

```
shuaisheng@shuaisheng-virtual-machine: /etc
-rw-r--r-- 1 shuaisheng shuaisheng 807 4月 13 17:13 .profile
drwx----- 4 shuaisheng shuaisheng 4096 4月 13 17:19 snap
shuaisheng@shuaisheng-virtual-machine: /etc$ mkdir /home/shuaisheng/linux
shuaisheng@shuaisheng-virtual-machine: /etc$ rmdir /home/shuaisheng/linux
shuaisheng@shuaisheng-virtual-machine: /etc$ cat > /home/shuaisheng/foo << EOF
> hello,shuaisheng!
> ^C
shuaisheng@shuaisheng-virtual-machine: /etc$ cat /home/shuaisheng/foo
cat: /home/shuaisheng/foo: 没有那个文件或目录
shuaisheng@shuaisheng-virtual-machine: /etc$ cat > /home/shuaisheng/foo << EOF
> hello,shuaisheng
> EOF
shuaisheng@shuaisheng-virtual-machine: /etc$ cat /home/shuaisheng/foo
hello,shuaisheng
shuaisheng@shuaisheng-virtual-machine: /etc$ mkdir /home/shuaisheng/foo.bak
shuaisheng@shuaisheng-virtual-machine: /etc$ cp /home/shuaisheng/foo /home/shuaisheng/foo.bak/
shuaisheng@shuaisheng-virtual-machine: /etc$ rm -r /home/shuaisheng/foo.bak
shuaisheng@shuaisheng-virtual-machine: /etc$ cat /home/shuaisheng/foo
hello,shuaisheng
shuaisheng@shuaisheng-virtual-machine: /etc$ mkdir /home/shuaisheng/foo.bak
shuaisheng@shuaisheng-virtual-machine: /etc$ head -n 3 /etc/adduser.conf
# /etc/adduser.conf: `adduser' configuration.
# See adduser(8) and adduser.conf(5) for full documentation.
```

```
shuaisheng@shuaisheng-virtual-machine: /etc$ tail -n 5 /etc/adduser.conf
#NAME_REGEX="^[a-z][-a-z0-9_]*$"

# use extrausers by default
#USE_EXTRAUSERS=1
DIR_MODE=0750
shuaisheng@shuaisheng-virtual-machine: /etc$ split -l $((($wc -l < /etc/adduser.conf)/2)) /etc/adduser.conf adduser.conf.
split: adduser.conf.aa: 权限不够
shuaisheng@shuaisheng-virtual-machine: /etc$ su
密码:
123456
```

```
shuaisheng@shuaisheng-virtual-machine: ~/桌面$ cat > /home/shuaisheng/bat.txt
google 100 5000
baidu 100 5000
guge 50 3000
sohu 100 4500^C
```

```
Ubuntu 64 位- VMware Workstation 16 Player (仅用于非商业用途)
Player(P) 5月23日 12:30
shuaisheng@shuaisheng-virtual-machine: ~/桌面

shuaisheng@shuaisheng-virtual-machine:~/桌面$ cat > /home/shuaisheng/bar.txt
google 110 5000
baidu 100 5000
guge 50 3000
sohu 100 4500

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sort -s /home/shuaisheng/bar.txt
baidu 100 5000
google 110 5000
guge 50 3000
sohu 100 4500

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sort -n /home/shuaisheng/bar.txt
baidu 100 5000
google 110 5000
guge 50 3000
sohu 100 4500

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sort -n -k 2 /home/shuaisheng/bar.txt
guge 50 3000
baidu 100 5000
sohu 100 4500
google 110 5000

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sort -n -k 2 -k 3 /home/shuaisheng/bar.txt
guge 50 3000
sohu 100 4500
baidu 100 5000
google 110 5000

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sort -n -r -k 3 -k2 /home/shuaisheng/bar.txt
google 110 5000
baidu 100 5000
sohu 100 4500
guge 50 3000

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sort -k 1.2 -s -b /home/shuaisheng/bar.txt
baidu 100 5000
sohu 100 4500

shuaisheng@shuaisheng-virtual-machine:~/桌面$ ls -l /baz
shuaisheng@shuaisheng-virtual-machine:~/桌面$ mkdir -p /path1
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo "hello,file1" > ~/path1/file1
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo "hello,file1" > ~/path1/file2
shuaisheng@shuaisheng-virtual-machine:~/桌面$ mkdir -p /path2
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo "hello,file3" > ~/path2/file3
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo "hello,file4" > ~/file4
```



```
shuaisheng@shuaisheng-virtual-machine:~/桌面$ tar -cvf package.tar ~/path1 ~/file4
tar: 从成员名中删除开头的“/”
/home/shuaisheng/path1/
/home/shuaisheng/path1/file1
tar: 从硬连接目标中删除开头的“/”
/home/shuaisheng/path1/file2
/home/shuaisheng/file4
shuaisheng@shuaisheng-virtual-machine:~/桌面$ tar -tvf package.tar
drwxrwxr-x shuaisheng/shuaisheng 0 2023-05-23 15:37 home/shuaisheng/path1/
-rw-rw-r-- shuaisheng/shuaisheng 12 2023-05-23 15:36 home/shuaisheng/path1/file1
-rw-rw-r-- shuaisheng/shuaisheng 12 2023-05-23 15:37 home/shuaisheng/path1/file2
-rw-rw-r-- shuaisheng/shuaisheng 12 2023-05-23 15:38 home/shuaisheng/file4
shuaisheng@shuaisheng-virtual-machine:~/桌面$ tar -rvf package.tar ~/path2
tar: 从成员名中删除开头的“/”
/home/shuaisheng/path2/
/home/shuaisheng/path2/file3
tar: 从硬连接目标中删除开头的“/”
shuaisheng@shuaisheng-virtual-machine:~/桌面$ mkdir ~/path3
mkdir: 无法创建目录 “/home/shuaisheng”: 文件已存在
mkdir: 无法创建目录 “/path3”: 权限不够
shuaisheng@shuaisheng-virtual-machine:~/桌面$ cp package.tar ~/path3/
cp: 无法创建普通文件 '/home/shuaisheng/path3/': 不是目录
shuaisheng@shuaisheng-virtual-machine:~/桌面$ mkdir ~/path3
shuaisheng@shuaisheng-virtual-machine:~/桌面$ cp package.tar ~/path3/
shuaisheng@shuaisheng-virtual-machine:~/桌面$ cd ~/path3
shuaisheng@shuaisheng-virtual-machine:~/path3$ tar -xvf package.tar
home/shuaisheng/path1/
home/shuaisheng/path1/file1
home/shuaisheng/path1/file2
home/shuaisheng/file4
home/shuaisheng/path2/
home/shuaisheng/path2/file3
shuaisheng@shuaisheng-virtual-machine:~/path3$
```

```

shuaisheng@shuaisheng-virtual-machine:~/path3$ echo "123" > ~/foo.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ ln ~/foo.txt ~/bar.txt
ln: 无法创建硬链接 '/home/shuaisheng/bar.txt': 文件已存在
shuaisheng@shuaisheng-virtual-machine:~/path3$ comm ~/foo.txt ~/bar.txt
123
    google 110 5000
comm: 文件2 没有被正确排序
    baidu 100 5000
    guge 50 3000
    sohu 100 4500
comm: 输入没有被正确排序
shuaisheng@shuaisheng-virtual-machine:~/path3$ ls -li ~/foo.txt ~/bar.txt
807777 /home/shuaisheng/bar.txt 808165 /home/shuaisheng/foo.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ echo "abc" > ~/bar.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ cmp ~/foo.txt ~/bar.txt
/home/shuaisheng/foo.txt /home/shuaisheng/bar.txt 不同: 第 1 字节, 第 1 行
shuaisheng@shuaisheng-virtual-machine:~/path3$ rm ~/foo.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ ls -li ~/bar.txt
807777 /home/shuaisheng/bar.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ cat ~/bar.txt
abc
shuaisheng@shuaisheng-virtual-machine:~/path3$ ln -s ~/bar.txt ~/baz.txt
ln: 无法创建符号链接 '/home/shuaisheng/baz.txt': 文件已存在
shuaisheng@shuaisheng-virtual-machine:~/path3$ ls -li ~/bar.txt ~/baz.txt
807777 /home/shuaisheng/bar.txt 807768 /home/shuaisheng/baz.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ cmp ~/bar.txt ~/baz.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ rm ~/bar.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ cat ~/baz.txt
cat: /home/shuaisheng/baz.txt: 没有那个文件或目录
shuaisheng@shuaisheng-virtual-machine:~/path3$ echo "hello,qux" > ~/qux.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$ chmod a+x ~/qux.txt
shuaisheng@shuaisheng-virtual-machine:~/path3$

```

### 实验三

```

shuaisheng@shuaisheng-virtual-machine:~/workspace1$ gcc -o test test.c
shuaisheng@shuaisheng-virtual-machine:~/workspace1$ ls -l test
-rwxrwxr-x 1 shuaisheng shuaisheng 15952 5月 23 16:56 test
shuaisheng@shuaisheng-virtual-machine:~/workspace1$ ./test
bash: ./test: 没有那个文件或目录
shuaisheng@shuaisheng-virtual-machine:~/workspace1$ ./test
hello,worldshuaisheng@shuaisheng-virtual-machine:~/workspace1$

```

```
#scopev4 ::ffff:169.254.0.0/112 2
#scopev4 ::ffff:127.0.0.0/104 2
hello,this is vim world:## label <mask> <value>
scopev4 ::ffff:0.0.0.0/96 14
65,24
```

```
# used. Changing these defaults should hardly ever be necessary.
# The defaults are equivalent to:
#
#scopev4 ::ffff:169.254.0.0/112 2
#scopev4 ::ffff:127.0.0.0/104 2
hello,us vim world:## label <mask> <value>
scopev4 ::ffff:0.0.0.0/96 14
65,7
```

```
hello,worldshuaisheng@shuaisheng-virtual-machine:~/workspace1$ mkdir ~/workspace2
shuaisheng@shuaisheng-virtual-machine:~/workspace1$ cd ~/workspace2
shuaisheng@shuaisheng-virtual-machine:~/workspace2$ cat /etc/gai.conf > ./gai.conf
f
shuaisheng@shuaisheng-virtual-machine:~/workspace2$ vim gai.conf
shuaisheng@shuaisheng-virtual-machine:~/workspace2$ vim gai.conf
shuaisheng@shuaisheng-virtual-machine:~/workspace2$
```

实验四

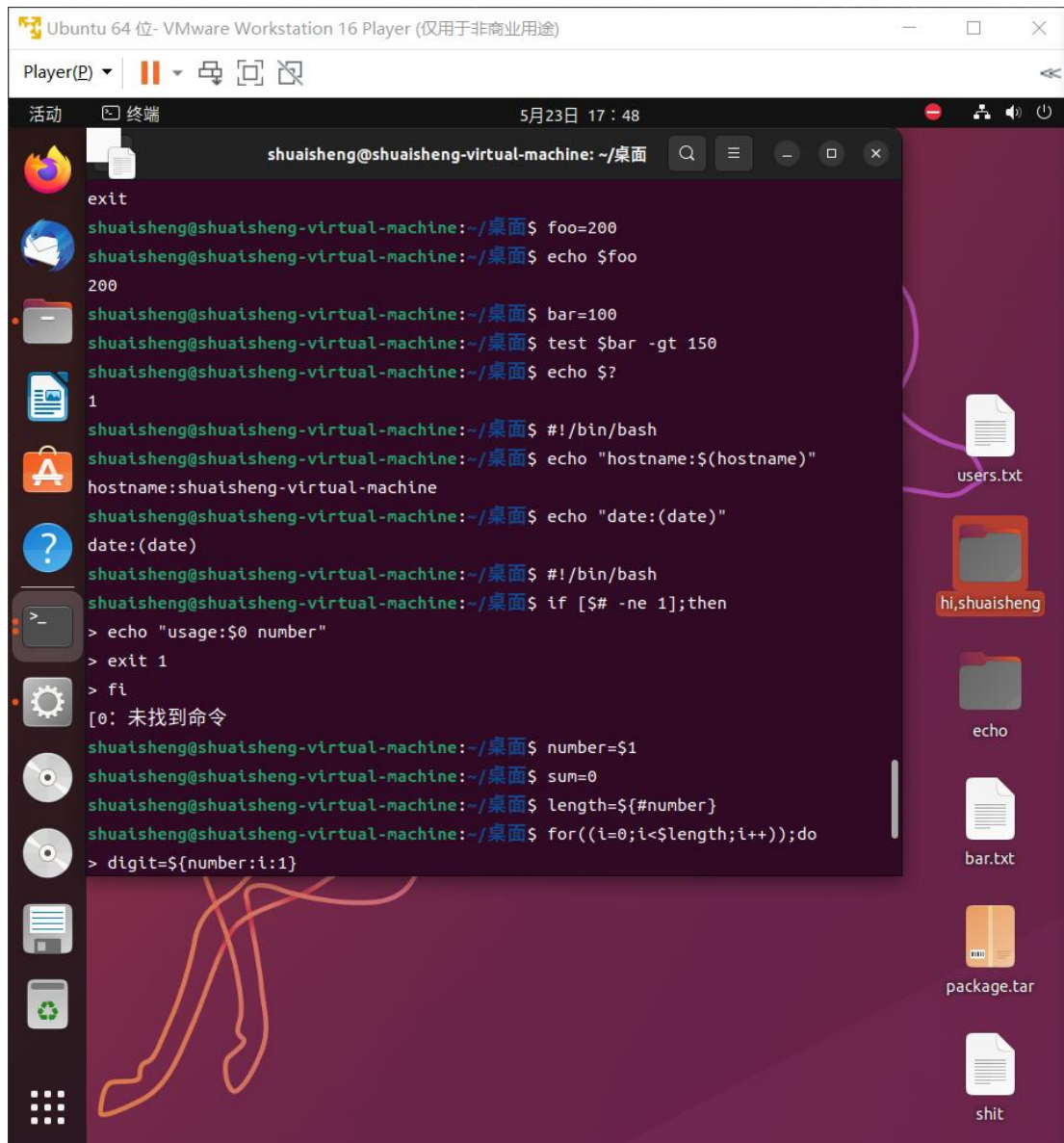


```
su: failed to execute /bin/csh: No such file or directory
shuaisheng@shuaisheng-virtual-machine:~/桌面$ sudo usermod -u 2000 /bin/csh foo
用法: usermod [选项] 登录

选项:
  -b, --badnames          allow bad names
  -c, --comment 注释      GECOS 字段的新值
  -d, --home HOME_DIR     用户的新主目录
  -e, --expiredate EXPIRE_DATE 设定帐户过期的日期为 EXPIRE_DATE
  -f, --inactive INACTIVE 过期 INACTIVE 天数后, 设定密码为失效状态
  -g, --gid GROUP          强制使用 GROUP 为新主组
  -G, --groups GROUPS      新的附加组列表 GROUPS
  -a, --append GROUP       将用户追加至上边 -G 中提到的附加组中,
                           并不从其它组中删除此用户
  -r, --remove             remove the user from only the supplemental GROUP
                           S
                           mentioned by the -G option without removing
                           the user from other groups
  -h, --help              显示此帮助信息并推出
  -l, --login LOGIN        新的登录名称
  -L, --lock               锁定用户帐号
  -m, --move-home          将家目录内容移至新位置 (仅于 -d 一起使用)
  --extrausers             Use the extra users database
  -Z, --selinux-user       remove any SELinux user mapping for the user
```

```
root@shuaisheng-virtual-machine:/home/shuaisheng/桌面# echo "user1:pass 123456"
> users.txt
root@shuaisheng-virtual-machine:/home/shuaisheng/桌面# sudu newusers users.txt
Command 'sud' not found, did you mean:
  command 'tudu' from deb tudu (0.10.4-1)
  command 'sudo' from deb sudo (1.9.11p3-1ubuntu1.3)
  command 'sudo' from deb sudo-ldap (1.9.11p3-1ubuntu1.3)
Try: apt install <deb name>
root@shuaisheng-virtual-machine:/home/shuaisheng/桌面# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
```

实验五





```

shuaisheng@shuaisheng-virtual-machine:~/桌面$ for((i=0;i<$length;i++));do
> digit=${number:i:1}
> sum=$((sum + digit**length))
> done
shuaisheng@shuaisheng-virtual-machine:~/桌面$ if [$sum -eq $number];then
> echo "$number is a Narcissistic number"
> else echo "$number is not a Narcissistic number"
> fi
[0: 未找到命令
is not a Narcissistic number
shuaisheng@shuaisheng-virtual-machine:~/桌面$ touch myshell.sh
shuaisheng@shuaisheng-virtual-machine:~/桌面$ #!/bin/bash
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo"hostname: $(hostname)"
echohostname: shuaisheng-virtual-machine: 未找到命令
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo "Hostname: $(hostname)"
Hostname: shuaisheng-virtual-machine
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo "Date: $(date)"
Date: 2023年 05月 23日 星期二 17:50:20 CST

```

```

shuaisheng@shuaisheng-virtual-machine:~/桌面$ touch sum.sh
shuaisheng@shuaisheng-virtual-machine:~/桌面$ #!/bin/bash
shuaisheng@shuaisheng-virtual-machine:~/桌面$ if [$# -n 3];then
> echo "usage: $0 num1 num2 num3"
> exit 1
> fi
[0: 未找到命令
shuaisheng@shuaisheng-virtual-machine:~/桌面$ num1=$1
shuaisheng@shuaisheng-virtual-machine:~/桌面$ num2=$2
shuaisheng@shuaisheng-virtual-machine:~/桌面$ num3=$3
shuaisheng@shuaisheng-virtual-machine:~/桌面$ sum=$((num1+num2+num3))
shuaisheng@shuaisheng-virtual-machine:~/桌面$ echo"the sum of $num1,$num2 and $num3 is $sum"
echothe sum of , and is : 未找到命令
shuaisheng@shuaisheng-virtual-machine:~/桌面$

```

## 实验六

```
#!/bin/bash

if [ $# -ne 1 ]; then
    echo "usage: $0 directory"
    exit 1
fi

target_dir=$1

if [ ! -d $target_dir ]; then
    echo "$target_dir does not exist"
    exit 1
fi

for file in *.c; do
    cp $file $target_dir
done

echo "All C files in the current directory have been copied to $target_dir"
```

```
count=1
sum=0

while [ $count -le 10 ]; do
    if [ $((count % 2)) -eq 0 ]; then
        sum=$((sum + count))
    fi
    count=$((count + 1))
done

echo "The sum of the first 10 even numbers is $sum"
```

```
~
~
~
```

```
#!/bin/bash

count=1
sum=0

until [ $count -gt 10 ]; do
    square=$((count * count))
    sum=$((sum + square))
    count=$((count + 1))
done

echo "The sum of squares from 1 to 10 is $sum"
```

## 实验七

```
The sum of 3 and 4 is 7
shuaisheng@shuaisheng-virtual-machine:~/桌面$ chmod +x ./abc.sh
shuaisheng@shuaisheng-virtual-machine:~/桌面$ ./abc.sh
The sum of 3 and 4 is 7
shuaisheng@shuaisheng-virtual-machine:~/桌面$
```

```
function sum() {
    local a=$1
    local b=$2
    local c=$((a + b))
    echo "The sum of $a and $b is $c"
}

sum 3 4
```



>\_

终端

“终端”已就绪

```
#!/bin/bash

function factorial() {
    local n=$1
    if [ $n -eq 0 ]; then
        echo 1
    else
        local m=$((n - 1))
        local t=$(factorial $m)
        echo $((n * t))
    fi
}

result=$(factorial 5)
echo "The factorial of 5 is $result"

~
~
~
~
~
```

shuaisheng@shuaisheng-virtual-machine: ~/桌面

shuaisheng@shuaisheng-virtual-machine:~/桌面\$ chmod +x ./abc.sh

shuaisheng@shuaisheng-virtual-machine:~/桌面\$ ./abc.sh

The factorial of 5 is 120

shuaisheng@shuaisheng-virtual-machine:~/桌面\$

shuaisheng@shuaisheng-virtual-machine:~/桌面\$ chmod +x ./abc.sh

shuaisheng@shuaisheng-virtual-machine:~/桌面\$ ./abc.sh

starting...

shuaisheng@shuaisheng-virtual-machine:~/桌面\$



A terminal window with a dark purple background. The title bar at the top right shows a terminal icon and the text "终端" (Terminal) and "“终端”已就绪" (Terminal is ready). The prompt is "#!/b" followed by a document icon and the word "bash". The code defines three nested functions: first(), second(), and third(). The first function calls second(), which calls third(), which prints "-3- here is in the third func.". Then second() prints "-2- here is in the second func." and calls third(). Finally, first() prints "-1- here is in the first func." and calls second(). The code ends with an echo statement "starting..." and two tilde symbols.

```
#!/b bash

function first() {
    function second() {
        function third() {
            echo "-3- here is in the third func."
        }
        echo "-2- here is in the second func."
        third
    }
    echo "-1- here is in the first func."
    second
}

echo "starting..."

~
~
```

实验八

```
shuaisheng@shuaisheng-virtual-machine:~/桌面$ sed 's/\$/g' quote.txt
The honeysuckle band played all night long for only 90.
It was an evening of splendid music and company.
Too bad the disco floor fell through at 23:10.
The local nurse Miss P.Neave was in attendance

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sed -n '/music/p' quote.txt
It was an evening of splendid music and company.
shuaisheng@shuaisheng-virtual-machine:~/桌面$ sed '4a\
hello world!' quote.txt
The honeysuckle band played all night long for only $90.
It was an evening of splendid music and company.
Too bad the disco floor fell through at 23:10.
The local nurse Miss P.Neave was in attendance
hello world!

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sed 's/The/Quod/g' quote.txt
Quod honeysuckle band played all night long for only $90.
It was an evening of splendid music and company.
Too bad the disco floor fell through at 23:10.
Quod local nurse Miss P.Neave was in attendance
```

```
shuaisheng@shuaisheng-virtual-machine:~/桌面$ sed '3c\
This is the third line.' quote.txt
The honeysuckle band played all night long for only $90.
It was an evening of splendid music and company.
This is the third line.
The local nurse Miss P.Neave was in attendance

shuaisheng@shuaisheng-virtual-machine:~/桌面$ sed '2d' quote.txt
The honeysuckle band played all night long for only $90.
Too bad the disco floor fell through at 23:10.
The local nurse Miss P.Neave was in attendance

shuaisheng@shuaisheng-virtual-machine:~/桌面$ var="evening"
sed -n "/$var/p" quote.txt
It was an evening of splendid music and company.
shuaisheng@shuaisheng-virtual-machine:~/桌面$
```



```
shuaisheng@shuaisheng-virtual-machine:~/桌面$ awk '{print $2}' number.txt
:
:
shuaisheng@shuaisheng-virtual-machine:~/桌面$ awk -F ':' '{print $2}' number.txt
two
five
shuaisheng@shuaisheng-virtual-machine:~/桌面$
```

```
shuaisheng@shuaisheng-virtual-machine:~/桌面$ #!/bin/bash

count=0 # 计数器
while read line
do
    nums=($line) # 将每行的 3 个数字分别存储到一个数组中
    for num in ${nums[@]} # 遍历数组中的每个数字
    do
        if [ $((num % 2)) -eq 0 ]; then # 判断当前数字是否为偶数
            count=$((count+1)) # 偶数计数器加 1
            echo $num
        fi
    done
done < foo.txt

echo "numbers:"
echo $count
46
2
4
46
numbers:
4
```

```
shuaisheng@shuaisheng-virtual-machine:~/桌面$ chmod +x ./aaa.sh
shuaisheng@shuaisheng-virtual-machine:~/桌面$ ./aaa.sh
./aaa.sh: 第 2 行: read: "-p": 不是有效的标识符
awk: 1: unexpected character 0xe2
Warning: unknown mime-type for "}" -- using "application/octet-stream"
Warning: unknown mime-type for "END" -- using "application/octet-stream"
Warning: unknown mime-type for "{" -- using "application/octet-stream"
Warning: unknown mime-type for "print" -- using "application/octet-stream"
Warning: unknown mime-type for "nmatches," -- using "application/octet-stream"
Warning: unknown mime-type for "'found.'" -- using "application/octet-stream"
Warning: unknown mime-type for "}'" -- using "application/octet-stream"
Error: no such file "}"
Error: no such file "END"
Error: no such file "{"
Error: no such file "print"
Error: no such file "nmatches,"
Error: no such file "'found.'"
Error: no such file "}'"
Error: no "print" mailcap rules found for type "text/plain"
shuaisheng@shuaisheng-virtual-machine:~/桌面$
```