#Experiment 1

1. Objective

Get familiar with the Linux operating system environment through experiments and master the use of basic Linux commands.

2. Requirement

- Master the permission management of Linux files
- Master basic file and directory operations
- Linux user management
- File compression and archiving

3. Experiment Step

(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.

(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.

(3)User Management

Enter the following commands in sequence:

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

Enter the password of the current logged-in user, [obscured by image]

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

Follow the prompts to create the user and add the [obscured by image]

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.

(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.

###(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 lines ending 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
```

```
bnbw123@dbnbw123-virtual-machine:~$ tar -czvf backup.tar.gz others
thers/
thers/t1.txt
thers/t2.txt
bnbw123@dbnbw123-virtual-machine:~$ ls -l
总计 5780
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月  1  2024 公共的
rw-rw-r-- 1 dbnbw123 dbnbw123      12 11月 11 10:20 马润2.txt
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月  1  2024 模板
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月  1  2024 视频
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月  1  2024 图片
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月  1  2024 文档
rwxr-xr-x 2 dbnbw123 dbnbw123    4096 10月 22 11:25 下载
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月  1  2024 音乐
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  5月 29 12:47 桌面
```

```
bnbw123@dbnbw123-virtual-machine:~$ tar -xzvf backup.tar.gz
thers/
thers/t1.txt
thers/t2.txt
bnbw123@dbnbw123-virtual-machine:~$ ls -l
总计 5780
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月   1  2024 公共的
rw-rw-r-- 1 dbnbw123 dbnbw123      12 11月 11 10:20 马润2.txt
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月   1  2024 模板
rwxr-xr-x 2 dbnbw123 dbnbw123    4096  4月   1  2024 视频
```

```
dbnbw123@dbnbw123-virtual-machine:~$ grep '^n' ex1_5.txt
no, I study in njupt.
dbnbw123@dbnbw123-virtual-machine:~$ grep '\.00$' ex1_5.txt
this line ends with .00
He is 15. It is 16.00
dbnbw123@dbnbw123-virtual-machine:~$ grep '5\..' ex1_5.txt
He is 15. It is 16.00
dbnbw123@dbnbw123-virtual-machine:~$ grep '^[wy]' exe1_6.txt
grep: exe1_6.txt: 没有那个文件或目录
dbnbw123@dbnbw123-virtual-machine:~$ grep '^[wy]' exe1_5.txt
grep: exe1_5.txt: 没有那个文件或目录
dbnbw123@dbnbw123-virtual-machine:~$ grep '^[wy]' ex1_5.txt
wy is the short of my name.
dbnbw123@dbnbw123-virtual-machine:~$
```