Course ISE 435: Distributed Algorithms in Network Communication
Recitation 9 Exercise

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1 Balanced Sliding Window

Consider the balanced sliding window example which can be found at the end of the lecture notes. We will go over it together in detail.

Pay attention to the importance of the fairness requirements:

- If the sending of a packet is applicable for an infinite long time, the packet is sent infinitely often.
- If the same packet is sent infinitely often, it is received infinitely often

Why are they important? What would happen if the first fairness rule were not applied? What if the second fairness rule were not applied?

2 What to do

To better understand how the balanced sliding window protocol works, perform the following hand example:

- 9 packets on each side
- $l_p = 3, l_q = 1$
- Packets 2 and 5 from p drop the first time they are sent
- Packets 5 and 6 from q drop the first time they are sent

As in the example in class, you may bunch together the arrival of packets to save time and space in your drawings. Check that all of the assertions in the invariant are true at each step.