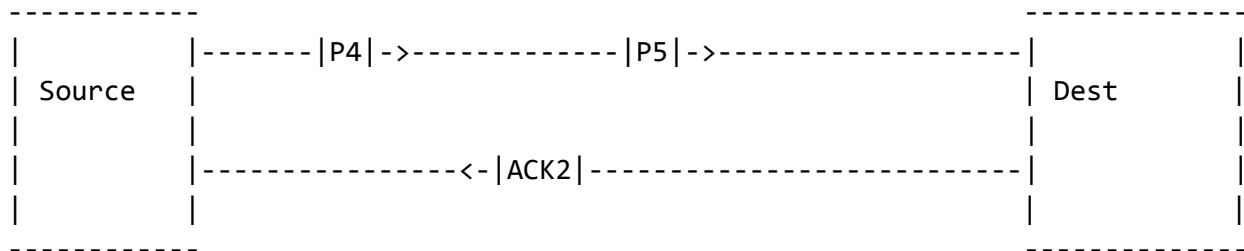


Homework 1

Due: October 14, by mail to lboloni@eecs.ucf.edu

Operation:

Create a simulator of the reliable transmission protocol. Use a text-based output similar to the one below:



Each step of the simulator corresponds to one time slot. After every step request an input from the user, as follows:

[timeslot 15] Enter your choice (0, +n, -n):

If the user enters 0 the simulator will proceed to simulate the next step. Entering a positive number +n will destroy the n-th packet moving from source to destination. Entering a negative number -n, will destroy the n-th packet moving from destination to source.

Assume that the sender has an infinite supply of packets.

Command line parameters

Specify the parameters of the simulation on the command line:

`-protocol simple/stopandgo/gobackn/selective`

Specifies the type of the protocol used

`-window size number`

Specifies the size of the window (for gobackn and selective, for all the others, the attempt to specify a window size should print an error

-delay number

Specifies the delay on the line from the source to destination. A delay of 5 time units, for instance, means that the frame transmitted by source at 10 will arrive to destination at 15.

Implementation

You can use any mainstream, standalone programming language (C, C++, Java, Perl, Python). No Javascript or languages which require specific environments (Visual Basic, C#).

Deliverables

Code, running instructions.

For extra credit:

- Visualize the windows and the buffers (10pt)
- Implement a variable transmission speed coming from the application layer – sometimes there is nothing to send (10pt)
- Implement TCP-style flow control. (10pt)
- Implement TCP-style congestion control. (10pt)