

PL206 Operating Systems Lab

Prerequisites: CS101, PL106

Lab Contents:

Overview of Unix

Files and Directories, processes, Signals, System calls and library functions, Unix standardization and Implementation, system data files, types of limits(conf)

The Environment of a UNIX process

Main environment, process termination, command line arguments, memory layout of a C program, memory allocation

Files and Directories

File I/O and efficiency, file system calls, dup functions, fcntl, stat functions, set uids, permissions, sticky bit, links, file times and utime function, directory creation and reading, mkdir, chdir etc, special files

Standard I/O library

Streams and file objects, positioning, reading and writing to streams, binary I/O, formatted I/O

Process control

Identifiers, fork, exec, wait functions, race conditions, changing user and group ids, process accounting and times, controlling terminals

Signals

Signal concept and function, unreliable signals, interrupted system calls, kill, raise, alarm, pause, sigsetjmp, sleep, abort, system functions

IPC

Pipes, popen and pclose functions, FIFOs, CoProcesses, Message Queues, msgget and msgsnd, msgctl functions, semaphores, semget, semctl, semop functions, shared memory, shmget, shmat, shmctl, shmdt functions

Main Reading

1. C and Unix Programming – Kerningham and Pike, Prentice Hall
2. Advanced Programming in the UNIX environment – W R Stevens, Pearson education Manuals