OPERATING SYSTEMS

JAN-MAY 2023

LAB ASSIGNMENT 1

AIM: Advanced concepts in OS, shell, and processes in general.

Q1. Recall that every process runs in one of two modes at any time: user mode and kernel mode. It runs in user mode when it is executing instructions / code from the user. It executes in kernel mode when running code corresponding to system calls etc.

Compare (qualitatively) the programs “cpu-no-print.C” and “cpu-print.C” in terms of the amount of time each spends in the user mode and kernel mode, using information from the proc file system. For examples, which programs spend more time in kernel mode than in user mode, and vice versa? Read through their code and justify your observations.

Q2. Consider the following commands that you can type in the bash shell: cd, ls, history, ps. Which of these are system programs that are simply executed by the bash shell, and which are implemented within the code of bash itself?

NOTE:

1. State your observations clearly on a document for each of these questions. Evaluation will be based on your comments. Paste snapshots of the output wherever necessary.

2. This is an individual assignment.

3. Marks Distribution: Submission + VIVA= 10 M + 15 M.