Ahmedabad University
School of Engineering and Applied Science

B.Tech (ICT), Semester - V
Course: CSE341- Operating Systems Lab
Assignment - 2, Shell Programming

Instructions

- **Write and test shell scripts/programs on Unix/Linux platform**
- **Date of submission: 24/08/20 11:59:59 PM (Section 1), 26/08/20 11:59:59 PM (Section 2)**
- **Teaching Assistant associated with your group will inform you regarding which problems are to be attempted by a student and mode of submission**

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1. Write a shell script to check if directory exists and if it exists, display list of files and directories (along with subdirectories) in it.

2. Write a shell script to read the name of a specific file and delete the file if it exists.

3. Input name of a file from a user and find out the complete path for the given file name.

4. Write a shell script and use for loop to move all the files in the current directory to another specified directory.

5. Write a shell script to read the name of a directory and display the name of all executable files in the given directory. Also, display the total count in the end.

6. Write a shell script to read a directory name and delete all zero-sized file from it and its sub-directories.

7. Write a shell script to read a directory name and sort it in ascending order of the size of each file.

8. Write a shell script to read the name (or path) of 2 directories and copy all the files from them into a new directory.

9. Write a shell script to compare identically named files in two different directories and if they are the same, copy one of them in a third directory.

10. Write a shell script to compare files in a directory and if they have the same content, delete one of them.

11. Write a shell script to read a directory name and delete all identical content file from it and its sub-directories, leaving one copy in the whole tree.

12. Write a shell script to run a simple hello world C code every X seconds for M times. Take X and M as user input.

13. Write a shell script to read a dynamic number of files names as command-line arguments and create a file with each those names. If a file name already exists, then move that file to another subdirectory and then create a new file with that name.

14. Write a shell script to display all files in any specific directory(read from the user) in the following format : (One example given for your reference)

File	Size in kB	Date	Protection	Owner
test	6	Sep 1	-rw-rw-r--	user

    Also, display the total number of files and total space occupied by directory.

15. Write a shell script to display the date, time and a welcome message (like Good Morning User etc.) The time should be displayed with “a.m.” or “p.m.” and not in terms of 24-hour notation.

16. Write a shell script to make Menu for file and directory management :
    a. Display Current Directory
    b. List Directory
    c. Make a new Directory
    d. Change Directory
    e. Copy File
    f. Rename File
    g. Delete File
    h. Edit content of File
    i. Exit

17. Write a shell script which reads a text file and output the following:
    a. Count the number of characters, words and lines
    b. File in reverse order

c. Frequency of any particular word in the file
d. Replace Lower case alphabets in place of Upper Case Alphabets

18. Write a shell script to perform the following user operations :
    a. Print sorted list of users
    b. Count total number of users
    c. Search for any specific user and display no. of times the user logged in
    d. Check if any specific user is terminally active
    e. List all users without password

    (Hint: Use Pipes to achieve the result)

19. Write a shell script to display detailed attributes of all files that have names beginning with "file" followed by either 1, 2, 3, 4, or 5.

20. Write a shell script to broadcast a specific message to any specified user or a group of users logged on any terminal.

21. Write a shell script to list all files in a specific directory that are
    a. Newer than a specified date
    b. Older than a specified date

22. 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 reverse order.
    iv. Toggle all the characters in the file.
    v. Display type of the file.

23. Write a shell script that appends the PID of the current shell to the filenames of all the files having extension .txt.

24. Create a file which contains information about employees.
    The sample record is
    Iyer|Ramanujan|2007|35 cement road, Nagpur|8000
    Write a shell script with three functionality
    i. To add a new employee in file
    ii. To get information about any employee. (Enter name through the keyboard)
    iii. To display all employees whose basic pay is between 4000 to 7000

25. Create a file which contains information about items in the following manner.

Item name | item code | item price

Write a shell script which allows you to add, update, delete and purchase any item from The item list and generate a printout of a bill.