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Lab 2 - Write Up

Completed assignment, bonus questions number 1 and 3 has been completed.
proc.h: Added int priority, start, wait to struct proc because we need each proc's own status.

- Priority → holds the priority level of the process
- Start → holds the arrival time of the process
- Wait → holds the time that process had waited

proc.c:

- Updated allocproc by adding:
  - p→ priority = 10; because it is the initial default priority.
  - p→ start = ticks; ticks is the current tick that p is created
  - p→ wait = 0; this is the initial wait count
- Created setpriority function to update the priority level of the current process. Put the locks because priority changes in some other places as well. We don't want interleaving.
- Scheduler has been updated:
  - Created an extra loop to run the process with the highest priority level.
  - Priority level increases when process is in runnable state but not running
  - Priority level decreases every time a process runs.
- Updated exit to show the current status of the process that is being exited such as:
  - turnaround time
  - Start time
  - Last priority level before exiting (since it changes during execution)
  - Process ID
  - Start Tick
  - End Tick

sysproc.c:

- Created new function setpriority has been created for a system call
  - Added additional functionality to control is made if in case a priority lower than 0 or higher than 31 is being assigned

usys.S:

- Added setpriority as a new system call function

defs.h:

- Added setpriority as a new system call function

user.h, **syscall.c** and **syscall.h:**

- Added setpriority function calls to each of the files.

Makefile:

- Added new test file lab2_test to UPROGS and EXTRA

Lab2_test.c:

- Added additional tests for the bonus points. You need to call it with 1 to test actual assignment, 2 and 3 to test 3rd Bonus. You can always see the test for Bonus 1