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CECS 326 sect 02

FileCopy Report Breakdown

Objective:
The project involved creating a C program that copies a file from a source location to a destination location using inter-process communication via a pipe. The implementation was divided between Melody and Andrea.

Video link: https://youtu.be/2-dilRtThNk

Melody's Implementations/Contributions:
Melody was responsible for **parsing the command-line arguments** to ensure the program received the correct number of arguments. She implemented logic to display an error message if the arguments were incorrect, guiding users on how to use the program. Melody also took on the responsibility of opening the source file in read mode and the destination file in write mode using the open() system call. She ensured error handling was in place in case either of the files failed to open, preventing crashes and giving clear feedback to the user. Additionally, Melody implemented the fork() system call to create a child process and set up logic for both the parent and child processes. She ensured that all file descriptors—such as those for the pipe, source file, and destination file—were properly closed after the file operations were complete, preventing resource leaks and improving program efficiency.

Andrea's Implementations/Contributions:
Andrea focused on creating the pipe using the pipe() system call, which acted as the communication channel between the parent and child processes. In the parent process, Andrea implemented the logic to read from the source file and write the data to the pipe, while ensuring error handling for both write() and read() operations. She also worked on the child process, where she implemented reading data from the pipe and writing it to the destination file. Like Melody, Andrea took care of error handling and ensured that the appropriate resources were closed after the operations were complete, ensuring stability and preventing file descriptor leaks. Lastly, Andrea was responsible for compiling and testing the program. She tested it by copying various files from different source locations to different destination files, confirming that the program worked correctly in all cases.

Reference:
For further reading on using fork() and pipe() in C, we referenced the following resource: GeeksforGeeks - C Program to Demonstrate Fork and Pipe. This resource helped in understanding the implementation and working of fork() and pipe() in a real-world application scenario.