ITCS 6166 – Computer Communications and Networks

Project 2 – Implementation and Simulation of Go-Back-N and Selective Repeat Protocols

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In this program we have two files: one, inputsfile -which have arguments or parameters to be passed to Mysender and second, fileread.txt -which is the data to be sent to receiver by sender.

Two Protocols are implemented : 1. Go back N and 2. Selective Repeat

1. Go back N:
   Window size = 2^m-1
   Receive window size = 1
   The required packet seq number with ACK

2. Selective Repeat:
   Window size = 2^{m-1}
   Receive window size = 2^{m-1}
   The received packet seq number with ACK

The two protocols are in same program. They can be executed by changing the inputsfile contents. They also have checksum to detect the data if it is corrupted. A timer is included to detect timeout. If ACK is received after timeout, then it is again sent. Duplicate packets are deleted. In GBN, if packet 1,2,3,4 are sent and packet 3 is lost (all other packets sent successfully), then receiver will send ACK3. In response to this, the sender will send packets 3,4,5,6 (if 5,6 are to be sent else only 3,4). In SR, its receive window size is same as sending window size and receiver ACKs for the received packets. In both cases, if there is timeout, ACK loss or data packet loss, the sender will resend the packets.

Steps to execute:

1. Open two command windows – for Mysender.java and Myreceiver.java
2. Create a file of any filename in same directory as .java files (inputsfile)
3. It should be
   For eg:
   SR
   4
   20
   1000
   500

(Values in different line)

4. Create another file – having file name “fileread.txt”. Write anything in fileread.txt . This is the data that is sent to the Receiver.
5. Compile both
   ‘javac Mysender.java’
   ‘javac Myreceiver.java’
6. Execute Myreceiver first and then Mysender
   ‘Java Myreceiver portNum’
   ‘Java Mysender text_file_name(with ext) portNum seg’
   (The two port names should be same to communicate)