Programming Assignment #1

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Server and client for downloading 5 files (1, 2, 3, 4, 5) sequentially

Logs in **5_files_serially** folder.

we see that the files get downloaded fast and all the md5's match in the first try.

Server and client for downloading 5 files (1, 2, 3, 4, 5) parallely

Logs in **5_files_parallely** folder.

We see that 4 files downloaded successfully with md5's matching, but 1 file did not download properly and it is only after 7 re tries that we are able to download the file properly.

By comparing both the sequential and parallel transfers we see that sequential takes less time than parallel. This might change based on the implementation of how both are implemented. We are sending an additional header for parallel downloads which takes up 20 bytes(NUMBER_SIZE) per PACKET of size 1024. This might be the reason for parallel downloads being slower.

Automated testing with 8 clients

Can be run using **test.sh** script.

Logs in **8_clients_parallely** & **8_clients_sequentially** folders

This is achieved with the help of gnome-terminal and a bash script.

From the logs we see that Parallel transfers take more time than sequential transfers. Additionally, we see that for parallel downloads we have around 3 failures.

Stepped testing starting from 8 clients to 64 clients

Can be run using **stepTest.sh**

Logs in **Sequential_8_to_64_clients** & **Parallel_8_to_64_clients** folders

For sequential steps:

> Overall average error: 0.0
>
> Overall average time: 0.002196299431933807

For Parallel steps:

Overall average error: 3.386135114885115

Overall average time: 0.004014801241790616

The graph evaluation is present in ../Docs/Report.pdf