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ECE-322

Write-Up for Program 1

This assignment tasked us with creating a program that emulated a producer-consumer type problem, using the two functions pipe() and fork(). Fork() was used to allow two simultaneous processes to operate both the consumer and producer, while pipe was used to control the file descriptor boundaries between the two ends of the “pipe”. One of the major points that you needed to focus on when writing this code, was to differentiate the code block for both the parent and the child, as they have different responsibilities in this code. We did this by catching the parent in the if, and leaving an else clause for a child.

Additionally, a with pipe() allowing the producer and consumer to communicate, a problem we faced right off the bat was making sure that the data that was going in, also came out correctly on the other side. For a while we struggled with the last value sent by the producer coming out on the consumers end twice. We realized that we had to move our “break” clause to right after the consumer read the received value, so when the EOF value is sent by the producer, the consumer doesn't accidentally increment the statistics counts on the way out.

Overall, this assignment provided us with a great opportunity to explore the uses of pipe() and fork() and gain in-depth experience on some of the common issues one might face when they use both functions.