CS348 Computer Networks

Assignment 2

Indian Institute of Technology, Patna

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Instructions : This assignment is in continuation to Assignment 1. But you have to submit the solutions in a different tgz file with name assign2.tgz. The submission date is 27.01.2019.

Problem 1. Consider the problem 2 of the previous assignment (i.e. multiple sources). In this assignment rather than using a constant packet generation rate, we will now use a Poisson distribution and observe its effects. We now assume that the packet generation at each source i follows a Poisson distribution with a given rate, a_i which is equivalent to the fact that the generation time between two consecutive packets at each source follows an exponential distribution.

- Assuming a_i to be same for all sources, plot the average delay for each packet with respect to a_i.
- Assuming a_i to be different for each source, plot the average delay for each packet with respect to a_i.
- Assume that the size of the queue of the switch is fixed, and the packet is dropped if the queue is full. Plot the packet loss rate at the switch with respect to different packet sending rates a_i for each of the sources.