

Operating Systems - 1: CS3510

Programming Assignment 1: Computation of Collatz Numbers

- EE18BTECH11023
- Kamparaju Srikanth

Program Design:

Firstly using the arguments of the main function for the input through command line arguments. Please follow the instructions given in the *readme.txt* file for compiling and running the program. After taking the input through command line arguments, I have checked whether the number entered is greater than 0 or not. Then I have requested a fork call that returns the process ID(PID) of the process that is proceeding for the next. I have checked if the PID is zero or not denoting the child process and if it is zero I have implemented the *printCollatz()* function to ensure the modularity of the code. Else if the process is a parent process I have requested it to wait until the child process completes its execution using the *wait()* function in the *sys/wait.h* header file. For the child process in the *printCollatz* function until the passed argument is not equal to 1 I have run a while loop and every time checking and changing the number as required for the collatz number. Finally, after the child process exits, the parent process exits from the *wait()* call(NULL represents wait for an indefinite time until its child process exits), and the program code exits.