

CS - 22

Operating Systems Concepts with Unix / Linux**Unit : 1****Introduction, Process Management, Memory Management**

Meaning of OS

Functions of OS

Features of OS

OS Types (Features Point of View)

Introduction of OS process

- Process State Transition Diagram
- Process Scheduling
 - FCFS
 - SJN
 - Round Robin
 - Priority Base Non Preemptive
 - Priority Base Preemptive

Physical Memory and Virtual Memory

- Memory Allocation
- Contiguous Memory Allocation
- Noncontiguous Memory Allocation
- Virtual Memory Using Paging
- Virtual Memory Using Segmen

Unit : 2**Getting Started with Unix, Unix Shell Command, Text Editing With vi Editor,**

Unix Architecture

- Unix Features
- Types Of Shell (C, Bourn, Korn)
- Unix File System
 - Types Of Files
 - Ordinary Files
 - Directory Files
 - Device Files
- Unix File & Directory Permissions

Connecting Unix Shell : Telnet

- Login Commands passwd, logout, who, who am i, clear
- File / Directory Related Command
 - ls, cat, cd, pwd, mv, cp, ln, rm, rmdir,
 - mkdir, umask, chmod, chown, chgrp,
 - find,pg,more,less,head,tail,wc,touch
- Operators in Redirection & Piping

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Advance Tools

- Finding Patterns in Files
- grep,fgrep,egrep
- Working with columns and fields
- cut,paste,join
- Tools for sorting
- sort,uniq
- Comparing files : cmp,comm.,diff
- Changing Information in Files : tr,sed,
- Examining File Contents : od
- Monitoring Input and Output tee,script
- Tools For Displaying Date and Time cal,date
- Communications telnet,wall, write,mail,news,finger
- Process Related Commands :
- ps, command to run process in background,
- nice,kill,at,batch,cron, crontab,wait,sleep
- Concept of Mounting a File System
- mount command
- Concept of DeMounting a File System
- umount command
- Introduction of vi editor
- Modes in vi
- Switching mode in vi
- Cursor movement
- Screen control commands
- Entering text, cut, copy, paste in vi editor

Unit : 3

Shell Programming Getting Started with Linux, Linux Booting

- Shell Keywords
- Shell Variables
- System variables
- PS2, PATH, HOME,LOGNAME,
- MAIL, IFS, SHELL
- User variables
- set, unset and echo command with shell
- variables
- Interactive shell script using read and echo
- Decision Statements

- if then fi
- if then else fi
- if then elif else fi
- case esac
- test command
- Logical Operators
- Looping statements
 - for loop
 - while loop
 - until loop
 - break, continue command
- Arithmetic in Shell script
 - Various shell script examples
- History of Linux
- GNU, GPL Concept
- Open Source & Freeware
- Structure and Features of Linux
- Installation and Configuration of Linux
 - Using with Ubuntu
- Startup, Shutdown and boot loaders of Linux
- User Interfaces (GUI and CUI)

Unit : 4

Working with X-Windows (Ubuntu)

Layered Structure of X

- Window Manager
- Desktop Environment
- Start Menu
- User Configuration
- startx Command
- Window Managers
 - GNOME
 - KDE
 - Purpose of window manager
- The KDE Desktop
 - KDE Panel
 - Desktop Icons
 - Managing Windows
 - The KDE Control Panel
- The GNOME Desktop
 - The GNOME Panel
 - Desktop Icons
 - Managing Windows
 - The GNOME Control Panel
- Create, Delete, Rename, Copy files and folders

- Install / Uninstall Software

Unit : 5

Linux Admin (UBUNTU)

- Creating Linux User Account and Password
- Installing and Managing Samba Server
- Installing and Managing Apache Server
- Optimizing LDAP Services
- Optimizing DNS Services
- Optimizing FTP Services
- Optimizing Web Services
- Configure Ubuntu's Built-In Firewall
- Working with WINE

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	60	05	05	05	75

Reference Books:

- 1) Stallng W, "Operating Systems", 7th edition, Prentice Hall India.
- 2) Silberschatz, A., Peter B. Galvin and Greg Gagne, "Operating System Principles", Wiley-Indian Edition, 8th Edition
- 3) Unix Shell Programming - Y. Kanetkar- BPB Publications
- 4) Unix concepts and applications- Sumitabha Das