

# System Programming HW2

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## 1 Problems and Solutions

First, I specified a file descriptor to the file given on the command line. Because of my program runs for 8 elements, I runned 8 forks. I stored the pid of every child formed in the global array. Before the parent process, I stopped the children with sigsuspend so that the child processes would not start running. Then I sent a signal to all children with the mother process to start trading by sending a sigusr1 signal.

In child processes, I read the file with read and put it in a buffer. I took the line with i.process in the buffer, parsed it and sent it to the lagrange function. While parsing, I converted the numbers between commas to double. I have put the odd columns as x and even column as y into different arrays.(x,y,x,y,x,y). I converted the value returned from the Lagrange function into a string by combining the x and y arrays with the array accordingly. Then I added the newly created string to the file instead of the i.line of the buffer. Since the write () function caused a problem, I wrote the buffer I added completely to the file. I locked the file while I was working on the file so that each process reads and write the file correctly. (I quoted the Lagrange function from Geeksforgeeks.)

## 2 Pass File

In general, I cite the expectations and shortcomings for convenience:

- First of all, I created the processes.

- I locked the file using file lock.

- I did parent and child interaction using sigusr and sigsuspend.

- I've completed the Wall Valgrid checks.

- In case of any errors, I have printed the information with stderr.

The missing part is the calculation of the average and the coefficient after all the processes are finished.

The signal I had to use after all the processes were finished broke my synchronization. So I had to remove it. Therefore, I used waitpidd to block zombies and orphan, while the program is ending.

As I did while reading, the part of parsing and averaging remained incomplete because of this.