Project 1 Report

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For our design, we used C++ to perform file copying operations using process forking and inter-process communication with pipes. Upon execution, it verifies the presence of both an input and an output file via command-line arguments. Utilizing the fork() system call, it generates a child process to manage the file reading task while the parent process handles the writing task. We created two pipes, filePipe and bufferSizePipe, which are established to facilitate communication between the parent and child processes. The child process determines the size of the input file and reads its contents into a dynamically allocated buffer. Meanwhile, the parent process receives this data and writes it to the designated output file. Error handling mechanisms are incorporated to address scenarios where the input file is inaccessible or non-existent, ensuring the reliability of the file copying process.