Assignment-6: Congestion Control

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1 Documentation

There are 3 files (must be kept in same folder):

1. *client.c* : file contains client side code

2. *server.c* : file contains server side code

3. *Makefile*

This is an implementation of congestion control algorithm over the sliding window ARQ (Go-Back-N) protocol. The compilation and running procedure are detailed below. A time-out of 1 second has been set.

2 Compilation

To compile, run make as:

```
aayush@aayush-Inspiron-5558:~$ make
gcc -o client client.c
gcc -o server server.c
```

3 Running

To run server, enter executable, port number and drop probability on command line:

```
aayush@aayush-Inspiron-5558:~$ ./server 8000 0.4
```

To run client, enter executable, ip and port number of server on command line:

```
vivek@vivek-Lenovo-G50-30:~$ ./client 10.147.89.213 8000
```

4 Sample input-output

```
vivek@vivek-Lenovo-G50-30:~$ ./client 10.147.89.213 8000
Enter file name: photo.jpg
Size of file is 1775776 bytes
Number of chunks is 1735

Transmitted packets with sequence numbers 1 to 3 with window size 3
```

```
Timeout occured.....
Retransmitted Packet with sequence numbers 1 to 1 with window size 1

Transmitted packets with sequence numbers 1 to 1 with window size 1
Transmitted packets with sequence numbers 2 to 3 with window size 2
.
.
.
Transmitted packets with sequence numbers 188 to 375 with window size 188
Transmitted packets with sequence numbers 189 to 377 with window size 189

Timeout occured.....
Retransmitted Packet with sequence numbers 189 to 282 with window size 94

Transmitted packets with sequence numbers 189 to 282 with window size 94
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.
.
MD5 matched
1538 packets were retransmitted
aayush@aayush-Inspiron-5558:~/Desktop/CN/P2P_chat$ ./server 8000 0.4
Received packet with sequence number 1
Received packet with sequence number 2
Received packet with sequence number 3
Size of file is 1775776 bytes
No of chunks is 1735
Received packet with sequence no 4, expected packet with sequence no 4 Sending ack 4
Received packet with sequence no 5, expected packet with sequence no 5 Sending ack 5
.
.
.
Received packet with sequence no 188, expected packet with sequence no 188 Sending ack 188
Received packet with sequence no 190, expected packet with sequence no 189 Sending ack 188
Received packet with sequence no 192, expected packet with sequence no 189 Sending ack 188
Received packet with sequence no 194, expected packet with sequence no 189 Sending ack 188
.
.
.
File received
```