Operating Systems Lab 2021

Assignment Set 1 :

Submission Deadline 29th Sept 2021

Objectives: to learn the following:

- **Race condition**
- **ps, kill, cat, chmod ls, pwd, etc. commands**
- **fork() system call**
- **speedup processing creating multiple processes using fork()**

A1) Write a code such that it takes input n and then the parent process (p) creates n number of child processes (c1, c2, c3,…..cn) all of them as its direct descendent i.e. p is the parent of c1, c2, c3 …. and also cn. Each process including the parent should display the pid & ppid once in the terminal and also store the values in a common file (log.txt). The parent can create the file log.txt and all its child processes can get access it.

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A2) Write a code such that it takes input n and then the parent process p creates a child c1, then c1 creates c2, c2 creates c3… and so on till cn. Each process including the parent should display the pid & ppid once in the terminal and also store the values in a common file (log.txt). The parent can create the file log.txt and all its child processes can get access it.

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A3) Write a suitable code to speedup finding all prime numbers in a given range [1, N], creating M child processes by the parent process.

First try to run it for two processes then generalize it for M child processes

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A4) Learn the use of ps, kill, cat, chmod ls, pwd, etc. commands

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A5) Execute the balance update code discussed in the class and have a feel of race condition in OS