

Null Process Handling

I handled the null process by only executing context switch when the currpuid was not 0, ie the null process. If no other process was found in the ready status, 0 was returned and was handled by having the null process run until a higher, ready process is found. **CPU Bound**

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CPU Bound

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pid: 3, outer: 0, prcputot: 0
pid: 3, outer: 1, prcputot: 3
pid: 3, outer: 2, prcputot: 5
pid: 3, outer: 3, prcputot: 8
pid: 3, outer: 4, prcputot: 11
pid: 3, outer: 5, prcputot: 13
pid: 3, outer: 6, prcputot: 16
pid: 3, outer: 7, prcputot: 19
pid: 3, outer: 8, prcputot: 22
pid: 3, outer: 9, prcputot: 25
pid: 3, prcputot: 27, prprio: 55, preempt: 13
pid: 4, outer: 0, prcputot: 0
pid: 4, outer: 1, prcputot: 2
pid: 4, outer: 2, prcputot: 5
pid: 4, outer: 3, prcputot: 8
pid: 4, outer: 4, prcputot: 10
pid: 4, outer: 5, prcputot: 13
pid: 4, outer: 6, prcputot: 16
pid: 4, outer: 7, prcputot: 19
pid: 4, outer: 8, prcputot: 21
pid: 4, outer: 9, prcputot: 24
pid: 4, prcputot: 27, prprio: 55, preempt: 13
pid: 5, outer: 0, prcputot: 0
pid: 5, outer: 1, prcputot: 3
pid: 5, outer: 2, prcputot: 5
pid: 5, outer: 3, prcputot: 8
pid: 5, outer: 4, prcputot: 11
pid: 5, outer: 5, prcputot: 14
pid: 5, outer: 6, prcputot: 16
pid: 5, outer: 7, prcputot: 19
pid: 5, outer: 8, prcputot: 22
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pid: 5, outer: 9, prcputot: 25
pid: 5, prcputot: 28, prprio: 55, preempt: 12
pid: 6, outer: 0, prcputot: 0
pid: 6, outer: 1, prcputot: 2
pid: 6, outer: 2, prcputot: 5
pid: 6, outer: 3, prcputot: 8
pid: 6, outer: 4, prcputot: 10
pid: 6, outer: 5, prcputot: 13
pid: 6, outer: 6, prcputot: 16
pid: 6, outer: 7, prcputot: 19
pid: 6, outer: 8, prcputot: 22
pid: 6, outer: 9, prcputot: 24
pid: 6, prcputot: 27, prprio: 55, preempt: 13
pid: 7, outer: 0, prcputot: 0
pid: 7, outer: 1, prcputot: 3
pid: 7, outer: 2, prcputot: 6
pid: 7, outer: 3, prcputot: 8
pid: 7, outer: 4, prcputot: 11
pid: 7, outer: 5, prcputot: 14
pid: 7, outer: 6, prcputot: 17
pid: 7, outer: 7, prcputot: 19
pid: 7, outer: 8, prcputot: 22
pid: 7, outer: 9, prcputot: 25
pid: 7, prcputot: 28, prprio: 55, preempt: 12

IO Bound

All io bound processes, all of which were created using the same priority, seemed to evenly rotate. They also took less time, as seen by the prcputot, when compared to the cpubound processes. The cpubound averaged around 24 where the iobound averaged 11.

pid: 8, outer: 0; prcputot: 0
pid: 9, outer: 0; prcputot: 0
pid: 10, outer: 0; prcputot: 0
pid: 11, outer: 0; prcputot: 0
pid: 12, outer: 0; prcputot: 0
pid: 8, outer: 1; prcputot: 2
pid: 9, outer: 1; prcputot: 3
pid: 10, outer: 1; prcputot: 3
pid: 11, outer: 1; prcputot: 2
pid: 12, outer: 1; prcputot: 3
pid: 8, outer: 2; prcputot: 4
pid: 9, outer: 2; prcputot: 5
pid: 10, outer: 2; prcputot: 5
pid: 11, outer: 2; prcputot: 5
pid: 12, outer: 2; prcputot: 6
pid: 8, outer: 3; prcputot: 6
pid: 9, outer: 3; prcputot: 7
pid: 10, outer: 3; prcputot: 7

pid: 11, outer: 3; prcputot: 7
pid: 12, outer: 3; prcputot: 8
pid: 8, outer: 4; prcputot: 8
pid: 9, outer: 4; prcputot: 9
pid: 10, outer: 4; prcputot: 9
pid: 11, outer: 4; prcputot: 9
pid: 12, outer: 4; prcputot: 10
pid: 8, outer: 5; prcputot: 10
pid: 9, outer: 5; prcputot: 11
pid: 10, outer: 5; prcputot: 11
pid: 11, outer: 5; prcputot: 11
pid: 12, outer: 5; prcputot: 12
pid: 8, outer: 6; prcputot: 12
pid: 9, outer: 6; prcputot: 13
pid: 10, outer: 6; prcputot: 13
pid: 11, outer: 6; prcputot: 13
pid: 12, outer: 6; prcputot: 14
pid: 8, outer: 7; prcputot: 14
pid: 9, outer: 7; prcputot: 15
pid: 10, outer: 7; prcputot: 15
pid: 11, outer: 7; prcputot: 15
pid: 12, outer: 7; prcputot: 16
pid: 8, outer: 8; prcputot: 16
pid: 9, outer: 8; prcputot: 17
pid: 10, outer: 8; prcputot: 17
pid: 11, outer: 8; prcputot: 17
pid: 12, outer: 8; prcputot: 18

Mixed

I created the cpubound processes first. As seen by the out, the preempt values are raised compared to the iobound and cpubound above. Once their time slices run out, the iobound take over and finish, allowing the cpubound to continually use up their slices until all are finished.

pid: 13, outer: 0, prcputot: 0
pid: 13, outer: 1, prcputot: 3
pid: 13, outer: 2, prcputot: 6
pid: 13, outer: 3, prcputot: 9
pid: 13, outer: 4, prcputot: 11
pid: 13, outer: 5, prcputot: 14
pid: 13, outer: 6, prcputot: 17
pid: 13, outer: 7, prcputot: 20
pid: 13, outer: 8, prcputot: 23
pid: 13, outer: 9, prcputot: 26
pid: 13, prcputot: 29, prprio: 58, preempt: 39
pid: 8, outer: 9; prcputot: 18
pid: 8, prcputot: 18, prprio: 58, preempt: 37

pid: 9, outer: 9; prcputot: 19
pid: 9, prcputot: 19, prprio: 58, preempt: 37
pid: 10, outer: 9; prcputot: 19
pid: 10, prcputot: 19, prprio: 58, preempt: 37
pid: 11, outer: 9; prcputot: 19
pid: 11, prcputot: 19, prprio: 58, preempt: 37
pid: 12, outer: 9; prcputot: 20
pid: 12, prcputot: 20, prprio: 58, preempt: 37
pid: 14, outer: 0, prcputot: 0
pid: 14, outer: 1, prcputot: 3
pid: 14, outer: 2, prcputot: 5
pid: 14, outer: 3, prcputot: 8
pid: 14, outer: 4, prcputot: 11
pid: 14, outer: 5, prcputot: 14
pid: 14, outer: 6, prcputot: 17
pid: 14, outer: 7, prcputot: 20
pid: 14, outer: 8, prcputot: 22
pid: 14, outer: 9, prcputot: 25
pid: 14, prcputot: 28, prprio: 55, preempt: 12
pid: 15, outer: 0, prcputot: 0
pid: 15, outer: 1, prcputot: 3
pid: 15, outer: 2, prcputot: 6
pid: 15, outer: 3, prcputot: 9
pid: 15, outer: 4, prcputot: 11
pid: 15, outer: 5, prcputot: 14
pid: 15, outer: 6, prcputot: 17
pid: 15, outer: 7, prcputot: 20
pid: 15, outer: 8, prcputot: 23
pid: 15, outer: 9, prcputot: 26
pid: 15, prcputot: 29, prprio: 55, preempt: 11
pid: 16, outer: 0; prcputot: 0
pid: 17, outer: 0; prcputot: 0
pid: 18, outer: 0; prcputot: 0
pid: 16, outer: 1; prcputot: 2
pid: 17, outer: 1; prcputot: 3
pid: 18, outer: 1; prcputot: 3
pid: 16, outer: 2; prcputot: 4
pid: 17, outer: 2; prcputot: 5
pid: 18, outer: 2; prcputot: 5
pid: 16, outer: 3; prcputot: 6
pid: 17, outer: 3; prcputot: 7
pid: 18, outer: 3; prcputot: 7
pid: 16, outer: 4; prcputot: 8
pid: 17, outer: 4; prcputot: 9
pid: 18, outer: 4; prcputot: 9
pid: 16, outer: 5; prcputot: 10
pid: 17, outer: 5; prcputot: 11
pid: 18, outer: 5; prcputot: 11

pid: 16, outer: 6; prcputot: 12
pid: 17, outer: 6; prcputot: 13
pid: 18, outer: 6; prcputot: 13
pid: 16, outer: 7; prcputot: 14
pid: 17, outer: 7; prcputot: 15
pid: 18, outer: 7; prcputot: 15
pid: 16, outer: 8; prcputot: 16
pid: 17, outer: 8; prcputot: 17
pid: 18, outer: 8; prcputot: 17
pid: 16, outer: 9; prcputot: 18
pid: 16, prcputot: 18, prprio: 58, preempt: 38
pid: 17, outer: 9; prcputot: 19
pid: 17, prcputot: 19, prprio: 58, preempt: 37
pid: 18, outer: 9; prcputot: 19
pid: 18, prcputot: 19, prprio: 58, preempt: 37