File System — Implementation — Access Methods

3. open for write

C code: fd = open ("/foo/more/bar.txt", O_RWONLY)

Inode Bitmap	Data Bitmap	Root Inode	foo Inode	more Inode	bar Inode	root data	foo data	more data
		read						
						read		
			read					
							read	
				read				
								read
read / write ↑					write			
								write
write ✗								
			write (?)	write				

a. Read '/' inode & content, obtain foo's inumber
   create entry of root's inumber in file-open table.

b. Read 'foo' inode & content to obtain more's inumber.
   create entry of foo's inumber in file-open table.

c. Read 'more' inode & content to obtain bar.txt's inumber.
   create entry of more's inumber in file-open table.

d. read imap to find a free node for 'bar.txt'.

e. update imap, setting 1 for allocated inode.

f. Update more's content, adding an entry for bar.txt.

g. Update more's inode, Update its modification Time

h. Update foo's inode. update its mod time ?

4. Writing the file

int ret_in = write (fd, buffer, 4096)

Inode Bitmap	Data Bitmap	Root Inode	foo Inode	more Inode	bar Inode	root data	foo data	more data	bar data
					read				
	read								
	write								write
					write				

a. Read inode of bar, by looking up its inode in file-open table

b. allocate new data block, read & write bmap.

c. write to data block of bar.

d. Update bar inode: modification time. add pointer to block.