National University of Computer and Emerging Sciences
Chiniot-Faisalabad Campus

Lab 04

CL2006 – Operating System - Lab

Course Instructor	**Juhinah Batool Asif**
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FAST School of Computing

Department Artificial Intelligence

Instructions

1. Make a PDF document with the convention “ROLLNO_ LAB#_ SECTION” and put all your source code and snapshots of its output in it.

2. Plagiarism is strictly prohibited, if you take a code snippet off the internet, mention its reference.

3. Do not discuss solutions with one another. Copying the solution from any source can lead to ZERO marks.

Lab Tasks:

➢ Task 1

Write a program using fork() system call to create Simple Arithmetic Operations in Child Processes P1 and P2 as:

This program creates two child processes:

- **P1** calculates the sum of two numbers.
- **P2** calculates the product of two numbers.

➢ Task 2

Write a program using the fork() system call to create a hierarchy of 3 processes such that P2 is the child of P1 and P1 is the child of P. Also include a print statement for each process, something like (printf("I'm the 1st Child Process %d and my parent id %d", getpid(), getppid());)

➢ Task 3

Write a program (like **multiplication.c/cpp files**) that performs an initial task, then uses exec() to replace itself with another program (like **multiplication.c/cpp files**) that performs a different task.

➢ Task 4

Create a parent-child relationship between two processes. The parent should print two statements:

- Parent (P) is having ID <PID>
- ID of P's Child is <PID_of_Child>

The child should print two statements:

- C) Child is having ID <PID>
- D) My Parent ID is <PID_of_Parent>

Make use of wait() in such a manner that the order of the four statements A, B, C and D is:

A

C

D

B