

# 作业2

## 1. 题目说明

实现安全的rm命令

1. 传入一个参数：用以遍历该路径下所有文件及目录中文件内容的最长字符串
2. 定期删除（Baidu）
3. 识别rm选项 -r -f

1. rm -r -f \*
2. rm -f /

## 2. 代码说明

```
#####
# File Name: delete.sh
# Author: Lifangqiang
# mail: 576245059@qq.com
# Created Time: 一 8/13 20:02:59 2018
#####

#!/bin/bash
if [ ! -d ~/.Trash ]; then #如果不存在~/.Trash目录则创建一个~/.Trash目录
    mkdir ~/.Trash
fi

if [ $# -eq 0 ]; then #如果delete.sh后没有输入任何字符的话执行以下代码
    echo "usage: $0 [-f | -r] [-dPRrvW] file ..."
    echo "unlink file"
elif [ "$1" == "-r" ] || [ "$1" == "-R" ]; then #当在delete.sh后输入-r或者-R执行以下程序
    if [ "$2" == "-f" ]; then #当-r或-R后面是-f的话直接递归并强制覆盖到回收站，然后递归并强制删除
        for ((i=3; i<=$#; i++)); do
            file=${!i}
            cp -rf $file ~/.Trash
            rm -rf $file
        done
    fi
fi
```

```

else #如果-r或-R后面是文件或者目录，那么该文件或目录递归并询问是否覆盖同名文件到回收站，并以此递归并询问是否删除该文件或目录
    for ((i=2; i<=$#; i++)); do
        file=${!i}
        cp -ri $file ~/.Trash
        rm -ri $file
    done
fi
elif [ "$1" == "-f" ]; then #当在delete.sh后输入-f执行以下程序
    if [ "$2" == "-r" ] || [ "$2" == "-R" ]; then #当-f后面是-r或-R的话直接递归并强制覆盖到回收站，然后递归并强制是否删除
        for ((i=3; i<=$#; i++)) do
            file=${!i}
            cp -rf $file ~/.Trash
            rm -rf $file
        done
        else #如果-f后面是文件，那么将该文件强制覆盖同名文件到回收站，并且强制删除该文件，但是如果是目录就执行失败
            for ((i=2; i<=$#; i++)); do
                file=${!i}
                if [[ -d $file ]]; then
                    echo $0: $file: is a directory
                elif [[ -f $file ]]; then
                    cp -f $file ~/.Trash
                    rm -f $file
                fi
            done
        fi
    elif [ "$1" == "-rf" ] || [ "$1" == "-Rf" ] || [ "$1" == "-fr" ] || [ "$1" == "-fR" ]; then #当在delete.sh后输入-rf或-Rf或-fr或-fR执行以下程序
        for ((i=2; i<=$#; i++)); do #直接递归并强制覆盖的移到回收站，然后递归并强制删除
            file=${!i}
            cp -rf $file ~/.Trash
            rm -rf $file
        done
        else #如果delete.sh后面是文件或者目录，那么将该文件询问是否覆盖同名文件到回收站，并且询问是否删除该文件，但是如果是目录就执行失败
            for ((i=1; i<=$#; i++)); do
                file=${!i}
                if [ -f $file ]; then
                    cp -i $file ~/.Trash
                    rm -i $file
                elif [ -d $file ]; then
                    echo $0: $file: is a directory
                fi
            done
        fi
fi

```

输入命令： `crontab -e`

```
* 11 * * * ~/other/delete.sh -rf ~/RegularDeletion/*
* 23 * * * rm -rf ~/.Trash/*
```

代码说明：

将~/RegularDeletion目录里面所有的文件在每天24小时制的11点整用delete.sh来进行递归并强制删除，然后放入回收站。

将回收站在每天24小时制的23点整进行强制清空。

### 3. 难点记录

本次作业的难点是：

1. 比较困扰我的问题是：如果*i=1*，如何使用**变量i**来表示*\$1*，刚开始我理解的想法来得出*\$1*，可是得出的总为*1*，最终通过查资料知道了使用 `${!i}` 可以最终得出*\$1*。
2. 运行 `if [ "$2" == "-f" ]` 代码时，在“*[*”和“*]*”中间的**字符或者字符串**必须要与其有一个**空格间隔**，并且==左右两边必须要有**空格分隔**，**否则运行失败**。
3. **cp**的时候必须把**目标目录名**后面的/必须去除，这样才能把将**文件**和**目录**放入**目标目录**里面，否则就是**复制更名**的操作。这个问题困扰我好长时间，导致作业上交的有些晚，但是也很莫名其妙就好了。

### 4. 执行结果

1. delete.sh后面什么都不写：

```
lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh
usage: ./delete.sh [-f | -r] [-dPRrvW] file ...
unlink file
```

## 2. delete.sh后面写两个文件夹test1和test2

```
lifaqiang@Lifaqiang_MacBookPro:other$ ls -l
total 3000
-rwxr-xr-x@ 1 lifa qiang  staff  1474982  2 15  2017 292688.jpg
drwxr-xr-x  6 lifa qiang  staff    192    8 14  02:08 GitHub
drwxr-xr-x  6 lifa qiang  staff    192    8 13  16:49 HaiZei_4
drwxr-xr-x  5 lifa qiang  staff    160    8  5  17:22 Xcode
drwxr-xr-x  4 lifa qiang  staff    128    8 13  16:17 a
-rw-r--r--  1 lifa qiang  staff     43    8 14  14:36 a.log
-rw-r--r--@ 1 lifa qiang  staff  13456    8  1  14:46 brew_install
-rw-r--r--  1 lifa qiang  staff    265    8 14  15:35 conf
-rw-r--r--  1 lifa qiang  staff   1761    8 13  17:33 cpcp
-rw-r--r--  1 lifa qiang  staff    616    8 13  18:06 cs.sh
-rwxrwxrwx@ 1 lifa qiang  staff   2851    8 14  02:29 delete.sh
drwxr-xr-x  7 lifa qiang  staff    224    8  1  09:59 eclipse-workspace
drwxr-xr-x  4 lifa qiang  staff    128    7 31  18:47 eclipse-workspace-javase
-rwxrwxrwx@ 1 lifa qiang  staff   2439    8 14  10:28 getLongestFile.sh
-rwxrwxrwx  1 lifa qiang  staff    705    8 13  23:36 getLongestString.sh
-rw-r--r--  1 lifa qiang  staff    398    8 12  16:56 lenstring.sh
drwxr-xr-x  3 lifa qiang  staff     96    8 14  19:05 log
-rw-r--r--  1 lifa qiang  staff     87    8 12  11:46 ma6174
-rwxrwxrwx  1 lifa qiang  staff    555    8 13  15:13 string.sh
drwxr-xr-x  5 lifa qiang  staff    160    8 14  23:08 test1
drwxr-xr-x  5 lifa qiang  staff    160    8 14  23:08 test2
lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh test1 test2
./delete.sh: test1: is a directory
./delete.sh: test2: is a directory
```

## 3. delete.sh后面写两个文件cpcp和a.log

```
lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh cpcp a.log
remove cpcp? y
remove a.log? y
```

前往回收站

```
lifaqiang@Lifaqiang_MacBookPro:other$ ls ~/.Trash/
a.log cpcp
```

## 4. delete.sh -f 后面写两个文件cs.sh和conf

```
lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh -f cs.sh conf
lifaqiang@Lifaqiang_MacBookPro:other$ ls ~/.Trash/
a.log conf  cpcp  cs.sh
```

## 5. delete -f 后面写两个文件夹test1和test2

```
lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh -f test1 test2
./delete.sh: test1: is a directory
./delete.sh: test2: is a directory
```

## 6. delete -r 后面写两个文件夹test1和test2

```

lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh -r test1 test2
examine files in directory test1? y
remove test1/a? y
remove test1/c? y
remove test1/b? y
remove test1? y
examine files in directory test2? y
remove test2/f? y
remove test2/d? y
remove test2/e? y
remove test2? y
lifaqiang@Lifaqiang_MacBookPro:other$ ls ~/.Trash/
a.log conf  cpcp  cs.sh test1 test2

```

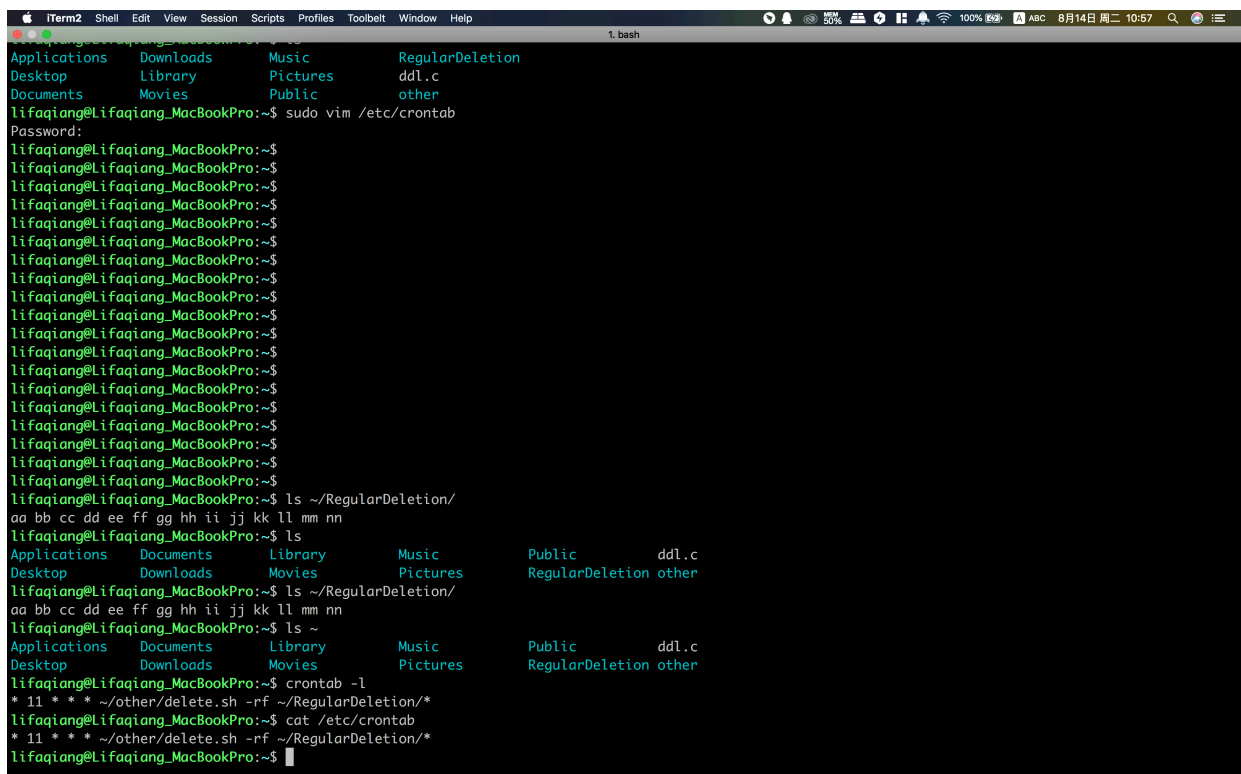
## 7. delete -r -f 后面写两个文件夹a和log

```

lifaqiang@Lifaqiang_MacBookPro:other$ delete.sh -r -f a log
lifaqiang@Lifaqiang_MacBookPro:other$ ls ~/.Trash/
a      a.log conf  cpcp  cs.sh log  test1 test2

```

## 8. 定时删除



```

lifaqiang@Lifaqiang_MacBookPro:~$ sudo vim /etc/crontab
Password:
lifaqiang@Lifaqiang_MacBookPro:~$ 
lifaqiang@Lifaqiang_MacBookPro:~$ 
lifaqiang@Lifaqiang_MacBookPro:~$ 
lifaqiang@Lifaqiang_MacBookPro:~$ 
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lifaqiang@Lifaqiang_MacBookPro:~$ 
lifaqiang@Lifaqiang_MacBookPro:~$ 
lifaqiang@Lifaqiang_MacBookPro:~$ 
lifaqiang@Lifaqiang_MacBookPro:~$ ls ~/RegularDeletion/
aa bb cc dd ee ff gg hh ii jj kk ll mm nn
lifaqiang@Lifaqiang_MacBookPro:~$ ls
Applications  Documents  Library      Music        Public        ddl.c
Desktop       Downloads  Movies       Pictures     RegularDeletion other
lifaqiang@Lifaqiang_MacBookPro:~$ ls ~/RegularDeletion/
aa bb cc dd ee ff gg hh ii jj kk ll mm nn
lifaqiang@Lifaqiang_MacBookPro:~$ ls ~
Applications  Documents  Library      Music        Public        ddl.c
Desktop       Downloads  Movies       Pictures     RegularDeletion other
lifaqiang@Lifaqiang_MacBookPro:~$ crontab -l
* 11 * * * ~/other/delete.sh -rf ~/RegularDeletion/*
lifaqiang@Lifaqiang_MacBookPro:~$ cat /etc/crontab
* 11 * * * ~/other/delete.sh -rf ~/RegularDeletion/*
lifaqiang@Lifaqiang_MacBookPro:~$

```

