

Version 1 of my program first counts the files by opening the directory and looping through. Once done, it calls the distributor process which splits the work up into n portions. Each call makes n file lists representing which of its assigned files are going to be associated with the processor function. I chose to use char arrays for almost all of this, because I found them more mutable. Once done, the main function calls the process function on the entire list of lists and loops through each sublist that was created for its process index. The processor reads the lines and trims them into the final program lines while organizing it, then returns a finished string representing its portion of the final file. The main function concatenates these strings and writes them all to a file.

Version 2 of my program sends the files directly to the distributors using subprocesses. The distributors all count the files, but they split up the work of writing file names. They directly check the process index in the file and write them directly to a new file. Once done they exit because they are no longer necessary. The main function repeats the process with the process function, creating a set of subprocesses that read the file lines and print them all to a single organized file then exit. Once those are all done the main function reads the files and prints the data to the output file name.

Version 3 of my program works exactly as version 2, but runs a new executable rather than continuing the current process with the current variables on the stack.

My **script** takes an input directory and an output image name, finds the maximum subprocess number for the source files, and executes the most recent version with the subprocess number, input directory name, and output image file as parameters.

I think it's rather obvious that I didn't almost no testing for incorrect input parameters. I assume that every input parameter is always valid. Aside from that, everything in my program including the Null terminating values on the char arrays is all calculated. I check the end of line character when reading every file to make sure it always matches by the time we make the full file string, so the format always matches.