

## Midterm Topic 4

Ex 1: (P, Q, n, local)

(P2, Q2, 0, -)

(P4, Q2, 0, -)

(P5, Q2, 0, 0)

(P3, Q3, 1, 0)

(P4, Q3, 0, 0)

(P5, Q3, 0, 1)

? if repeats 2 now to 1?

Ex 2: (On Seperak Page)

Ex 3: (Part 1) on other page

(Part 2)

~~enableWrite()~~ ~~write()~~

~~while(!data.isEmpty())~~

~~data.write.read.wait();~~

~~disableWrite()~~

~~write.wait()~~

write() {

disableWrite();

data.addFirst(0);

}

enableWrite();

write.signalAll();

}

read() {

while(data.isEmpty())

read.wait();

temp = data.getLast();

return temp;

disableWrite();

while(!read.empty())

write.wait();

}



Ex. 2: Semaphore refill = new Semaphore(2);  
 Semaphore mutex = new Semaphore(1);  
~~Given~~ int trucks = 0;

Thread { // Truck

~~gasUp.acquire()~~; refill.acquire();  
 mutex.acquire();

if (trucks == 0) {

6.times {

gasUp.acquire(); }

~~mutex.acquire()~~;

trucks++;

mutex.release();

// refilling truck

mutex.acquire();

trucks--;

~~mutex.release()~~;

if (trucks == 0) {

6.times {

gasUp.release();

}

}

mutex.release();  
 refill.release();

}

Ex. 3: 1) write(Object o) {

data.addFirst();

read.signalAll();

}

read() { while (data.isEmpty())  
 read.wait();

}

Object temp = data.getLast();

data.removeLast();

return temp;