

1. Objective

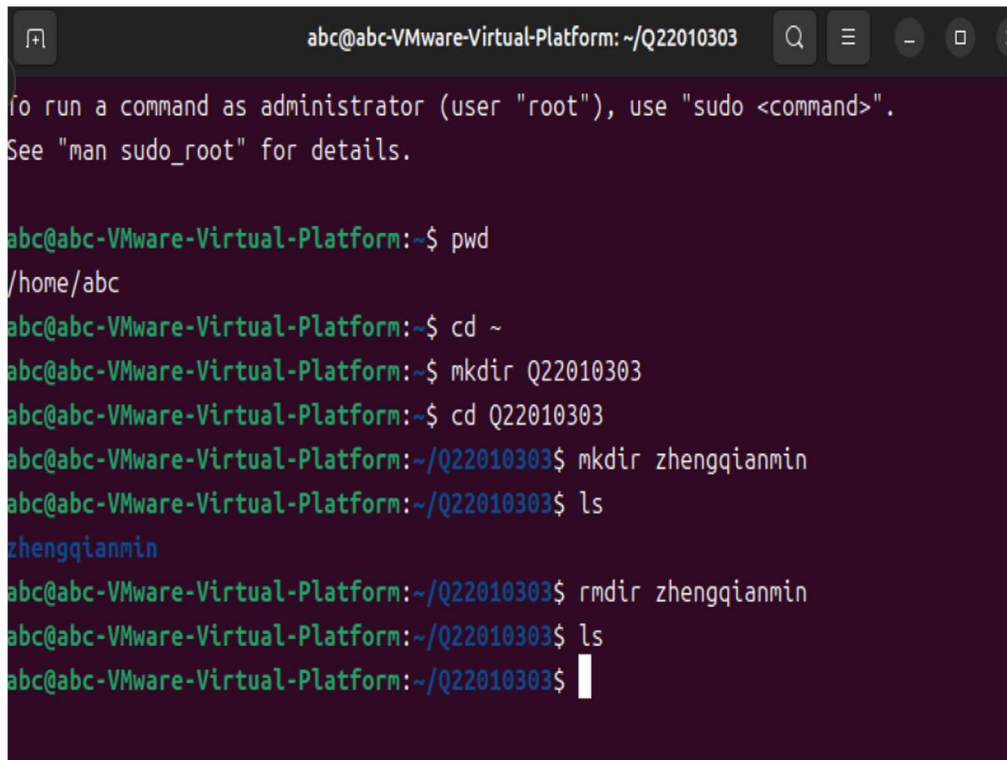
Get familiar with the Linux operating system environment through experiments and master the use of basic Linux commands.

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



```
abc@abc-VMware-Virtual-Platform: ~/Q22010303
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

abc@abc-VMware-Virtual-Platform:~$ pwd
/home/abc
abc@abc-VMware-Virtual-Platform:~$ cd ~
abc@abc-VMware-Virtual-Platform:~$ mkdir Q22010303
abc@abc-VMware-Virtual-Platform:~$ cd Q22010303
abc@abc-VMware-Virtual-Platform:~/Q22010303$ mkdir zhengqianmin
abc@abc-VMware-Virtual-Platform:~/Q22010303$ ls
zhengqianmin
abc@abc-VMware-Virtual-Platform:~/Q22010303$ rmdir zhengqianmin
abc@abc-VMware-Virtual-Platform:~/Q22010303$ ls
abc@abc-VMware-Virtual-Platform:~/Q22010303$
```

(2) File operation

```
abc@abc-VMware-Virtual-Platform: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
abc@abc-VMware-Virtual-Platform:~/桌面$ cd ~  
abc@abc-VMware-Virtual-Platform:~$ touch zqm.txt  
abc@abc-VMware-Virtual-Platform:~$ ls  
公共 模板 视频 图片 文档 下载 音乐 桌面 Q22010303 snap zqm.txt  
abc@abc-VMware-Virtual-Platform:~$ echo "hello world">zqm.txt  
abc@abc-VMware-Virtual-Platform:~$ cat zqm.txt  
hello world  
abc@abc-VMware-Virtual-Platform:~$ cp zqm.txt zqm2.txt  
abc@abc-VMware-Virtual-Platform:~$ mv zqm.txt Q22010303.txt  
abc@abc-VMware-Virtual-Platform:~$ ls  
公共 视频 文档 音乐 Q22010303 snap  
模板 图片 下载 桌面 Q22010303.txt zqm2.txt  
abc@abc-VMware-Virtual-Platform:~$
```

(3) User Management

```
q22010303@abc-VMware-Virtual-Platform: ~  
abc@abc-VMware-Virtual-Platform:~/桌面$ whoami  
abc  
abc@abc-VMware-Virtual-Platform:~/桌面$ sudo su root  
[sudo] abc 的密码:  
root@abc-VMware-Virtual-Platform:/home/abc/桌面# groupadd student  
root@abc-VMware-Virtual-Platform:/home/abc/桌面# whoami  
root  
root@abc-VMware-Virtual-Platform:/home/abc/桌面# adduser q22010303  
info: 正在添加用户"q22010303"...  
info: 从 1000 到 59999 中选择 UID/GID...  
info: 正在添加新组"q22010303" (1001)...  
info: 正在添加新用户"q22010303" (1001) 到组"q22010303 (1001)"...  
info: 创建主目录"/home/q22010303"...  
info: 正在从"/etc/skel"复制文件...  
新的密码:  
重新输入新的密码:  
passwd: 已成功更新密码  
正在改变 q22010303 的用户信息  
请输入新值, 或直接敲回车键以使用默认值  
    全名 []:  
    房间号码 []:  
    工作电话 []:  
    家庭电话 []:  
    其它 []:
```

```
q22010303@abc-VMware-Virtual-Platform: ~  
info: 正在添加新用户"q22010303" (1001) 到组"q22010303 (1001)"...  
info: 创建主目录"/home/q22010303"...  
info: 正在从"/etc/skel"复制文件...  
新的密码:  
重新输入新的密码:  
passwd: 已成功更新密码  
正在改变 q22010303 的用户信息  
请输入新值, 或直接敲回车键以使用默认值  
    全名 []:  
    房间号码 []:  
    工作电话 []:  
    家庭电话 []:  
    其它 []:  
这些信息是否正确? [Y/n] Y  
info: 正在添加新用户"q22010303"到附加组"users" ...  
info: 正在添加用户"q22010303"到"users"组...  
root@abc-VMware-Virtual-Platform:/home/abc/桌面# usermod -g student q22010303  
root@abc-VMware-Virtual-Platform:/home/abc/桌面# su q22010303  
q22010303@abc-VMware-Virtual-Platform:/home/abc/桌面$ cd ~  
q22010303@abc-VMware-Virtual-Platform:~$ touch zqm.txt  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l  
总计 0  
-rw-r--r-- 1 q22010303 student 0 10月 15 16:58 zqm.txt  
q22010303@abc-VMware-Virtual-Platform:~$
```

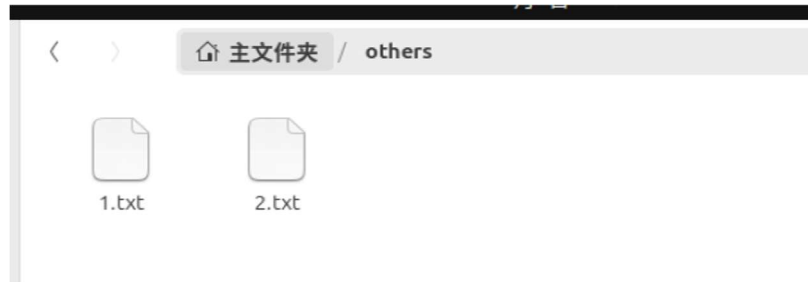
(4) Permission management

```
q22010303@abc-VMware-Virtual-Platform: ~  
q22010303@abc-VMware-Virtual-Platform:~$ touch demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod 777 demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
-rwxrwxrwx 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod a-x demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
-rw-rw-rw- 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod go-w demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
-rw-r--r-- 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod g+w demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
-rw-rw-r-- 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod a= demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
----- 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod +t demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo
```

```
q22010303@abc-VMware-Virtual-Platform: ~  
q22010303@abc-VMware-Virtual-Platform:~$ chmod g+w demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
  
-rw-rw-r-- 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod a= demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
  
----- 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod +t demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
  
-----T 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod u+s demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
  
---S-----T 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod u+rx demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
  
-r-s-----T 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$ chmod g+rws demo  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l demo  
  
-r-srwS--T 1 q22010303 student 0 10月 14 10:08 demo  
q22010303@abc-VMware-Virtual-Platform:~$
```


(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.



```
q22010303@abc-VMware-Virtual-Platform: ~  
q22010303@abc-VMware-Virtual-Platform:~$ ls  
公共 模板 视频 图片 文档 下载 音乐 桌面 git others snap  
q22010303@abc-VMware-Virtual-Platform:~$ tar -czvf backup.tar.gz others  
others/  
others/1.txt  
others/2.txt  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l  
总计 48  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 公共  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 模板  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 视频  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 图片  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 文档  
drwxr-xr-x 4 q22010303 root 4096 11月 29 09:18 下载  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 音乐  
drwxr-xr-x 4 q22010303 root 4096 12月 2 10:54 桌面  
-rw-r--r-- 1 q22010303 root 163 12月 8 19:57 backup.tar.gz  
drwxr-xr-x 3 q22010303 root 4096 12月 2 11:07 git  
drwxr-xr-x 2 q22010303 root 4096 12月 8 19:50 others  
drwx----- 5 q22010303 root 4096 12月 8 19:54 snap  
q22010303@abc-VMware-Virtual-Platform:~$ rm -r others
```

```
q22010303@abc-VMware-Virtual-Platform:~  
q22010303@abc-VMware-Virtual-Platform:~$ rm -r others  
q22010303@abc-VMware-Virtual-Platform:~$ ls  
公共 模板 视频 图片 文档 下载 音乐 桌面 backup.tar.gz git snap  
q22010303@abc-VMware-Virtual-Platform:~$ tar -xzvf backup.tar.gz  
others/  
others/1.txt  
others/2.txt  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l  
ls-l: 未找到命令  
q22010303@abc-VMware-Virtual-Platform:~$ ls -l  
总计 48  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 公共  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 模板  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 视频  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 图片  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 文档  
drwxr-xr-x 4 q22010303 root 4096 11月 29 09:18 下载  
drwxr-xr-x 2 q22010303 root 4096 10月 16 13:07 音乐  
drwxr-xr-x 4 q22010303 root 4096 12月 2 10:54 桌面  
-rw-r--r-- 1 q22010303 root 163 12月 8 19:57 backup.tar.gz  
drwxr-xr-x 3 q22010303 root 4096 12月 2 11:07 git  
drwxr-xr-x 2 q22010303 root 4096 12月 8 19:50 others  
drwx----- 5 q22010303 root 4096 12月 8 19:54 snap  
q22010303@abc-VMware-Virtual-Platform:~$
```

Search the textfile

```
abc@abc-VMware-Virtual-Platform: ~  
abc@abc-VMware-Virtual-Platform:~$ grep '^n' 1.txt  
no,I study in njupt.  
abc@abc-VMware-Virtual-Platform:~$ grep '\.00' 1.txt  
this line ends with .00  
He is 15. It is 16.00  
abc@abc-VMware-Virtual-Platform:~$ grep '\.00$' 1.txt  
this line ends with .00  
He is 15. It is 16.00  
abc@abc-VMware-Virtual-Platform:~$ grep '5\..$' 1.txt  
abc@abc-VMware-Virtual-Platform:~$ grep '5\..' 1.txt  
He is 15. It is 16.00  
abc@abc-VMware-Virtual-Platform:~$ grep '^[wy]' 1.txt  
wy is the short of my name.  
abc@abc-VMware-Virtual-Platform:~$
```