

### 3

Base Test Case- When running all 4 processes with the same priority, they all ran for approximately the same time. The function called for the test cases is called testing in the file testing.c. Currently I have the variable UPBOUND set as 100,000,000.

Test Case 1: I ran 4 processes with priorities of 20, 20, 20, and 5. The last process ran approximately 33% longer than the others, hence the lower priority assigned.

Test Case 2: I ran 4 processes with priorities of 20, 20, 10, and 10. The last two ran about twice as long as the other ones assigned as a priority of 20.

Test Case 3: I ran 4 processes with priorities of 40, 20, 20, and 5. The first ran 3 times as fast as the two processes with 20 priorities and the last took 33% longer to finish.

### 4

CPU-Bound: The output below reflects the ending lines of my output. The scheduler performs fairly well; each process takes relatively the same amount of time and reaches the same outer loop not far off from each other.

*(Had some error printing to the console with 5 processes attempting to do so)*

PID: 5, prcputot: 8945593, prprio: 32766, preempt: 7  
putot: 8910435

PID: 6, Outer Loop: 9, prcputot: 8928422

PID: 6, Outer Loop: 9, prcputot: 8946412

PID: 6, Outer Loop: 9, prcputot: 8964406

PID: 6, Outer Loop: 9, prcputot: 8982404

PID: 6, Outer Loop: 9, prcputot: 9000404, putot: 8928058

PID: 7, Outer Loop: 9, prcputot: 8946064

PID: 7, Outer Loop: 9, prcputot: 8964073

PID: 7, Outer Loop: 9, prcputot: 8982086

PID: 7, Outer Loop: 9, prcputot: 9000103

PID: 7, Outer Loop: 9, prcputot: 9018123

PID: 405

PID: 6, Outer Loop: 9, prcputot: 9018430

PID: 6, Outer Loop: 9, prcputot: 9036459

PID: 6, Outer Loop: 9, prcputot: 9054491

PID: 6, Outer Loop: 9, prcputot: 9072527

PID: 6, prcputot: 9072527, prprio: 32766, preempt: 5

7, Outer Loop: 9, prcputot: 9036147

PID: 7, Outer Loop: 9, prcputot: 9054194

PID: 7, Outer Loop: 9, prcputot: 9072245

PID: 7, Outer Loop: 9, prcputot: 9090300

PID: 7, Outer Loop: 9, prcputot: 9108358

PID: 7, Outer Loop: 9, prcputot: 9126420

PID: 7, Outer Loop: 9, prcputot: 9144486

PID: 7, Outer Loop: 9, prcputot: 9162555

PID: 7, Outer Loop: 9, prcputot: 9180628

PID: 7, Outer Loop: 9, prcputot: 9198705

PID: 7, prcputot: 9198705, prprio: 32766, preempt: 4

IO-Bound: The out below reflects the ending lines of my output. The total cpu times were a lot close to each other, and finished a lot closer to each other when compared to the cpu bound test. The schedule seems to work well.

PID: 7, Outer Loop: 9, prcputot: 1

PID: 4, Outer LoLoop: 9, prcputot: 1

PID: 6, Outep: 9, prcputot: 1

PID: 3, Outer Loop: 9, prcputot: 1

PID: 5, Outer r Loop: 9, prcputot: 1

PID: 7, Outer Loop: 9,op: 9, prcputot: 1

PID: 4, Outer LLoop: 9, prcputot: 1

PID: 6, Oute prcputot: 1

PID: 3, Outer Loop: 9oop: 9, prcputot: 1

PID: 5, Outerr Loop: 9, prcputot: 1

PID: 7, Outer Loop: 9,, prcputot: 1

PID: 4, Outer Loop: Loop: 9, prcputot: 1

PID: 6, Out prcputot: 1

PID: 3, Outer Loop: 99, prcputot: 1

PID: 5, Outer Looper Loop: 9, prcputot: 1

PID: 7, Outer Loop: 9, prcputot: 1

PID: 3, prcputot: 1, prprio: 32766, preempt: 18

PID: 4, Outer Loop: 9, prcputot: 1

PID: 4, prcputot: 1, prprio: 32766, preempt: 17

: 9, prcputot: 1

PID: 5, prcputot: 1, prprio: 32766, preempt: 17

PID: 6, Outer Loop: 9, prcputot: 1

PID: 6, prcputot: 1, prprio: 32766, preempt: 17

, prcputot: 1

PID: 7, prcputot: 1, prprio: 32766, preempt: 18

Half-and-Half: The out below reflects the ending lines of my output. The cpubound PIDs are 3,4,5 and the iobound PIDs are 6,7,8. From the jumbled output its hard to decipher, but it appears the iobound processes finished with about the same and the same applies for the cpu bound. It doesn't appear that either completely finished before the other.

PID: 8, Outer, prcputot: 1

PID: 3, Outer Loop: 9, prcputot: 1

PID: 6, Outer Loo Loop: 9, prcputot: 1

PID: 5, Out9, prcputot: 1

PID: 4, Outer Loop:p: 9, prcputot: 1

PID: 8, Outer Ler Loop: 9, prcputot: 1

PID: 3, Outer Loop: 9 9, prcputot: 1

PID: 6, Outer Loopoop: 9, prcputot: 1

PID: 8, prcputot: 1, prprio: 32766, preempt: 18

PID: 5, Outer Loop: 9, prcputot: 1  
 , prcputot: 1  
 PID: : 9, prcputot: 5, Outer Loop: 9, prcputot: 1  
 4, Outer Loop: 9, prcPID: 3, Outer Loop: 9, prcputot: 1  
 t: 1  
 PID: 5, Outer Loop: 9, prcputot: 1  
 PID: 3, Outer Loop: 9, prcputot: 1  
 op: 9, prcputot: 1  
 P Loop: 9, prcPID: 6, Outer Loop: 9, prcputot: 1  
 ID: 4, Outer Loop: 9, prcPID: 5, Outer Loop: 9, prcputot: 1  
 cputot: 1  
 PID: 6, Outer Loop: 9, prcputot: 5, Outer Loop: 9, prcputot: 1  
 er Loop: 9, prcputot: 3, Outer Loop: 9, prcputot: 1  
 1  
 PID: 5, Outer Loop: 9, prcputot: 1  
 PID: 3, Outer Loop: 9, prcputot: 4, Outer Loop: 9, prcputot: 1  
 9, prcputot: 1  
 PID: 9, prcputot: 4, Outer Loop: 9, prcputot: 1  
 6, Outer Loop: 9, prcPID: 5, Outer Loop: 9, prcputot: 1  
 : 1  
 PID: 4, Outer Loop: 9, prcputot: 1  
 PID: 5, Outer Loop: 9, prcputot: 3, Outer Loop: 9, prcputot: 1  
 p: 9, prcputot: 1  
 P Loop: 9, prcPID: 3, Outer Loop: 9, prcputot: 1  
 D: 6, Outer Loop: 9, prcPID: 4, Outer Loop: 9, prcputot: 1  
 rcputot: 1  
 PID: 5, prcPID: 3, Outer Loop: 9, prcputot: 1  
 prcputot: 1  
 PID: 4, cputot: 1, prcPID: 3, Outer Loop: 9, prcputot: 1  
 Outer Loop: 9, prcputot: 6, Outer Loop: 9, prcputot: 1  
 rprio: 32766, preempt: 17, prcPID: 3, Outer Loop: 9, prcputot: 1  
 ot: 1  
 PID: 6, Outer Loop: 9, prcputot: 18  
 PID: 3, Outer Loop: 9, prcputot: 1  
 PID: 4, Outer Loop: 9, prcputot: 9, prcputot: 1  
 PID: 3, Outer Loop: 9, prcputot: 9, prcputot: 1  
 PID: 6, Outer Loop: 9, prcputot: 9, prcputot: 1  
 PID: 4, Outer Loop: 9, prcputot: 9, prcputot: 1  
 PID: 3, Outer Loop: 9, prcputot: 9, prcputot: 1  
 PID: 4, prcputot: 1, prprio: 32766, preempt: 17  
 PID: 6, Outer Loop: 9, prcputot: 9, prcputot: 1  
 r Loop: 9, prcputot: 6, Outer Loop: 9, prcputot: 1  
 t: 1  
 PID: 3, prcputot: 6, Outer Loop: 9, prcputot: 1  
 t: 1, prprio: 32766, prcPID: 6, Outer Loop: 9, prcputot: 1  
 reempt: 19  
 PID: 6, Outer Loop: 9, prcputot: 9, prcputot: 1  
 PID: 6, Outer Loop: 9, prcputot: 9, prcputot: 1

PID: 6, prcputot: 1, prprio: 32766, preempt: 18