

Linux System Programming with UNIX Internals Batch Contents

In this batch we mainly focus on the System Programming on the Linux platform. For System programming we use C programming language.

To understand the operating systems design we consider UNIX operating system.

In this batch we cover below topics.

- History and Standards of UNIX operating system
- Fundamental Concepts of Operating systems
- Tasks of Operating Systems
- Kernel Architecture of Operating system
- System Programming Concepts
- File Subsystems
- File I/O
- File I/O Buffering
- File Attributes
- Directories and Links
- Streams and FILE Objects
- Standard Input, Standard Output, and Standard Error Section
- Buffering
- Opening a Stream
- Reading and Writing a Stream
- Standard I/O Efficiency Section
- Binary I/O
- Formatted I/O
- Temporary Files
- Processes subsystems
- Process Creation
- Process Termination
- Monitoring Child Processes
- Program Execution
- Process Creation and Program Execution in More Detail
- Process Credentials
- System and Process Information
- Process Priorities and Scheduling
- Process Resources
- Process Termination
- Command-Line Arguments Section
- Environment List
- Memory Layout of a C Program
- Advanced Process Subsystems
- Process Identifiers
- fork Function
- vfork Function
- exit Functions
- wait and waitpid Functions
- waitid Function
- exec Functions

- Process Accounting
- Process Times
- Signals: Fundamental Concepts
- Signals: Signal Handlers
- Signals: Advanced Features
- Threads: Introduction
- Threads: Thread Synchronization
- Daemons
- Thread Concepts
- Thread Identification
- Thread Creation
- Thread Termination
- Thread Synchronization
- Project build activity with Makefile
- Fundamentals of Shared Libraries
- Advanced Features of Shared Libraries
- Interprocess Communication Overview
- Pipes and FIFOs
- Introduction to System V IPC
- System V Message Queues
- System V Semaphores
- System V Shared Memory
- Memory Mappings
- Virtual Memory Operations
- Tracing System Calls
- Kernel module programming
- Device Driver introduction
- Device Driver programming

Batch Duration : 3.5 Months

Days : Saturday, Sunday

Timing : 5.30 to 8.30 PM

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