

create:

## 创建文件和目录

```
[.]> create f myfile
Congratulations! myfile is created

[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:96
Directory     .             Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
Directory     ..            Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
File          myfile        Thu Nov 30 10:31:01 2023    Thu Nov 30 10:31:01 2023
Thu Nov 30 10:31:01 2023    Thu Nov 30 10:31:01 2023

[.]> create d dir
.dir created.
..dir created.
Congratulations! dir is created

[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:128
Directory     .             Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
Directory     ..            Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
File          myfile        Thu Nov 30 10:31:01 2023    Thu Nov 30 10:31:01 2023
Directory     dir           Thu Nov 30 10:31:07 2023    Thu Nov 30 10:31:07 2023
```

delete:

## 删除文件

```
[.]> delete f myfile
num:4

last entryname: dir

last entrynamelen: 3
num:3
Congratulations! myfile is deleted!

[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:96
Directory     .             Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
Directory     ..            Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
Directory     dir           Thu Nov 30 10:31:07 2023    Thu Nov 30 10:31:07 2023
```

## 删除目录

```
[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:64
Directory     .             Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
Directory     ..            Thu Nov 30 10:30:04 2023    Thu Nov 30 10:30:04 2023
```

创建一个目录 dir，然后在目录 dir 里边创建新的目录和文件，最后在上级目录中直接删除目录 dir

```

o [root@localhost ~]# ./hello
Hello! Welcome to Ext2 like file system!
please input the password(init:123):123

[.]> create d dir
.dir created.
..dir created.
Congratulations! dir is created

[.]> cd dir

[dir]> create d mydir
.dir created.
..dir created.
Congratulations! mydir is created

[dir]> create f myfile
Congratulations! myfile is created

[dir]> ls
Type          FileName      CreateTime          LastAccessTime      ModifyTime

!!!!!!!current->i_size:128
Directory     .             Thu Nov 30 10:37:45 2023   Thu Nov 30 10:37:45 2023   Thu Nov 30 10:37:45 2023
Directory     ..            Thu Nov 30 10:30:04 2023   Thu Nov 30 10:30:04 2023   Thu Nov 30 10:30:04 2023
Directory     mydir         Thu Nov 30 10:37:59 2023   Thu Nov 30 10:37:59 2023   Thu Nov 30 10:37:59 2023
File          myfile        Thu Nov 30 10:38:05 2023   Thu Nov 30 10:38:05 2023   Thu Nov 30 10:38:05 2023

[dir]> cd ..

[.]> delete d dir
num:4
last entryname: myfile
last entrynamelen: 6
num:3
The dir is deleted!Congratulations! dir is deleted!

[.]> ls
Type          FileName      CreateTime          LastAccessTime      ModifyTime

!!!!!!!current->i_size:64
Directory     .             Thu Nov 30 10:30:04 2023   Thu Nov 30 10:30:04 2023   Thu Nov 30 10:30:04 2023
Directory     ..            Thu Nov 30 10:30:04 2023   Thu Nov 30 10:30:04 2023   Thu Nov 30 10:30:04 2023

```

close:

```

[.]> ls
Type          FileName      CreateTime          LastAccessTime      ModifyTime

!!!!!!!current->i_size:64
Directory     .             Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023
Directory     ..            Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023

[.]> create d dir
.dir created.
..dir created.
Congratulations! dir is created

[.]> ls
Type          FileName      CreateTime          LastAccessTime      ModifyTime

!!!!!!!current->i_size:96
Directory     .             Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023
Directory     ..            Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023   Thu Nov 30 10:42:24 2023
Directory     dir           Thu Nov 30 10:45:03 2023   Thu Nov 30 10:45:03 2023   Thu Nov 30 10:45:03 2023

[.]> cd dir

[dir]> create d mydir
.dir created.
..dir created.
Congratulations! mydir is created

[dir]> cd mydir

[mydir]> close 2

[.]> █

```

read

```
[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:128
Directory     .             Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023
Directory     ..            Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023
Directory     dir           Thu Nov 30 10:45:03 2023    Thu Nov 30 10:45:26 2023    Thu Nov 30 10:45:03 2023
File          file         Thu Nov 30 10:49:10 2023    Thu Nov 30 10:49:49 2023    Thu Nov 30 10:49:49 2023

[.]> read file

hello world!!!
This is OS lab

[.]> █
```

write

```
[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:128
Directory     .             Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023
Directory     ..            Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023    Thu Nov 30 10:42:24 2023
Directory     dir           Thu Nov 30 10:45:03 2023    Thu Nov 30 10:45:26 2023    Thu Nov 30 10:45:03 2023
File          file         Thu Nov 30 10:49:10 2023    Thu Nov 30 10:50:44 2023    Thu Nov 30 10:49:49 2023

[.]> write file

now file is been writing

[.]> read file

hello world!!!
This is OS lab
now file is been writing

[.]> █
```

password（更改密码）

```
[.]> password
Please input the old password
1
Please input the new password:123
Modify the password?[Y/N]y

[.]> password
Please input the old password
123
Please input the new password:1
Modify the password?[Y/N]y

[.]> ^C
[root@localhost ~]# gcc hello.c -o hello
[root@localhost ~]# ./hello
Hello! Welcome to Ext2_like file system!
please input the password(init:123):123
Wrong password!It will terminate right away.
Thank you for using~ Byebye!
[root@localhost ~]# gcc hello.c -o hello
[root@localhost ~]# ./hello
Hello! Welcome to Ext2_like file system!
please input the password(init:123):1

[.]> █
```

## format（格式化）

```
[.]> format
Do you want to format the filesystem?
It will be dangerous to your data.
[Y/N]y

!!!!!!!inode.i_size:64

[.]> ls
Type          FileName      CreateTime      LastAccessTime      ModifyTime
!!!!!!!current->i_size:64
Directory     .              Thu Nov 30 10:57:41 2023      Thu Nov 30 10:57:41 2023      Thu Nov 30 10:57:41 2023
Directory     ..             Thu Nov 30 10:57:41 2023      Thu Nov 30 10:57:41 2023      Thu Nov 30 10:57:41 2023
[.]> █
```

## exit（退出）

```
[.]> exit
Do you want to exit from filesystem?[Y/N]
t

please input [Y/N]
Do you want to exit from filesystem?[Y/N]
y
Thank you for using~ Byebye!
[root@localhost ~]# █
```

## pwd（寻找当前目录的绝对路径）

```
[.]> create d dir
.dir created.
..dir created.
Congratulations! dir is created

[.]> cd dir

[dir]> create d mydir
.dir created.
..dir created.
Congratulations! mydir is created

[dir]> cd mydir

[mydir]> cd mydir
path input error!

[mydir]> create d i
.dir created.
..dir created.
Congratulations! i is created

[mydir]> cd i

[i]> pwd
/dir/mydir/i

[i]> █
```

问题以及解决方法：

1. 缺乏整体意识，没有全局观。看完 ppt 介绍后对于如何实现没有一个系统的认识，在实验的过程总是担心会缺少某一步进而导致严重的问题（比如内存泄漏）

解决过程：翻阅资料，询问同学

[模拟实现 EXT2 文件系统-CSDN 博客](#)

[EXT2 文件系统 - AlanTu - 博客园 \(cnblogs.com\)](#)

[Linux 内核之 IO2：EXT 文件系统详解\(案例解析\)\\_ext2 文件系统实现-CSDN 博客](#)

[深入理解 EXT2 文件系统实现原理 - 知乎 \(zhihu.com\)](#)

[Unix/Linux 系统编程自学笔记-第十一章:EXT2 文件系统 - 20191314 汇仁 - 博客园 \(cnblogs.com\)](#)

2.对文件创建，文件读写，获取最新时间等功能不熟悉。寻址能力弱，容易把绝对寻址，直接寻址，间接寻址弄混

解决过程：翻阅资料，询问同学，编写简单的程序进行测试

[C 库函数 – fread\(\) | 菜鸟教程 \(runoob.com\)](#)

[C 中的 fseek 函数使用 - 极客星云 - 博客园 \(cnblogs.com\)](#)

[localtime\(\)函数：获取当前时间和日期并转换为本地时间\\_localtime 转 time-CSDN 博客](#)