Homework 1

# Due:April 5th, by mail to lboloni@eecs.ucf.edu

# Operation:

Create a simulator of the Go-Back-N sliding window protocol. Use a text-based output similar to the one below:

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| |-------|P4|->-------------|P5|->-------------------| |

| Source | | Dest |

| | | |

| |----------------<-|ACK2|---------------------------| |

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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:

-windowsize number

Specifies the size of the window

-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#). If you are using Visual C++ make sure you are not including libraries which require the environment.

# Deliverables

Package together into a zip, rar or tar.gz file the following:

* compiled application (for C and C++)
* source code
* README file explaining how to run it and what OS is the compiled application targeted to.

# 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)