State University of New York at New Paltz

Student Name: Andrew McDonald

OS Lab section: 01 (Friday,2:00-4:40)

Semester: Fall 2021

REPORT for LAB # 09

(Process States and Memory Management)

"Operating Systems" Fall 2021

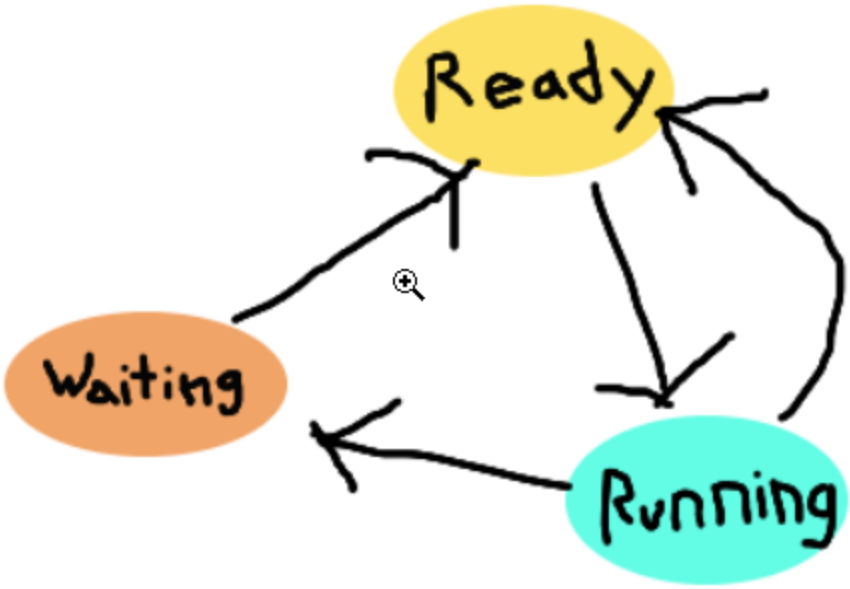
(Professor Hanh Pham)

Lab Instructor: BINDHUPRIYA THRIPURANENI

Action to take	Resultant State	Success	Fail
1. Drag process to the waiting queue (i.e. put in waiting state)	Ready	N	Y
2. Drag process to the Process Bin (i.e. terminate it)	Ready	N	Y
3. Drag process to the CPU 0 box (i.e. run it)	Running	Y	N
4. Drag process to the waiting queue	Waiting	Y	N
5. Drag process to the CPU 0 box	Waiting	N	Y
6. Drag process to the Process Bin	Waiting	N	Y
7. Drag process to the Ready Queue (i.e. put it in ready state)	Ready	Y	N
8. Click on the RESUME button in OS Control tab	Running	Y	N
9. Drag process to the ready queue	Ready	Y	N
10. Click on the RESUME button in OS Control tab	Running	Y	N
11. Drag process to Process Bin	ProcessBin	Y	N

Legal State Changes

From state	**To state**
Ready	Running
Running	Waiting
Waiting	Ready
Running	Ready



LO2:

States
1. Running
2. Waiting
3. Ready
4. Running
5. Waiting
6. Ready

Using the small Keyboard window click on any button and observe what happens in the OS simulator. Make a note below of what state the process goes into immediately after a keyboard button is clicked

It is in the running state. When I click a button on the keyboard the process immediately goes to the Waiting queue and then jumps to Ready and then Running once again.

LO3

First Fit	This placed the process in the #2 position because it was the first place open.
Best fit	This placed the process in the #5 position because the process was placed where it fit perfectly because that was the best place for it to go.
Worst Fit	This placed the process in the #7 position because it took up area in the largest area open in main memory which is the worst position.

LO4

Process	**Pages**	**Free**	**Alloc**	**Swap**
P1	4	1536	1024	0
P2	5	256	2304	0
P3	3	256	2304	768

P3's memory is swapped out because the whole process could not be loaded into Main Memory at the time so it was swapped.

Process	**Free**	**Alloc**	**Swap**
P1	256	2304	768
P2	256	2304	768
P3	768	1792	1280
P1	768	1792	1280
P2	256	2304	768
P3	768	1792	1280

CPU%	**Free**	**Alloc**	**Swap**
0	2560	0	0

The exercises above have been designed to demonstrate the basic principles of OS memory management. Review what has been done in the last section above and make your comments on the way virtual memory management functions in the box below:

Reviewing the resource utilization of the processes as the pass through execution is very interesting. It starts out with the first 2 processes having memory allocated to them while the 3rd is in swap. But as the process stored in swap is needed to be moved to the running process the assignment of memory is shifted around.