Documentation Notes

# User Processes P1:

* Expected output:

G012\_test: START

G012\_test: total 6 tests

G012\_test: test 6 OK

G012\_test: test 5 OK

G012\_test: test 4 OK

G012\_test: test 2 OK

G012\_test: test 3 OK

G012\_test: test 1 OK

G012\_test: 6/6 tests OK

G012\_test: 0/6 tests FAIL

G012\_test: END

* Proc1 takes up all the memory to test blocking on resource
* Proc2 is a basic test to check if a memory block on its own can be requested
  + Proc2 is designed to be blocked and later unblocked
* Proc3 checks a standard request/release pair
  + Proc3 is designed to be blocked and later unblocked
* Proc4 is designed with pre-emption in mind giving a higher priority to Proc6
* Proc5 changes its own priority and checks that it is changed correctly
* Proc6 ensures that our checks around releasing memory disallow releasing something which is not a memory block that we manage
* We have custom functions to print out the result of each test and to check when tests are complete to print the post amble

# User Processes P2:

* proc1 HIGH reg command / command will exit
* proc2 HIGH reg command / check argument correct->exit
* proc3 HIGH clock / does not interact with anything else
* proc4 HIGH always ready
* proc5 Medium send delayed message to self, ask for all memblocks, release them upon receive the delayed message
* proc6 Medium ask for one memblock, then release memblock.
* 1,2,3 set self to LOWEST upon finishing
* 4 set self to LOWEST if #proc finished is 3
* 5,6 set self to LOWEST upon finishing
* run proc 1,2,3 (block on receive)
* while waiting proc 4 (non-block)
* 5 sends a delayed message to self, takes all available memblocks
  + upon receiving, it releases all memblocks it holds.
* 6 ask for one memblock (should be blocked when 5 is not yet started releasing)
  + then release that block immediately.

# User Processes P1:

Expected output:

G012\_test: START

G012\_test: total 6 tests

G012\_test: test 3 OK

G012\_test: test 6 OK

G012\_test: test 5 OK

G012\_test: test 4 OK

G012\_test: test 2 OK

G012\_test: test 1 OK

G012\_test: 6/6 tests OK

G012\_test: 0/6 tests FAIL

G012\_test: END

# Our Notes

* We keep track of our memory blocks with a stack
  + Requesting memory pops off
  + Releasing memory pushes on
  + Stack makes it so that we don’t have to keep track of both the front and the back; in general the math just becomes a lot easier
* We have two arrays of queues
  + One array keeps track of the ready queues for the different priorities
  + One array keeps track of the blocked queues for the different priorities
* We have ProcessNode as a queue member wrapper around PCB which allows us to have next and previous for each PCB without changing the structure of the given PCB
* We implemented a memory block queue as well which we don’t use as we instead go with a stack, but we kept it for reference purposes in case we need it at a later time
* As we have so many debug statements, if you run with the DEBUG\_0 flag there will be stack overwrites which cause a ton of random errors interspersed throughout the code. Debug hotkeys are reasonable as they do not print an excessive amount.