CS 74200 Project 2 Linux Shared Memory

In this project, the parent and the child processes establish a shared-memory object using POSIX share memory IPC in a Linux environment. The parent process writes a positive integer n in the shared-memory object. The child process overwrites the shared-memory object with the first n numbers of the Fibonacci sequence 0, 1, 1, 2, 3, 5, 8, 13, ….

Project Details

1. See POSIX share memory program examples in Section 3.5.1.
2. The parent process (fib\_shm\_parent.c) creates a shared-memory object and writes the value n in the object. The number n is passed on the command line.

int main(int argc, char \*argv[])

{

     int n,

if (argc != 1 || atoi(argv[1] < 0)

{

printf(“Please provide a positive number”);

return 0;

}

n = atoi(argv[1];

}

1. The parent process creates the child process which calls execlp with child process executable fib\_shm\_child, and wait for it to terminate and outputs the sequence when the child process completes.
2. The child process (fib\_shm\_child.c) opens the share memory object to read the value n and overwrite the value n by the first n numbers of the Fibonacci sequence.
3. Compile fib\_shm\_parent.c with –o to get an executable file fib\_shm\_parent
4. Compile fib\_shm\_child.c with –o to get an executable file fib\_shm\_child
5. Use Linux commands script project2output.txt and exit to get the terminal output from executing the parent process

Submission

1. Provide two source code files and the output file project2output.txt in a zipped file
2. Submit the zipped file as an attachment.

Grading

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| Grading Rubric | |
| Project | 100 points |