 4 mobdonald mobdonald   4096 11月 11 10:45  others
mobdonald@mobdonald-virtual-machine:~/Desktop$ tar -xzvf backup.tar.gz
others/
others/xh/
others/jl/
mobdonald@mobdonald-virtual-machine:~/Desktop$ ls -l
total 84
-rwxrw-r-- 1 mobdonald mobdonald    114 10月 12 10:29  4-1.sh
-rwxrw-r-- 1 mobdonald mobdonald    302 10月 12 10:51  4-4.sh
-rw-rw-r-- 1 mobdonald mobdonald    122 10月 12 11:22  4-6.sh
-rw-rw-r-- 1 mobdonald mobdonald    151 11月 11 10:45  backup.tar.gz
-r-srwS--T 1 mobdonald mobdonald      0 11月 11 10:23  demo
-rwxrwxr-x 1 mobdonald mobdonald 16216 10月 30 14:48  eb
-rw-rw-r-- 1 mobdonald mobdonald   1578 10月 30 14:47  eb.c
-rwxrwxr-x 1 mobdonald mobdonald 16088 10月 30 14:26  examplea
-rw-rw-r-- 1 mobdonald mobdonald    445 10月 30 14:26  examplea.c
-rwxrwxr-x 1 mobdonald mobdonald 16008 10月 30 14:21  hello
-rw-rw-r-- 1 mobdonald mobdonald    144 10月 30 14:21  hello.c
-rw-rw-r-- 1 mobdonald mobdonald      0 10月 24 09:33  make
drwxrwxr-x 2 mobdonald mobdonald   4096  5月 18 16:18 'New Folder'
drwxrwxr-x 4 mobdonald mobdonald   4096 11月 11 10:45  others
mobdonald@mobdonald-virtual-machine:~/Desktop$ vim 123.txt
mobdonald@mobdonald-virtual-machine:~/Desktop$ grep '^n' 123.txt
no, I study in njupt.
mobdonald@mobdonald-virtual-machine:~/Desktop$ grep '\.00$' 123.txt
this line ends with .00
He is 15. It is 16.00
mobdonald@mobdonald-virtual-machine:~/Desktop$ grep '5\..' 123.txt
He is 15. It is 16.00
mobdonald@mobdonald-virtual-machine:~/Desktop$ grep '^[wy]' 123.txt
wy is the short of my name.
mobdonald@mobdonald-virtual-machine:~/Desktop$
```