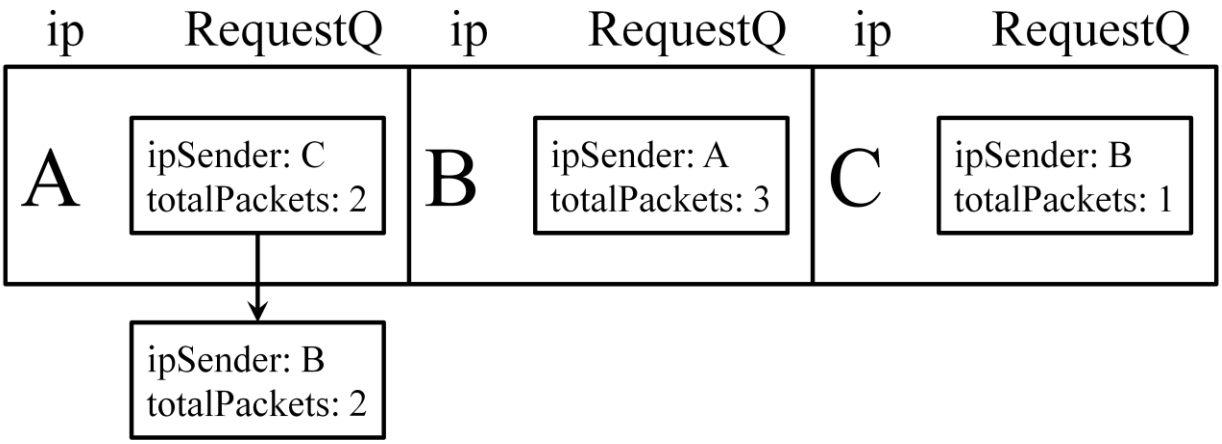
Assignment #4 Notes

Input File:

1	day
4	Requests
3	Network Devices
A C 2	A is requesting 2 MB from C…
B A 3	
C B 1	
A B 2	

Step 1) Read in requests:

*Since we know we have 3 Network devices (read in from file), we can create an array of size 3 that holds the Network Devices:

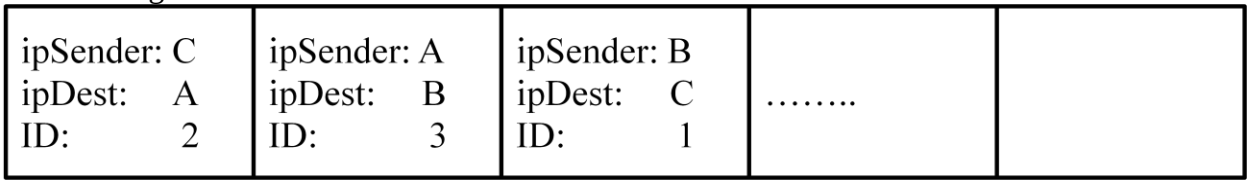


*Notice that the order of the devices in the array is the order in which we saw new devices in the input file. I would like you to use this convention, instead of ordering by which request comes first.

Step 2) Begin simulation at Clock = 1:

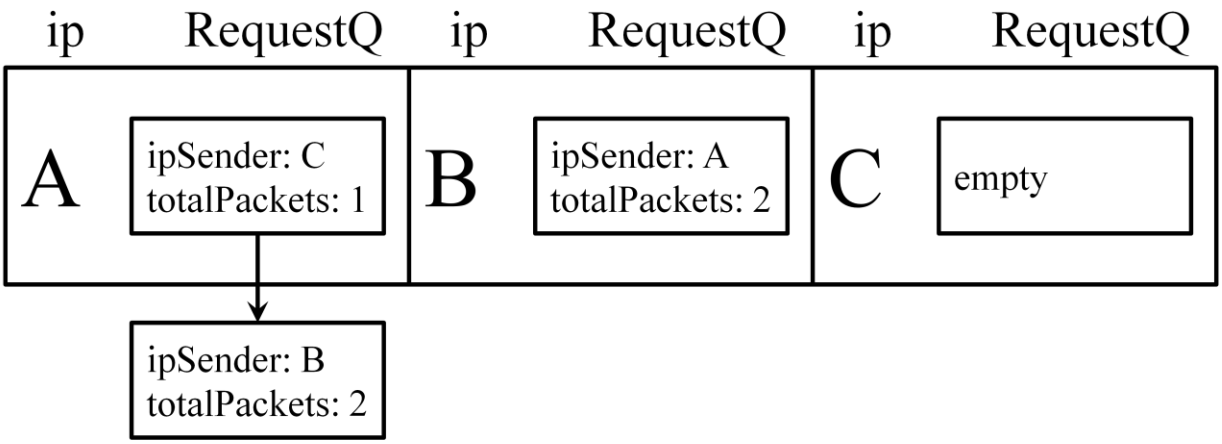
Enqueue Phase: enqueue 1 packet from each device, for only the 1st request in each device's RequestQ.

The resulting router will be:



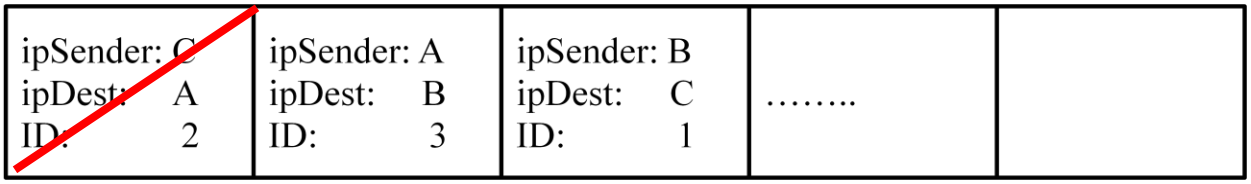
*Note the ID is the number of packets left to fulfill, once the ID == 1, we know the request is complete.

*If the enqueue into the router is successful, we will also want to decrement the totalPackets for each device's first requests. So the resulting array would be:



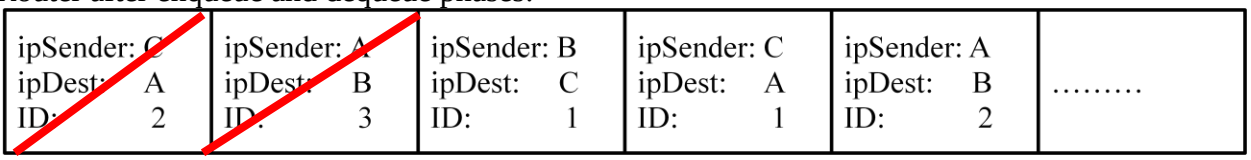
*Note that since C's 1st request was fulfilled, totalPackets == 0, so we could dequeue it and move to C's next request. However, C only had one request, so the queue is empty.

Step 3) Dequeue phase: on same clock cycle, the router can only dequeue 1 packet per cycle so after dequeueing the router looks like:

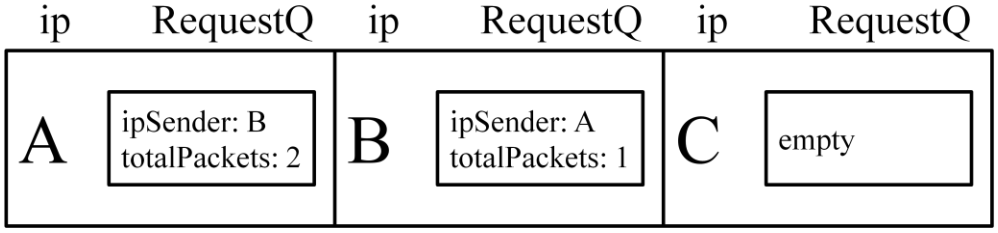


Clock = 2:

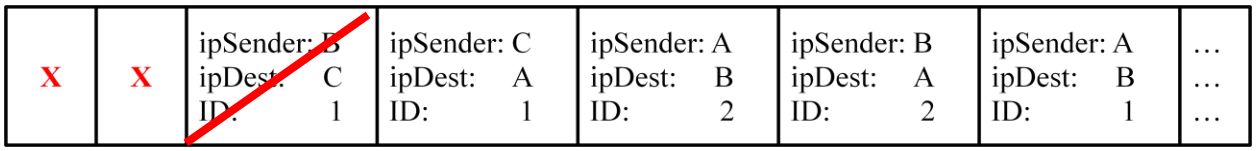
Router after enqueue and dequeue phases:



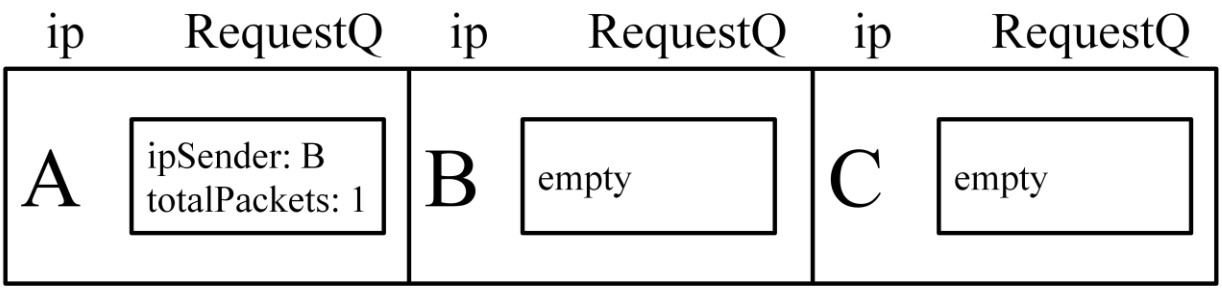
Device Array after Enqueue Phase:



Clock = 3:
Router after enqueue and dequeue phases:



Device Array after Enqueue Phase:



On this clock cycle the following would print to the file, since a packet with ID == 1 was dequeued from the router:

“Device C has received its request at time = 3ms.”

The simulation would continue until all requests have been filled…