Assignment - 6 Usage
Slow Start in Go Back N ARQ over UDP

The Program consists of two files - udparq_server.c and udparq_client.cpp.
To build the files using makefile , type the following
<p style="color:magenta">make build</p>
Then to run the server program , open a terminal and type
<p style="color:blue">./udpserver <portno></p>
Then it prompts for the packet drop percentage probability in the server.
To run the client program , open another terminal and type
<p style="color:blue">./udpclient <host> <portno></p>
<host> and <portno> are the address and port no of the server.
Then it asks to provide the filename for transfer.

Working :
The client starts with a Initial window size of 3 , and then onwards it increases the window size by no of acks received. If no ack is received then it halfs the window size. The window size is increased until it reaches a MAX_WINDOW = 10,000 defined in the client and server program. There is also a limit to the sequence no , which is MAXSEQ = 1000000 , which is also defined in the both programs.

Sample Input and Output :

Terminal — 11:01 PM

hemanth@hemanth-ubuntu-hp: ~/Desktop/Networks/Lab test 1

```
hemanth@hemanth-ubuntu-hp:~/Desktop/Networks/Lab test 1$ ./udpserver 4566
Enter the Drop percentage(integer) of the server in [0,100] - 30
server received datagram from localhost (127.0.0.1)
server received 25/25 bytes: Hello TCP_client.c 3498 4
OK file - TCP_client.c filename - 3498 chunks - 4
Dropped packet - 1
Dropped packet - 2
Dropped packet - 2
total - 3498

Received the file correctly
ACK has been received - ACK OK
```

hemanth@hemanth-ubuntu-hp: ~/Desktop/Networks/Lab test 1

```
hemanth@hemanth-ubuntu-hp:~/Desktop/Networks/Lab test 1$ ./udpclient localhos
t 4566
Enter the name of the file - TCP_client.c
Echo from server: Hello TCP_client.c 3498 4
Starting the File Transfer
ACK is ACK0
ACK is ACK1
ACK is ACK1
ACK is ACK3

File Transfer operation Complete
Echo from server: 37b980beaad24048ecb2ad9646524c74
Original Hash is 37b980beaad24048ecb2ad9646524c74

MD5 sum matched
hemanth@hemanth-ubuntu-hp:~/Desktop/Networks/Lab test 1$
```


Terminal — 11:04 PM

hemanth@hemanth-ubuntu-hp: ~/Desktop/Networks/Lab test 1

```
hemanth@hemanth-ubuntu-hp:~/Desktop/Networks/Lab test 1$ ./udpserver 4566
Enter the Drop percentage(integer) of the server in [0,100] - 10
server received datagram from localhost (127.0.0.1)
server received 25/25 bytes: Hello test.agc 102170 100
OK file - test.agc filename - 102170 chunks - 100
Dropped packet - 0
Dropped packet - 4
Dropped packet - 19
Dropped packet - 24
Dropped packet - 31
Dropped packet - 43
Dropped packet - 57
Dropped packet - 58
Dropped packet - 65
Dropped packet - 68
Dropped packet - 84
Dropped packet - 95
total - 102170

Received the file correctly
ACK has been received - ACK OK
```

hemanth@hemanth-ubuntu-hp: ~/Desktop/Networks/Lab test 1

```
hemanth@hemanth-ubuntu-hp:~/Desktop/Networks/Lab test 1$ ./udpclient localhos
t 4566
Enter the name of the file - test.agc
Echo from server: Hello test.agc 102170 100
Starting the File Transfer
ACK is ACK-1
ACK is ACK1
ACK is ACK3
ACK is ACK9
ACK is ACK18
ACK is ACK23
ACK is ACK30
ACK is ACK42
ACK is ACK56
ACK is ACK57
ACK is ACK64
ACK is ACK67
ACK is ACK83
ACK is ACK94
ACK is ACK99

File Transfer operation Complete
Echo from server: ac92c05549e9fa65437e2bdf53b0a7b0
Original Hash is ac92c05549e9fa65437e2bdf53b0a7b0

MD5 sum matched
hemanth@hemanth-ubuntu-hp:~/Desktop/Networks/Lab test 1$
```