Operating Systems Laboratory

Master of Computer Application
First Year, Second Semester
Session: 2022-23

Assignment - IV

Date: 24/04/2023

1. Write a C program to create a child process. The parent process must wait until the child finishes. Both the processes must print their own pid and parent pid. Additionally the parent process should print the exit status of the child.

2. Write a C program which prints prime numbers between the range 1 to 10,00,000 by creating ten child processes and subdividing the task equally among all child processes, i.e., the first child should print prime numbers in the range 1 to 1,00,000, the second child in the range 1,00,001 to 2,00,000, ... The child processes must run in parallel and the parent process must wait until all the child processes finish.

3. Write a C program which creates a child process. The parent process sends a string (input by user) which the child process inspects and sends "YES" back to the parent if the string is a palindrome, otherwise it sends "NO". The IPC to be used is pipe. Both the processes terminate when the input string is "quit".

4. Write a C program which prints the following menu

    1. ls
    2. pwd
    3. uname
    4. exit

    When, the user provides an input, the parent process creates a child process [if user's choice is between 1-3] and executes the corresponding command [use execv() system call]. The main process waits for the child to finish and displays the menu again. The parent process terminates if user's choice is 4.