



CC-311 Shell Programming Practical

Course Title:	Shell Programming Practical
Course Code:	CC-311
Course Credit:	3
Session Per Week:	3
Total Teaching Hours:	40 Hours

AIM

The students using the concepts of filters, special commands in Linux operating system will be able to write efficient shell scripts. It also gives information about process management and communication commands.

LEARNING OUTCOMES

The student would be able

- To get knowledge about managing files in Linux system.
- To understand the use of common Linux editors to edit files and manage the contents of the file.
- To learn commands of Linux for manipulating and filtering the contents of the file.
- To develop the skills for writing shell scripts using files and filters.
- To obtain knowledge about compressing files and communication commands.

DETAIL SYLLABUS

Unit-1

10 Hours

General –Purpose Utilities and Files and directories

- General Purpose Utilities

Cal, date, echo, bc, script, who, uname, tty, man, info, passwd, logout, wc

- Linux Files and Directories

Current Working Directory-pwd, Listing Files and Directories-ls, Matching Filenames with Patterns (wildcard characters), Simple Simple ways to create a file- touch,cat,, echo, Showing the contents of a file-cat, more, less, head, tail

Unit-2

10 Hours

Additional File Management Commands

- Additional File Management Commands

Creating Directories-mkdir, Removing Empty Directories-rmdir, Copying Files and Directories-cp, Removing Files and Nonempty Directories-rm, Renaming Files and Directories-mv, Comparing Two Files-cmp, What is Common-comm, Converting One File to Other-diff, Piping and Redirection and tee, File and Directory Permission and Privileges chmod, Locating Files-find

- Editing Files

Creating and Editing files using vi, pico and, emacs editors.

- Basics of Shell Scripting Programming

Creating Shell Scripts using various commands of Linux except Filters.; Interactive shell script using read and echo; Decision Statements: if then fi, if then else fi, if then elif else fi,

caseesac; Testcommand; LogicalOperators; Loopingstatements: forloop, while loop, untilloop; Break, continue command; Arithmetic in Shell script usingexpr; Creating Shell Scripts to perform mathematical calculations

Unit-3

10 Hours

Simple Filters, filters using regular expression, advanced filters

- SimpleFilters: Paginating files –pr, Splitting a file vertically–cut, Pasting files–paste, Ordering a file–sort, Locate repeated and non repeatedlines–uniq, Translating characters–tr
- Filters using regular expression: Searching for pattern–grep, stream editor –sed
- Advanced filters: Simple awkfiltering, Comparisonoperators, Variables, Built invariables, Controlflow, Looping

Unit-4

10 Hours

Compressing , decompressing and achieving files & Customizing environment variables , communication commands

- Compressing , decompressing and achievingfiles: Gzip,gunzip, Tar, Zip and unzip
- Environment variables: Environment variables, Alias, Inline command editing, Miscellaneous features, Initialization script.
- Communication commands: Finger, Talk, Mesg, Mailx, Pine, Write, Wall

NOTE:

The students are expected to write shell scripts unit wise as given below.

The list in each unit is indicative only and may or may not be asked in the examination.

List of shell scripts file based on

- 1 Check the output of the following commands:date, ls, who, cal, ps, wc, cat, uname, pwd, mkdir, rmdir, cd, cp, rm, mv, diff, chmod, grep, sed, head, tail,cut, paste, sort, find, man
- 2 Write a script to find the complete path for any file.
- 3 Write a shell script to execute following commands
 - Sort file abc.txt and save this sorted file inxyz.txt
 - Give an example of : To execute commands together without affecting result of eachother.
 - How to print “thisis
a three –line
1. Textmessage”
 - Which command display version of theUNIX?
 - How would you get online help of catcommand?
- 4 Write a shell script to execute following commands
 - How would u display the hiddenfiles?
 - How delete directory withfiles?
 - How would user can do interactivecopying?
 - How would user can do interactive deletion offiles?
 - Explain two functionality of “mv” command withexample?
- 5 Write a shell script to execute following commands
 - Create a file called text and store name,age and address init.
 - Display the contents of the file text on thescreen.
 - Delete the directories mydir and newdir at oneshot.
 - Sort a numericfile?

- Change the permissions for the file newtext to 666.
- 6 Write a shell script that accepts filename and displays last modification time if file exists, otherwise display appropriate message.
 - 7 Write a shell script to display the login names that begin with 's'.
 - 8 Write a shell script to remove the zero sized file from the current directory
 - 9 Write a shell script to display the name of all the executable files from the current directory.
 - 10 Write a shell script that will display welcome message according to time
 - 11 Write a shell script to find number of ordinary files and directory files.
 - 12 Write a shell script that takes a filename from the command line and checks whether the file is an ordinary file or not.
 - If it is an ordinary file then it should display the contents of the file.
 - If it is not an ordinary file then script should display the message: "File does not exist or is not ordinary, cannot display."
 - 13 Write a shell script that takes a filename from the user and checks whether it is a directory file or not.
 - If it is a directory, then the script should display the contents of the directory.
 - If it is not a directory file then script should display the message: "File is not a directory file"
 - 14 Write a shell script that takes a filename as an argument and checks if the file exists and is executable.
 - If the file is executable then the shell script should display the message: "File exists"
 - If the file does not exist and is not executable then the script should display the message: "File does not exist or is not executable."
 - 15 Write a shell script that displays all subdirectories in current working directory.
 - 16 Write a shell script that calculates the number of ordinary and directory files in your current working directory.
 - 17 Write a shell script that accepts 2 filenames and checks if both exist; if both exist then append the content of the second file into the first file.
 - 18 Write a shell script that takes the name of two files as arguments and performs the following:
 - i. Displays the message :
"Displaying the contents of file : (first argument)"
and displays the contents page wise.
 - ii. Copies the contents of the first argument to second argument.
 - iii. Finally displays the message: "File copied successfully."
 - 19 Write a shell script to display the following menu and acts accordingly:
 - i. Calendar of the current month and year.
 - ii. Display "Good Morning/Good Afternoon/Good Evening" according to the current login time.
 - iii. User name, User's home directory.
 - iv. Terminal name, Terminal type.
 - v. Machine name.
 - vi. No. of users who are currently logged in; List of users who are currently logged in.
 - 20 Write a shell script that displays the following menu and acts accordingly
 1. Concatenates two strings
 2. Renames a file
 3. Deletes a file.
 4. Copy the file to specific location

- 21 Write a shell script to change the suffix of all your *.txt files to .dat.
- 22 Write a shell script to accept a directory-name and display its contents. If input is not given then HOME directory's contents should be listed. (Make use of command line argument)
- 23 Write a shell script to get all files of home directory and rename them if their names start with c.
Newname = oldname111
- 24 Write a shell script that takes two filename as arguments. It should check whether the contents of two files are same or not, if they are same then second file should be deleted.
- 25 Write a shell script that accepts two directory names from the command line and copies all the files of one directory to another. The script should do the following
- If the source directory does not exist, flash a error message
 - If destination directory does not exist create it
 - Once both exist copy all the files from source directory to destination directory.
- 26 Write a shell script that displays the following menu
- List homedirectory
 - Date
 - Print workingdirectory
 - Users loggedin
- Read the proper choice. Execute corresponding command. Check for invalid choice.
- 27 Write a shell script that displays all hidden files in current directory.
- 28 Write a shell script that Combine two files in the third file horizontally and vertically.
- 29 Write a shell script to delete all the spaces from a given file.
- 30 Write a shell script to find a given date fall on a weekday or a weekend.
- 31 Write a shell script to search for a given word in all the files given as the arguments on the command line.
- 32 Write a shell script that display last modified file in the current directory.
- 33 Write a script to display the permissions of the particular file.
- 34 Write a shell script to display the calendar in the following manner:
- i. Display the calendar of months m1 and m2 by 'CAL m1, m2' commandfile.
 - ii. Display the calendar of the months from m1 to m2 by 'CAL m1-m2' commandfile.
- 35 Write a shell script to display the following menu for a particular file :
- i. Display all the words of a file in ascendingorder.
 - ii. Display a file in descendingorder.
 - iii. Toggle all the characters in thefile.
 - iv. Display type of the file.
- 36 Write a shell script to check whether the named user is currently logged in or not.
- 37 Write a shell script to display the following menu for a particular file:
- i.Display all the words of a file in ascending order.
 - ii.Display a file in descending order.
 - iii.Display a file in reerse order.
 - iv.Toggle all the characters in the file
 - v.Display type of the file.
- 38 Write a shell script to find total no. Of users and finds out how many of them are currently logged in.
- 39 Write a shell script that displays the directory information in the following format-
- Filename Size Date Protection Owner**

- 40 Write a shell script to display five largest files from the current directory
- 41 Write a shell script that toggles contents of the file
- 42 Write a shell script that report whether your friend has currently logged in or not. If he has logged in then the shell script should send a message to his terminal suggesting a dinner tonight. If you do have write permission to his terminal or if he hasn't logged in then such a message should be mailed to him about your dinner proposal.
- 43 Write a shell script for the performing the write and mail.
- 44 Write a shell script to accept any character using command line and list all the files starting with that character in the current directory.
- 45 Create a file called student containing roll-no, name and marks.
 - a. Display the contents of the file sorted by marks in descending order
 - b. Display the names of students in alphabetical order ignoring the case.
 - c. Display students according to their rollnos.
 - d. Sort file according to the second field and save it to file 'names'.
 - e. Display the list of students who scored between 70 and 80.

Note: Shell Script based on Files and filters should only to be asked in exam

TEXTBOOKS:

1. Beginning with Ubuntu Linux (First Edition 2007) Publisher : Apress Publications
By Keir Thomas
2. Unix : Concepts and Applications (Fourth Edition) Publisher: Tata McGrawHill
By Sumitabha Das

REFERENCE BOOKS:

1. Unix Shell Programming Publisher : BPB Publications By Yashvant P Kanetkar
2. The Official Ubuntu Book Publisher : Pearson Publications By Benjamin Mako Hill
3. Linux Command Line and Shell Scripting Bible- Publisher : Wiley Indian Edition.
By Richard Blum
4. Introduction to Unix/Linux Publisher: Cengage Learning By Christopher Diaz
5. Introduction to UNIX and Shell Programming Publisher: Pearson Education
By M.G. Venkatesh Murthy