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# ADVANCED OPERATING SYSTEMS
# (ELECTIVE-II)

**UNIT-I: Introduction to Operating Systems:**
Overview of computer system hardware, Instruction execution, I/O function, Interrupts, Memory hierarchy, I/O Communication techniques, Operating system objectives and functions, Evaluation of operating System

**UNIT-II: Introduction to UNIX and LINUX:**
Basic Commands & Command Arguments, Standard Input, Output, Input / Output Redirection, Filters and Editors, Shells and Operations

**UNIT-III:**
**System Calls:**
System calls and related file structures, Input / Output, Process creation & termination.
**Inter Process Communication:**
Introduction, File and record locking, Client – Server example, Pipes, FIFOs, Streams & Messages, Name Spaces, Systems V IPC, Message queues, Semaphores, Shared Memory, Sockets & TLI.

**UNIT-IV:**
**Introduction to Distributed Systems:**
Goals of distributed system, Hardware and software concepts, Design issues.
**Communication in Distributed Systems:**
Layered protocols, ATM networks, Client - Server model, Remote procedure call and Group communication.

**UNIT-V:**
**Synchronization in Distributed Systems:**
Clock synchronization, Mutual exclusion, E-tech algorithms, Bully algorithm, Ring algorithm, Atomic transactions
**Deadlocks:**
Deadlock in distributed systems, Distributed dead lock prevention and distributed dead lock detection.

**TEXT BOOKS:**


1. The Design of the UNIX Operating Systems – Maurice J. Bach, 1986,PHI.
2. Distributed Operating System - Andrew. S. Tanenbaum, 1994,PHI.
3. The Complete Reference LINUX – Richard Peterson, 4th Ed., McGraw –Hill.

**REFERENCE BOOKS:**


1. Operating Systems: Internal and Design Principles - Stallings, 6th Ed.,PE.
2. Modern Operating Systems - Andrew S Tanenbaum, 3rd Ed.,PE.
3. Operating System Principles - Abraham Silberchatz, Peter B. Galvin, Greg Gagne, 7th Ed., JohnWiley
4. UNIX User Guide – Ritchie &Yates.
5. UNIX Network Programming - W.Richard Stevens, 1998,PHI.