Week15Assignment

Please complete a report in English in English in English in English and upload the corresponding codes.

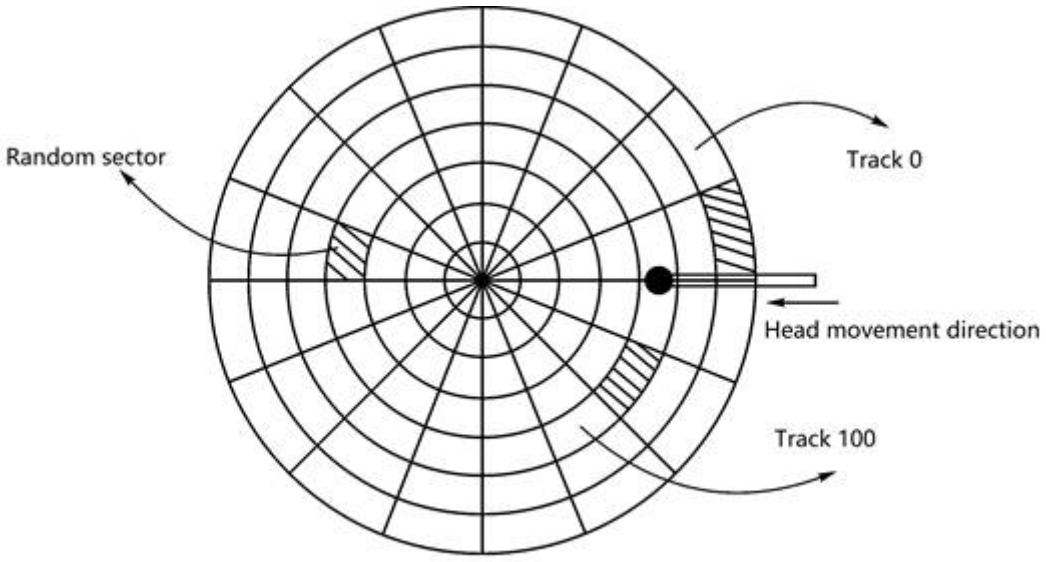
The files should be uploaded directly without compression without compression without compression without compression

The files to be submitted for this assignment are:

1. report.pdf

1. Disk scheduling [50 pts]

Suppose the computer system uses the disk as the following:



The disk has 200 tracks in total. Let a single-sided disk rotation speed be 12000r/min per minute, each track has 100 sectors, and the average movement time between adjacent tracks is 1 ms. If at some point, the head is located at track 100 and moves in the direction in which the track number increases, the track number request queue is 70, 30, 90, 120, 60, 20. A randomly distributed sector is read for each track in the request queue.

(1) READ/WRITE data time = (1) _____ + (2) _____ + (3) _____. [10 pts]

(2) Use FIFO\SSTF\SCAN\CSCAN algorithm to read the six sectors, [40pts]

a) write the track access sequence

b) how much time is required in total? The calculation process is required.

2. Simple File System [50 pts]

Please draw the architecture diagram of the `sfs.img` according to the project we had given.

The directory structure of `disk0` in the project:

```
disk0
├── dir1
|   └── file1
├── hello
├── sh
└── test
```

Some requirements:

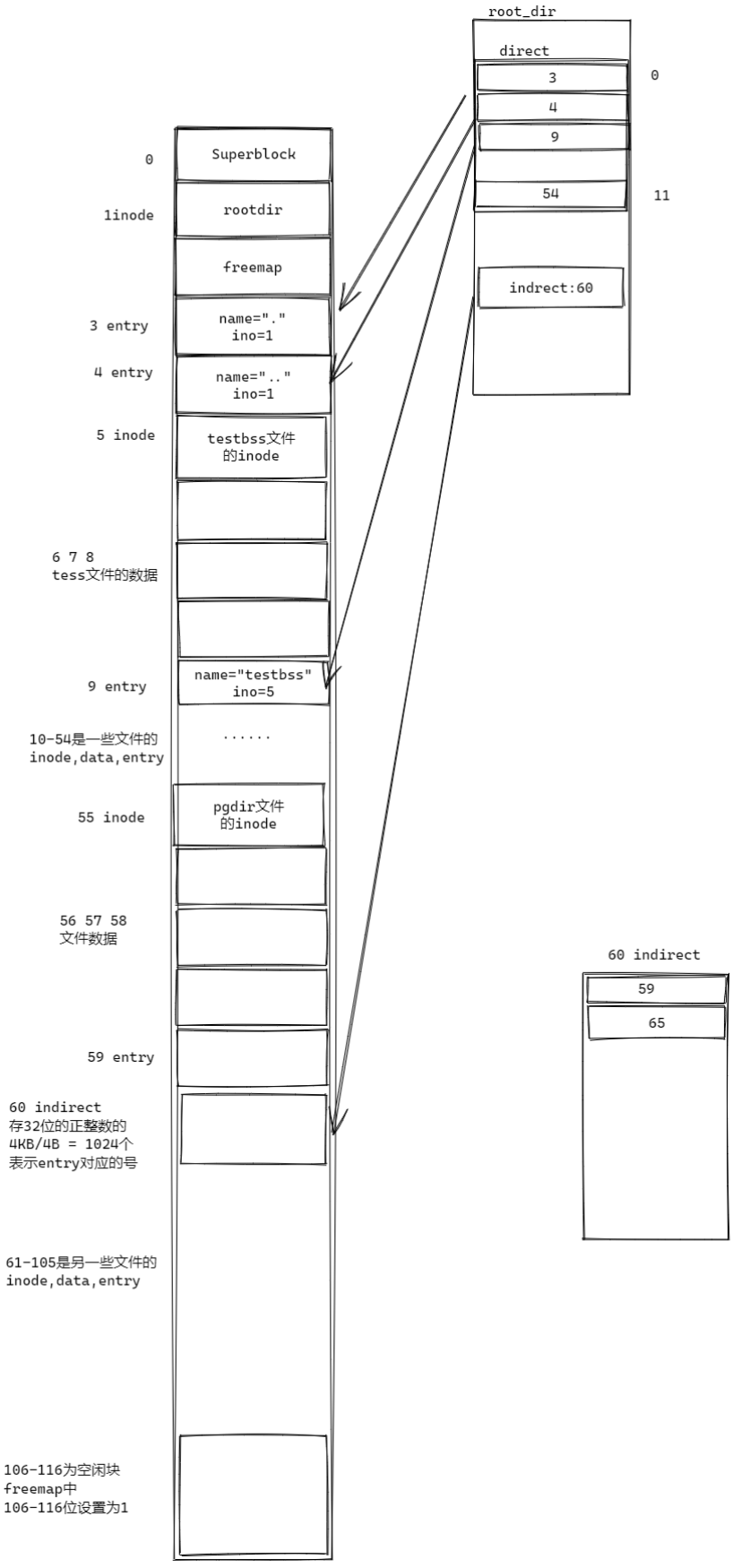
If this block is an entry, please give the name and ino number.

If this block is an inode of entry, you need to draw the direct array or indirect pointer.

In freemap, you only need to say which bit are 1.

The others just need to explain what this block is.

Sample:


root_dir
direct
3
4
9
54
0
11
indrect:60
0
Superblock
1inode
rootdir
freemap
3 entry
name="."
ino=1
4 entry
name=".."
ino=1
5 inode
testbss文件
的inode
6 7 8
tess文件的数据
9 entry
name="testbss"
ino=5
10-54是一些文件的
inode,data,entry
.....
55 inode
pgdir文件
的inode
56 57 58
文件数据
59 entry
60 indirect
存32位的正整数的
4KB/4B = 1024个
表示entry对应的号
61-105是另一些文件的
inode,data,entry
106-116为空闲块
freemap中
106-116位设置为1
60 indirect
59
65