

#Experiment 1

## Objective

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

## Requirement

Master the permission management of Linux files

Master basic file and directory operations

Linux user management

File compression and archiving

## Experiment Step

### Directory Operation

Enter the following commands in sequence:

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

#### 1.File operation

Enter the following commands in sequence:

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

```
$pwd
```

```
$cd ~
```

```
$mkdir your_studentID
```

```
$cd your_studentID
```

```
$mkdir your_name
```

```
$ls
```

```
$rmdir your_name
```

```
$ls
```

```
$cd ~
```

```
$touch yourname.txt
```

```
$ls
```

```
$echo "hello world" > yourname.txt
```

```
$cat yourname.txt
```

```
$cp yourname.txt yourname2.txt
```

```
$mv yourname.txt yourstudentid.txt
```

```
$ls
```

```
xuan@xuan-None: ~/B19040710
xuan@xuan-None:~$ pwd
/home/xuan
xuan@xuan-None:~$ cd ~
xuan@xuan-None:~$ mkdir B19040710
xuan@xuan-None:~$ cd B19040710
xuan@xuan-None:~/B19040710$ mkdir 王文宣
xuan@xuan-None:~/B19040710$ mkdir 王文轩
xuan@xuan-None:~/B19040710$ rmdir 王文宣
xuan@xuan-None:~/B19040710$ ls
王文轩
xuan@xuan-None:~/B19040710$ cd ~
xuan@xuan-None:~$ cd B19040710
xuan@xuan-None:~/B19040710$ ls
王文轩
xuan@xuan-None:~/B19040710$ rmdir 王文轩
xuan@xuan-None:~/B19040710$ ls
xuan@xuan-None:~/B19040710$ touch 王文轩.txt
xuan@xuan-None:~/B19040710$ ls
王文轩.txt
xuan@xuan-None:~/B19040710$ echo "hello world">王文轩.txt
xuan@xuan-None:~/B19040710$ cat 王文轩.txt
hello world
xuan@xuan-None:~/B19040710$ cp 王文轩.txt 王文轩2.txt
xuan@xuan-None:~/B19040710$ mv 王文轩.txt B19040710.txt
xuan@xuan-None:~/B19040710$ ls
王文轩2.txt  B19040710.txt
xuan@xuan-None:~/B19040710$
```

## User Management

Enter the following commands in sequence:

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

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

Switch to the user.

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

## 2.Permission management

Enter the following commands in sequence:

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

```
$whoami
```

```
$sudo su root
```

```
#groupadd student
```

```
#whoami
```

```
#adduser yourstudentID
```

```
#usermod -g student yourstudentID
```

```
#su yourstudentID
```

```
$cd ~
```

```
$touch yourname.txt
$ls -l
$ 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
$tar -czvf backup.tar.gz others
$ls -l
$tar -xzvf backup.tar.gz
$ls -lObserve changes in the process.
```

```
xuan@xuan-None:~$ sudo su root
[sudo] xuan 的密码:
root@xuan-None:/home/xuan# groupadd student
groupadd: "student"组已存在
root@xuan-None:/home/xuan# adduser b19040710
fatal: 用户"b19040710"已经存在。
root@xuan-None:/home/xuan# usermod -g student b19040710
usermod: 无改变
root@xuan-None:/home/xuan# su b19040710
b19040710@xuan-None:/home/xuan$ cd ~
b19040710@xuan-None:~$ touch 王文轩.txt
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ touch demo
b19040710@xuan-None:~$ chmod 777 demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-rwxrwxrwx 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod a-x demo
b19040710@xuan-None:~$ ls -l
```

```
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod go-w demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod g+w demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-rw-rw-r-- 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod a= demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-----T 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod +t demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-----T 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod u+s demo
b19040710@xuan-None:~$ ls -l
```

```
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod u+s demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
---S-----T 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod u+rx
chmod: "u+rx" 后缺少操作对象
请尝试执行 "chmod --help" 来获取更多信息。
b19040710@xuan-None:~$ chmod u+rx demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-r-s-----T 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ chmod g+rws demo
b19040710@xuan-None:~$ ls -l
总计 0
-rw-r--r-- 1 b19040710 student 0 12月  9 16:09 王文轩.txt
-r-srws--T 1 b19040710 student 0 12月  9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
```



```

b19040710@xuan-None:~$ tar -czvf backup.tar.gz others
tar: others: 无法 stat: 没有那个文件或目录
tar: 由于前次错误，将以上次的错误状态退出
b19040710@xuan-None:~$ ls
王文轩.txt  backup.tar.gz  demo  wangwenxuan.txt
b19040710@xuan-None:~$ tar -czvf backup.tar.gz
tar: 谨慎地拒绝创建空归档文件
请用“tar --help”或“tar --usage”获得更多信息。
b19040710@xuan-None:~$ tar -xzvf backup.tar.gz
b19040710@xuan-None:~$ ls
王文轩.txt  backup.tar.gz  demo  wangwenxuan.txt
b19040710@xuan-None:~$ ls -l
总计 4
-rw-r--r-- 1 b19040710 student 0 12月 9 16:09 王文轩.txt
-rw-r--r-- 1 b19040710 student 45 12月 9 16:13 backup.tar.gz
-r-srwS--T 1 b19040710 student 0 12月 9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$ tar -czvf backup.tar.gz
tar: 谨慎地拒绝创建空归档文件
请用“tar --help”或“tar --usage”获得更多信息。
b19040710@xuan-None:~$ ls -l
总计 4
-rw-r--r-- 1 b19040710 student 0 12月 9 16:09 王文轩.txt
-rw-r--r-- 1 b19040710 student 45 12月 9 16:13 backup.tar.gz
-r-srwS--T 1 b19040710 student 0 12月 9 16:09 demo
-rw-r--r-- 1 b19040710 student 0 10月 14 10:31 wangwenxuan.txt
b19040710@xuan-None:~$

```

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

```
xuan@xuan-None: ~  
xuan@xuan-None:~$ grep '^n' B19040710.txt  
no, I study in njupt.  
xuan@xuan-None:~$ grep '\.00$' B19040710.txt  
this line ends with 00  
this line ends with .00  
He is 15. It is 16.00  
xuan@xuan-None:~$ grep '5\.. ' B19040710.txt  
He is 15. It is 16.00  
xuan@xuan-None:~$ grep '^[wy]' B19040710.txt  
y is the short of myname  
xuan@xuan-None:~$
```