CSE 344 – SYSTEM PROGRAMING – HW2

REPORT

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In this homework, I worked with two programs firstly. I wrote a parent file and a child file. After making sure that these two programs worked well, I combined them.

I used binary text input in this homework. So, my input file contains only 1 and 0's. I takes from 8 bit (1 byte) from the input file and convert them to unsigned int.

Child process has to wait until parent create and write something to the mkstemp temporary file. In this purpose, I used sigsuspend functions in the child process. So, the process doesn't make any busy waiting mechanism. And also, I use the SIGUSR2 signal. When the parent write a line, It throws a SIGUSR2. And then, the child catch it end read the file. Also, all of the read and write operations to/from file is include file locking operations. So, there is no conflict between the processes.

Also, the child has to wait for parent finish. In this purpose, I use SIGUSR1 signal (also, according to HW instructions). When the child take the sigusr1 signal, it reads the the temp file one more time and then closes with its messages. And also, it removes the tempfile.

Another problem in the homework is handling of the Critical Region Interrupt. So, I created signal handling functions and if a process takes a SIGINT signal, handling functions catch and ignore it with a message. In the homework text, there is also SIGSTOP signal. But to sigstop and sigkill signals can't blocked or handled.

Another ambiguity is SIGTERM. For this, similar to other signal handler, I created a handler function. If this handler catches a SIGTERM signal from the Terminal, it finishes the process gracefully and also, it closes the open files, removes the input and temporary file (according to HW instructions).

I followed the specified rules in the HW instructions. I used getopt() for the parsing command line, all mathematical operations in 3 decimal points, etc...

And also, I wrote the all operation functions (mae, mse, least square, ...) in the code. I didn't use any one of the third party software.

Thank you...