Lab 6 - Description

(Time management with processes)

Lab Overview:

For this lab, we will be learning how to use signals to perform time scheduling for processes in C. This is an important concept as any real foray into parallel processing and OS management requires the direct management of processes in order to maximize the efficiency of the system.

Core Tasks:

1. Add a loop to the provided program's child section that runs for 10 seconds.
2. Using `SIGSTOP` and `SIGCONT`, stutter the program.

Task Details:

1. Add a loop to the provided program's child section that runs for 10 seconds.
    a. This loop will run for exactly 10 seconds before breaking from the loop and exiting. Each second it will print the following message: " **Child process <pid> - Still alive after for <x> seconds"**. Your print must match this **exactly**.
2. Using `SIGSTOP` and `SIGCONT`, stutter the program.
    a. Sleep the parent for 1 second before you begin sending signals.
    b. Your parent must d the following until the child exits.
        i. Send `SIGSTOP` to the child.
        ii. Sleep for 3 seconds.
        iii. Send `SIGCONT` to the child.
        iv. Sleep for 1 second

Remarks:

This lab is very simple. If you wish to learn more about job scheduling for the project see the following resource:
https://www.gnu.org/software/libc/manual/html_node/Job-Control.html#Job-Control

Some code has been attached to get you started. **WARNING**: Do not copy this code and use it in your project. You **will** receive a 0 if you do.

Submission Requirements:

In order to receive any credit for a lab, completion of the labs' core tasks must be demonstrated to the TA's. In order to receive points for this lab the student must do the following:

1. Compile and run your code (we must see it compile and execute successfully).
2. Valgrind output with leak-check and mem-check showing no memory leaks.
3. Submit your file to Canvas.
    a. The submission must take place before the end of the lab. Canvas will lock the submission after your lab time. If you are switching your lab day (perfectly fine), you must tell us before your assigned day.