John Parkhurst

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I ran into a lot of issues with this assignment when I started implementing functioning pipe architecture. Despite being able to split the create multiple threads and read each line, I was unable to get the threads to communicate with one another. Currently, they are able to read their "set" lines(0-5 6-11) and determine if the line belongs to the thread, and then print it out to a file. What I was unable was to implement was the communication between them after this and have them communicate the remaining lines and send them the way of the proper thread. Using pipes for this I was inexperienced with and was unable to research how best to implement this in the time frame. Given more time I would do more research on interprocess communication to allow the program to move on.

I made a few major decisions on data structures such as using a structure to pass all the required arguments to the program. One mistake I definitely made looking back was passing the file in the structure when I should have had the file imported to the program and then had all the threads cross-reference the shared list. This would have been the proper way to do it and used mutex locks when accessing said data. So given more time I would go back and change that first so I could implement proper interprocess communication.

It currently does not function to the specifications of the assignment for either version. Right now it will run and split to the correct amount of threads and read the specified lines and output them to a file. However, there is no functioning pipe architecture and no interprocess communication so the threads can not continue after a single run.

Dup2 pipes would be the best pipe for both versions due to the single output nature of the architectures. There is a race condition if they try to access the list at the same time because it would be based on indexes of the file and if we remove one then the data is changed for the

other. They do not need to tell the other processes they are terminating however since that would not effect the other processes.