Rajiv Gandhi Proudyogiki Vishwavidyalaya

PROGRAMME: B.E. Information Technology, VI Semester
Course:-IT- UNIX AND SHELL PROGRAMMING

Course Contents

CATEGORY OF COURSE	COURSE TITLE	COURSE CODE	CREDIT-6C			THEORY PAPER DC
			L	T	P	
Departmental Course DC-13	Unix And Shell Programming	IT- 601	3	1	2	Max.Marks-100 Min.Marks-35 Duration-3hrs.

Branch:- Information Technology
Course:- IT 601 Unix And Shell Programming

UNIT–I
General Overview of the System: System structure, user perspective, O/S services assumption about Hardware The Kernel and buffer cache architecture of Unix O/S, System concepts, Kernel data Structure, System administration, Buffer headers, Structure of the buffer pool, Scenarios for retrieval of the buffer, Reading and writing disk block, Advantage and disadvantage of buffer cache.

UNIT–II
Internal Representation of Files: Inodes, Structure of regular, Directories conversions of a path name to an inode, Super block, Inode assignment to a new file, Allocation of disk blocks, Open read write file and record close, File creation, Operation of special files change directory and change root, change owner and change mode. STAT and FSTAT, PIPES mounting and unmounting files system, Link Unlink

UNIT–III
Structures of Processes and process control: Process states and transitions layout of system memory, the context of a process, manipulation of process address space, Sleep process creation/termination. The user Id of a process, changing the size of a process. Killing process with signals, job control, scheduling commands: AT and BATCH,TIME,CORN.

UNIT-IV
Introduction to shell scripts: shell Bourne shell, C shell, Unix commands, permissions, editors, grep family, shell variables, scripts, metacharacters and environment, if and case statements, for while and until loops. Shell programming.

UNIT-V
Introduction of Awk and perl Programming: Awk pattern scanning , BEGIN and END patterns, Awk arithmetic and variables, and operators, functions, perl; the chop() function, variable and operators.Networking tools:Resolving IP addressing, TELNET, FTP, Socket programming, introduction of Linux structure .

References:-

1. M.J. Bach "Design of UNIX O.S. ", PHI Learning
2. Y.Kanetkar "Unix shell programming", BPB Pub.
3. B.W. Kernighan & R. Pike, "The UNIX Programming Environment", PHI Learning
4. S.Prata "Advanced UNIX: A Programming's Guide", BPB Publications, New Delhi.
5. Beck "Linux Kernel, Pearson Education, Asia.
6. Sumitabha Das " Unix concepts and Applications".Tata McGraw Hill,Second Edition,2001

Suggested list of experiments

Installation of Unix/Linux

1.Study about the General Purpose utilities

a) Banner b)cal c)date d)calender e)tty f)bc

g) spell & fspell

2.Implement WE Command in C

3.Implement Grep command in C

4.Implement More command in C

5.Implement Link & Unlink in C

6.Implement LS command in C

7.Study about the Unix system variables

8.Write the program to find biggest among 3 numbers using shell

9.Write a shell program to find factorial

10.Write a shell program to check the given string is Palindrome (or) not

11.Write a shell program to check whether the user is logged (or) not

12.Write a shell program to wish the user those who login to the system

13.Write your own profile

14.Write a shell program to find the biggest among

numbers using positional parameters

15.Write a shell program to sort the strings using arrays