Reliable Data Transport Protocol Implementation

Abanob Nageh 3727

Abdallah Fahmi 3635

Implemented Protocols:

1. Stop & Wait.
2. Selective Repeat.
3. Go Back N.

Network System Analysis:

For a file split into 219 packets.

1) Stop & Wait:

PLP = 1%, time taken = 118.165 seconds.

PLP = 5%, time taken = 126.978 seconds.

PLP = 10%, time taken = 147.124 seconds.

PLP = 30%, time taken = 229.641 seconds.

2) Selective Repeat:

PLP = 1%, time taken = 6.829 seconds.

PLP = 5%, time taken = 7.380 seconds.

PLP = 10%, time taken = 7.019 seconds.

PLP = 30%, time taken = 9.141 seconds.

3) Go Back N:

PLP = 1%, time taken = 6.795 seconds.

PLP = 5%, time taken = 6.925 seconds.

PLP = 10%, time taken = 7.511 seconds.

PLP = 30%, time taken = 13.745 seconds.

How To Use:

There are two ways to use the program.

1) Read from files.

To run from file use the code already written inside the main function for reading from file.

Two files one for client and one for server are included.

2) Create inside main function.

Use the code that creates clients and servers directly in the main function.

Bonus:

In addition to implementing the three protocols this project also uses Huffman compression to decrease the size of the file before sending.

The program creates three files when used:

1) File that ends with “-compressed.txt”: is the compressed file on the server’s side.
2) File that start with ‘R’ and end with “-compressed.txt” is the file sent by the server to the client.
3) File that ends with “-decompressed” is that file after decompressing at the client.