CSE 4502 (SWE) [Operating Systems Lab]
Lab # 03

Lab Tasks:

1. Write a C program using the fork() system call that uses the Bobble Sorting algorithm in the child process to sort the given random numbers. In the parent process, you search a number using the Binary Search Algorithm. So, you will take two inputs, a set of random numbers and a searched value. For example, when [1,4,8,5,3,2] and "4" are provided, [1,4,8,5,3,2] will be sorted in the child process. In the parent process, "4" will be searched from that sorted numbers. Have the parent invoke the wait() call to wait for the child process to complete before exiting the program. Perform necessary error checking to ensure that a non-negative number is passed on the command line. Write two different C programs, one implementing pipe and another shared memory techniques.
2. Write a C program that generates the Fibonacci sequence. This program should work as follows: The user will enter on the command line the number of Fibonacci numbers that the program is to generate. The program will then create a child process that will generate the Fibonacci numbers. The generated numbers then will be passed to the parent process. When the child process finishes execution, the parent process will output the sequence generated by the child process. Because the parent process cannot begin outputting the Fibonacci sequence until the child process finishes, this will require having the parent process wait for the child process to finish. Write two different C programs, one implementing pipe and another shared memory techniques.