OS Guided Project Screenshots

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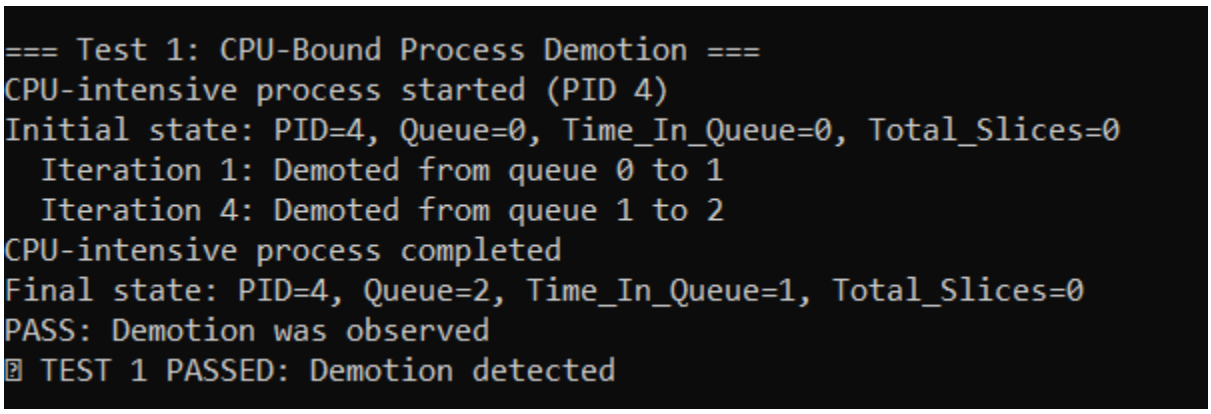

Figure 1: t1

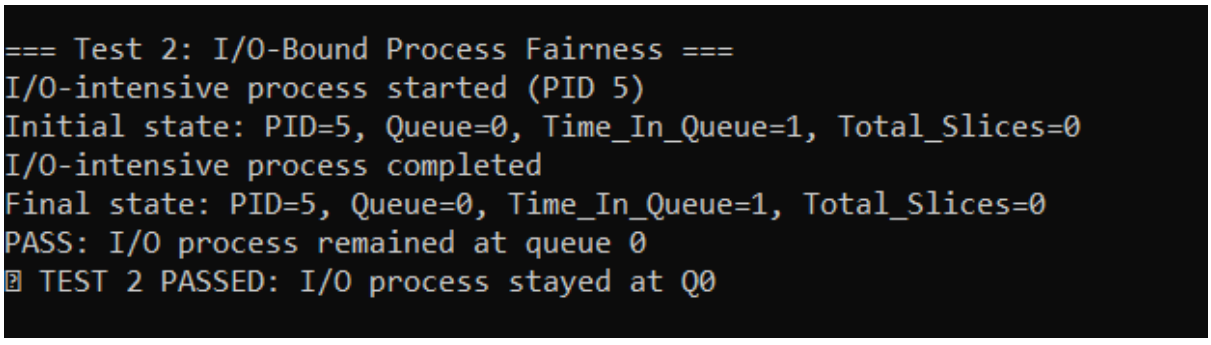

Figure 2: t2

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=== Test 3: Mixed Workload Fairness ===
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OCPU--inboundte) nsstartiiven gp
rocI/O-eisntes stnsive procaertss setarted (PId D (7)P
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Inittiate:al sta PtIeD:= P7I,D Qu=6, eueQ=ueue0, =0, TimTiem_e_InIn_Qu_Queeuue=1, Totae=l0,_S Tliceostal_Sl=i0
ces=0
  Iteration 0: Demoted from queue 0 to 1
I/O-intensive process completed
Final state: PID=7, Queue=0, Time_In_Queue=1, Total_Slices=0
PASS: I/O process remained at queue 0
CPU-intensive process completed
Final state: PID=6, Queue=1, Time_In_Queue=3, Total_Slices=0
PASS: Demotion was observed
 TEST 3 PASSED: Mixed workload coexistence verified
```

Figure 3: t3

```
=== Test 4: Priority Boost Test ===
Starting a CPU-bound process that should demote, then boost
Process 8: Starting CPU-intensive work
Initial: PID=8, Queue=0, Time_In_Queue=0, Total_Slices=0
  Iter 0: Queue changed from 0 to 2
  Iter 1: Queue changed from 2 to 3
After CPU work: PID=8, Queue=3, Time_In_Queue=12, Total_Slices=0
Waiting for boost (takes ~100 ticks)...
  Wait iter 0: queue=3
  Wait iter 10: queue=3
  Wait iter 20: queue=3
  Wait iter 30: queue=3
  BOOST DETECTED at iter 31: queue went from 3 to 0!
  BOOST DETECTED at iter 32: queue went from 3 to 0!
  BOOST DETECTED at iter 33: queue went from 3 to 0!
  BOOST DETECTED at iter 34: queue went from 3 to 0!
  BOOST DETECTED at iter 35: queue went from 3 to 1!
  BOOST DETECTED at iter 36: queue went from 3 to 1!
  BOOST DETECTED at iter 37: queue went from 3 to 1!
  BOOST DETECTED at iter 38: queue went from 3 to 1!
  BOOST DETECTED at iter 39: queue went from 3 to 1!
  Wait iter 40: queue=1
  BOOST DETECTED at iter 40: queue went from 3 to 1!
  BOOST DETECTED at iter 41: queue went from 3 to 1!
  BOOST DETECTED at iter 42: queue went from 3 to 1!
  BOOST DETECTED at iter 43: queue went from 3 to 1!
  BOOST DETECTED at iter 44: queue went from 3 to 1!
  BOOST DETECTED at iter 45: queue went from 3 to 1!
  BOOST DETECTED at iter 46: queue went from 3 to 1!
  BOOST DETECTED at iter 47: queue went from 3 to 1!
  BOOST DETECTED at iter 48: queue went from 3 to 1!
  BOOST DETECTED at iter 49: queue went from 3 to 1!
After boost period: PID=8, Queue=1, Time_In_Queue=3, Total_Slices=0
PASS: Both demotion and boost detected
 TEST 4 PASSED: Demotion and boost cycle confirmed
```

Figure 4: t4

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=== Test 5: Manual Priority Boost (boostproc syscall) ===
Child process 9 starting
Before manual boost: PID=9, Queue=0, Time_In_Queue=0, Total_SlicesParen=0t:
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 Queue=0, Time_In_Queue=0, Total_Slices=0
PASS: Boost worked (queue reduced or stayed same)
 TEST 5 PASSED: Manual boost syscall works
```

Figure 5: t5

```
=== Test 6: System-Wide Priority Boost ===
Testing boostproc(0) - boost all processes
Child before boost: queue=0
Parent: Calling system-wide boost
Child after boost: queue=0
PASS: System boost worked
 TEST 6 PASSED: System-wide boost works
```

Figure 6: t6

```
=== Test 7: Starvation Prevention (Automatic Boost) ===
Long CPU process should be boosted automatically every 100 ticks
Child 11: Starting very long CPU work
Initial: PID=11, Queue=0, Time_In_Queue=0, Total_Slices=0
  Burst 0: Demoted to queue 2
  Burst 2: Demoted to queue 3
  Burst 10: BOOSTED! queue went from 3 to 1
  Burst 11: Demoted to queue 2
  Burst 12: Demoted to queue 3
Total automatic boosts observed: 1
Final: PID=11, Queue=3, Time_In_Queue=15, Total_Slices=0
PASS: Automatic boost observed (starvation prevented)
 TEST 7 PASSED: Starvation prevention confirmed
```

Figure 7: t7

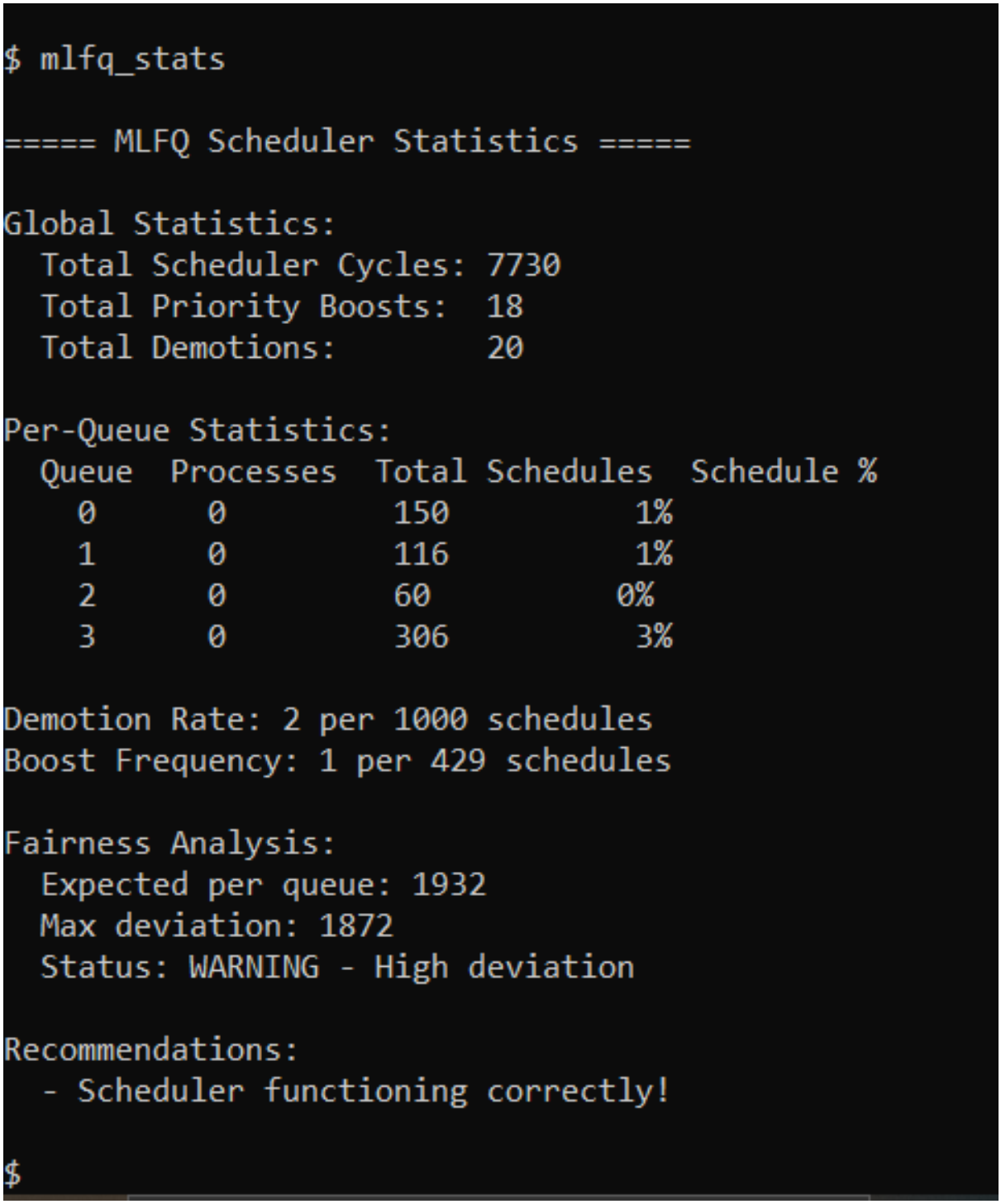

Figure 8: stats

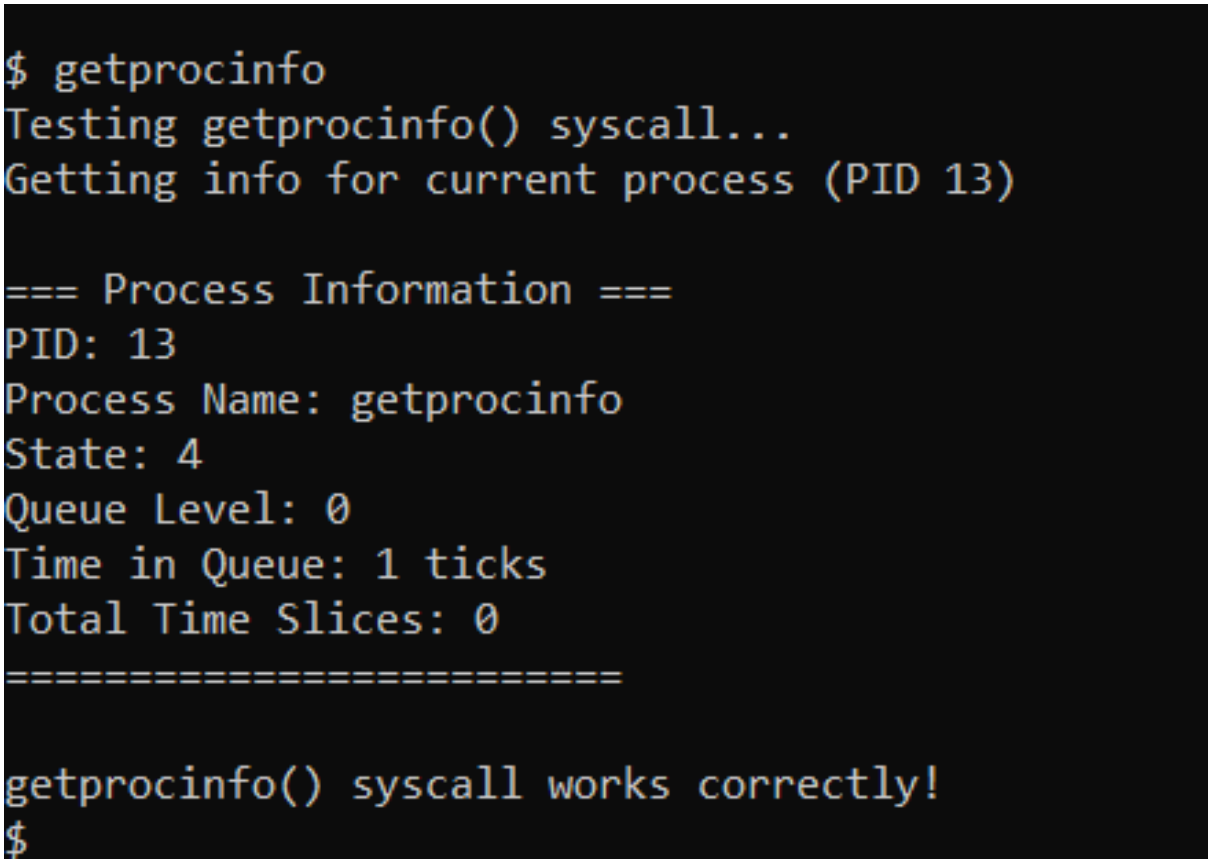

Figure 9: getprocinfo

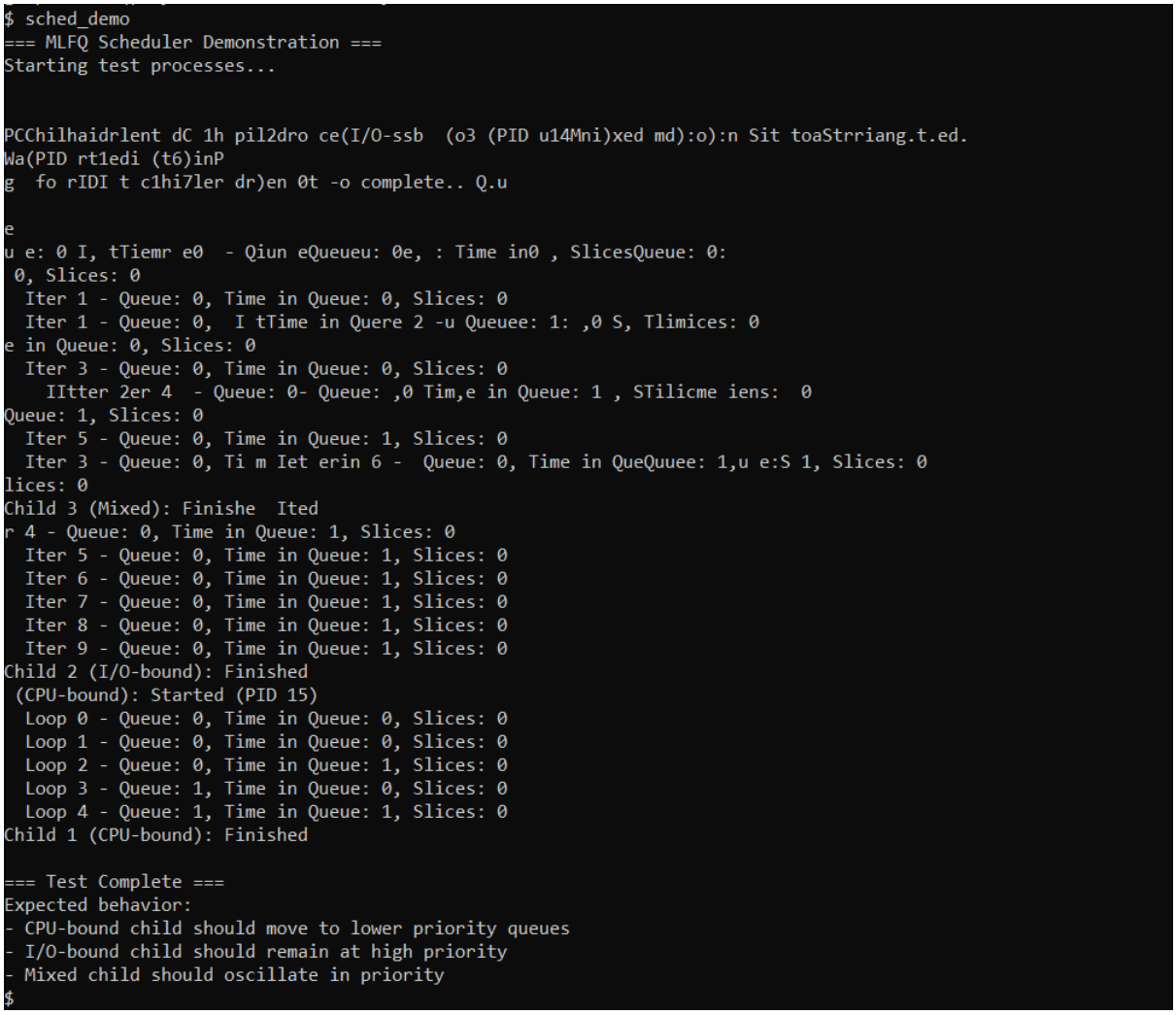

Figure 10: scheduler demo