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Internet Technology CS352

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Final Report Project 4

Reliable Data Transfer

USE PYTHON 3

Question 1:

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Question 2:

We collaborated by breaking the project into parts given to us in the assignment. Paul handled the stop and wait and reliable transmission. Philip took part in ensuring that timeouts were correct, using and creating the select module correctly, and handled the organization and creation of the GITHUB repository.

We also consulted with the Professor Badri Nath, who provided a thorough explanation of how the sliding window should operate.

Question 3:

All portions of the code work properly.

Question 4:

There were difficulties in terms of using the select library as it took time to implement. Also, we had to take to account that the socket might break on Windows, so we had to check for cases where that was happening and try and catch accordingly. For example, if the socket broke then we would have to reconnect and send back a transmission.

Question 5:

Two observations learned from doing this project were that the inner mechanisms of reliable transport using a sliding window are crucially determined by the left and right window pointers. That these values must be constantly updated for there to be reliability or more packets to be sent. For example, just getting the acknowledgement does very little if the windows aren't constantly sliding.

We learned that pipelining dramatically increases transmission speed of data across the network. Using stop and wait took a very long time on the long-input.txt test case, but a bearable amount

of time when pipelining. We learned that download/upload speed is pretty much controlled by the size of the sliding window, as long as the network can support the data transfer.