

# HW4 Program

## Team組員

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## Environment


- 使用Ubuntu20.04.1
- 需有以下兩個套件

```
sudo apt-get install make
sudo apt-get install flex
```

- Github地址

110-2-OS-Homework/hw3 at main · DandinPower/110-2-OS-Homework

Contribute to DandinPower/110-2-OS-Homework development by creating an account on GitHub.

 <https://github.com/DandinPower/110-2-OS-Homework/tree/main/hw3>

DandinPower/110-2-OS-Homework



 1 Contributor  0 Issues  1 Star  0 Forks

## Problem

### 11.13

- 打開並查看file1.txt

```
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo gedit file1.txt
(gedit:4401): Tepl-WARNING **: 23:42:06.287: GVfs metadata is not supported. Fall
back to TeplMetadataManager. Either GVfs is not correctly installed or GVfs metad
ata are not supported on this platform. In the latter case, you should configure
Tepl with --disable-gvfs-metadata.
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file1.txt
This is file1.txt!
dandinpower123@ubuntu:~/Desktop/os homework test$ ls -li file1.txt
2367640 -rw-r--r-- 1 root root 19 May 28 23:41 file1.txt
```

- 可以觀察到file1.txt的inode為2367640
- 透過指令創建hard link 到file2.txt

```
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo ln file1.txt file2.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ ls -li file1.txt
2367640 -rw-r--r-- 2 root root 19 May 28 23:41 file1.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ ls -li file2.txt
2367640 -rw-r--r-- 2 root root 19 May 28 23:41 file2.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file1.txt
This is file1.txt!
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file2.txt
This is file1.txt!
```

- 可以看到一個file2.txt出現並且inode跟file1.txt一模一樣, 且兩者的內容也一樣
- 修改 file2.txt

```
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo gedit file2.txt
(gedit:4449): Tepl-WARNING **: 23:45:09.940: GVfs metadata is not supported. Fall
back to TeplMetadataManager. Either GVfs is not correctly installed or GVfs metad
ata are not supported on this platform. In the latter case, you should configure
Tepl with --disable-gvfs-metadata.
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file2.txt
This is file2.txt!
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file1.txt
This is file2.txt!
dandinpower123@ubuntu:~/Desktop/os homework test$ ls
file1.txt file2.txt file3.txt file4.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo rm file1.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ ls
file2.txt file3.txt file4.txt
```

- 可以觀察到修改file2.txt後file1.txt也會被同步修改
- strace rm file2.txt





- 嘗試修改file4.txt後可以觀察到file3.txt也被同步修改
- delete file3.txt and try to edit file4

```
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo rm file3.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ ls
file4.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo gedit file4.txt

(gedit:4635): Tepl-WARNING **: 23:53:10.481: GVfs metadata is not supported. Fallback to TeplMetadataManager. Either GVfs is not correctly installed or GVfs metadata are not supported on this platform. In the latter case, you should configure Tepl with --disable-gvfs-metadata.
dandinpower123@ubuntu:~/Desktop/os homework test$ sudo vim file4.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file4.txt
file4
dandinpower123@ubuntu:~/Desktop/os homework test$ ls
file3.txt  file4.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ cat file3.txt
file4
dandinpower123@ubuntu:~/Desktop/os homework test$ ls -li file3.txt
2367433 -rw-r--r-- 1 root root 6 May 28 23:53 file3.txt
dandinpower123@ubuntu:~/Desktop/os homework test$ ls -li file4.txt
2367639 lrwxrwxrwx 1 root root 9 May 28 23:49 file4.txt -> file3.txt
```

- 可以觀察到在刪除file3後file4就變成空的, 而當我嘗試去修改file4.txt後file3.txt又變回來了並且內容跟剛修改完的file4.txt內容一樣

## 12.16

- 編譯程式碼

```
gcc -o main main.c
```

- 執行程式

```
./main <disk head>
```

- disk head 為初始位置
- 輸出說明
  1. 根據順序依序輸出FCFS, SSTF, SCAN, CSCAN的結果
  2. 每一種演算法會先輸出移動順序再輸出移動總和
- 使用一組測資為

```
0 ~ 4999
2069, 1212, 2296, 2800, 544, 1618, 356, 1523, 4965, 3681
head : 2150
```

- 輸出結果

```
E:\Work\110_2\作業系統\homework\hw4\problem\12.16>gcc -o main main.c

E:\Work\110_2\作業系統\homework\hw4\problem\12.16>main 2150
2150 2069 1212 2296 2800 544 1618 356 1523 4965 3681
FCFS: 13011

2150 2069 2296 2800 3681 4965 1618 1523 1212 544 356
SSTF: 7586

2150 2296 2800 3681 4965 4999 2069 1618 1523 1212 544 356
SCAN(up first): 7492

2150 2069 1618 1523 1212 544 356 0 2296 2800 3681 4965
SCAN(down first): 7115

2150 2296 2800 3681 4965 4999 0 356 544 1212 1523 1618 2069
CSCAN: 9917
```