

Transmission Assessment

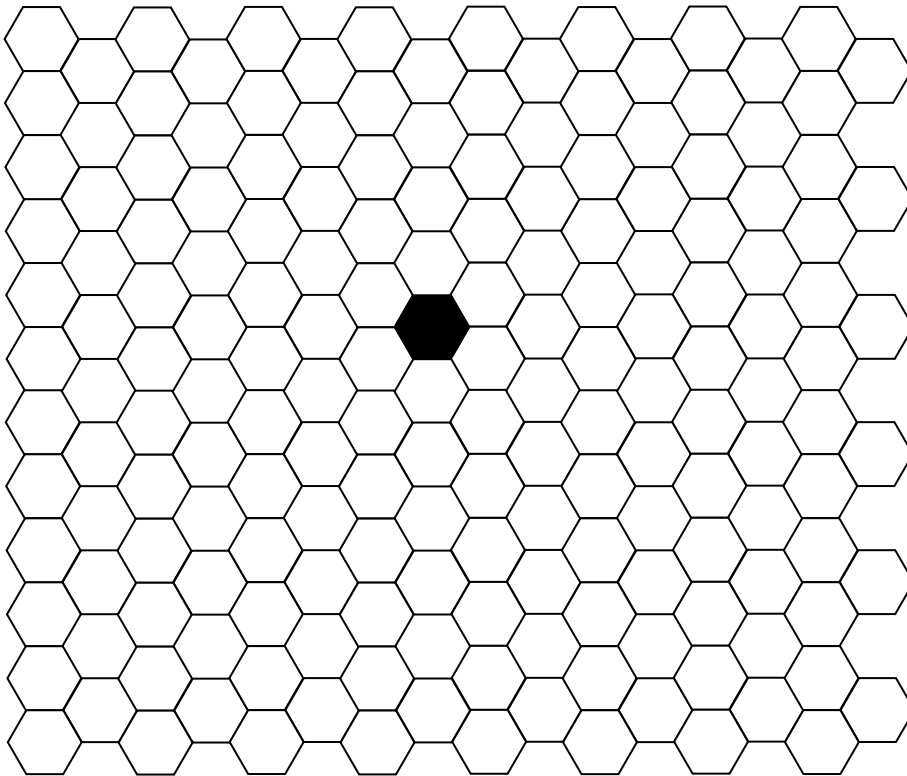
NETW601

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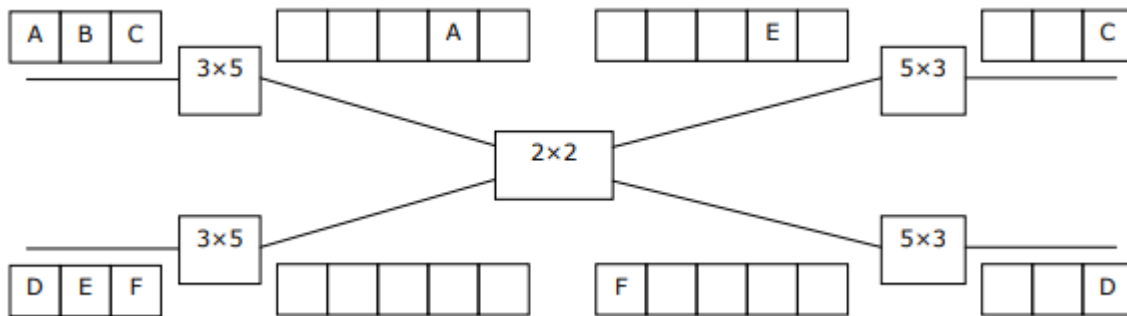
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Question 2

Consider the operation of 6x6 TST switch. The first stage is composed of two 3x5 TSI switches. The intermediate stage uses one 2x2 time shared switch. The final stage is composed of two 5x3 TSI switches. Given that all inputs to the TST are successfully switches towards the output of the TST switch:

- Is the system blocking / non-blocking
- Determine a feasible output pattern of the TST switch given the figure shown below by inserting appropriate letters in the timeslots at the output of the TST switch.
- Use the result from part (a) to determine a feasible configuration of the intermediate time-shared switch by inserting appropriate letters (wherever necessary) in the timeslots of the input and output of the intermediate stage switch.

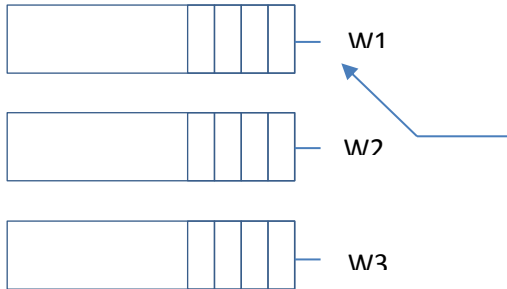


Question 2

Consider the WFQ shown below

The detailed parameter associated with your User ID are posted on the course website

for each packet in the sequence calculate the Virtual finish time and the delay



Please use the following symbols for the queues



q1



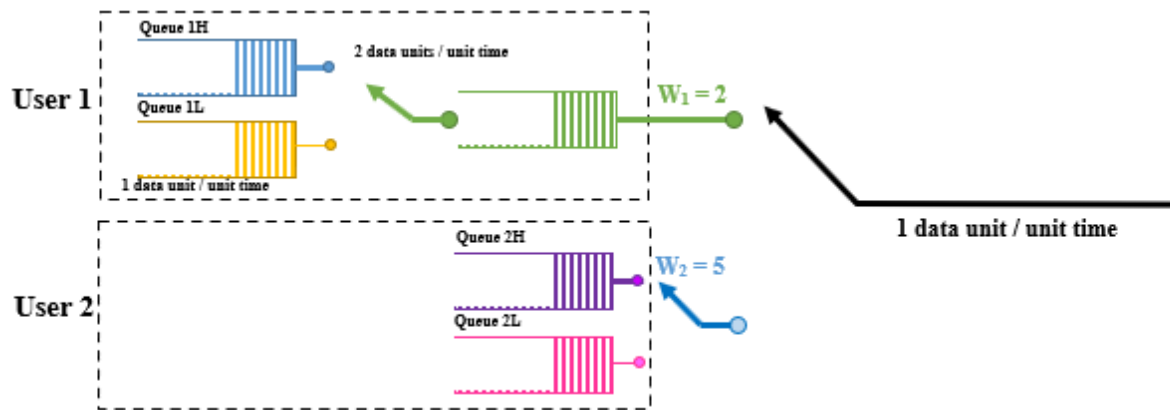
q2



q3



Question 3



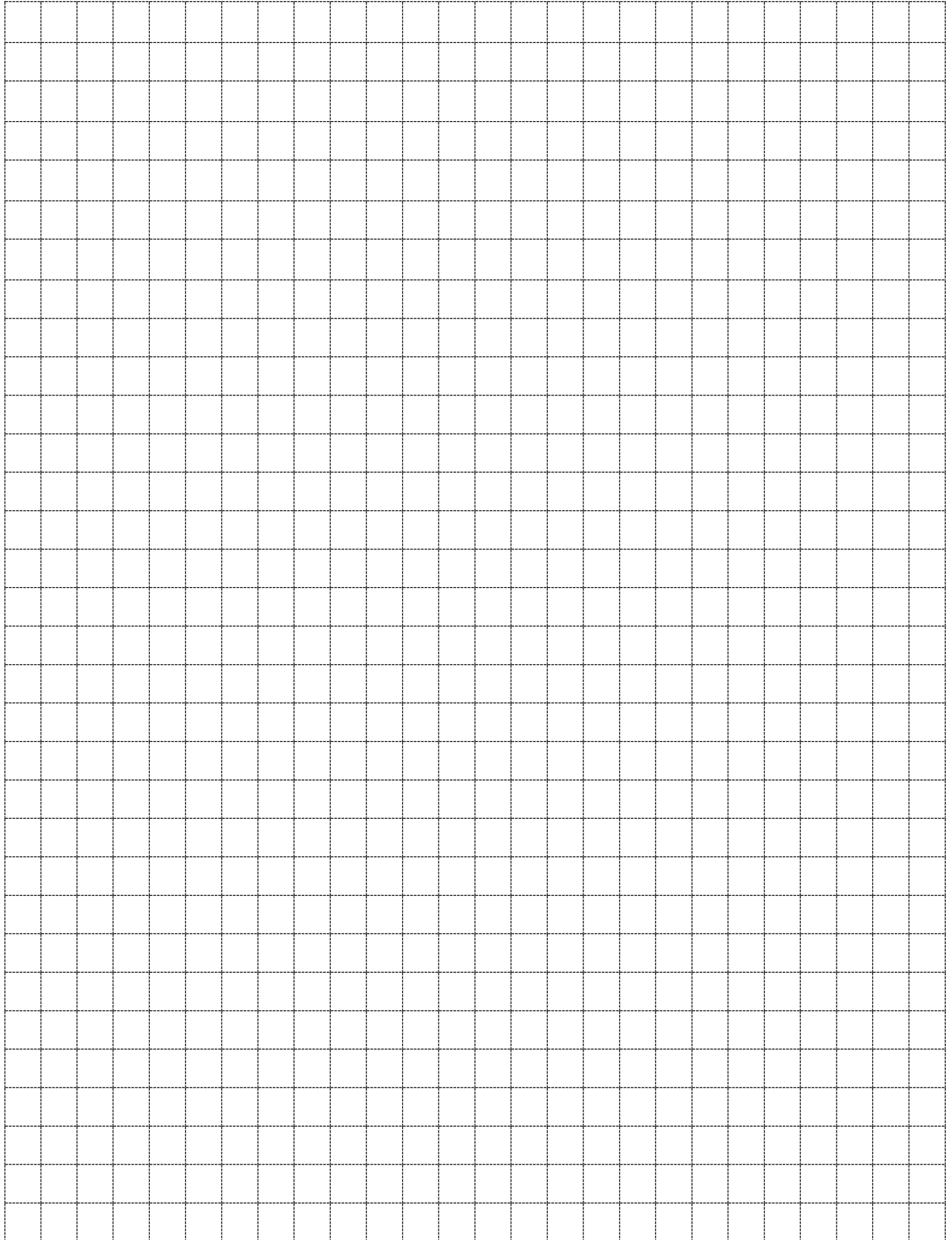
Consider the queuing system shown in the figure above where a single link is shared between two users using weighted fair queue scheduling. User one has a weight of 2 and user two has a weight of 5. Each user has two input queues: one for high priority traffic, and another queue for low priority traffic. The output of the two queues that belong to user one is fed to another queue at rate equal 2 data unit per unit time that is connected to the weighted fair queue scheduler. While the high and low priority queues of user 1 is directly connected to weight fair queue scheduler.

The detailed parameter associated with your User ID are posted on the course website

Where Q1H had queue ID 1, Q1L has Queue ID 2, Q2H has Queue ID 3 and Q2L a has queue ID 4

Please the following symbols to represent eh queues

- Q1H ■
- Q1L ▲
- Q2H ●
- Q2L ◆



Traffic Management at flow level

Question 1

The detailed parameter associated with your User ID are posted on the course website

The table in your assignment parameters shows the length of packets (in data units) arriving to FIFO queue of size 15 data units. A token bucket shaper is used to shape the traffic output from the queue. The token bucket shaper has a bucket depth of 8 data units and a token rate of 2 data units per unit time. The bucket is assumed to be full at time 0

- Use figure 2 to plot the token bucket content
- Use figure 3 to plot the traffic output from the FIFO queue
- Use figure 4 to plot the FIFO queue buffer content

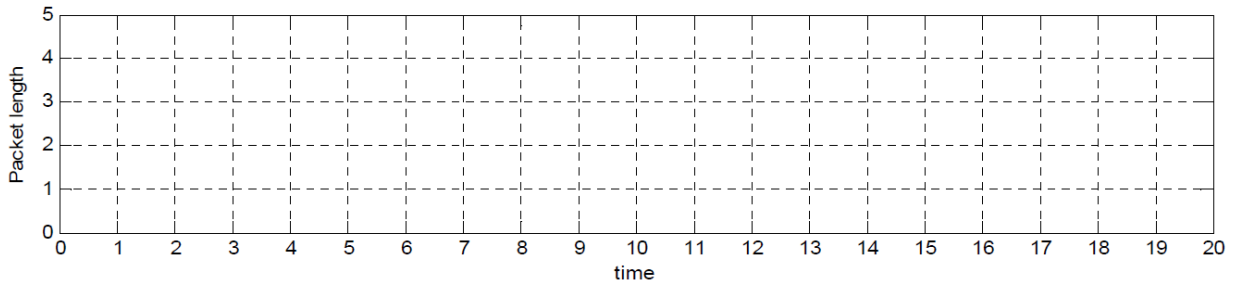


Figure 1

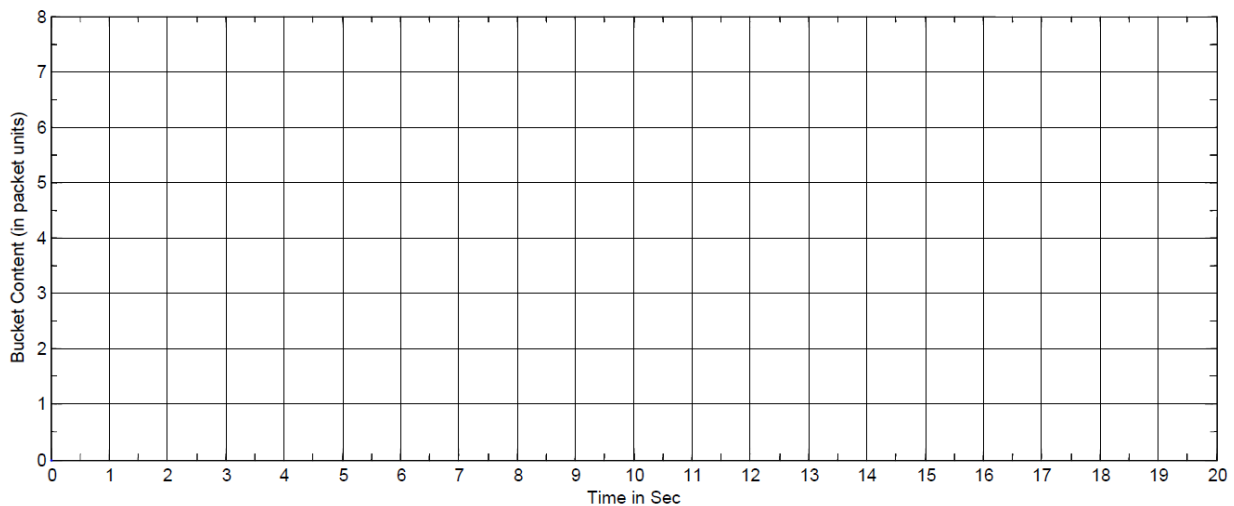


Figure 2

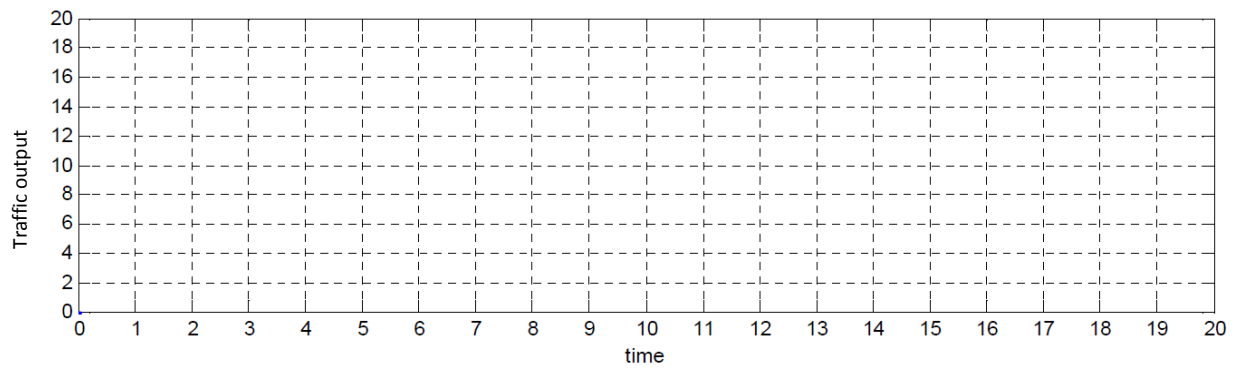


Figure 3

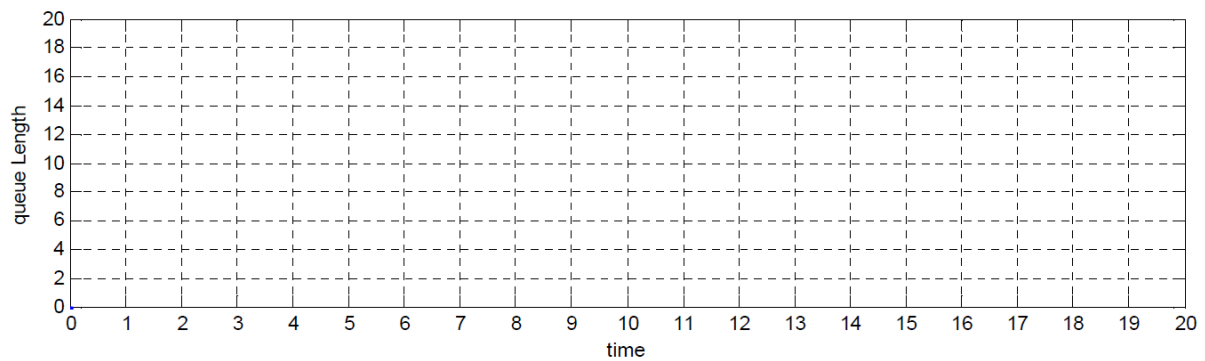


Figure 4

Question 2

The detailed parameter associated with your User ID are posted on the course website

Use the same parameter that was used in question one but assume the use of a leaky bucket approach

