**Pseudo code for the Process and Resource Manager using multiunit resources.**

* i.state is the state of process i
* i.resources is a list of pairs (r, k) where r is a resource and k is the number of units that process i is holding
* r.state is a counter that keeps track of the currently available units of r
* r.waitlist contains pairs (i, k) where i is the waiting process and k is the number of requested units
* Note that a release of k units may enable more than one process from r.waitlist

request(r, k){

if (r.state >= k and r.waitlist is empty)

r.state = r.state - k

insert (r, k) into i.resources

else

i.state = blocked

remove i from RL

insert (i, k) into r.waitlist

scheduler()

}

release(r){

remove (r, k) from i.resources

r.state = r.state + k

while (r.waitlist != empty and r.state > 0)

get next (j, k) from r.waitlist

if (r.state >= k)

r.state = r.state - k

insert (r, k) into j.resources

j.state = ready

remove (j, k) from r.waitlist

insert j into RL

else break

scheduler()

}