#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

(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

```
yyy@canghaihuaovo:~/B22040720$ cd ~
yyy@canghaihuaovo:~$ touch yinyuyang.txt
yyy@canghaihuaovo:~$ ls
公共的    桌面                           Library
模板      anaconda3                      'Nutstore Files'
视频      audio_config_content.json      package-lock.json
图片      B22040720                      PycharmProjects
文档      CLionProjects                  snap
下载      common_config_content.json     video_config_content.json
音乐      config_info.json               yinyuyang.txt
yyy@canghaihuaovo:~$ echo "hello world" > yinyuyang.txt
yyy@canghaihuaovo:~$ cat yinyuyang.txt
hello world
yyy@canghaihuaovo:~$ cp yinyuyang.txt yinyuyang2.txt
yyy@canghaihuaovo:~$ mv yinyuyang.txt  B22040720.txt
yyy@canghaihuaovo:~$ ls
公共的    anaconda3                      'Nutstore Files'
模板      audio_config_content.json      package-lock.json
视频      B22040720                      PycharmProjects
图片      B22040720.txt                  snap
文档      CLionProjects                  video_config_content.json
下载      common_config_content.json     yinyuyang2.txt
音乐      config_info.json
桌面      Library
```

(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.

(4) Permission management
Enter the following commands in sequence:
$ touch demo
$ chmod 777 demo
$ chmoda-x demo# result is rw-rw-rw-
$ chmodgo-w demo# result is rw-r--r--
$ chmodg+w demo# result is rw-rw-r--
$ chmoda=$ chmod+t demo# result is --------T
$ chmodu+s demo# result is --S-----T
$ chmodu+rx demo# result is r-s-----T
$ chmodg+rws demo# result is r-srwS--T
demo
result is ---------
After entering each line, run ls -l demo to view the result.

```
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod 777 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
-rwxrwxrwx 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod a-x demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
-rw-rw-rw- 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod go-w demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
-rw-r--r-- 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod g+w demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
-rw-rw-r-- 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod a= demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
--------- 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod +t demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
---------T 1 yyy yyy 0 10月 30 15:10 demo
```

```
            T 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod u+s demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
---S-----T 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod u+rx demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
-r-s-----T 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ chmod g+rws demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$ ls -l
总计 0
-r-srwS--T 1 yyy yyy 0 10月 30 15:10 demo
yyy@canghaihuaovo:~/文档/实验/linux实验一$
```

(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
$ls -l
```

```
yyy@canghathuaovo:~$ ls -l
总计 68
drwxr-xr-x  2 yyy yyy 4096  9月 23 21:31 公共的
drwxr-xr-x  2 yyy yyy 4096 10月 30 14:59 模板
drwxr-xr-x  2 yyy yyy 4096  9月 23 21:31 视频
drwxr-xr-x  3 yyy yyy 4096 10月 24 09:05 图片
drwxr-xr-x  6 yyy yyy 4096 12月  4 09:39 文档
drwxr-xr-x  6 yyy yyy 4096 12月  4 11:27 下载
drwxr-xr-x  2 yyy yyy 4096  9月 23 21:31 音乐
drwxr-xr-x  2 yyy yyy 4096 10月 30 14:59 桌面
drwxrwxr-x 31 yyy yyy 4096 10月 11 12:07 anaconda3
-rw-rw-r--  1 yyy yyy  156 12月  9 11:05 backup.tar.gz
drwxrwxr-x  3 yyy yyy 4096 10月 27 23:41 CLionProjects
drwxrwxr-x  2 yyy yyy 4096 11月 27 13:41 jf03
drwxrwxr-x  3 yyy yyy 4096 10月 30 14:49 Library
drwxrwxr-x  4 yyy yyy 4096 12月  4 11:27 'Nutstore Files'
drwxrwxr-x  2 yyy yyy 4096 12月  9 11:05 others
drwxrwxr-x  5 yyy yyy 4096 10月 30 20:01 PycharmProjects
drwx------  9 yyy yyy 4096 10月 30 14:49 snap
```

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

```
yyy@canghaihuaovo:~$ touch '^n' textfile
yyy@canghaihuaovo:~$ grep '^n' textfile
no, I study in njupt.
yyy@canghaihuaovo:~$ grep '\.00$' textfile
this line ends with .00
He is 15. It is 16.00
yyy@canghaihuaovo:~$ grep '5\..' textfile
He is 15. It is 16.00
yyy@canghaihuaovo:~$ grep '^[wy]' textfile
wy is the short of my name.
yyy@canghaihuaovo:~$
```