ICS 431
Term Project

Write a program that creates two pipes then forks two children. These two children will register their intentions of handling alarm signals then pause immediately.

The parent -after forking the two children- will create two shared memory blocks (with different random keys) to share with children (each child will share a single distinct memory block with the parent). After the creation of the memory blocks, the parent will send an alarm signal to both children to wake them up.

When the two children receive their alarm signals, they will wake up from their pause state, and each one of them will listen to a distinct pipe. The parent will send the keys of shared memory blocks –i.e. each shared memory key to its corresponding child- using the pipes.

The first child should now access the first shared memory block created by the parent using the key sent through the pipe. It will read a 3 by 4 integer matrix from the file "matrix1.txt" to this first shared memory block. At this point, the first child terminates after de-attaching the first shared memory block.

The second child should access the second shared memory block created by the parent using the key sent through the pipe. It will read a 4 by 3 integer matrix from the file "matrix2.txt" to this second shared memory block. At this point, the second child terminates after de-attaching the second shared memory block.

Meanwhile, the parent should be waiting for both children to terminate. After both children terminate execution, the parent should read the two matrices from the two different shared memory blocks, then multiply them and output the resulting 3 by 3 matrix to the screen.

Both input files –i.e. matrix1.txt and matrix2.txt – are posted for your reference.