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CSE 421
Homework 1

1.
    a. Micro kernels have an advantage in that they are easier to add new “features” to since new services are added to the user space and not in the actual kernel, they’re also easier to port to another cpu since you only need to make changes to the kernel and not anything else.
    b. The main disadvantage to micro kernels is that they are “slower” and have more performance overhead.
2.
    a. A fork creates a duplicate of the current process while exec replaces the current process.
    b. To create a thread you need to create a context, while a process uses more resources because they have to use a new PCB.
    c. A context switch is when the CPU switches task from one to another. A context switch involves saving and loading memory maps.
3.
    a. some of the processors wouldn’t be in use since the scheduler maps only the kernel threads to processors while they don’t map user level threads to the processors.
    b. If they have the same amount of threads allocated as the number of processors, they might all run at the same time but if one of the processor becomes blocked, this would cause the corresponding processor to become idle.
    c. If you have more processors than threads, you could switch out the blocked processor for one that is idle and continue running.
4.
    a. No, because a process has to go from blocked to ready first
    b. Yes
    c. No because a process has to be running for it to get blocked
    d. Yes
    e. Yes
    f. yes