

Lab 2 Design Document & Report

Report:

Files Changed:

1. proc.h: add int priority and uint startTime
2. proc.c: add setPriority w/ implementation, edit scheduler() function from round robin to priority scheme, add priority inheritance in wait() and waitpid() functions, print of turnaround time in exit() function, add priority aging in yield(), add default priority in fork() and other places where processes are created
3. exec.c: add default priority for OS processes
4. Add changes to other files necessary for a system call.
5. Makefile: add userland tests under the UPROGS target.
6. lab2.c, lab2decay.c, lab2inherit.c: lab 2 test files

Design Document:

How the current scheduler works: the current xv6 scheduler acts in a round robin fashion. It gives each process an even time slice, switching to the next one after each timer interrupt. It does this by looping through the process table, scheduling the current process, and then scheduling the next one after the time slice has finished (this is done with the timer and the yield() function). The next process is just the next one in the process table, and when the last process is reached, it loops back to the beginning.