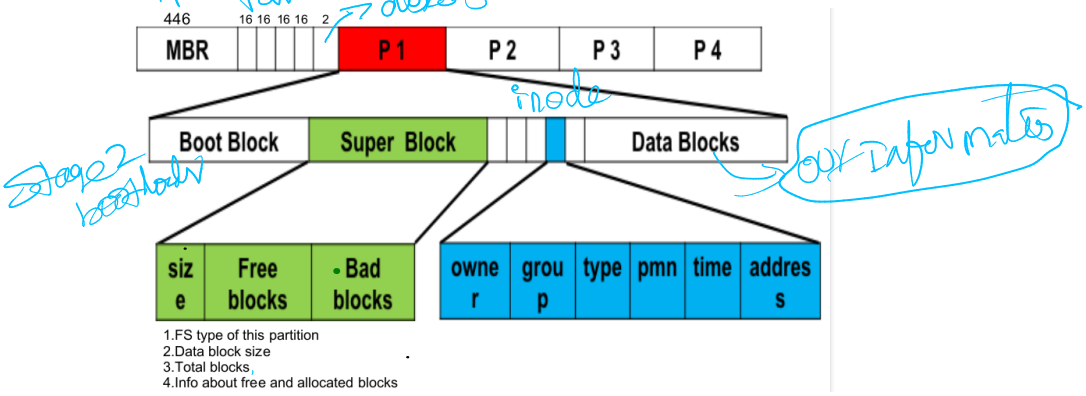
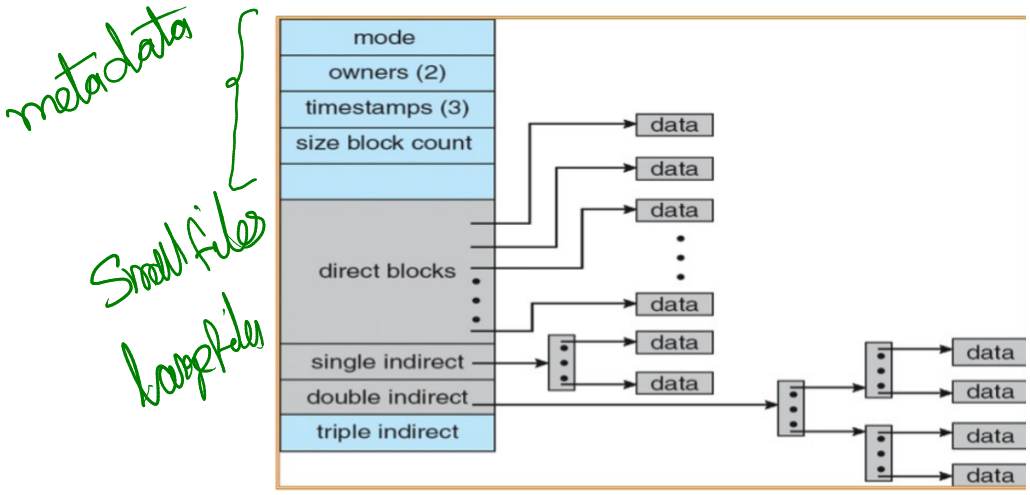
File System Architecture

MBR, GPT → Global Partition Table
↳ master boot record

Schematic Structure

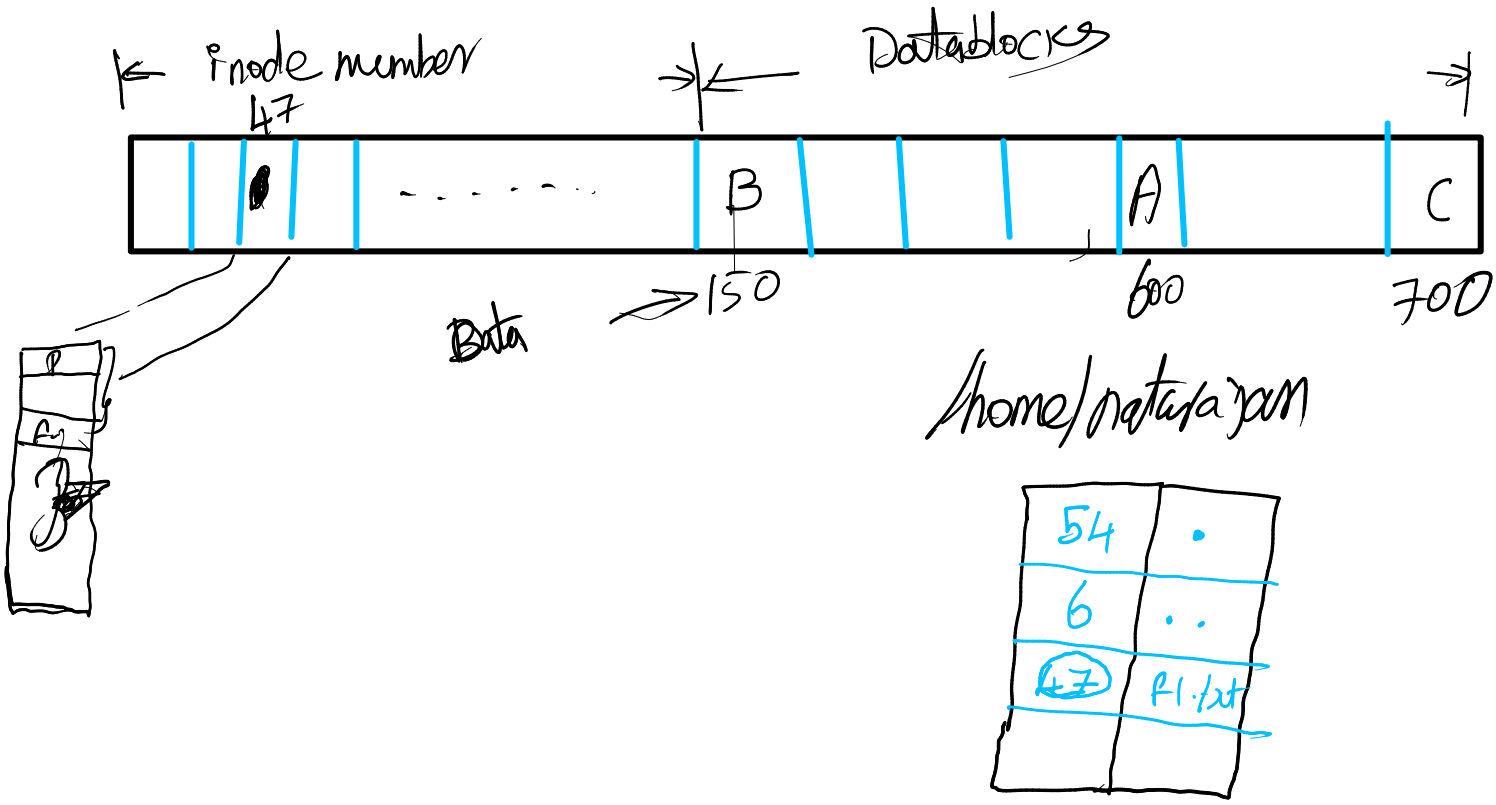


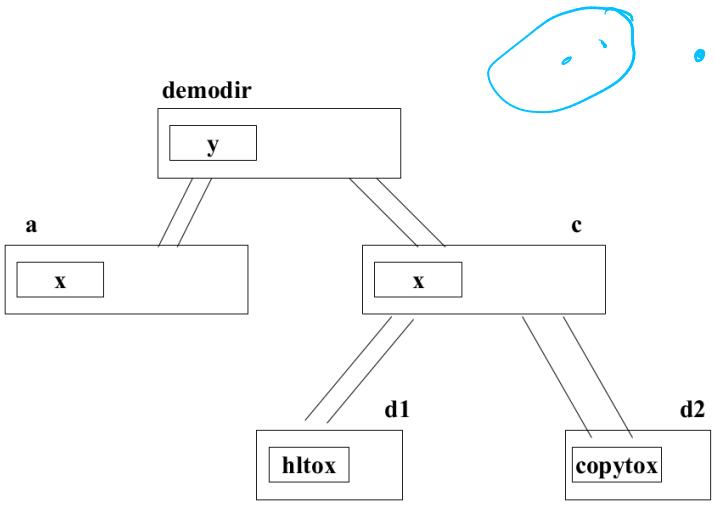
Structure of a Unix inode

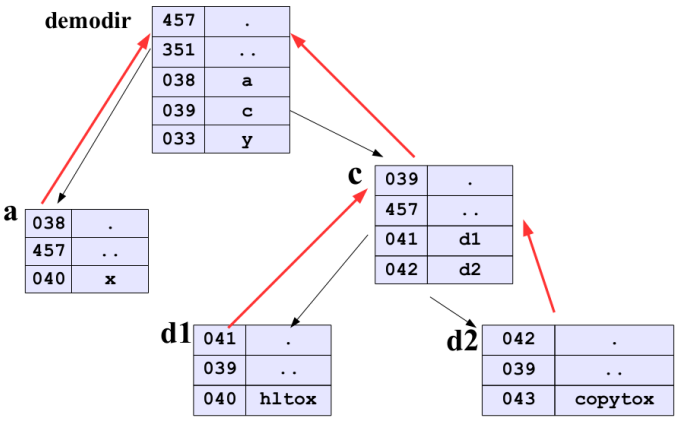


$ echo "This is text ....." > /home/natarajan/f1.txt

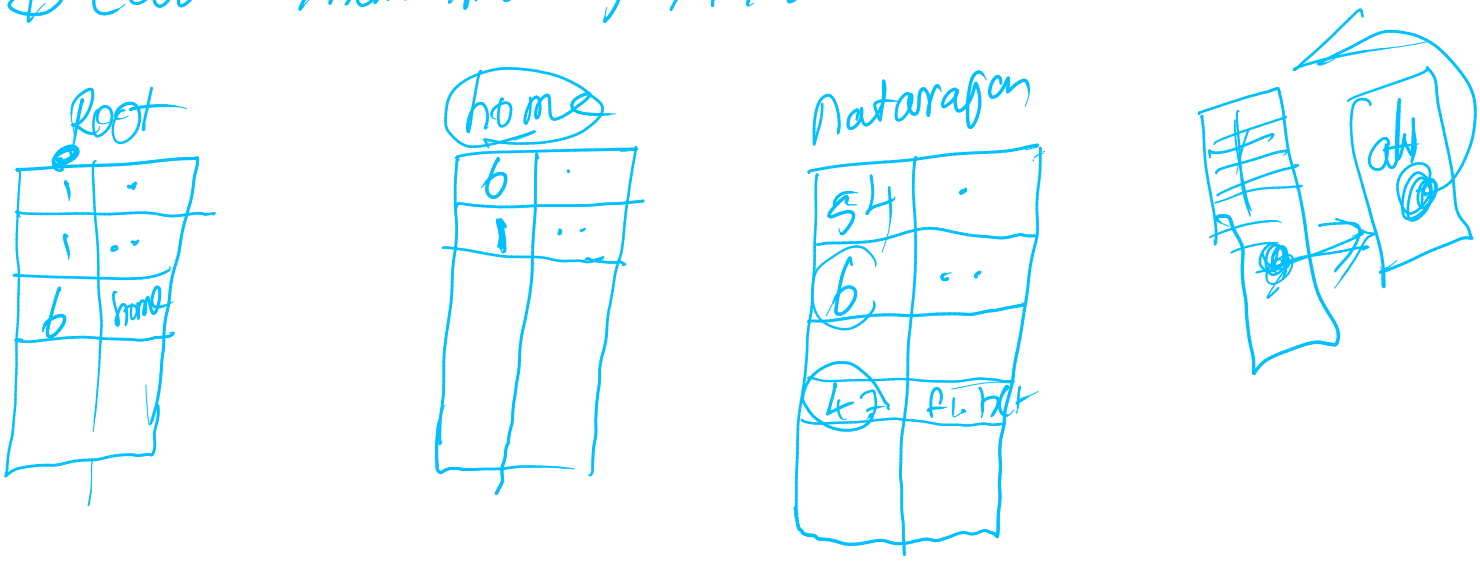
Who does it? OS

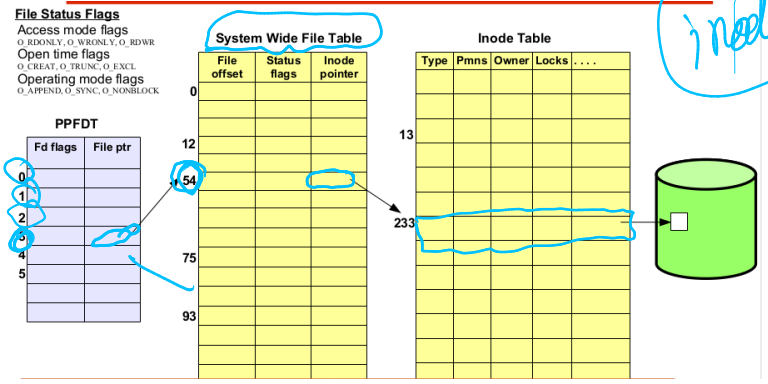




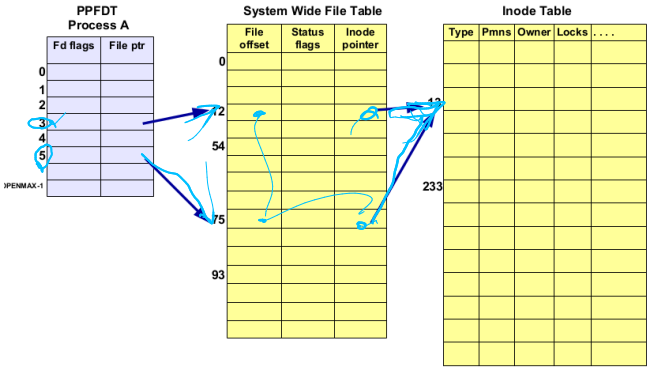


$ cat /home/natarajan/f1.txt

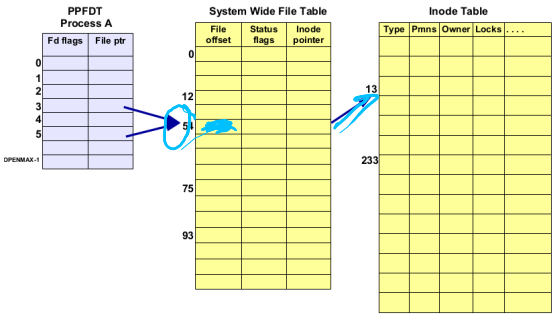




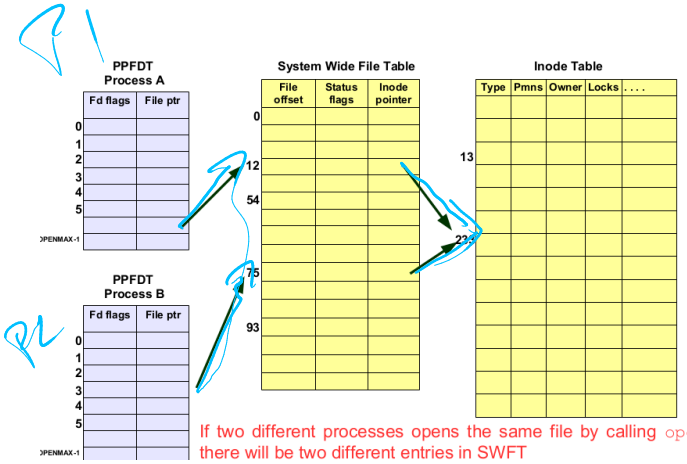
File Descriptor	Purpose	POSIX Name	stdio Stream
0	Standard input	STDIN_FILENO	stdin
1	Standard output	STDOUT_FILENO	stdout
2	Standard error	STDERR_FILENO	stderr



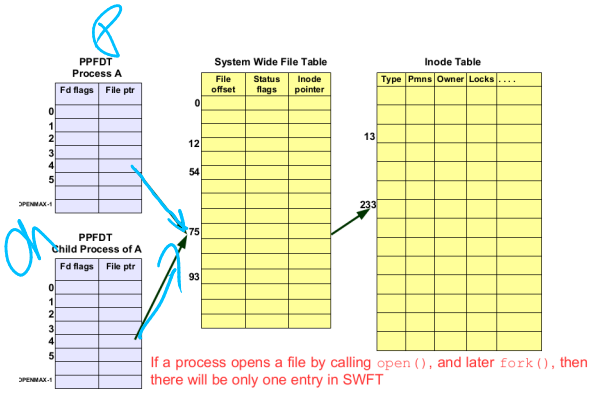
A process can open a file twice. If this is done by calling **`open()`** twice, then there will be two different entries in PPFTD as well as in SWFT for that single file



A process can open a file twice. If this is done by calling **`dup()`**, then there will be two entries in PPFDT but only one entry in SWFT



If two different processes opens the same file by calling `open()`, there will be two different entries in SWFT

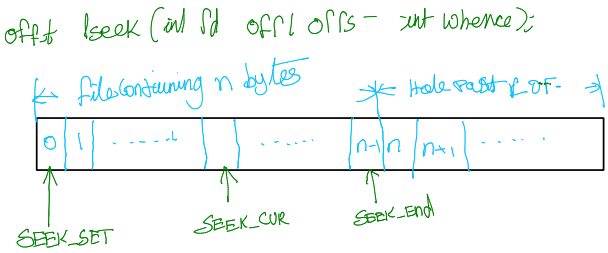


If a process opens a file by calling `open()`, and later `fork()`, then there will be only one entry in SWFT

Unix Universal I/O Model:

7 types
1) Regular
2) Directories
3) Named Pipes
4) Sockets
5) Soft link
6) Character Special file
7) Block Special file

open
read
write
close



Example:

-54
54

referenced

```
off_t posn;
posn = lseek(fd, 54, SEEK_SET);
posn = lseek(fd, +/-54, SEEK_CUR);
posn = lseek(fd, +/-54, SEEK_END);
```