Assignment 3

Operating System Lab (CS342)

Department of CSE, IIT Patna

Date:- 25-Jan-2022 Deadline:- 25-Jan, 11:59 PM

Instructions:

1. All the assignments should be completed and uploaded before the deadline. Marks will be deducted for the submissions made after the deadline.
2. Markings will be based on the correctness and soundness of the outputs. Marks will be deducted in case of plagiarism.
3. Proper indentation & appropriate comments (if necessary) are mandatory.
4. You should zip all the required files and name the zip file as roll_no .zip , eg. 1501cs11.zip.
5. 5. Provide a **readme** file with all the execution details (commands to execute) of the codes and outputs/observations (if necessary).
6. Upload your assignment (the zip file) in the following link:https://www.dropbox.com/request/us4O1P4Vgc1cE1Ddlkd4

Questions:

1. Create 2 child processes using fork() system call, Child 1 for adding two integers and Child 2 for multiplying two integers. The parent process should divide the results of Child 2 by the result of Child 1. All the results must be printed along with the respective process ids.

2. Modify the box given below using fork() system calls over a parent process to print the following output.

Output:

Hello Hello Hello Hello Hello Hello Hello Hello

```
#include <stdio.h>

#include <sys/types.h>

#include <unistd.h>

#include <stdlib.h>

int func(){

        fork calls to get desired output

      printf("Hello\t");

}

int main() {

      func();

      printf("Hello\t");

      exit(0);

}
```

3. Write two shell scripts named task1.sh and task2.sh for the following tasks respectively:

- A shell program that will create an array of size N having values n1 , n2 ,n3..... nN. Print a message “Search found along with its index of searched item S”. All the values(N, ni , S) should be taken from the Command Line Argument(CLA). Note: If the searched item does not contain in the array then output an error message.
- A recursive shell program that should output the product of the factorial of a number with the sum of all the prime no. less than equal to that number. Take N from CLA. E.g : N = n , Output = fact(n) * PrimeNoLessThan(n)
  = n * fact(n-1) * (if(n∈ Prime number) + PrimeNoLessThan(n-1)).
- Now, write a C program which creates one parent process and one child process. The child process will execute the task1.sh and the parent process will execute the task2.sh.