XV6 project 2 Scheduling

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The Scheduling Policy:

The xv6 scheduler was changed from a default “round robin” type, to a “priority” scheduling type.

Design Data Structures:

We augmented an existing data structure inside of uproc.h and proc.h; a field was added “int priority” which would be set to 50 by default and changed by way of the setpriority(int) function.

Implementation Details:

Modified proc.h and proc.c; a priority field in proc.h process struct and modification to the scheduler function in proc.c to make it priority based instead of round robin.
Added a definition for setpriority to user.h, syscall.c, syscall.h, usys.s.
Wrote the definition of setpriority inside of sysproc.c; takes the priority of the current running function and replaces it with the argument passed into setpriority(int).
Wrote a test file testmyscheduler that creates 10 children and decreases the priority of each created child. The last child to be created should be the first child to finish its process. The results below detail one run of this test.

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# TEST Description:
        Parent process creates 10 child processes which print to the screen every 1000 iterations.
        When a child completes its work it gets added to a completetition rank array.
        Results a printed when all chid processes complete.
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## TEST RESULTS
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Child: 9 Rank: 0
Child: 8 Rank: 1
Child: 7 Rank: 2
Child: 5 Rank: 3
Child: 6 Rank: 4
Child: 3 Rank: 5
Child: 4 Rank: 6
Child: 2 Rank: 7
Child: 1 Rank: 8
Child: 0 Rank: 9
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