

OS-PG Pintos Project

Team Details:

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Part 2:

- Add hello.c file [in src/tests/threads]
- Modified tests.h, Make.tests
- Modified struct test tests[] [in src/tests/threads/tests.c]

Part 3:

- Modified struct thread (added a variable) [in src/threads/thread.h]
- Modified timer_sleep(), timer_interrupt() and added decCounter() [in src/devices/timer.c]
- alarm-single, alarm-zero, alarm-negative, alarm-simultaneous
- Instead of busy waiting each thread, use a “sleepCounter” variable for each thread, set it to the sleep_ticks and block it. Decrement “sleepCounter” for each thread at each system -tick and unblock a thread if its “counter” is zero.

Part 4a:

- Modified thread_create(), next_thread_to_run(), thread_set_priority() [in src/threads/thread.c]
- alarm-priority, priority-change, priority-fifo
- Instead of executing the thread at the front of ready queue, iterate through the queue and execute the thread with highest priority.
- If newly created thread has higher priority than current running thread, preempt the current thread.
- If current thread's priority is reduced and if there's a thread in ready queue with greater priority than the current thread's new priority, preempt the current thread.

Part 4b:

- Modified sema_up() [in src/threads/synch.c]
- priority-sema
- Instead of signaling the thread at the front of sema wait queue, iterate through the queue and signal the highest priority thread.