MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Electrical Engineering and Computer Science
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6.263/16.37
Problem Set No. 2

Problem 1: Selective Repeat with limited buffer size at the receiver

In class we analyzed the selective repeat protocol under "ideal" assumptions. Specifically we assumed that SRP retransmitted only packets containing errors. This assumption requires the use of an unlimited window and unlimited buffer at the receiver. The goal of this problem is to understand the impact of the window size and receiver's buffer size on the performance of SRP.

A) Give an approximate expression for the efficiency of SRP when the receiver window size is only one packet.

B) Give an expression for the efficiency of SRP when the window size is equal to one round-trip worth of packets (you may assume unlimited buffers).

C) Give an expression for the efficiency of SRP when the receiver's buffer size is equal to one round-trip of packets (you may assume that the window size is much larger than the round-trip of packets).

Text Problems: 2.17, 2.18, 2.19, 2.20, 2.22, 2.26

Reading: Text Sections 3.1, 3.2, 3.3 PLUS review Appendix A (of Chapter 3) as needed.