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Design:

BlockingDisk:

For the blocking disk class I started by adding the disk id and size of disk as private members so the class had access to them. I also copied the issue operation function from the simple disk class for the same reason. Then I created the wait until ready function to override the one from simple disk. Finally, I added public member variables for the blocked queue list so they could be accessed elsewhere. Otherwise, the rest of the class is set up the same.

For the constructor, I set up the blocked queue to be empty and then saved the disk id an size into the private variables I made.

For the issue operation function, I did a direct copy from the simple disk function with the same name.

For the wait until ready function, I start by checking if the disk is ready. If not, then I take the current thread and add it to the blocked queue. Then I tell the scheduler to yield with the new block function I added to it (see below).

For the read function, I check if the blocked queue has something in it. If so, I add the current thread to the blocked queue and call the scheduler's block function. After, I call the issue operation function and tell it to read. Then I call wait until ready. Finally I read the data from the disk in the same way as the simple disk does.

For the write function, I check if the blocked queue has something in it. If so, I add the current thread to the blocked queue and call the scheduler's block function. After, I call the issue operation function and tell it to write. Then I call wait until ready. Finally I write the data to the disk in the same way as the simple disk does.

I copied over my scheduler and thread classes from MP5. Only the scheduler changed.

Scheduler:

I added the block function to this class which is similar to yield except without moving the blocked thread to the ready queue. I also updated the yield function to check for if the disk is ready and some thread is blocked. If so then I move the thread onto the ready queue. I also externed the SYSTEM_DISK from the kernel to give access to it for checking the disk.

Also had to update the makefile and kernel.

Makefile/Kernel:

I updated the makefile so that it compiled the scheduler.

In kernel I changed SYSTEM_DISK to be a BlockingDisk instead of a SimpleDisk. I also updated the stacks to be size 4096 for the 4 threads so that they don't get corrupted.

Online Participation:

I posted the question asking about exception 13 during the dispatch call in post @183. I also made a followup response for the same problem in @169_f2.