COSC 4740 Program 2
Fall 2024

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Repo: `https://github.com/cosc4740fa24/os_program2-SeaJay39673`

Lab: 11

Statement of Help

Kyler Legault

Kyler has helped me quite a bit with this project. He mostly warned me about bugs he came across, as well as rubber ducky-ed for me when I came across bugs. Most importantly, he showed me the following stack overflow link to help me get started with reading input from the pipes.

`https://stackoverflow.com/questions/22189637/creating-or-passing-a-string-from-a-pipe`.

We also discussed quite heavily different ways we could implement our code, and talked at a higher level of how we were implementing our own code.

Howard Shaw

I helped Howard with getting his pipes set up (showed him the same link Kyler showed me). I also explained how the program is supposed to work and helped talk him through his code for the first few commands.

Isaiah

So far, I helped him set up his pipes (also showed him the same link).

Driver Output

0:

```
**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 0

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
1     0        0            0         0

BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1 is empty
Queue of processes Blocked for resource 2 is empty

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0 is empty
Queue of processes with priority 1 is empty
Queue of processes with priority 2 is empty
Queue of processes with priority 3 is empty
**************************************************
```

6:

```
**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 6

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
2     0       10            5         0

BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1 is empty
Queue of processes Blocked for resource 2 is empty

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0 is empty
Queue of processes with priority 1 is empty
Queue of processes with priority 2 is empty
Queue of processes with priority 3 is empty
**************************************************
```

11:

```
**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 11

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
3     1        7            6         1

BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1 is empty
Queue of processes Blocked for resource 2 is empty

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0 is empty
Queue of processes with priority 1:
PID  Priority Value  Start Time  Total CPU time
4     1        1            6         1
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
2     2       42            5         3
Queue of processes with priority 3 is empty
**************************************************

**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 11

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
3     1        7            6         1
```

```
BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1 is empty
Queue of processes Blocked for resource 2 is empty

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0:
PID  Priority Value  Start Time  Total CPU time
5     0        6           11         0
6     0        6           11         0
Queue of processes with priority 1:
PID  Priority Value  Start Time  Total CPU time
4     1        1            6         1
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
2     2       42            5         3
Queue of processes with priority 3 is empty
**************************************************

**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 11

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
5     0        6           11         0

BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1 is empty
Queue of processes Blocked for resource 2:
PID  Priority Value  Start Time  Total CPU time
3     0        7            6         1

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0:
PID  Priority Value  Start Time  Total CPU time
6     0        6           11         0
Queue of processes with priority 1:
PID  Priority Value  Start Time  Total CPU time
4     1        1            6         1
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
2     2       42            5         3
Queue of processes with priority 3 is empty
**************************************************

**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 11

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
6     0        6           11         0
```

```
BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1:
PID  Priority Value  Start Time  Total CPU time
5     0        6           11         0
Queue of processes Blocked for resource 2:
PID  Priority Value  Start Time  Total CPU time
3     0        7            6         1

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0 is empty
Queue of processes with priority 1:
PID  Priority Value  Start Time  Total CPU time
4     1        1            6         1
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
2     2       42            5         3
Queue of processes with priority 3 is empty
**************************************************
```

15:

```
**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 15

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
10     0       20           11         0

BLOCKED PROCESS:
Queue of processes Blocked for resource 0 is empty
Queue of processes Blocked for resource 1:
PID  Priority Value  Start Time  Total CPU time
5     0        6           11         0
Queue of processes Blocked for resource 2:
PID  Priority Value  Start Time  Total CPU time
3     0        7            6         1

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0 is empty
Queue of processes with priority 1:
PID  Priority Value  Start Time  Total CPU time
4     1        1            6         1
6     1        6           11         1
8     1        9           11         1
9     1        8           11         1
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
2     2       42            5         3
Queue of processes with priority 3 is empty
**************************************************
```

118

```
**************************************************
The current system state is as follows :
**************************************************
```

```
CURRENT TIME: 118

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
31     1      250          115         1

BLOCKED PROCESS:
Queue of processes Blocked for resource 0:
PID  Priority Value  Start Time  Total CPU time
19     0        1           77         0
21     0        8           77         0
 8     1        9           11         4
Queue of processes Blocked for resource 1:
PID  Priority Value  Start Time  Total CPU time
 3     1        3            6         4
Queue of processes Blocked for resource 2:
PID  Priority Value  Start Time  Total CPU time
 5     0        6           11         2
25     0       70           88         1

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0:
PID  Priority Value  Start Time  Total CPU time
32     0      125          118         0
Queue of processes with priority 1 is empty
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
20     2       25           77         3
22     2       15           82         3
23     2      135           83         3
10     2       20           11         5
24     2      105           84         3
26     2       15           90         3
27     2     1350           93         3
28     2      135           96         3
29     2      112          106         3
30     2      125          110         3
Queue of processes with priority 3:
PID  Priority Value  Start Time  Total CPU time
13     3      299           31         7
17     3       10           51         7
 9     3       10           11        15
**************************************************
```

125

```
**************************************************
The current system state is as follows :
**************************************************

CURRENT TIME: 125

RUNNING PROCESS:
PID  Priority Value  Start Time  Total CPU time
33     1       62          121         2

BLOCKED PROCESS:
Queue of processes Blocked for resource 0:
PID  Priority Value  Start Time  Total CPU time
```

```
19     0        1           77         0
21     0        8           77         0
 8     1        9           11         4
Queue of processes Blocked for resource 1:
PID  Priority Value  Start Time  Total CPU time
 3     1        3            6         4
Queue of processes Blocked for resource 2:
PID  Priority Value  Start Time  Total CPU time
25     0       70           88         1

PROCESSES READY TO EXECUTE:
Queue of processes with priority 0:
PID  Priority Value  Start Time  Total CPU time
 5     0        6           11         2
Queue of processes with priority 1 is empty
Queue of processes with priority 2:
PID  Priority Value  Start Time  Total CPU time
20     2       25           77         3
22     2       15           82         3
23     2      135           83         3
10     2       20           11         5
24     2      105           84         3
26     2       15           90         3
27     2     1350           93         3
28     2      135           96         3
29     2      112          106         3
30     2      125          110         3
31     2      250          115         3
32     2      125          118         3
Queue of processes with priority 3:
PID  Priority Value  Start Time  Total CPU time
13     3      299           31         7
17     3       10           51         7
 9     3       10           11        15
**************************************************

The average Turnaround Time: 23.5455

Extra information you might want to know:
11 processes finished in a total of 259 seconds
```