CSE344-HOMEWORK #3

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1 Part I

1.1 INTRODUCTION

This Project I used system calls . By using system calls read,read some matrices and multypay them.
I did not use stdlib.h functions for input and output operations.I wrote matrix
library to do some operations in matrices ..And I have to handle argument stuff so
I wrote a argument library which named arg.h. while implementing arh.h I used getopt().
In this project I used :

*read(),

pipe,

signal,

signal haldlers,

kill,

getpid

fucntions.

1.2 Task 1: program

The program to be developed involves 5 processes: a parent P1 and its 4 children P2, P3, P4 and P5. The main idea is for P1 to receive as input 2 square matrices, distribute the calculation of their product to its children, collect from them the partial outputs, combine them, and then calculate the singular values of the product matrix (you are free to copy paste from external sources for the singular value calculation stage). The program (P1) will receive as command-line arguments the paths of 2 regular files and a positive integer n

./program -i inputPathA -j inputPathB -n 8

P1 will then read $(2^n)x(2^n)$ characters from each of the input files. Each character it reads will be converted to its ASCII code integer equivalent. If there are not sufficient characters in the files then it will print an error message and exit gracefully. These numerical values will be interpreted as the rows of a $(2^n)x(2^n)$ square matrix. Hence you will have read the contents of two matrices A and B; one from each input file respectively

1.3 Task 2: p1,p2,p3,p4

we crate 4 process to calculate values of the result matrix 1/4 and after this calculation we get there results and getting new result by combining them together.

1.4 HOW CAN I SOLVE

I synchronized 5 process by using pipes.Every process do its job after that sent result of these operation parent process wait them ,get results and combine them.Create new matrix .

And I use signal handler for SIGINT signal.If any process receive SIGINT signal , free memory and kill all process.