

UNIX INTERVALS AND SHELL PROGRAMMING

Unit 1

Introduction to the kernel: Architecture of the Unix, the buffer cache. Internal representation of files:-inode, accessing blocks, releasing blocks, structure of regular files, conversion of a path name to an inode, inode assignment to a new file, allocation of disk-block.

Unit 2

System calls for the file systems: OPEN, READ,WRITE,CLOSE,PIPES : the pipe system call, opening a named pipes, reading and writing pipes,closing pipes DUP,Mounting and Un-Mounting file system,LINK, UNLINK. System call for TIME and CLOCK.

Unit 3

The structure of processes : process states and transitions, layout of system memory, the context of a process, saving the context of the process,manipulation of the process address space.

Process Control : process creation, signals,process termination, awaiting process termination, the user-id of a process, changing the size of the process, the system BOOT and INIT process.

Unit 4

Shell Programming : Study of different types of Shell like C shell, Bourne Shell etc. Shellvariable, Shell script, Shell Command. Looping and Making choices: For Loop,While and Until, Passing arguments to scripts. Programming in different shells.

Unit 5

Inter Process Communication: Process Tracing, Network communication

Sockets Multiprocessor System : Problem of multiprocessor systems,Solution with Master and slave Processor, Solution with semaphores. Study of distributed Unix System.

BOOKS:

1. The design of Unix Operating System by Maurice J Bach.
2. Advanced Unix-A Programmer Guide by Stephen Prata.