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学号：202101000720

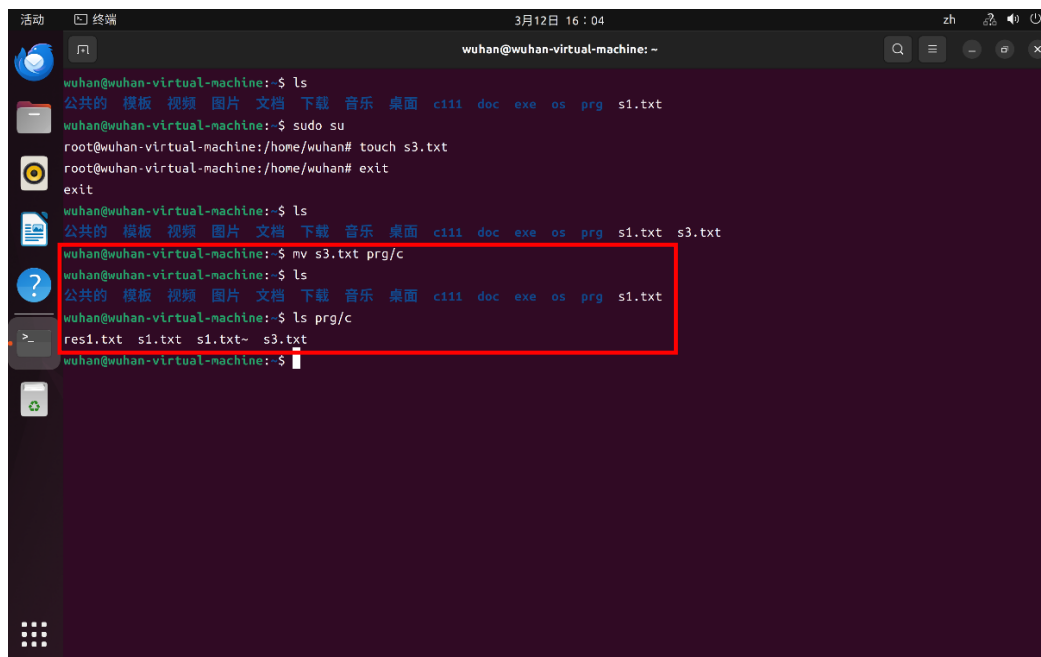
成绩：

实验 3 文件移动与查找

1、将文件 s3.txt 移动到 prg/c 目录下

命令：mv s3.txt prg/c

结果：



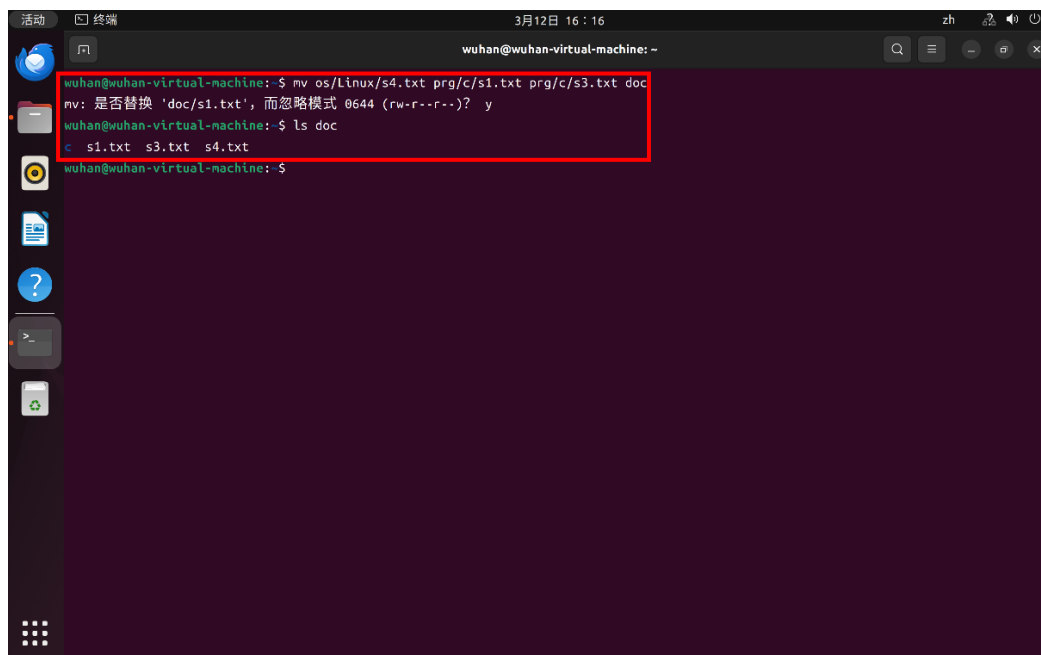
```
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe os prg s1.txt
wuhan@wuhan-virtual-machine:~$ sudo su
root@wuhan-virtual-machine:/home/wuhan# touch s3.txt
root@wuhan-virtual-machine:/home/wuhan# exit
exit
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe os prg s1.txt s3.txt
wuhan@wuhan-virtual-machine:~$ mv s3.txt prg/c
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe os prg s1.txt
wuhan@wuhan-virtual-machine:~$ ls prg/c
res1.txt s1.txt s1.txt~ s3.txt
wuhan@wuhan-virtual-machine:~$
```

图 1 移动文件

2、将文件 os/Linux/s4.txt 和 prg/c/s1.txt、prg/c/s3.txt 移动到 doc 目录下

命令：mv os/Linux/s4.txt prg/c/s1.txt prg/c/s3.txt doc

结果：



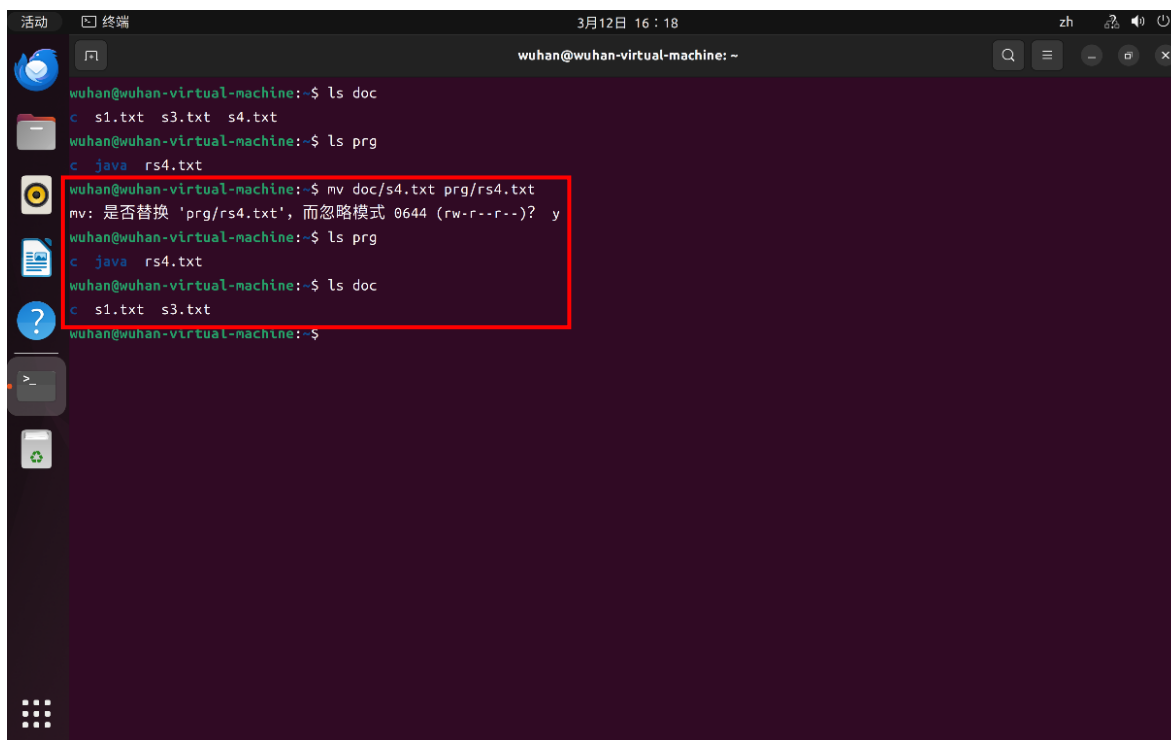
```
wuhan@wuhan-virtual-machine:~$ mv os/Linux/s4.txt prg/c/s1.txt prg/c/s3.txt doc
mv: 是否替换 'doc/s1.txt', 而忽略模式 0644 (rw-r--r--)? y
wuhan@wuhan-virtual-machine:~$ ls doc
c s1.txt s3.txt s4.txt
wuhan@wuhan-virtual-machine:~$
```

图 2 移动文件

3、将文件 doc/s4.txt 移动到 prg 目录下并且重命名为 rs4.txt

命令: `mv doc/s4.txt prg/rs4.txt`

结果:

A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a dark purple background. The terminal shows a series of commands and their outputs. The command 'mv doc/s4.txt prg/rs4.txt' is highlighted with a red box. The output of this command is 'mv: 是否替换 'prg/rs4.txt', 而忽略模式 0644 (rw-r--r--)? y'. The terminal also shows the contents of the 'doc' and 'prg' directories before and after the move operation.

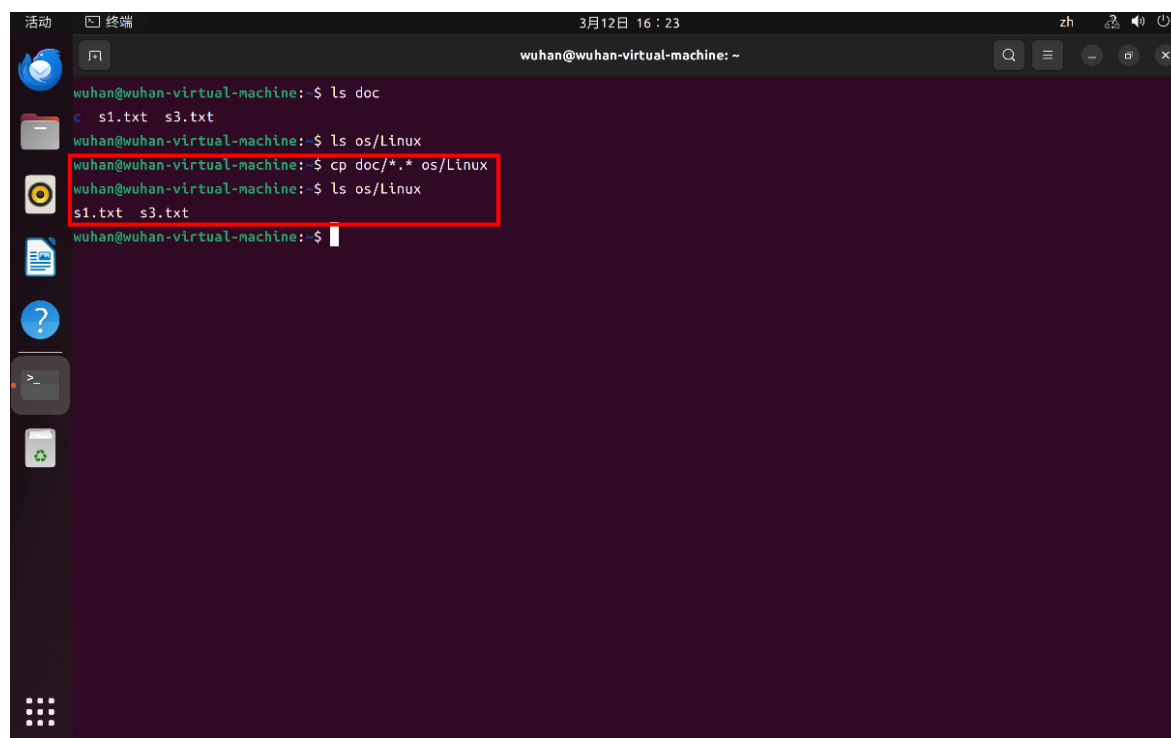
```
wuhan@wuhan-virtual-machine:~$ ls doc
c s1.txt s3.txt s4.txt
wuhan@wuhan-virtual-machine:~$ ls prg
c java rs4.txt
wuhan@wuhan-virtual-machine:~$ mv doc/s4.txt prg/rs4.txt
mv: 是否替换 'prg/rs4.txt', 而忽略模式 0644 (rw-r--r--)? y
wuhan@wuhan-virtual-machine:~$ ls prg
c java rs4.txt
wuhan@wuhan-virtual-machine:~$ ls doc
c s1.txt s3.txt
wuhan@wuhan-virtual-machine:~$
```

图 3 移动文件并重命名

4、将 doc 目录下的文件复制到 os/Linux 目录下

命令: `cp doc/*.* os/Linux`

结果:

A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a dark purple background. The terminal shows a series of commands and their outputs. The command 'cp doc/*.* os/Linux' is highlighted with a red box. The terminal also shows the contents of the 'doc' and 'os/Linux' directories before and after the copy operation.

```
wuhan@wuhan-virtual-machine:~$ ls doc
c s1.txt s3.txt
wuhan@wuhan-virtual-machine:~$ ls os/Linux
wuhan@wuhan-virtual-machine:~$ cp doc/*.* os/Linux
wuhan@wuhan-virtual-machine:~$ ls os/Linux
s1.txt s3.txt
wuhan@wuhan-virtual-machine:~$
```

图 4 复制文件

5、将 os/Linux 目录移动到 prg 目录下

命令: `mv os/Linux prg`

结果:

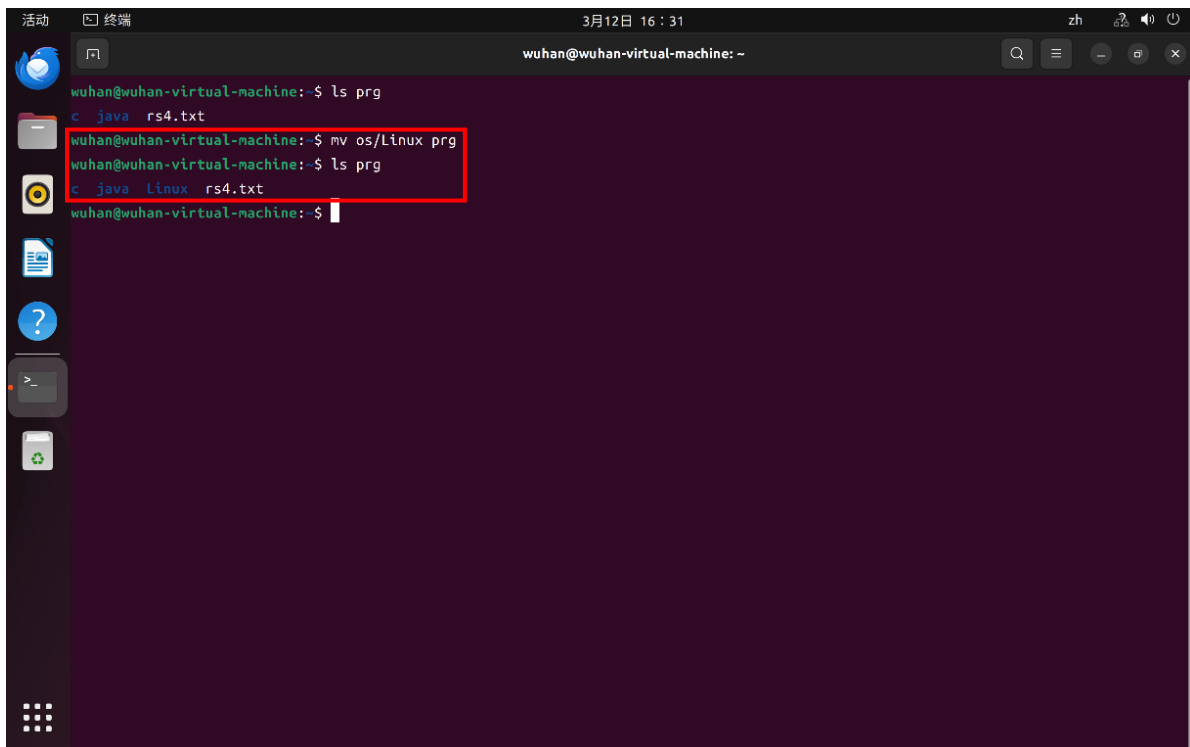


图 5 移动目录

6、将 prg/Linux 目录重命名为 prg/UNIX

命令: `mv prg/Linux prg/UNIX`

结果:

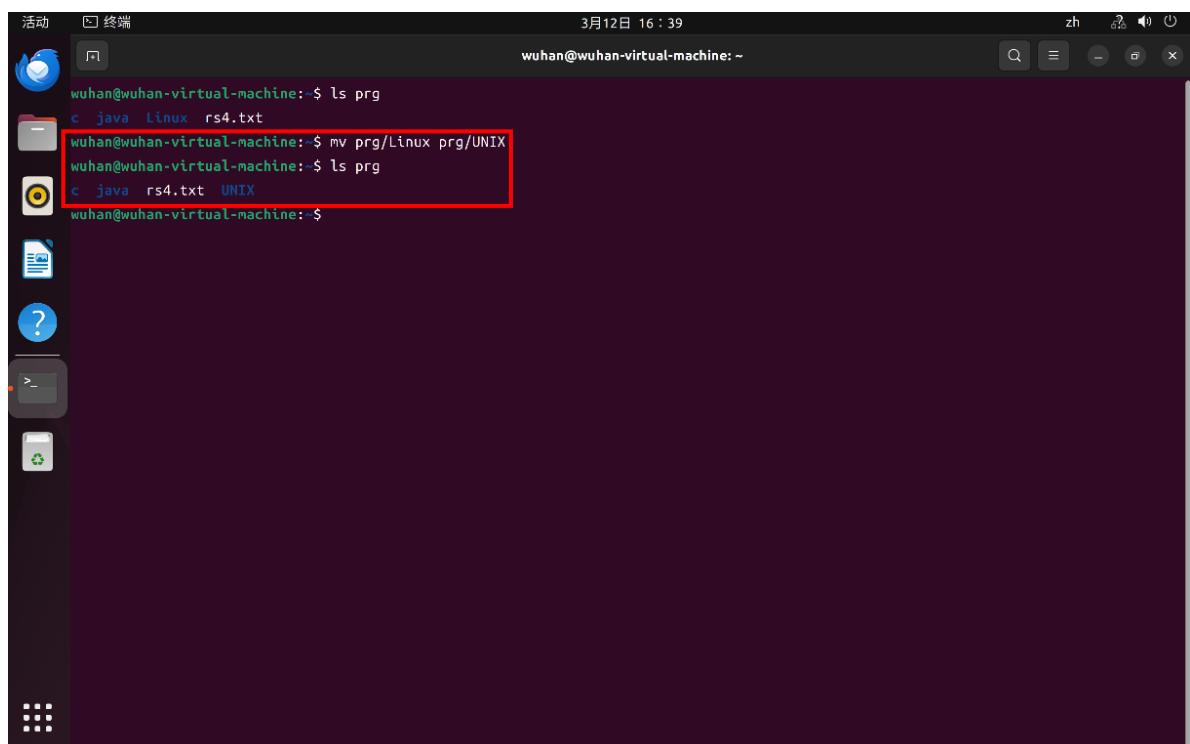
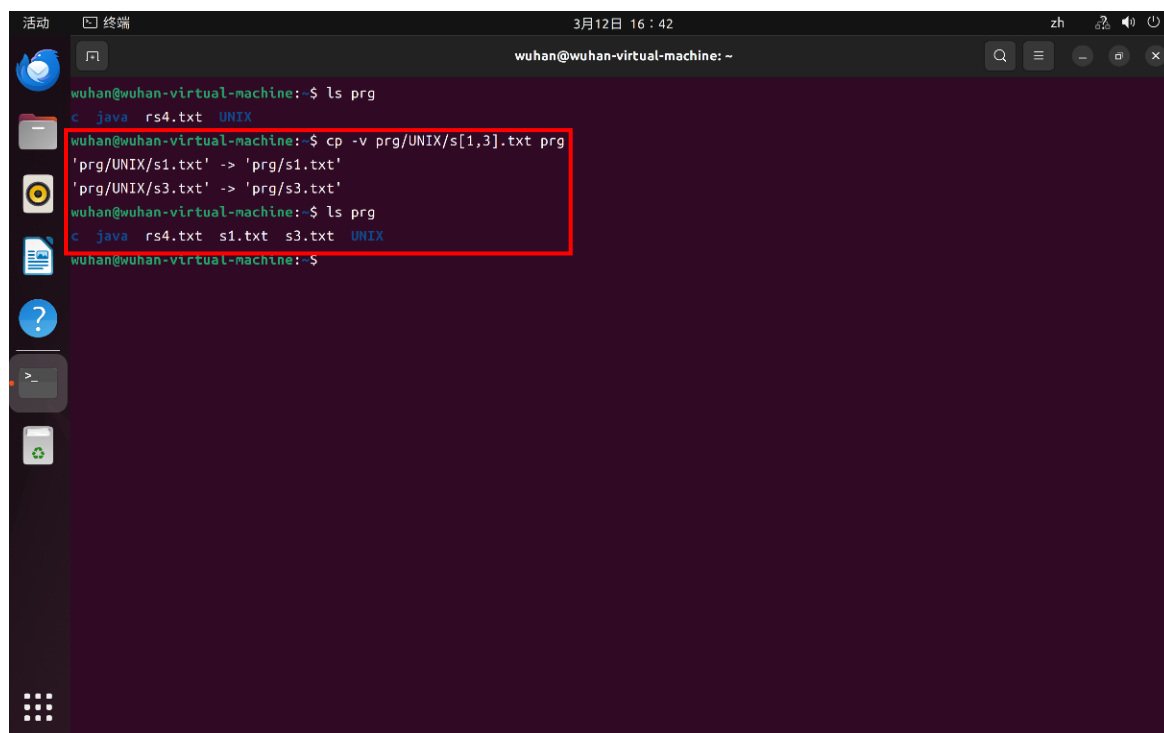


图 6 重命名目录

7、复制 prg/UNIX 目录下的文件 s1.txt、s3.txt 到目录 prg 下，并且显示被复制文件名

命令：cp -v prg/UNIX/s[1,3].txt prg

结果：

A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a dark purple background. The terminal shows a series of commands and their outputs. A red rectangle highlights the following sequence: the command 'cp -v prg/UNIX/s[1,3].txt prg', the output 'prg/UNIX/s1.txt' -> 'prg/s1.txt', the output 'prg/UNIX/s3.txt' -> 'prg/s3.txt', and the subsequent 'ls prg' command which lists 'rs4.txt s1.txt s3.txt UNIX'.

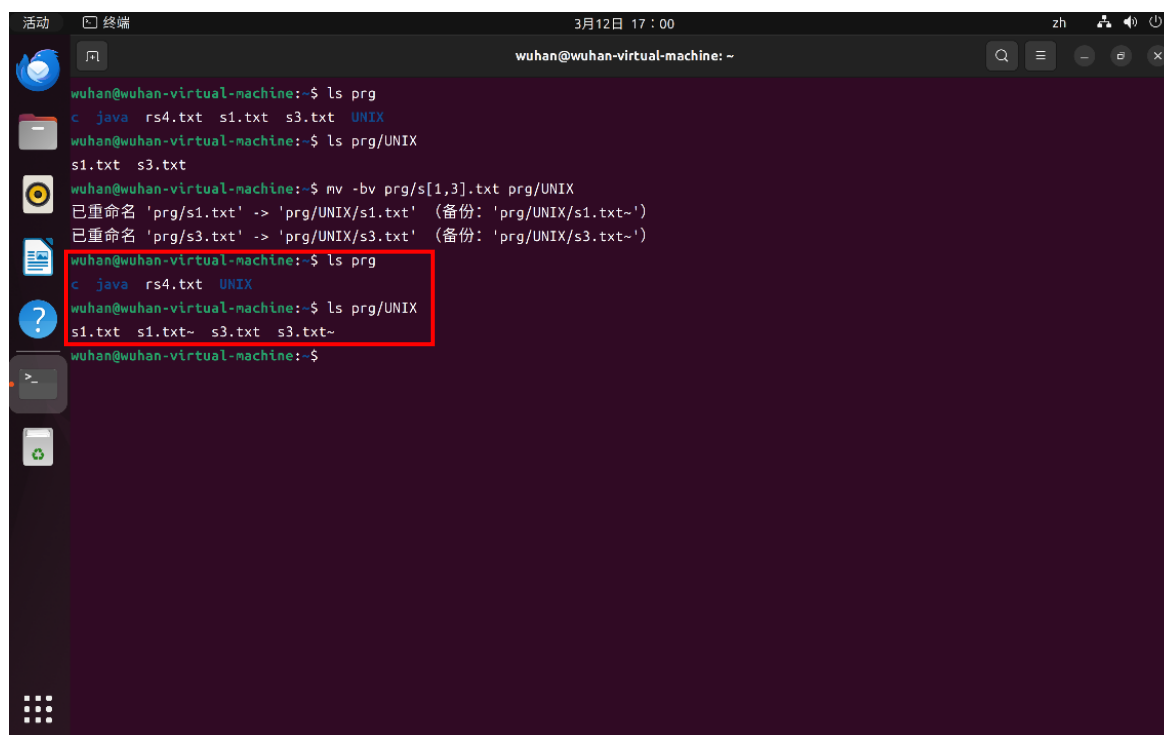
```
wuhan@wuhan-virtual-machine:~$ ls prg
c java rs4.txt UNIX
wuhan@wuhan-virtual-machine:~$ cp -v prg/UNIX/s[1,3].txt prg
'prg/UNIX/s1.txt' -> 'prg/s1.txt'
'prg/UNIX/s3.txt' -> 'prg/s3.txt'
wuhan@wuhan-virtual-machine:~$ ls prg
c java rs4.txt s1.txt s3.txt UNIX
wuhan@wuhan-virtual-machine:~$
```

图 7 复制文件

8、将 prg 目录下的文件 s1.txt、s3.txt 移动到 prg/UNIX 目录下，若有同名文件，则创建备份

命令：mv -bv prg/s[1,3].txt prg/UNIX

结果：

A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a dark purple background. The terminal shows commands and outputs for moving files. A red rectangle highlights the 'ls prg/UNIX' command and its output, which lists 's1.txt s1.txt~ s3.txt s3.txt~'.

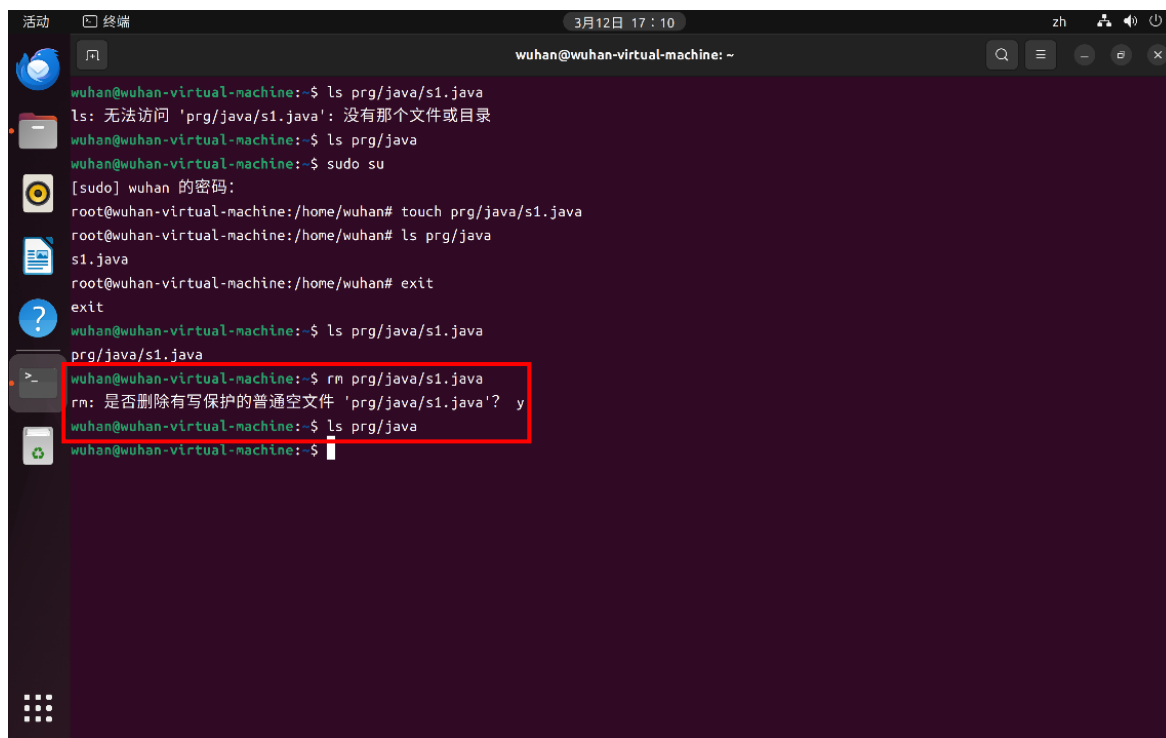
```
wuhan@wuhan-virtual-machine:~$ ls prg
c java rs4.txt s1.txt s3.txt UNIX
wuhan@wuhan-virtual-machine:~$ ls prg/UNIX
s1.txt s3.txt
wuhan@wuhan-virtual-machine:~$ mv -bv prg/s[1,3].txt prg/UNIX
已重命名 'prg/s1.txt' -> 'prg/UNIX/s1.txt' (备份: 'prg/UNIX/s1.txt~')
已重命名 'prg/s3.txt' -> 'prg/UNIX/s3.txt' (备份: 'prg/UNIX/s3.txt~')
wuhan@wuhan-virtual-machine:~$ ls prg
c java rs4.txt UNIX
wuhan@wuhan-virtual-machine:~$ ls prg/UNIX
s1.txt s1.txt~ s3.txt s3.txt~
wuhan@wuhan-virtual-machine:~$
```

图 8 移动文件

9、删除文件 prg/java/s1.java

命令: `rm prg/java/s1.java`

结果:



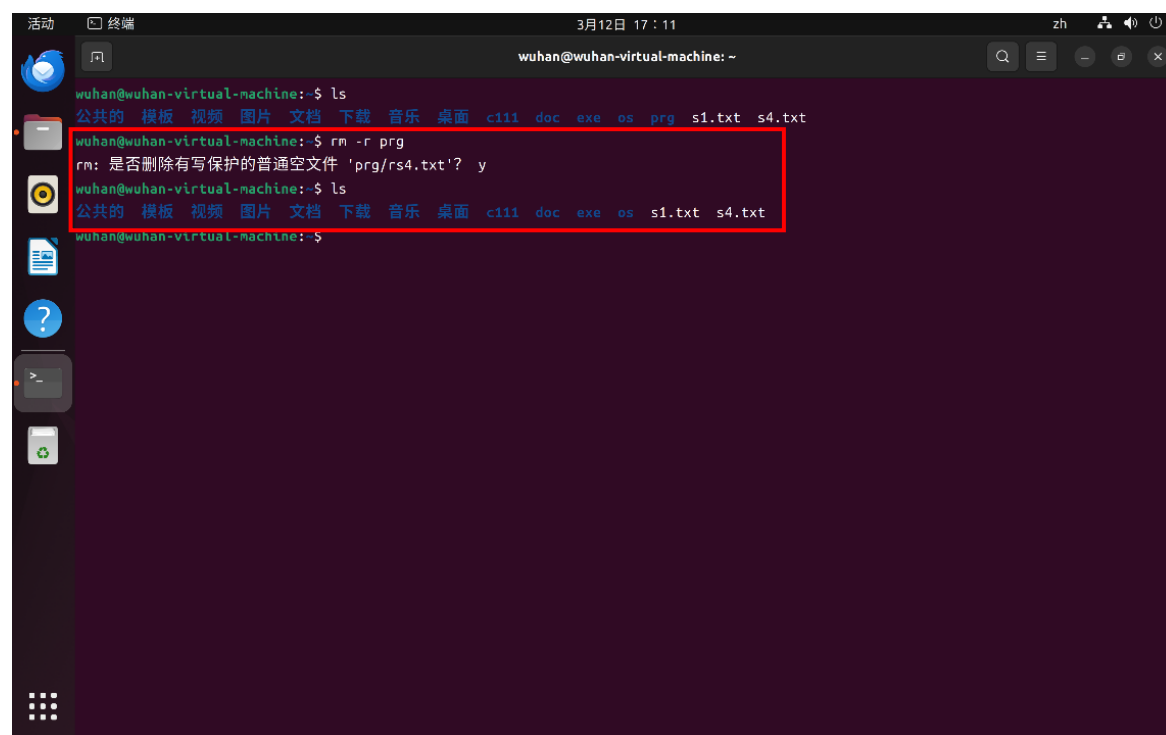
```
wuhan@wuhan-virtual-machine:~$ ls prg/java/s1.java
ls: 无法访问 'prg/java/s1.java': 没有那个文件或目录
wuhan@wuhan-virtual-machine:~$ ls prg/java
wuhan@wuhan-virtual-machine:~$ sudo su
[sudo] wuhan 的密码:
root@wuhan-virtual-machine:/home/wuhan# touch prg/java/s1.java
root@wuhan-virtual-machine:/home/wuhan# ls prg/java
s1.java
root@wuhan-virtual-machine:/home/wuhan# exit
exit
wuhan@wuhan-virtual-machine:~$ ls prg/java/s1.java
prg/java/s1.java
wuhan@wuhan-virtual-machine:~$ rm prg/java/s1.java
rm: 是否删除有写保护的普通空文件 'prg/java/s1.java'? y
wuhan@wuhan-virtual-machine:~$ ls prg/java
wuhan@wuhan-virtual-machine:~$
```

图 9 删除文件

10、删除目录 prg 及其下的子目录和文件

命令: `rm -r prg`

结果:



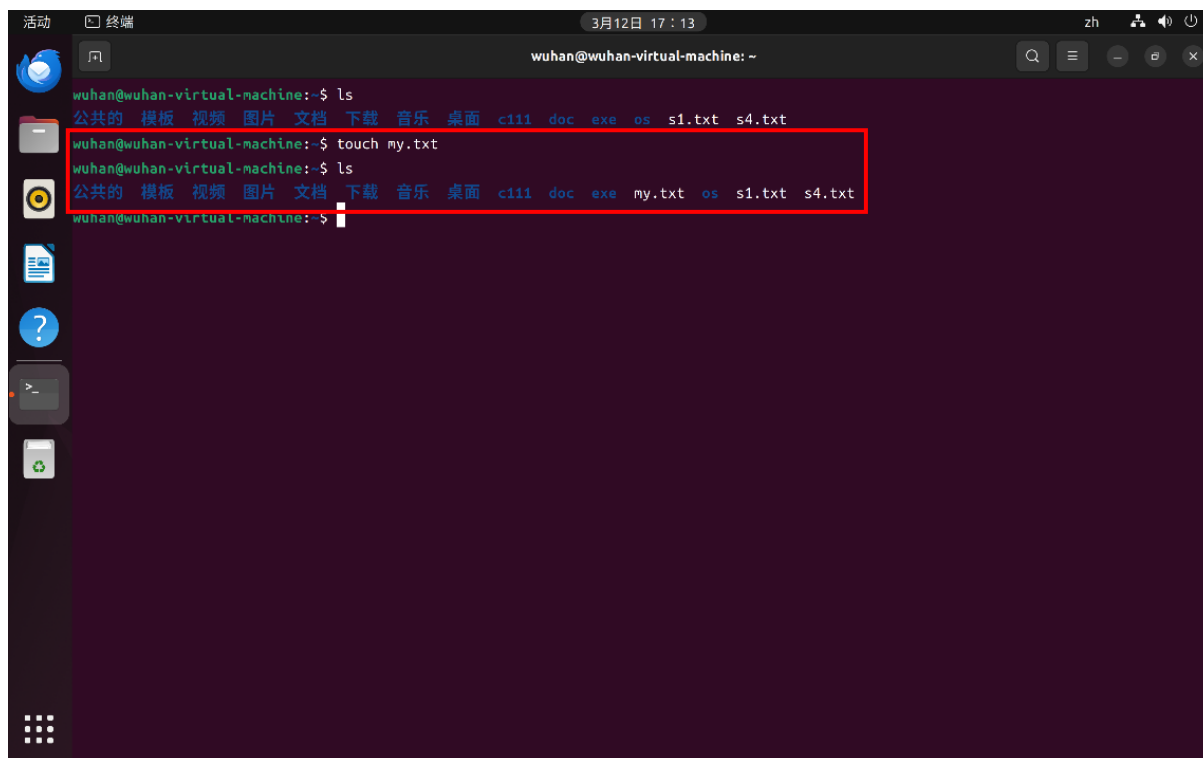
```
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe os prg s1.txt s4.txt
wuhan@wuhan-virtual-machine:~$ rm -r prg
rm: 是否删除有写保护的普通空文件 'prg/rs4.txt'? y
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe os s1.txt s4.txt
wuhan@wuhan-virtual-machine:~$
```

图 10 删除目录

11、创建空白文件 my.txt

命令: touch my.txt

结果:



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a date and time of 3月12日 17:13. The terminal shows the following commands and output:

```
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe os s1.txt s4.txt
wuhan@wuhan-virtual-machine:~$ touch my.txt
wuhan@wuhan-virtual-machine:~$ ls
公共的 模板 视频 图片 文档 下载 音乐 桌面 c111 doc exe my.txt os s1.txt s4.txt
wuhan@wuhan-virtual-machine:~$
```

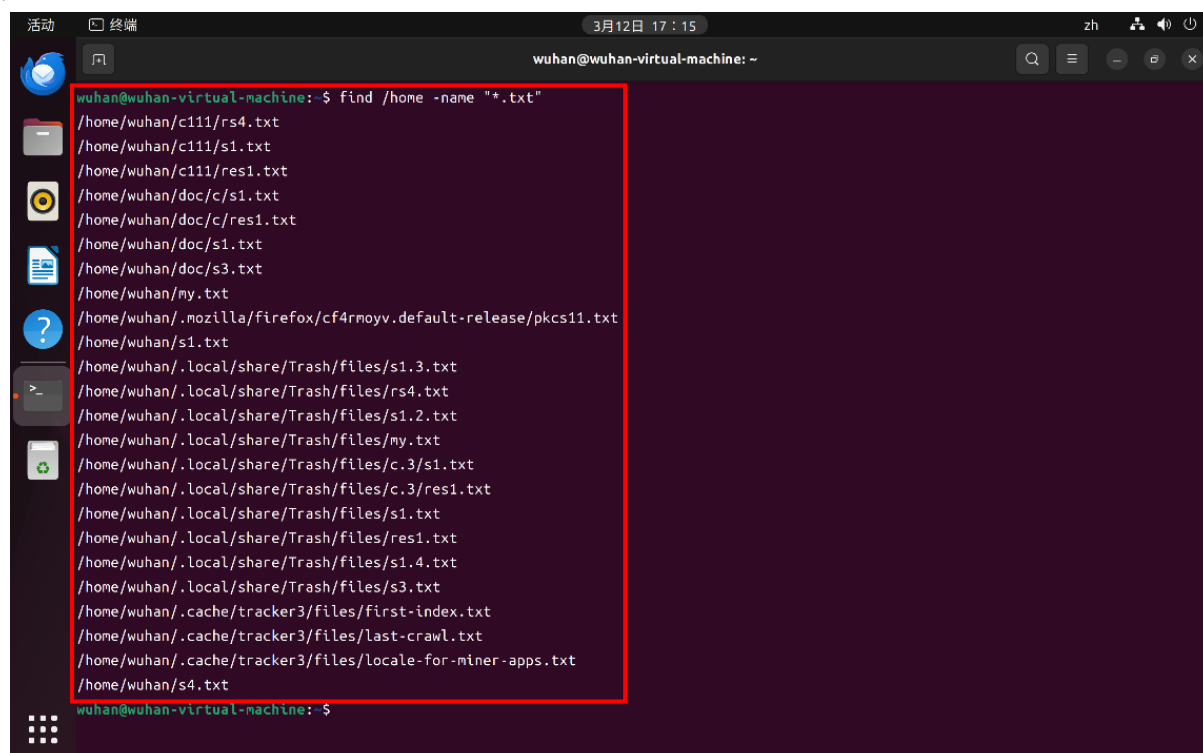
The output of the second 'ls' command is highlighted with a red box, showing that 'my.txt' has been added to the directory listing.

图 11 创建空文件

12、在/home 目录下查找以.txt 结尾的文件名

命令: find /home -name "*.txt"

结果:



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a date and time of 3月12日 17:15. The terminal shows the following command and output:

```
wuhan@wuhan-virtual-machine:~$ find /home -name "*.txt"
/home/wuhan/c111/rs4.txt
/home/wuhan/c111/s1.txt
/home/wuhan/c111/res1.txt
/home/wuhan/doc/c/s1.txt
/home/wuhan/doc/c/res1.txt
/home/wuhan/doc/s1.txt
/home/wuhan/doc/s3.txt
/home/wuhan/my.txt
/home/wuhan/.mozilla/firefox/cf4rmoyv.default-release/pkcs11.txt
/home/wuhan/s1.txt
/home/wuhan/.local/share/Trash/files/s1.3.txt
/home/wuhan/.local/share/Trash/files/rs4.txt
/home/wuhan/.local/share/Trash/files/s1.2.txt
/home/wuhan/.local/share/Trash/files/my.txt
/home/wuhan/.local/share/Trash/files/c.3/s1.txt
/home/wuhan/.local/share/Trash/files/c.3/res1.txt
/home/wuhan/.local/share/Trash/files/s1.txt
/home/wuhan/.local/share/Trash/files/res1.txt
/home/wuhan/.local/share/Trash/files/s1.4.txt
/home/wuhan/.local/share/Trash/files/s3.txt
/home/wuhan/.cache/tracker3/files/first-index.txt
/home/wuhan/.cache/tracker3/files/last-crawl.txt
/home/wuhan/.cache/tracker3/files/locale-for-miner-apps.txt
/home/wuhan/s4.txt
wuhan@wuhan-virtual-machine:~$
```

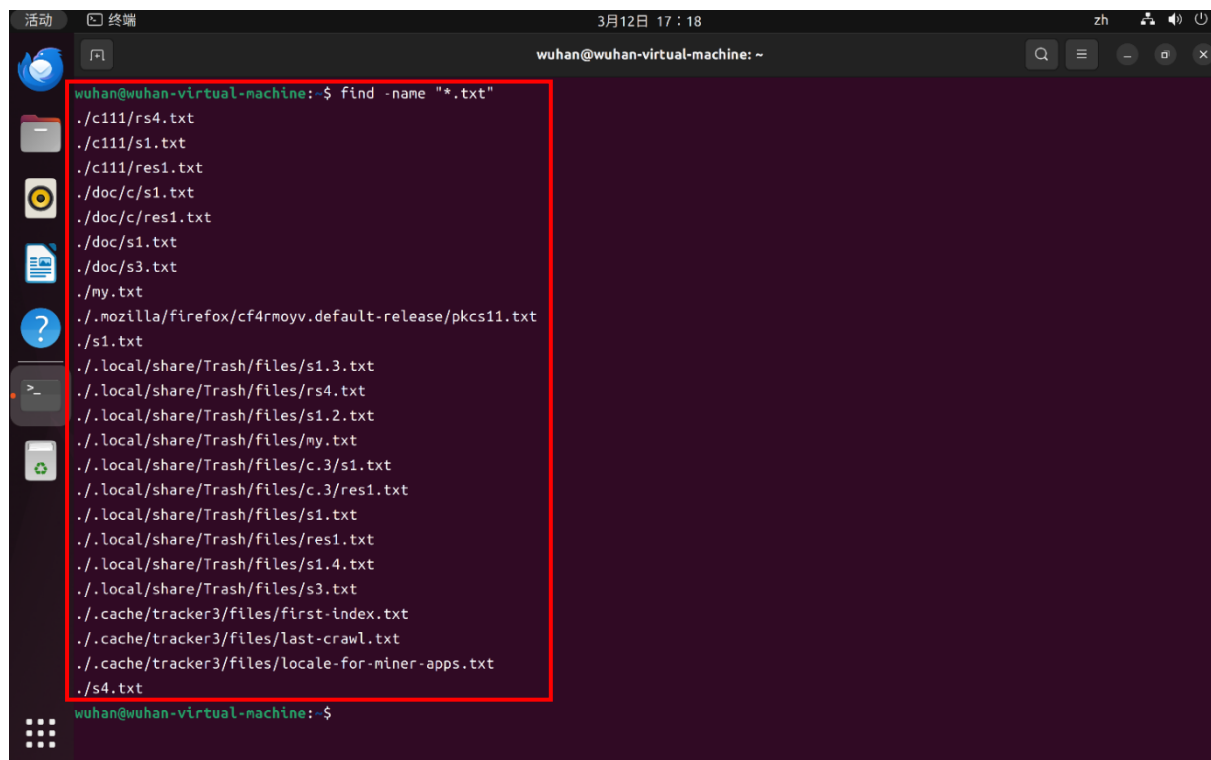
The output of the 'find' command is highlighted with a red box, listing all .txt files found in the /home directory.

图 12 查找文件

13、在当前目录及其子目录下查找以.txt 结尾的文件名

命令: `find -name "*.txt"`

结果:



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' showing the output of the command `find -name "*.txt"`. The results are listed as follows:

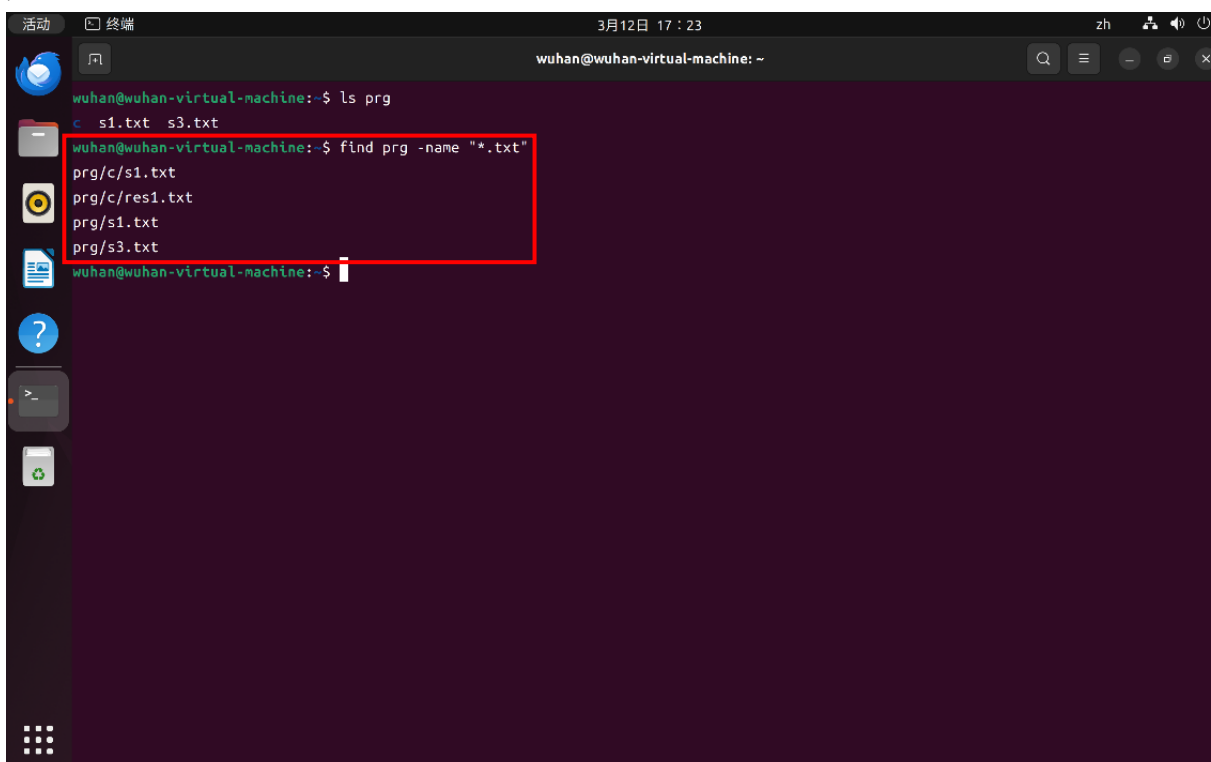
```
wuhan@wuhan-virtual-machine:~$ find -name "*.txt"
./c111/rs4.txt
./c111/s1.txt
./c111/res1.txt
./doc/c/s1.txt
./doc/c/res1.txt
./doc/s1.txt
./doc/s3.txt
./my.txt
./mozilla/firefox/cf4rmoyv.default-release/pkcs11.txt
./s1.txt
./.local/share/Trash/files/s1.3.txt
./.local/share/Trash/files/rs4.txt
./.local/share/Trash/files/s1.2.txt
./.local/share/Trash/files/my.txt
./.local/share/Trash/files/c.3/s1.txt
./.local/share/Trash/files/c.3/res1.txt
./.local/share/Trash/files/s1.txt
./.local/share/Trash/files/res1.txt
./.local/share/Trash/files/s1.4.txt
./.local/share/Trash/files/s3.txt
./.cache/tracker3/files/first-index.txt
./.cache/tracker3/files/last-crawl.txt
./.cache/tracker3/files/locale-for-miner-apps.txt
./s4.txt
wuhan@wuhan-virtual-machine:~$
```

图 13 查找文件

14、在 prg 目录及其子目录下查找以.txt 结尾的文件名

命令: `find prg -name "*.txt"`

结果:



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' showing the results of the command `find prg -name "*.txt"`. The results are listed as follows:

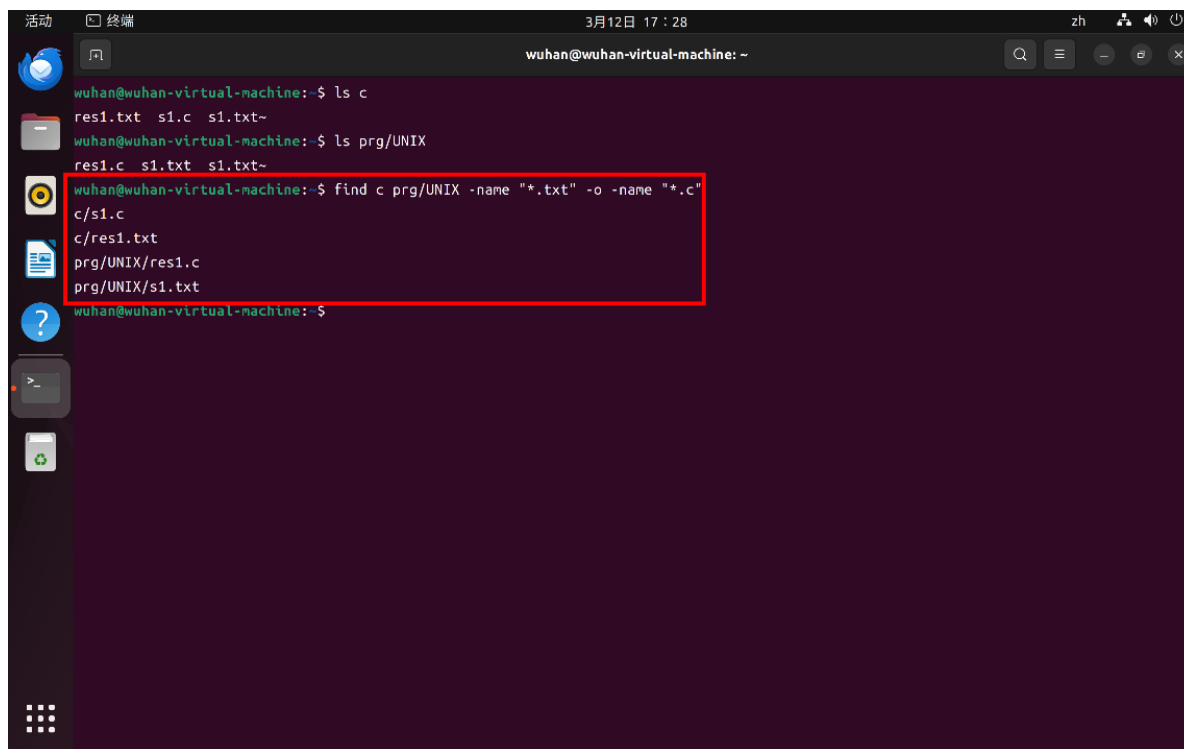
```
wuhan@wuhan-virtual-machine:~$ ls prg
c  s1.txt  s3.txt
wuhan@wuhan-virtual-machine:~$ find prg -name "*.txt"
prg/c/s1.txt
prg/c/res1.txt
prg/s1.txt
prg/s3.txt
wuhan@wuhan-virtual-machine:~$
```

图 14 查找文件

15、在 c 目录和 prg/UNIX 目录及其子目录下查找以.txt 或.c 结尾的文件名

命令：find c prg/UNIX -name "*.txt" -o -name "*.c"

结果：



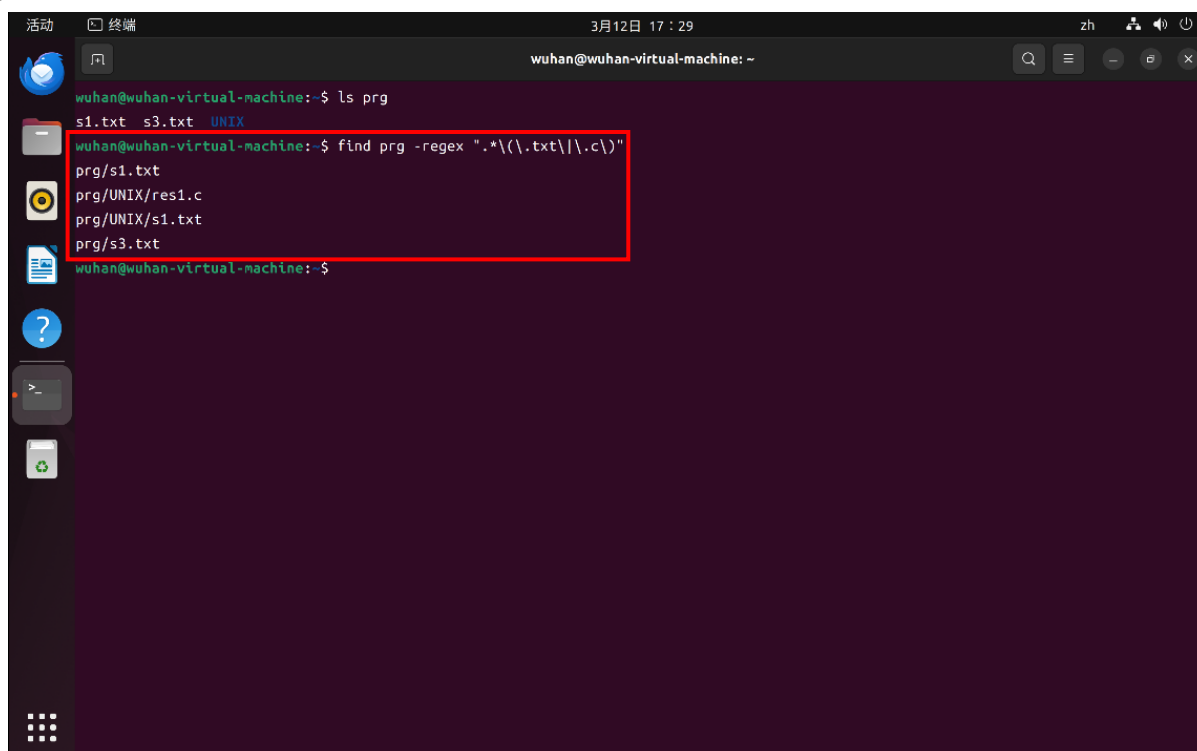
```
wuhan@wuhan-virtual-machine: ~  
$ ls c  
res1.txt s1.c s1.txt~  
$ ls prg/UNIX  
res1.c s1.txt s1.txt~  
$ find c prg/UNIX -name "*.txt" -o -name "*.c"  
c/s1.c  
c/res1.txt  
prg/UNIX/res1.c  
prg/UNIX/s1.txt  
$
```

图 15 查找文件

16、在 prg 目录及其子目录下查找以.txt 或.c 结尾的文件名

命令：find prg -regex ".*\\(\\.txt\\|\\.c\\)"

结果：



```
wuhan@wuhan-virtual-machine: ~  
$ ls prg  
s1.txt s3.txt UNIX  
$ find prg -regex ".*\\(\\.txt\\|\\.c\\)"  
prg/s1.txt  
prg/UNIX/res1.c  
prg/UNIX/s1.txt  
prg/s3.txt  
$
```

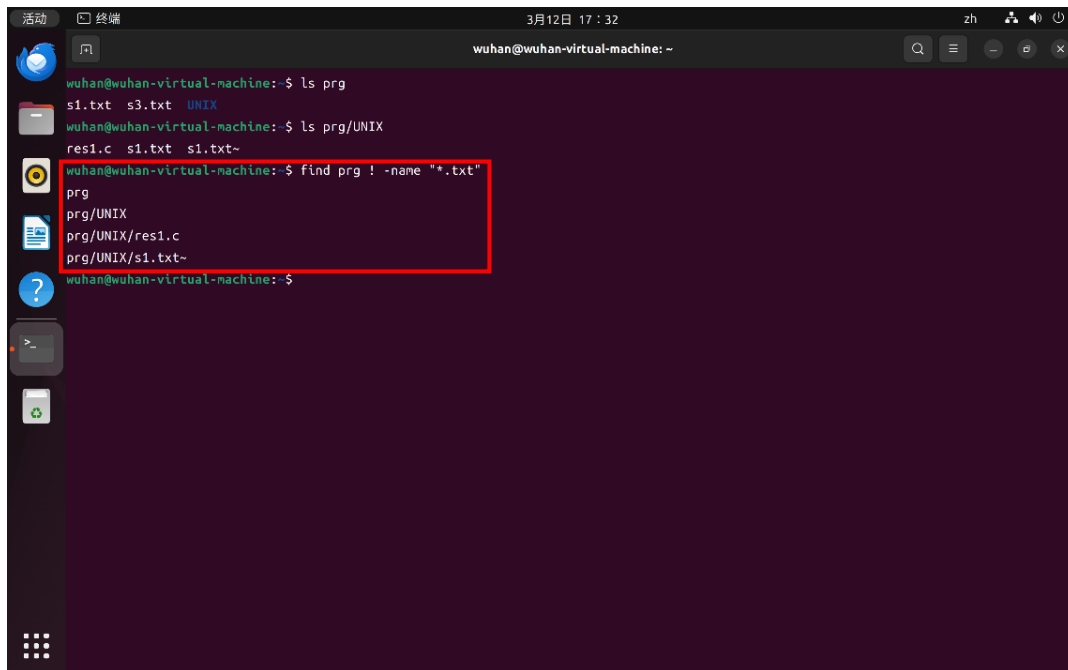
图 16 查找文件

实验 4 文件查找、内容查看、域排序与记录连接

1、找出 prg 目录及其子目录下不是以.txt 结尾的文件

命令：find prg !-name "*.txt"

结果：



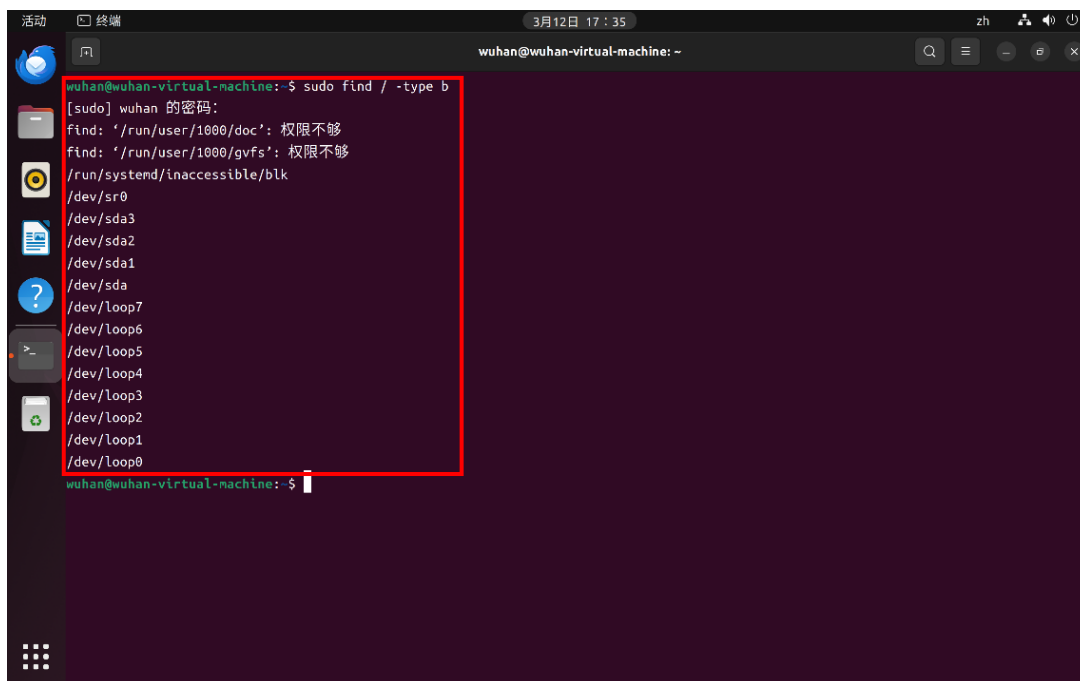
```
wuhan@wuhan-virtual-machine:~$ ls prg
s1.txt  s3.txt  UNIX
wuhan@wuhan-virtual-machine:~$ ls prg/UNIX
res1.c  s1.txt  s1.txt~
wuhan@wuhan-virtual-machine:~$ find prg !-name "*.txt"
prg
prg/UNIX
prg/UNIX/res1.c
prg/UNIX/s1.txt~
wuhan@wuhan-virtual-machine:~$
```

图 17 查找文件

2、在/目录下查找块设备文件

命令：sudo find / -type b

结果：



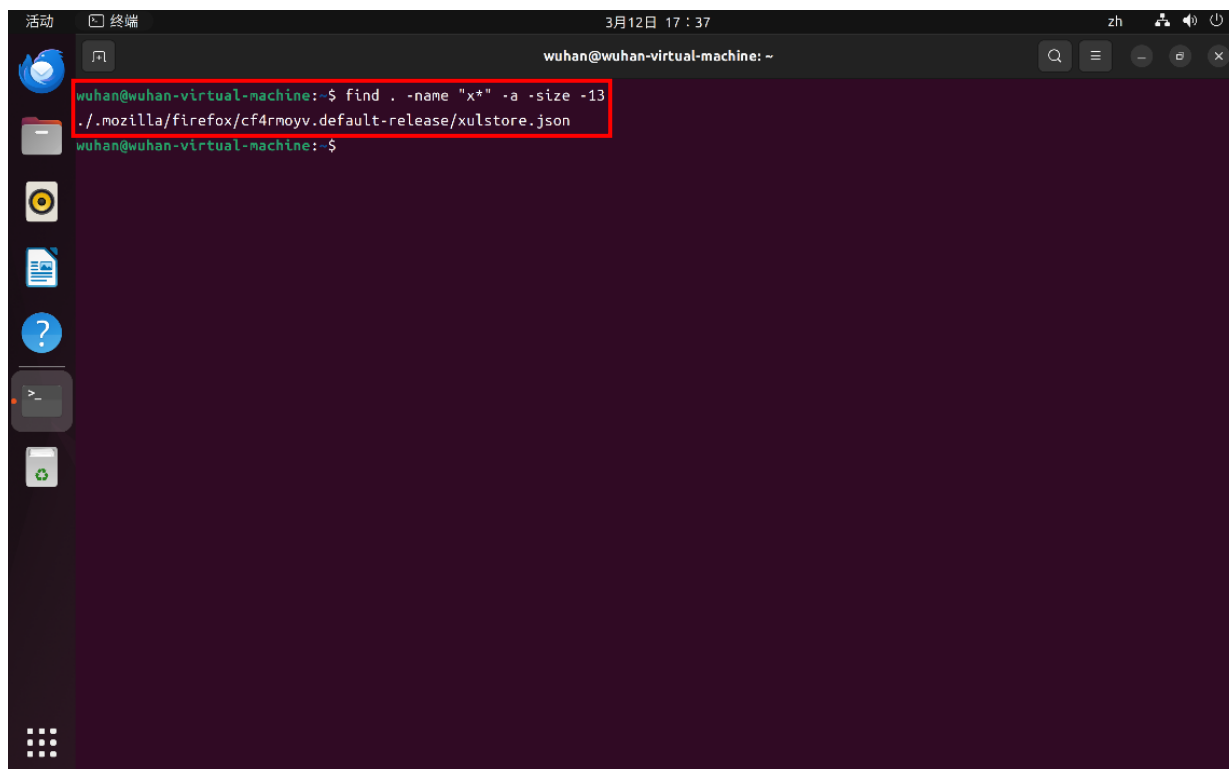
```
wuhan@wuhan-virtual-machine:~$ sudo find / -type b
[sudo] wuhan 的密码:
find: '/run/user/1000/doc': 权限不够
find: '/run/user/1000/gvfs': 权限不够
/run/systemd/inaccessible/blk
/dev/sr0
/dev/sda3
/dev/sda2
/dev/sda1
/dev/sda
/dev/loop7
/dev/loop6
/dev/loop5
/dev/loop4
/dev/loop3
/dev/loop2
/dev/loop1
/dev/loop0
wuhan@wuhan-virtual-machine:~$
```

图 18 查找文件

3、搜索当前目录下以“x”开头且小于 13 字节的文件

命令: `find . -name "x*" -a -size -13`

结果:



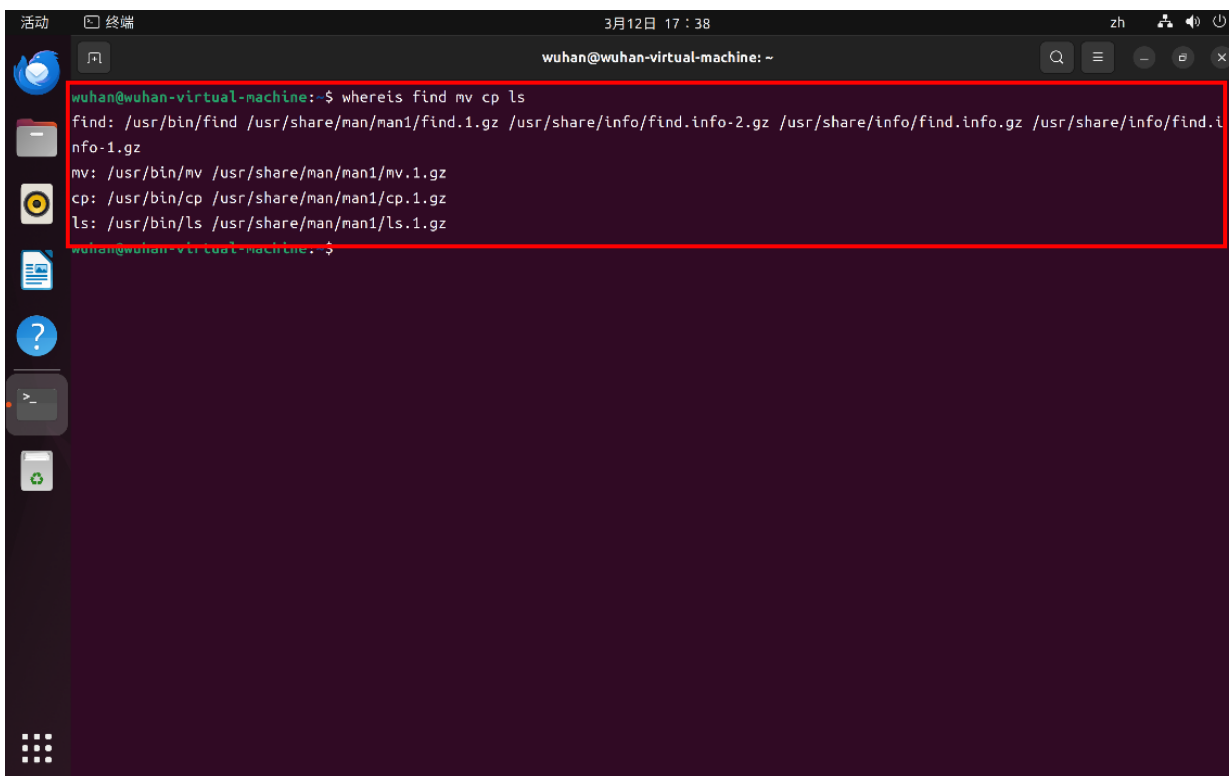
A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a dark purple background. The command `find . -name "x*" -a -size -13` has been entered and executed. The output, `./mozilla/firefox/cf4rmoyv.default-release/xulstore.json`, is displayed on the line following the command and is highlighted with a red rectangular box. The terminal interface includes a top bar with system icons and a left sidebar with application icons.

图 19 搜索文件

4、查找 find 程序、mv 程序、cp 程序和 ls 程序所在位置

命令: `whereis find mv cp ls`

结果:



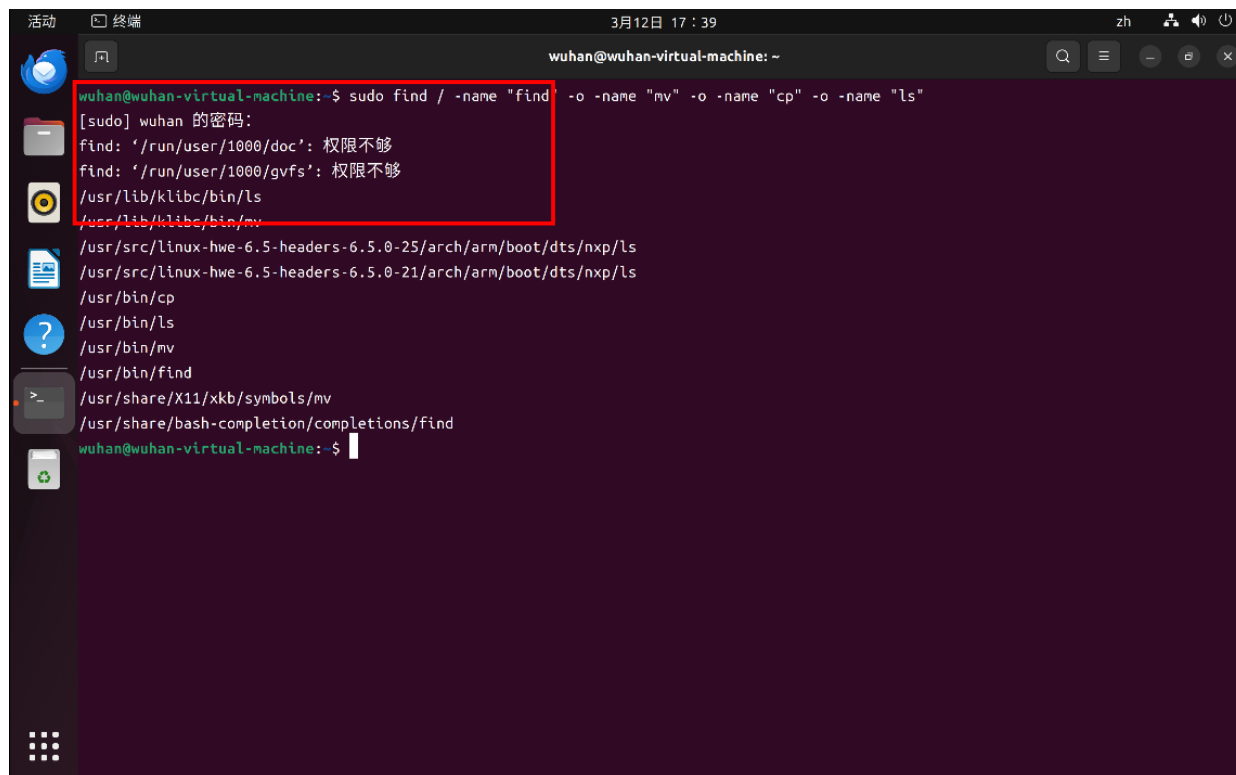
A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a dark purple background. The command `whereis find mv cp ls` has been entered and executed. The output, which lists the binary locations and man pages for find, mv, cp, and ls, is displayed on the line following the command and is highlighted with a red rectangular box. The terminal interface includes a top bar with system icons and a left sidebar with application icons.

图 20 查找文件

5、用 find 查找根目录 “/” 下的 find 程序、mv 程序、cp 程序和 ls 程序

命令：sudo find / -name "find" -o -name "mv" -o -name "cp" -o -name "ls"

结果：



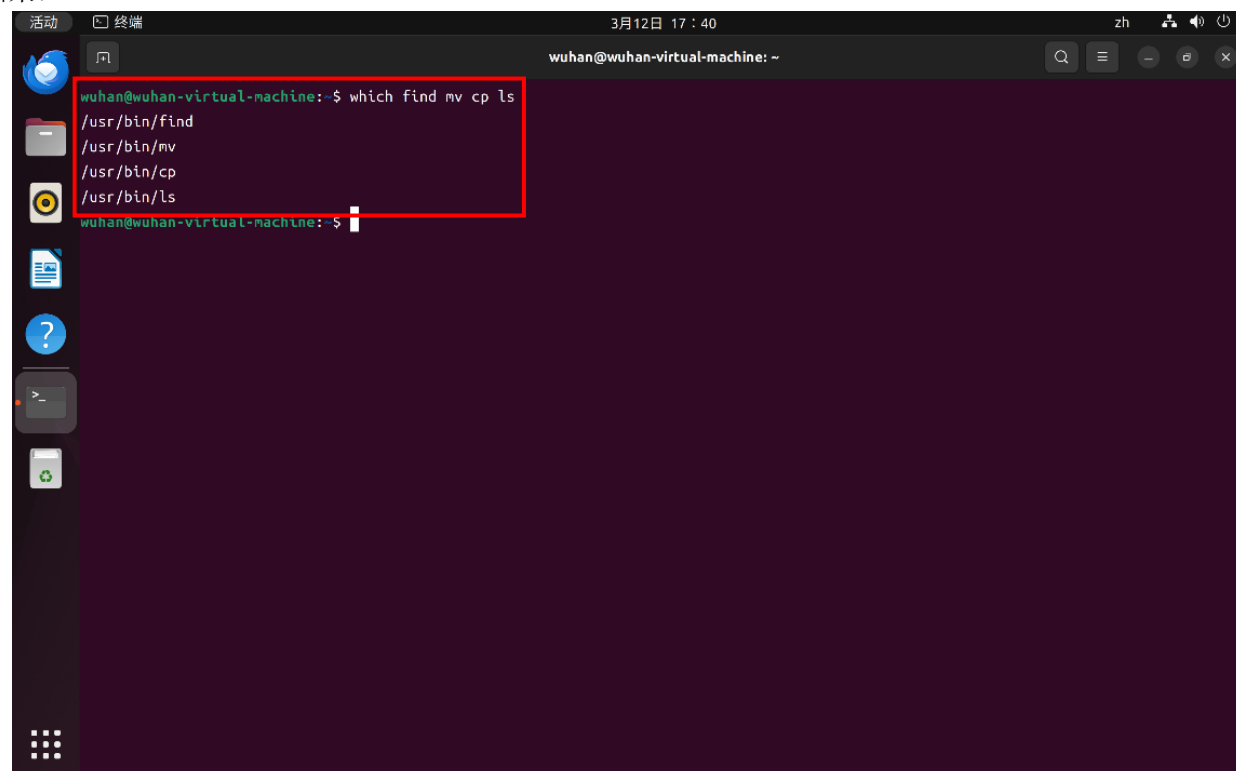
```
wuhan@wuhan-virtual-machine:~$ sudo find / -name "find" -o -name "mv" -o -name "cp" -o -name "ls"
[sudo] wuhan 的密码:
find: '/run/user/1000/doc': 权限不够
find: '/run/user/1000/gvfs': 权限不够
/usr/lib/klibc/bin/ls
/usr/lib/klibc/bin/mv
/usr/src/linux-hwe-6.5-headers-6.5.0-25/arch/arm/boot/dts/nxp/ls
/usr/src/linux-hwe-6.5-headers-6.5.0-21/arch/arm/boot/dts/nxp/ls
/usr/bin/cp
/usr/bin/ls
/usr/bin/mv
/usr/bin/find
/usr/share/X11/xkb/symbols/mv
/usr/share/bash-completion/completions/find
wuhan@wuhan-virtual-machine:~$
```

图 21 查找程序

6、显示 find 命令、mv 命令、cp 命令和 ls 命令的位置

命令：which find mv cp ls

结果：



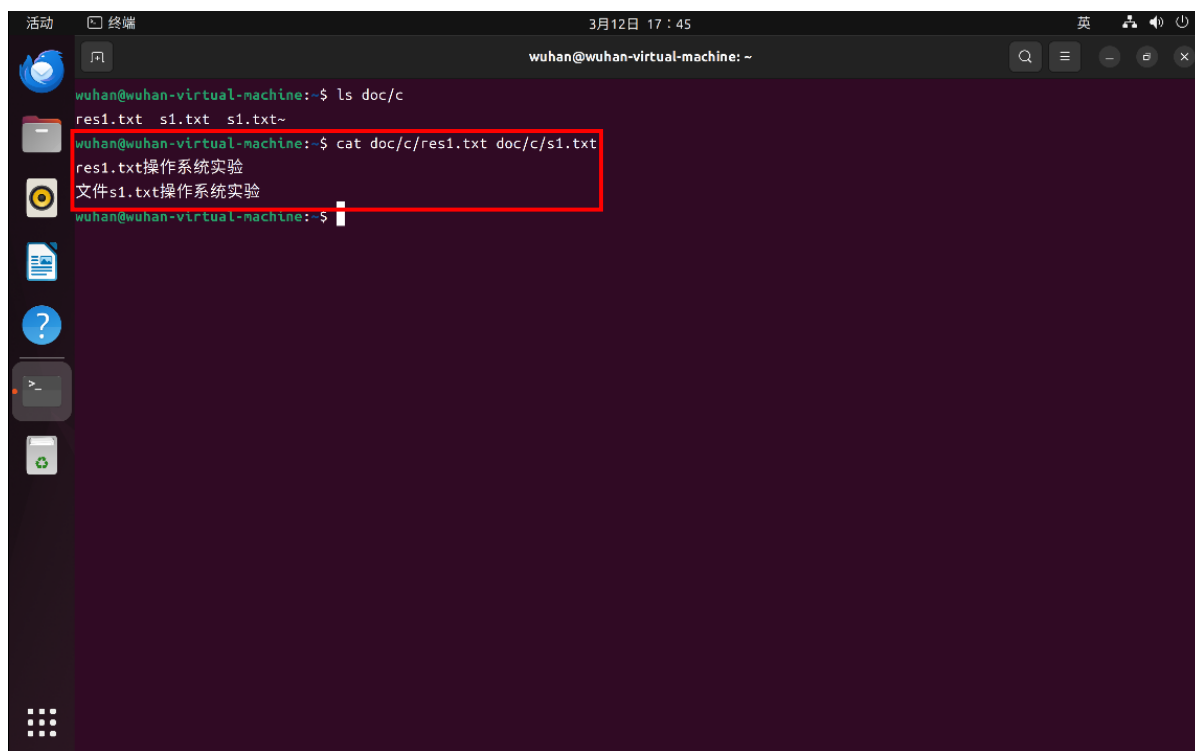
```
wuhan@wuhan-virtual-machine:~$ which find mv cp ls
/usr/bin/find
/usr/bin/mv
/usr/bin/cp
/usr/bin/ls
wuhan@wuhan-virtual-machine:~$
```

图 22 查找命令位置

7、查看 doc/c 目录下的文件 res1.txt 和 s1.txt 的内容

命令：cat doc/c/res1.txt doc/c/s1.txt

结果：



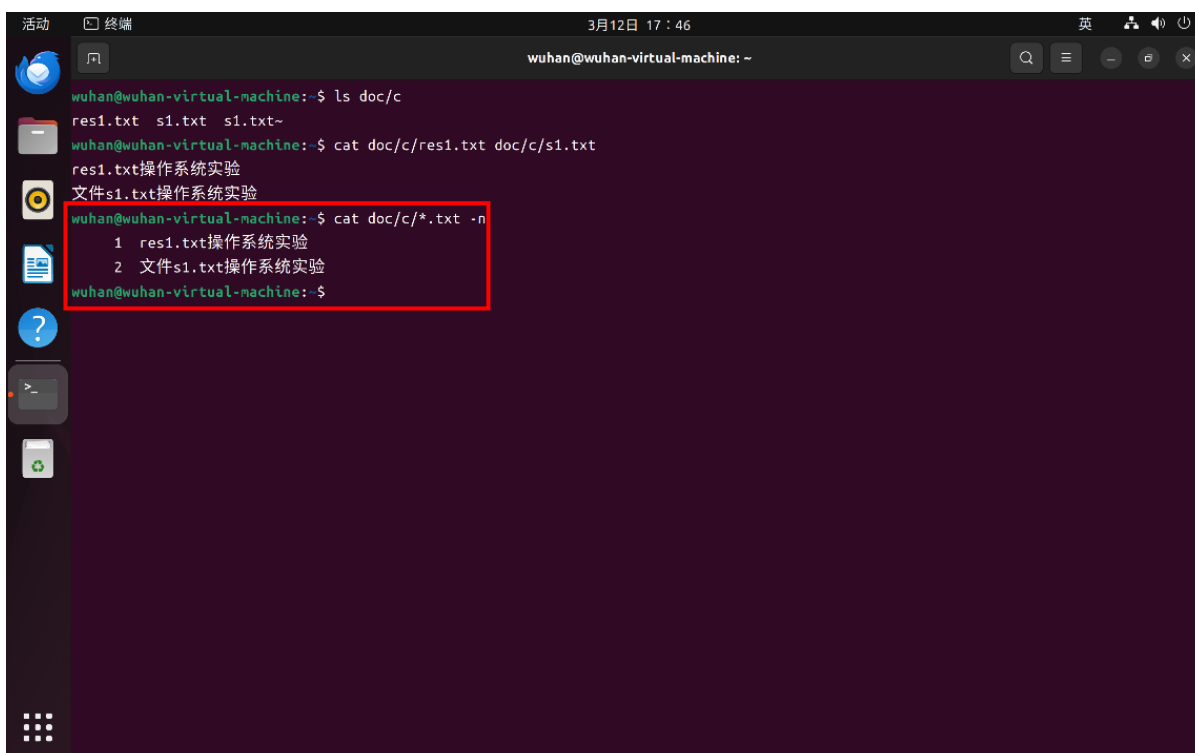
```
wuhan@wuhan-virtual-machine: ~  
$ ls doc/c  
res1.txt  s1.txt  s1.txt~  
$ cat doc/c/res1.txt doc/c/s1.txt  
res1.txt操作系统实验  
文件s1.txt操作系统实验  
wuhan@wuhan-virtual-machine: $
```

图 23 查看文件内容

8、显示 doc/c 目录下以“.txt”结尾的文件内容，并显示行号

命令：cat doc/c/*.txt -n

结果：



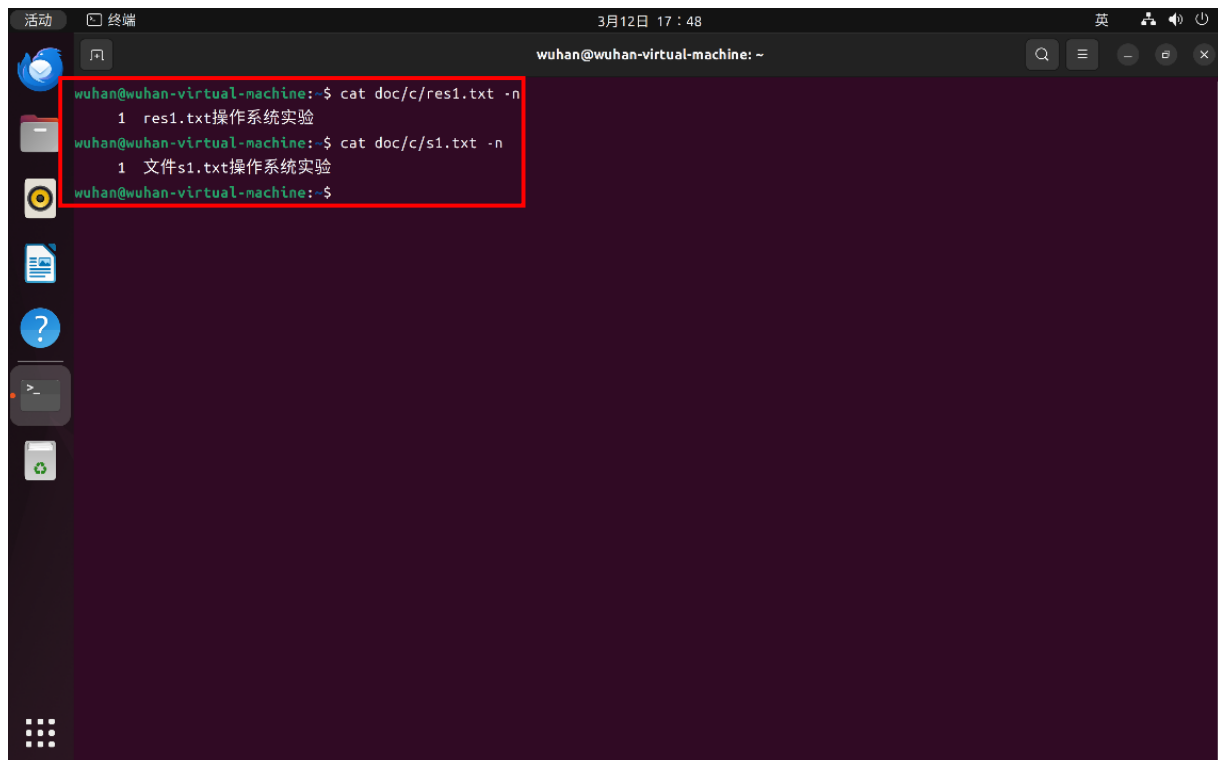
```
wuhan@wuhan-virtual-machine: ~  
$ ls doc/c  
res1.txt  s1.txt  s1.txt~  
$ cat doc/c/res1.txt doc/c/s1.txt  
res1.txt操作系统实验  
文件s1.txt操作系统实验  
$ cat doc/c/*.txt -n  
1 res1.txt操作系统实验  
2 文件s1.txt操作系统实验  
wuhan@wuhan-virtual-machine: $
```

图 24 查看文件内容

9、查看 doc/c 目录下的文件 res1.txt 和 s1.txt 的内容，显示行号

命令：cat doc/c/res1.txt -n , cat doc/c/s1.txt -n

结果：



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a date and time of 3月12日 17:48. The terminal shows the following commands and output:

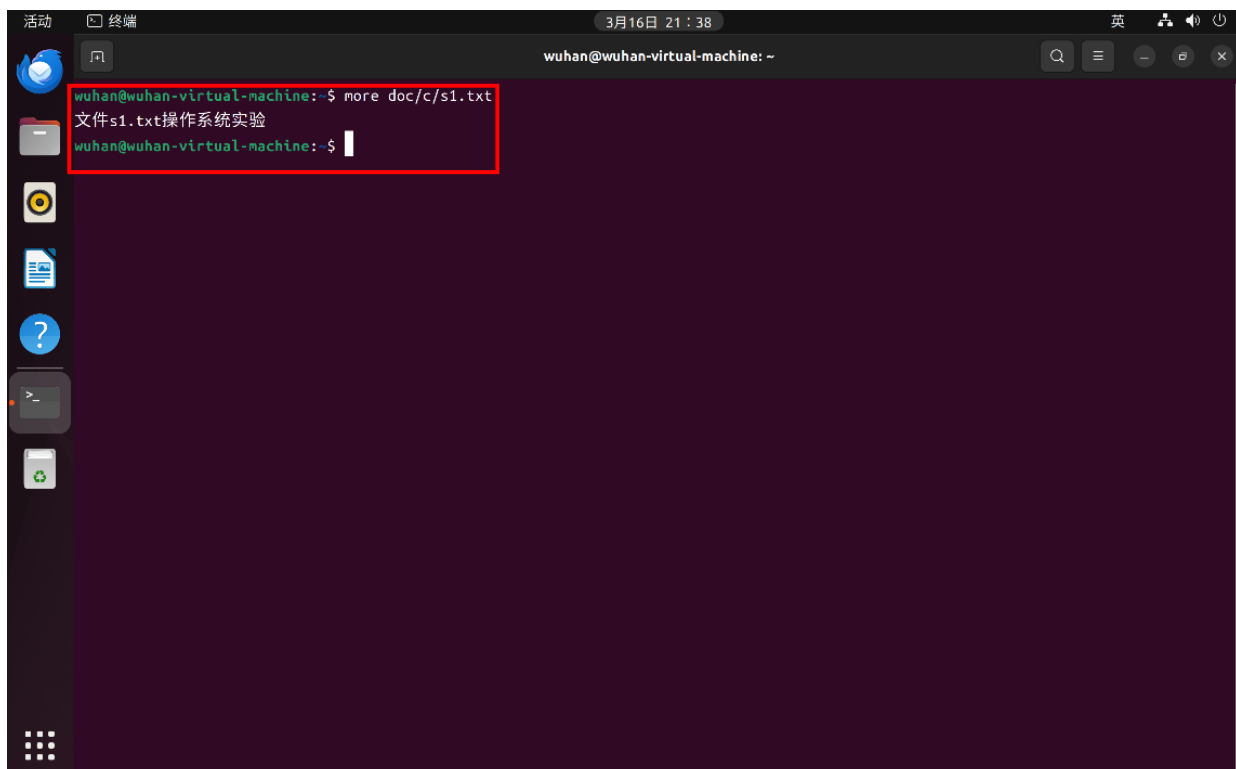
```
wuhan@wuhan-virtual-machine:~$ cat doc/c/res1.txt -n
1 res1.txt操作系统实验
wuhan@wuhan-virtual-machine:~$ cat doc/c/s1.txt -n
1 文件s1.txt操作系统实验
wuhan@wuhan-virtual-machine:~$
```

图 25 查看文件内容

10、逐屏查看 doc/c/s1.txt 文件内容

命令：more doc/c/s1.txt

结果：



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a date and time of 3月16日 21:38. The terminal shows the following commands and output:

```
wuhan@wuhan-virtual-machine:~$ more doc/c/s1.txt
文件s1.txt操作系统实验
wuhan@wuhan-virtual-machine:~$
```

图 26 查看文件内容

11、逐屏查看 doc/c/s1.txt 文件内容

命令: less doc/c/s1.txt

结果:



图 27 查看文件内容

12、从文件 `c/pc.c` 和 `prg/c/s1.c` 中找出包含字符串“main”的行

命令: `grep main c/pc.c prg/c/s1.c`

结果:

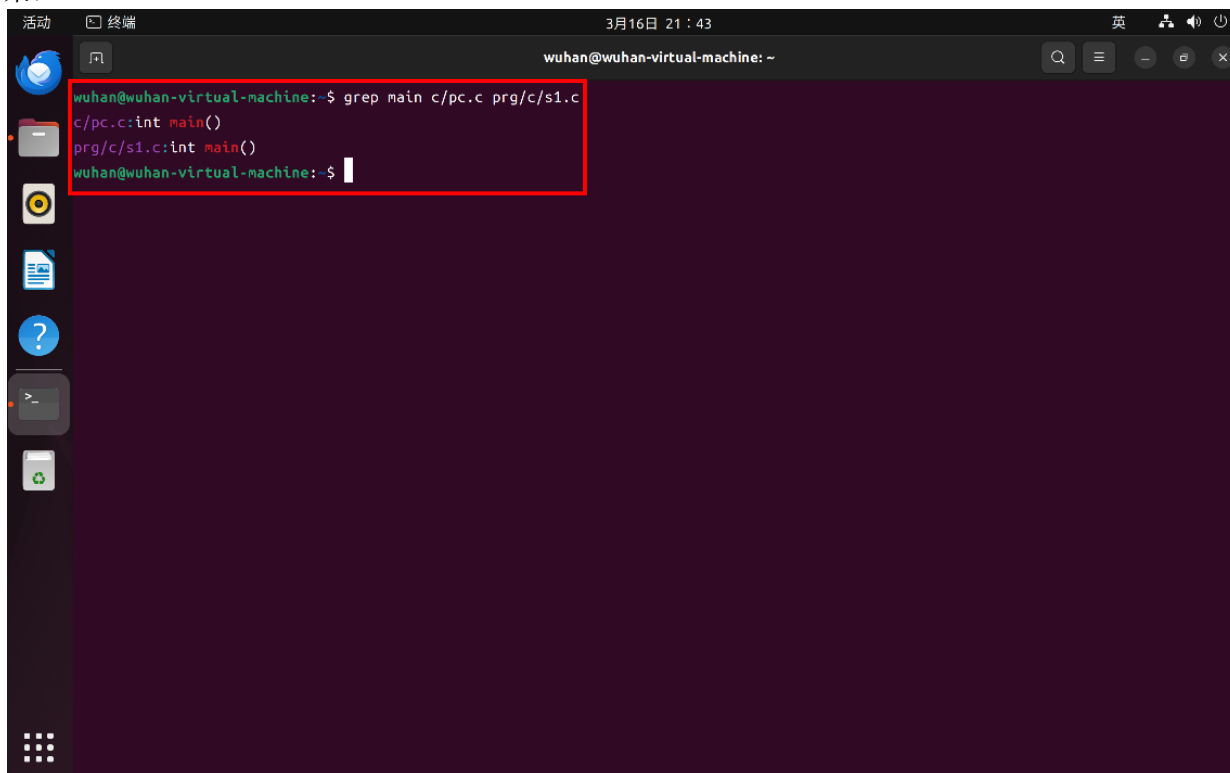
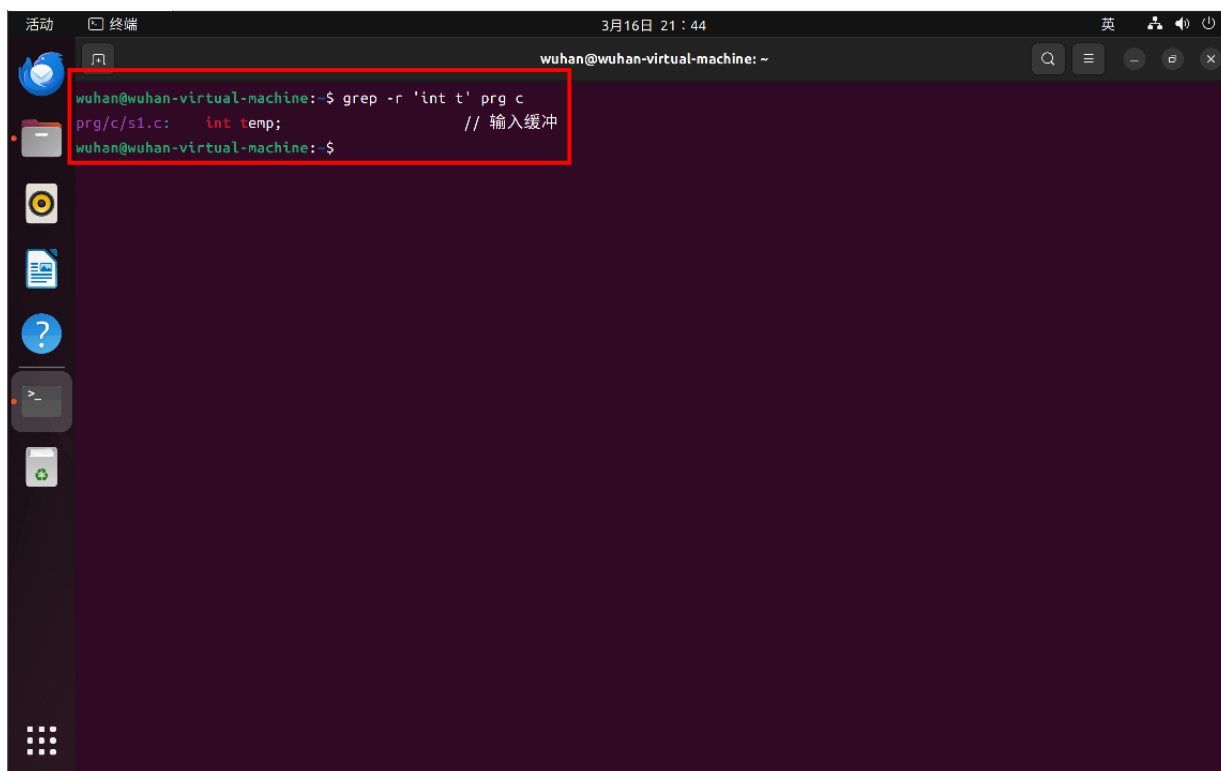


图 28 查看文件

13、从目录 prg 和 c 中找出包含字符串 “int t” 所在文件及字符串所在行

命令: `grep -r 'int t' prg c`

结果:



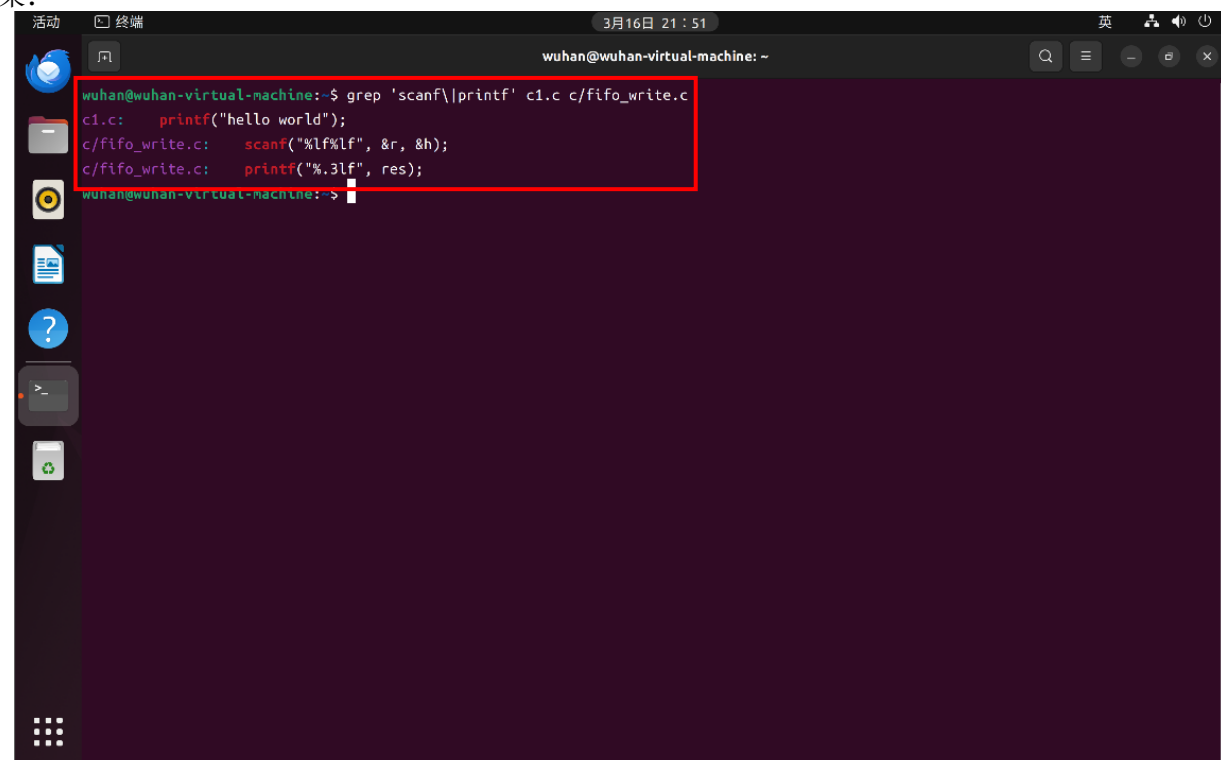
```
wuhan@wuhan-virtual-machine: ~  
wuhan@wuhan-virtual-machine:~$ grep -r 'int t' prg c  
prg/c/s1.c:      int temp;           // 输入缓冲  
wuhan@wuhan-virtual-machine:~$
```

图 29 查看文件内容

14、从文件 c1.c 和 c/fifo_write.c 中查找包含字符串 scanf 或 printf 的行

命令: `grep 'scanf\|printf' c1.c c/fifo_write.c`

结果:



```
wuhan@wuhan-virtual-machine:~$ grep 'scanf\|printf' c1.c c/fifo_write.c  
c1.c:      printf("hello world");  
c/fifo_write.c:      scanf("%lf%lf", &r, &h);  
c/fifo_write.c:      printf("%.3lf", res);  
wuhan@wuhan-virtual-machine:~$
```

图 30 查看文件内容

15、对文件执行域排序

命令：sort ste1.txt

结果：

```
wuhan@wuhan-virtual-machine:~$ sort ste1.txt
baidu 100 hello 5000 asd
google 110 test 5000 qwe
guge 50 good 3000 zxc
sohu 100 root 4500 ./
wuhan@wuhan-virtual-machine:~$
```

图 31 对文件内容排序

16、按指定域排序

命令：sort -k5 ste1.txt

结果：

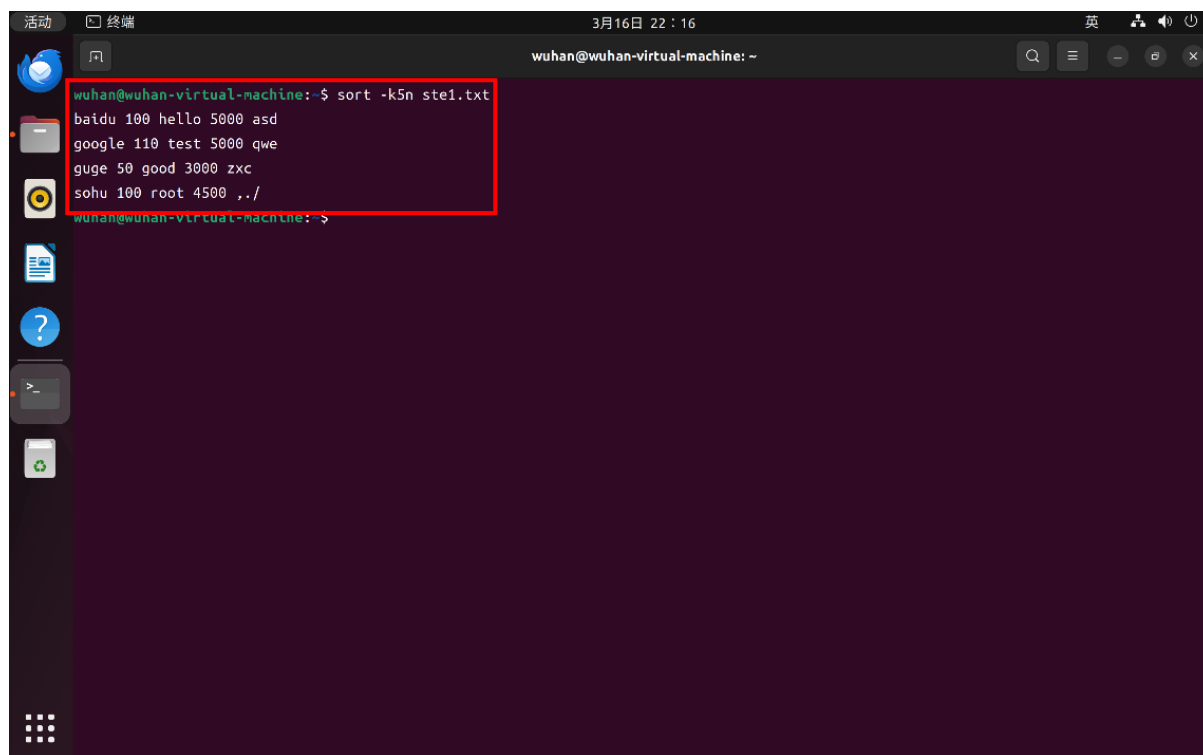
```
wuhan@wuhan-virtual-machine:~$ sort -k5 ste1.txt
sohu 100 root 4500 ./
baidu 100 hello 5000 asd
google 110 test 5000 qwe
guge 50 good 3000 zxc
wuhan@wuhan-virtual-machine:~$
```

图 32 对文件内容排序

17、将域看做数字排序

命令: `sort -k5n ste1.txt`

结果:



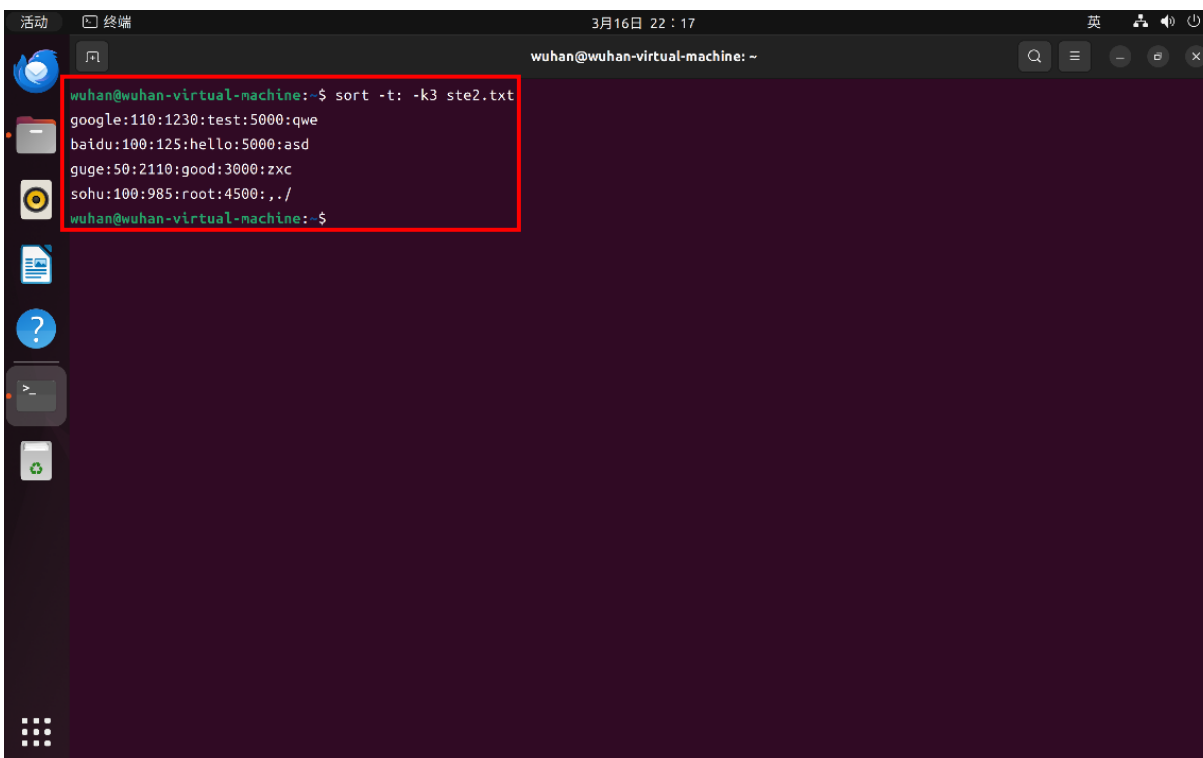
```
wuhan@wuhan-virtual-machine:~$ sort -k5n ste1.txt
baidu 100 hello 5000 asd
google 110 test 5000 qwe
guge 50 good 3000 zxc
sohu 100 root 4500 ../
wuhan@wuhan-virtual-machine:~$
```

图 33 对文件内容排序

18、指定域分隔符，按某个字段排序

命令: `sort -t: -k3 ste2.txt`

结果:



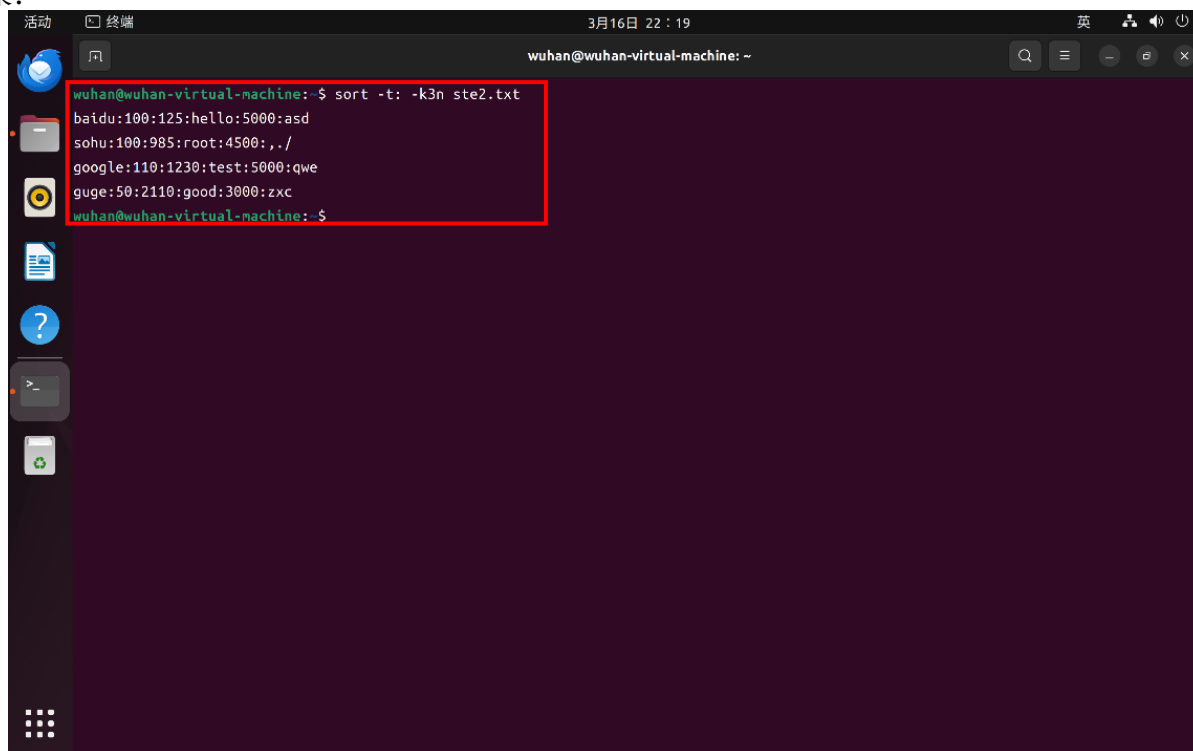
```
wuhan@wuhan-virtual-machine:~$ sort -t: -k3 ste2.txt
google:110:1230:test:5000:qwe
baidu:100:125:hello:5000:asd
guge:50:2110:good:3000:zxc
sohu:100:985:root:4500:../
wuhan@wuhan-virtual-machine:~$
```

图 34 对文件内容排序

19、依据某列，将其视为数字排序

命令：sort -t: -k3n ste2.txt

结果：



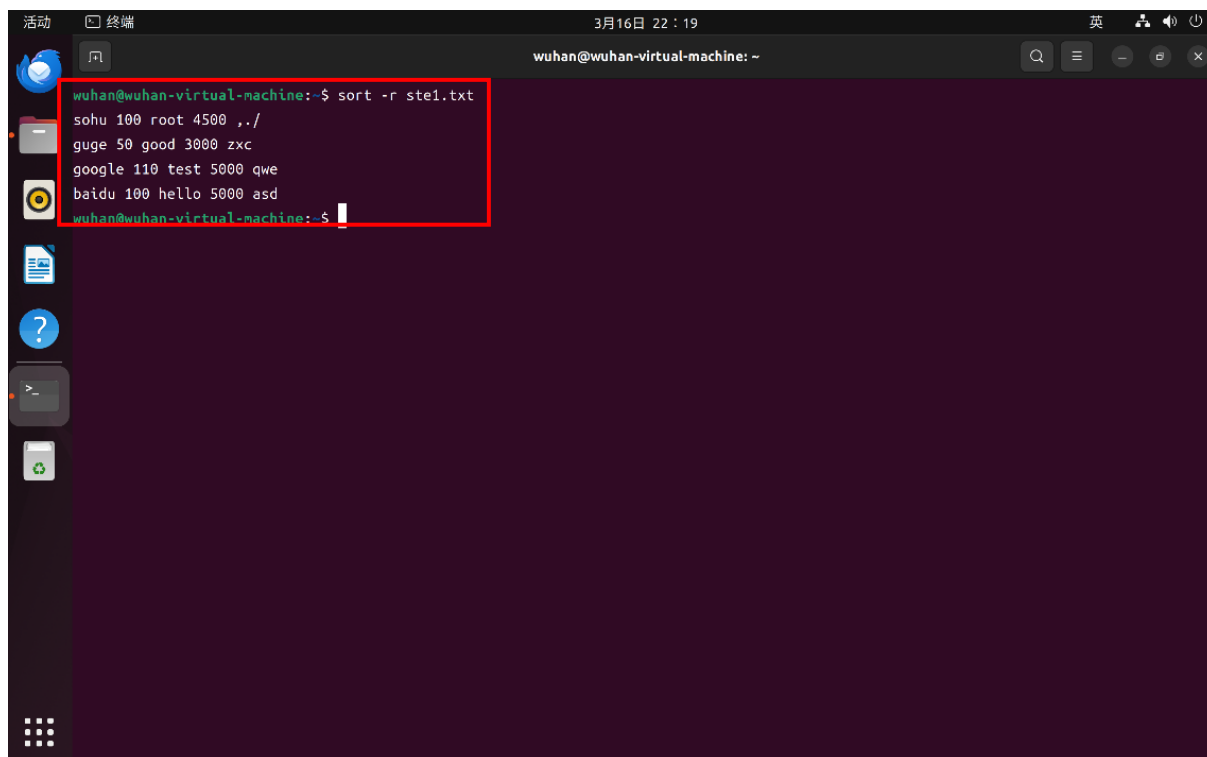
```
wuhan@wuhan-virtual-machine: ~  
$ sort -t: -k3n ste2.txt  
baidu:100:125:hello:5000:asd  
sohu:100:985:root:4500:./  
google:110:1230:test:5000:qwe  
guge:50:2110:good:3000:zxc  
wuhan@wuhan-virtual-machine: ~$
```

图 35 对文件内容排序

20、对文件 ste1.txt 第一列逆序排序

命令：sort -r ste1.txt

结果：



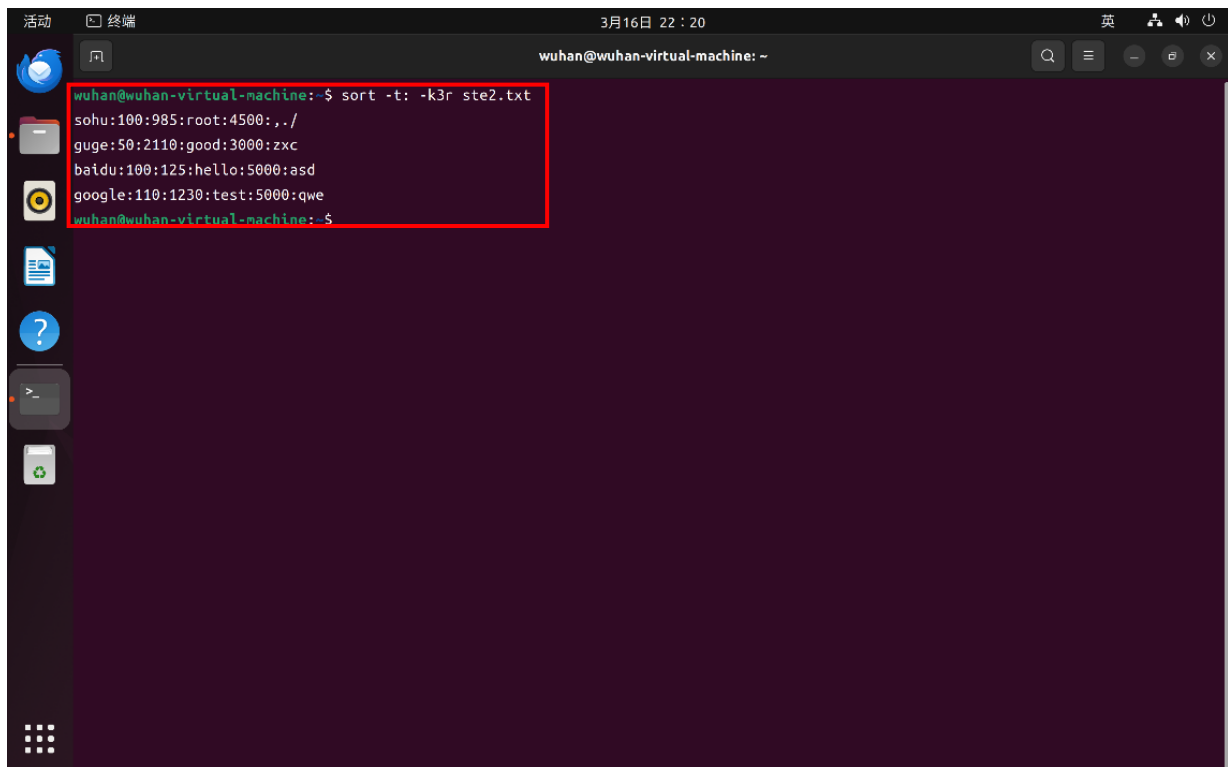
```
wuhan@wuhan-virtual-machine: ~  
$ sort -r ste1.txt  
sohu 100 root 4500 ./  
guge 50 good 3000 zxc  
google 110 test 5000 qwe  
baidu 100 hello 5000 asd  
wuhan@wuhan-virtual-machine: ~$
```

图 36 对文件内容排序

21、对 ste2.txt 第 3 列（科目 2）逆序排序

命令：sort -t: -k3r ste2.txt

结果：



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' showing the execution of the command `sort -t: -k3r ste2.txt`. The output is displayed in a red box:

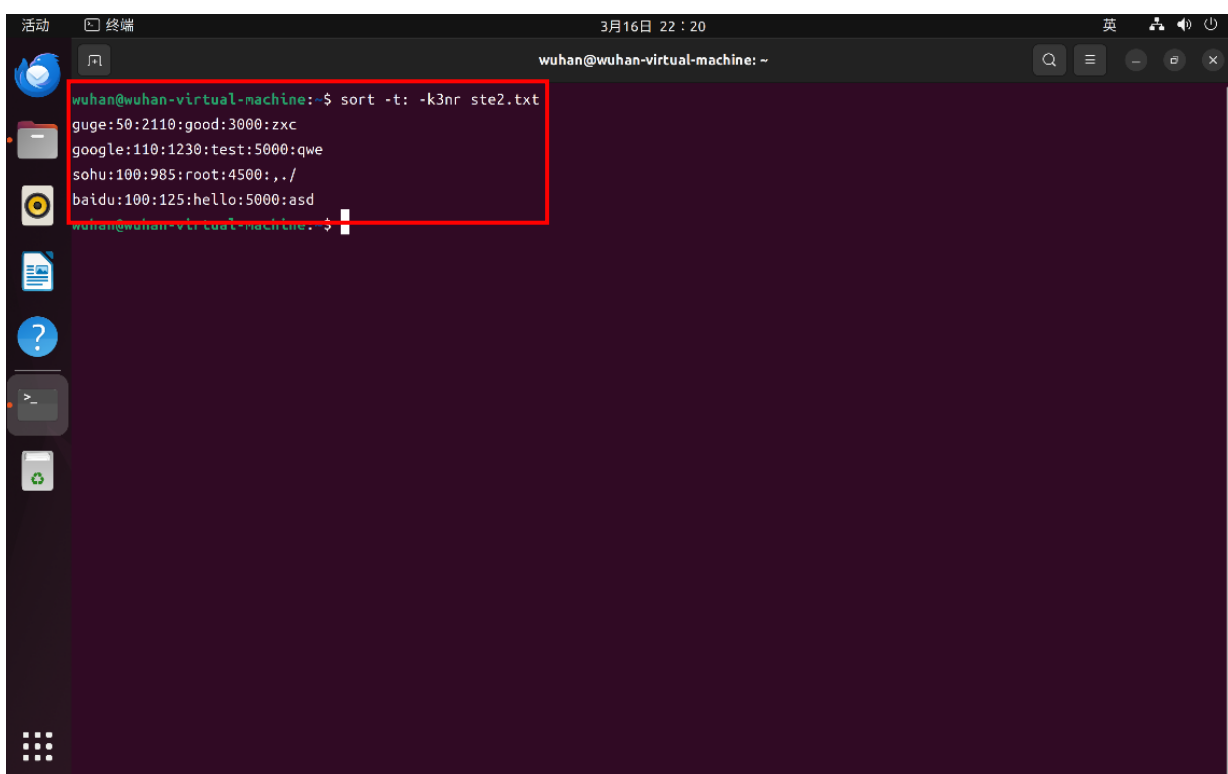
```
wuhan@wuhan-virtual-machine:~$ sort -t: -k3r ste2.txt
sohu:100:985:root:4500:./
guge:50:2110:good:3000:zxc
baidu:100:125:hello:5000:asd
google:110:1230:test:5000:qwe
wuhan@wuhan-virtual-machine:~$
```

图 37 对文件内容排序

22、对 ste2.txt 第 3 列（科目 2）按数字值逆序排序

命令：sort -t: -k3nr ste2.txt

结果：



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' showing the execution of the command `sort -t: -k3nr ste2.txt`. The output is displayed in a red box:

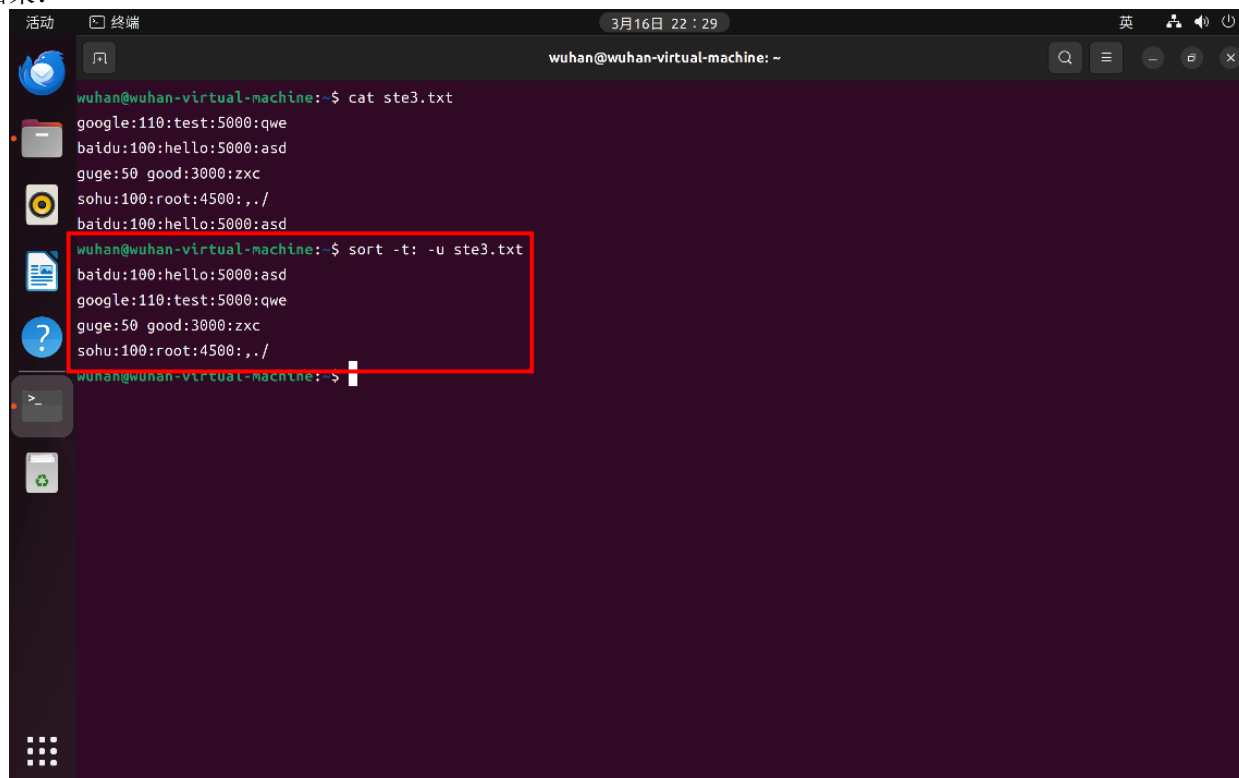
```
wuhan@wuhan-virtual-machine:~$ sort -t: -k3nr ste2.txt
guge:50:2110:good:3000:zxc
google:110:1230:test:5000:qwe
sohu:100:985:root:4500:./
baidu:100:125:hello:5000:asd
wuhan@wuhan-virtual-machine:~$
```

图 38 对文件内容排序

23、删除重复行

命令: `sort -t: -u ste3.txt`

结果:



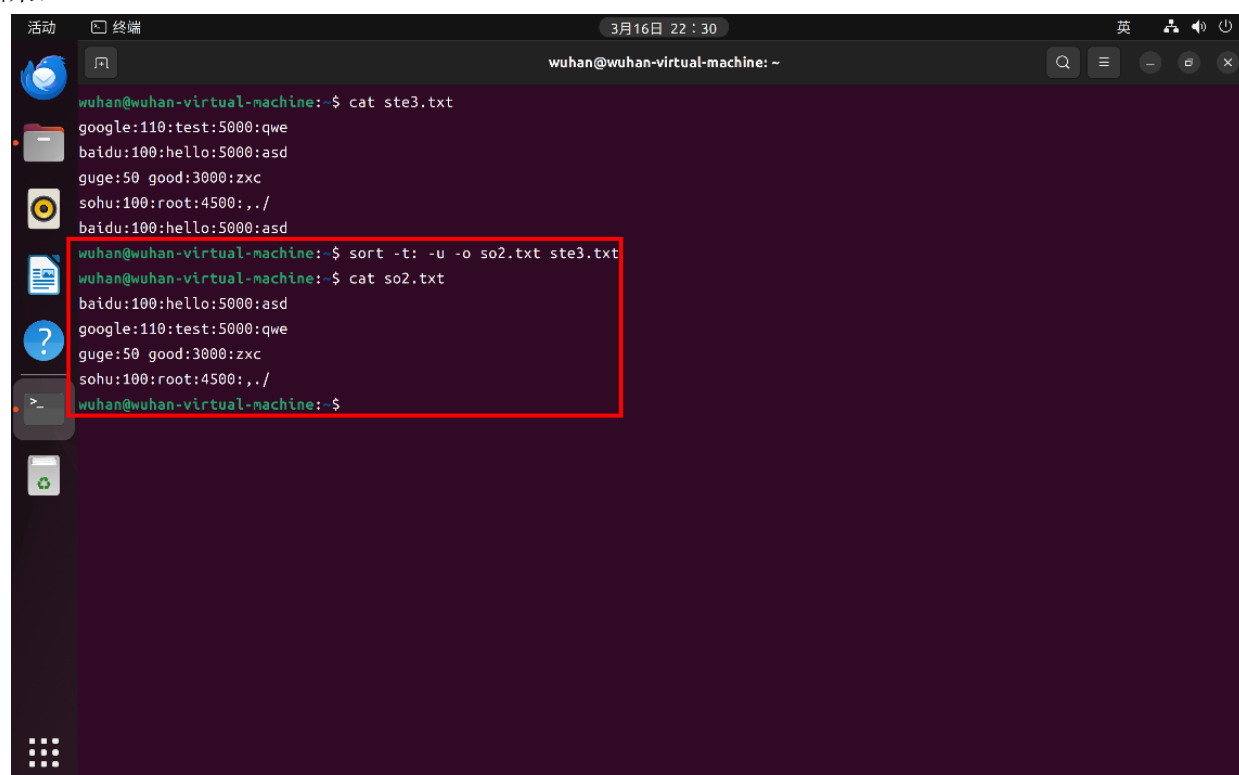
```
wuhan@wuhan-virtual-machine:~$ cat ste3.txt
google:110:test:5000:qwe
baidu:100:hello:5000:asd
guge:50 good:3000:zxc
sohu:100:root:4500:./
baidu:100:hello:5000:asd
wuhan@wuhan-virtual-machine:~$ sort -t: -u ste3.txt
baidu:100:hello:5000:asd
google:110:test:5000:qwe
guge:50 good:3000:zxc
sohu:100:root:4500:./
wuhan@wuhan-virtual-machine:~$
```

图 39 修改文件内容

24、对文件 ste3.txt 按第一列排序，并删除重复行后的排序结果保存在文件 so2.txt 中

命令: `sort -t: -u -o so2.txt ste3.txt`

结果:



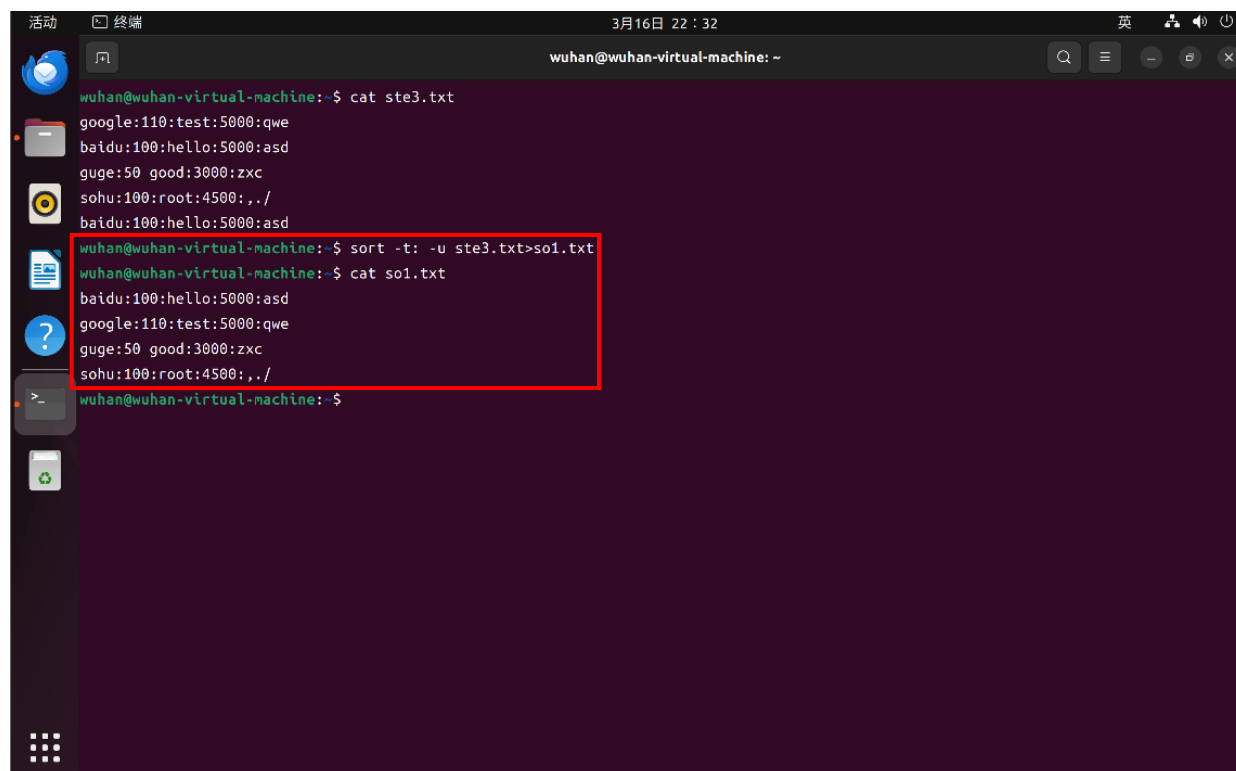
```
wuhan@wuhan-virtual-machine:~$ cat ste3.txt
google:110:test:5000:qwe
baidu:100:hello:5000:asd
guge:50 good:3000:zxc
sohu:100:root:4500:./
baidu:100:hello:5000:asd
wuhan@wuhan-virtual-machine:~$ sort -t: -u -o so2.txt ste3.txt
wuhan@wuhan-virtual-machine:~$ cat so2.txt
baidu:100:hello:5000:asd
google:110:test:5000:qwe
guge:50 good:3000:zxc
sohu:100:root:4500:./
wuhan@wuhan-virtual-machine:~$
```

图 40 修改文件内容

25、使用输出重定向保存排序输出结果

命令： `sort -t: -u ste3.txt>so1.txt`

结果：



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' showing the execution of the `sort` command. The terminal output is as follows:

```
wuhan@wuhan-virtual-machine:~$ cat ste3.txt
google:110:test:5000:qwe
baidu:100:hello:5000:asd
guge:50 good:3000:zxc
sohu:100:root:4500:../
baidu:100:hello:5000:asd
wuhan@wuhan-virtual-machine:~$ sort -t: -u ste3.txt>so1.txt
wuhan@wuhan-virtual-machine:~$ cat so1.txt
baidu:100:hello:5000:asd
google:110:test:5000:qwe
guge:50 good:3000:zxc
sohu:100:root:4500:../
wuhan@wuhan-virtual-machine:~$
```

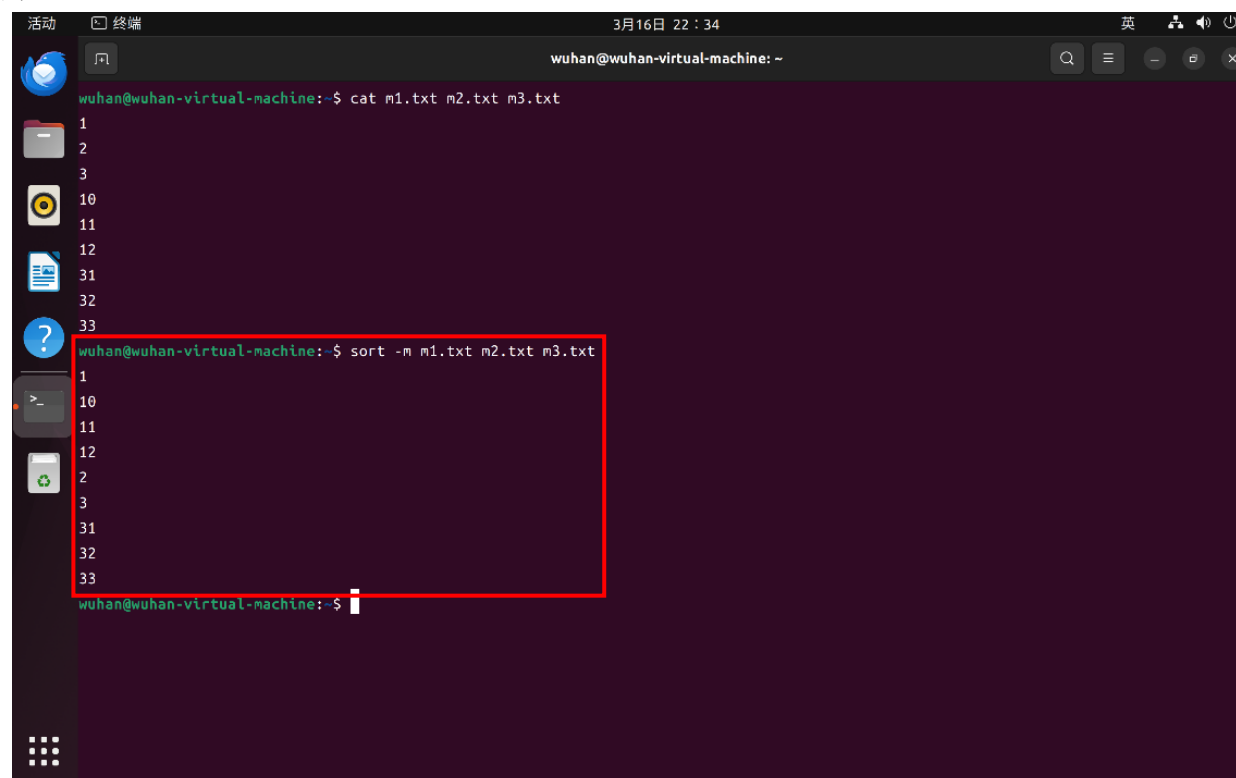
The output of the `sort` command is highlighted with a red box. The output shows the lines from `ste3.txt` sorted by the first field (username) and then by the second field (password), with duplicates removed.

图 41 修改文件内容

26、将三个文件 m1.txt、m2.txt、m3.txt 合并输出

命令： `sort -m m1.txt m2.txt m3.txt`

结果：



A terminal window titled 'wuhan@wuhan-virtual-machine: ~' showing the execution of the `sort -m` command. The terminal output is as follows:

```
wuhan@wuhan-virtual-machine:~$ cat m1.txt m2.txt m3.txt
1
2
3
10
11
12
31
32
33
wuhan@wuhan-virtual-machine:~$ sort -m m1.txt m2.txt m3.txt
1
10
11
12
2
3
31
32
33
wuhan@wuhan-virtual-machine:~$
```

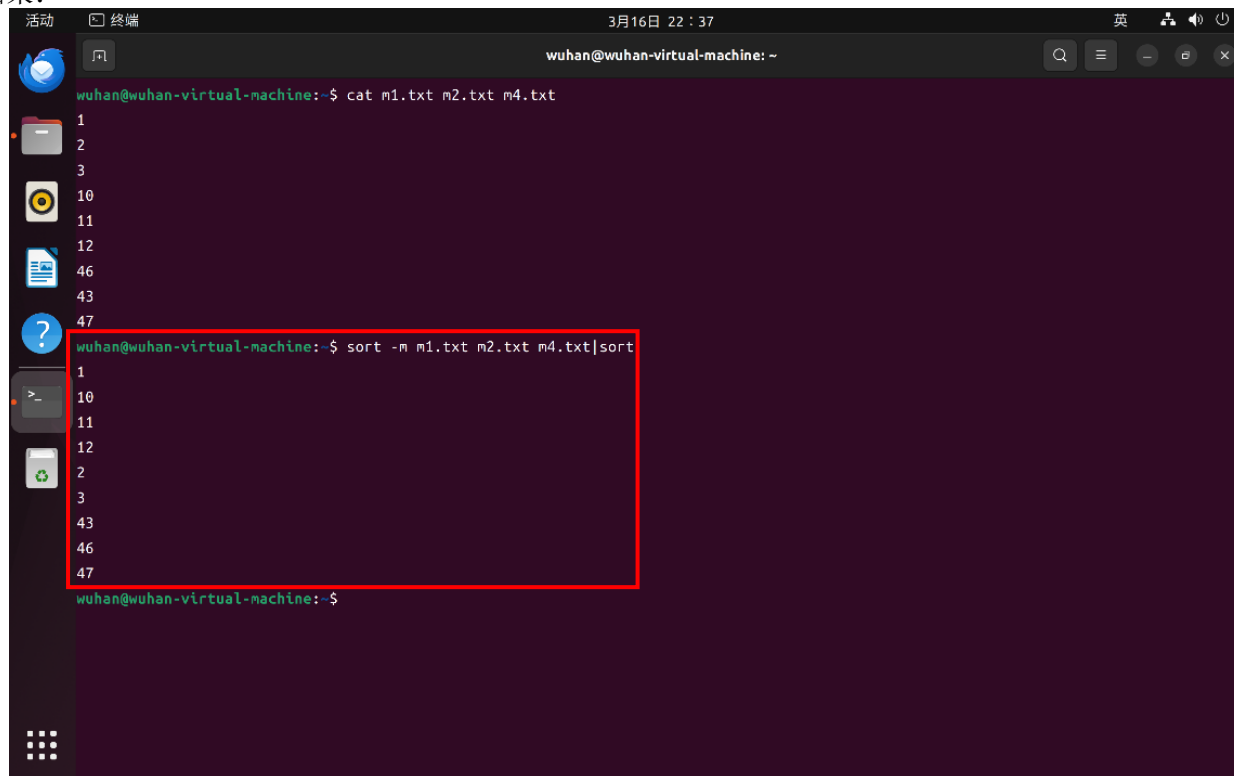
The output of the `sort -m` command is highlighted with a red box. The output shows the lines from `m1.txt`, `m2.txt`, and `m3.txt` merged and sorted numerically.

图 42 输出文件内容

27、将有序文件 m1.txt、m2.txt 和无序文件 m4.txt 的合并输出进行排序

命令: `sort -m m1.txt m2.txt m4.txt|sort`

结果:



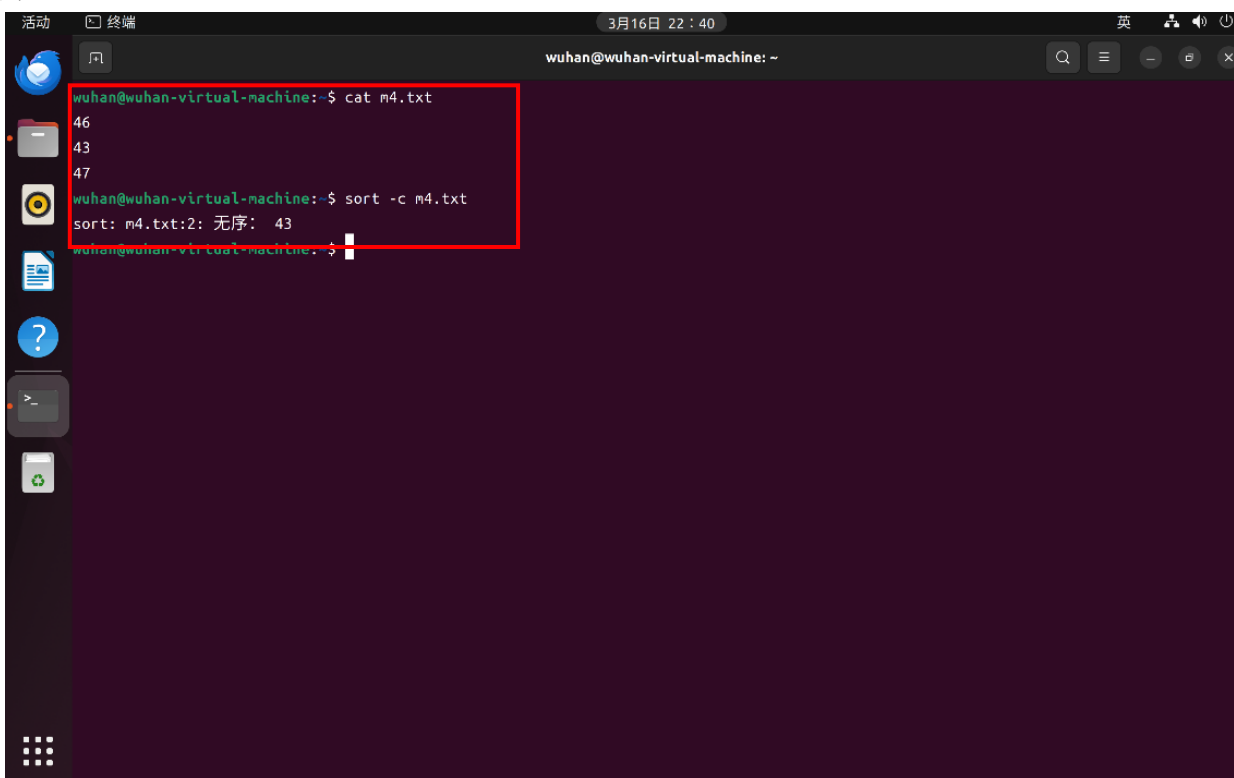
A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a timestamp of '3月16日 22:37'. The terminal shows the command `cat m1.txt m2.txt m4.txt` followed by its output: `1`, `2`, `3`, `10`, `11`, `12`, `46`, `43`, and `47`. Below this, the command `sort -m m1.txt m2.txt m4.txt|sort` is entered and its output is shown: `1`, `10`, `11`, `12`, `2`, `3`, `43`, `46`, and `47`. The output of the second command is highlighted with a red box.

图 43 输出文件内容

28、测试文件 m4.txt 是否有序

命令: `sort -c m4.txt`

结果:



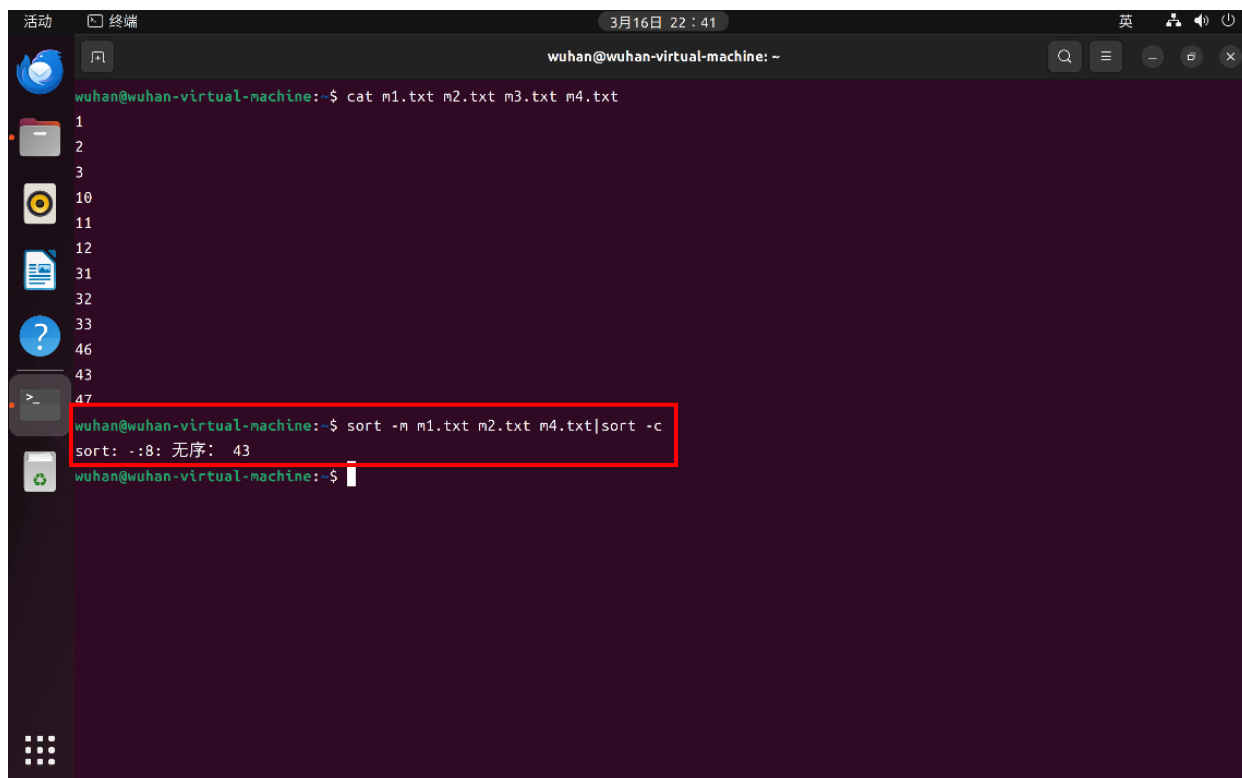
A terminal window titled 'wuhan@wuhan-virtual-machine: ~' with a timestamp of '3月16日 22:40'. The terminal shows the command `cat m4.txt` followed by its output: `46`, `43`, and `47`. Below this, the command `sort -c m4.txt` is entered and its output is shown: `sort: m4.txt:2: 无序: 43`. The output of the second command is highlighted with a red box.

图 44 测试文件内容

29、测试有序文件 m1.txt、m2.txt 和无序文件 m4.txt 的合并输出是否有序

命令: `sort -m m1.txt m2.txt m4.txt|sort -c`

结果:



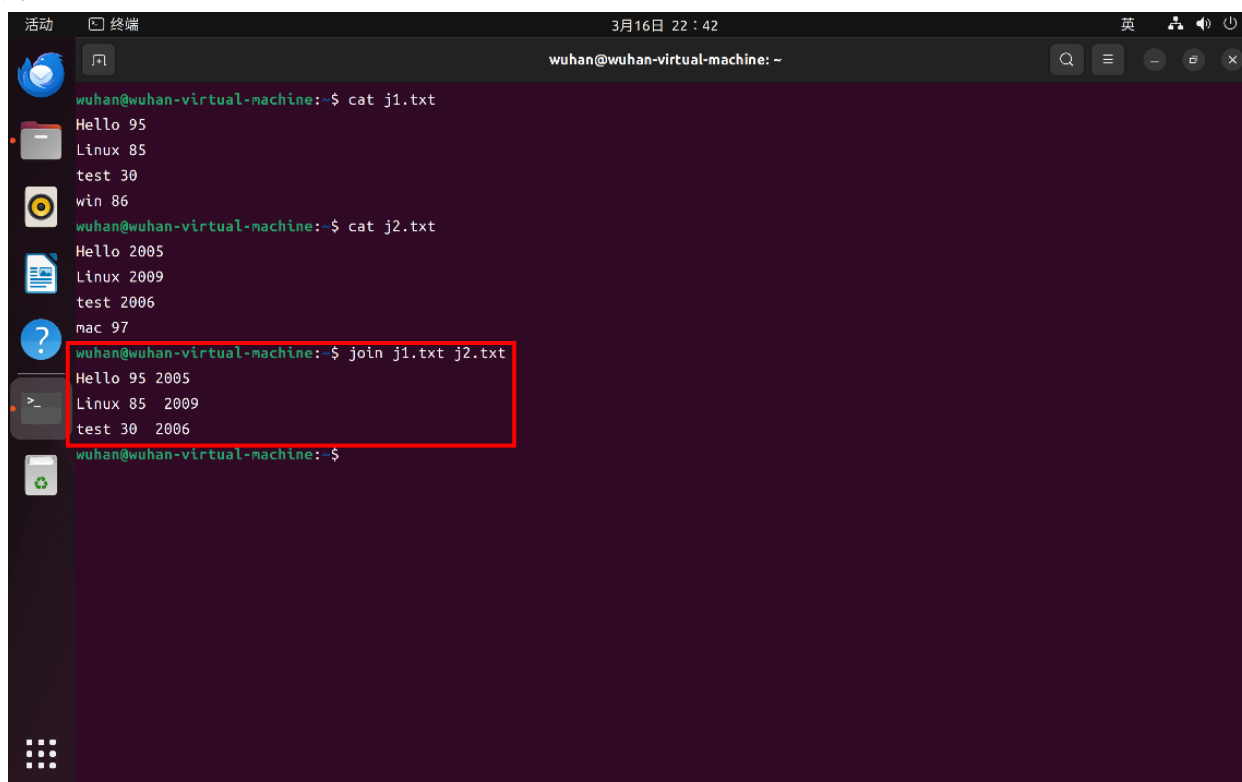
```
wuhan@wuhan-virtual-machine:~$ cat m1.txt m2.txt m3.txt m4.txt
1
2
3
10
11
12
31
32
33
46
43
47
wuhan@wuhan-virtual-machine:~$ sort -m m1.txt m2.txt m4.txt|sort -c
sort: -:8: 无序: 43
wuhan@wuhan-virtual-machine:~$
```

图 45 测试文件内容

30、连接两个文件中第一个域相同的记录

命令: `join j1.txt j2.txt`

结果:



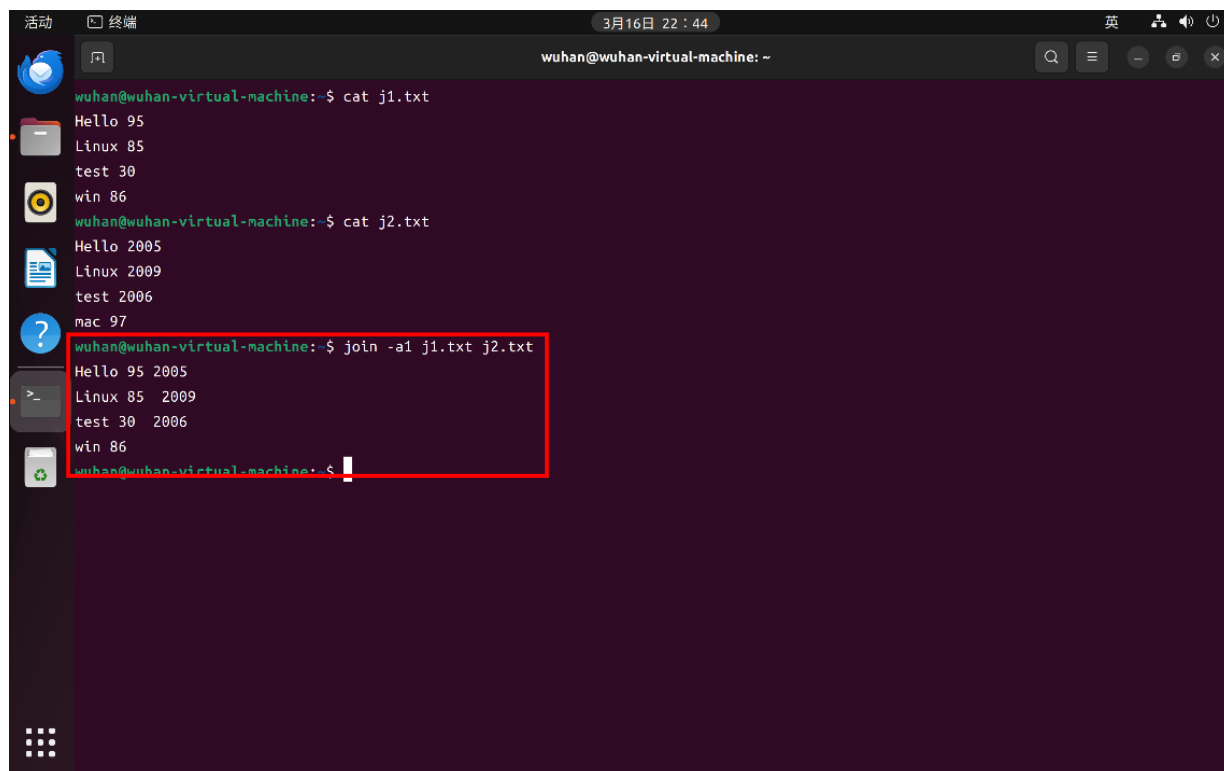
```
wuhan@wuhan-virtual-machine:~$ cat j1.txt
Hello 95
Linux 85
test 30
win 86
wuhan@wuhan-virtual-machine:~$ cat j2.txt
Hello 2005
Linux 2009
test 2006
mac 97
wuhan@wuhan-virtual-machine:~$ join j1.txt j2.txt
Hello 95 2005
Linux 85 2009
test 30 2006
wuhan@wuhan-virtual-machine:~$
```

图 46 测试文件内容

31、显示两个文件中有共同域的连接记录 and 文件 1 中无共同域的记录

命令: `join -a1 j1.txt j2.txt`

结果:



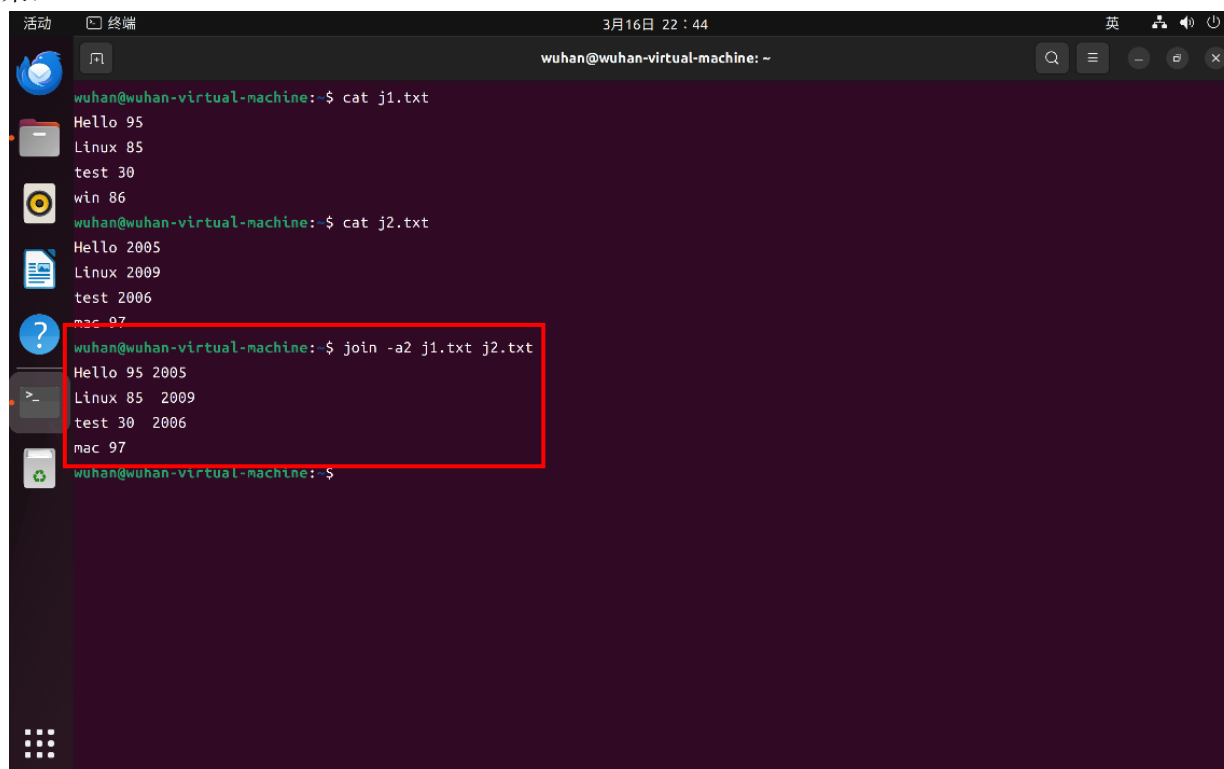
```
wuhan@wuhan-virtual-machine:~$ cat j1.txt
Hello 95
Linux 85
test 30
win 86
wuhan@wuhan-virtual-machine:~$ cat j2.txt
Hello 2005
Linux 2009
test 2006
mac 97
wuhan@wuhan-virtual-machine:~$ join -a1 j1.txt j2.txt
Hello 95 2005
Linux 85 2009
test 30 2006
win 86
wuhan@wuhan-virtual-machine:~$
```

图 47 测试文件内容

32、显示两个文件中有共同域的连接记录 and 文件 2 中无共同域的记录

命令: `join -a2 j1.txt j2.txt`

结果:



```
wuhan@wuhan-virtual-machine:~$ cat j1.txt
Hello 95
Linux 85
test 30
win 86
wuhan@wuhan-virtual-machine:~$ cat j2.txt
Hello 2005
Linux 2009
test 2006
mac 97
wuhan@wuhan-virtual-machine:~$ join -a2 j1.txt j2.txt
Hello 95 2005
Linux 85 2009
test 30 2006
mac 97
wuhan@wuhan-virtual-machine:~$
```

图 48 测试文件内容