CSE325:OPERATING SYSTEMS LABORATORY

L:0 T:0 P:2 Credits:1

Course Outcomes: Through this course students should be able to

CO1 :: understand different inter process communication strategies.

CO2 :: analyze various system calls in order to utilize them effectively.

CO3 :: demonstrate various process management related tasks.

CO4 :: develop multithreaded processes using pthread library

CO5 :: apply the various synchronization problems to ensure data consistency using mutex and semaphores.

CO6 :: analyze different inter process communication strategies.

List of Practicals / Experiments:

Process creation and threading

- Creating processes
- Process duplication using fork()
- Creating threads using pthread
- Environment variables
- Replacing process image using execlp

Inter-process communication

- Pipes, popen and pclose functions
- Stream pipes, passing file descriptors
- Shared memory
- Message passing
- Remote Procedure calls

Introduction to Linux

- Basic Linux Commands: ls, cat, man, cd, touch, cp, mv, rmdir, mkdir, rm, chmod, pwd
- System Calls: Read, Write, Open
- Lseek

Synchronization

- Synchronization with Mutexes
- Synchronization with semaphores
- Race Condition

shell programming

- variables
- standard input/output redirection
- shell arithmetic
- flow control and decision making

Text Books:

1. BEGINING LINUX PROGRAMMING by NEIL MATHEW & RICHARD STONES, WILEY

References:

1. OPERATING SYSTEM CONCEPTS by ABRAHAM SILBERSCHATZ, GALVIN, WILEY

2. UNIX CONCEPTS AND APPLICATIONS by SUMITABHA DAS, Tata McGraw Hill, India