Assignment 4

Basic practice questions

Give appropriate command to achieve following objectives. (These are practice questions to prepare you for assignment questions. These questions will not be evaluated.).

1. List contents of currrent folder in long listing format such that sizes are reported in human-readable format.

2. Change permissions of folder '`test`' such that only others can read, write and execute it. User and group owner should not have any permissions on it.

3. Add execute permissions for user on file '`maths.c`'. Other permissions of file should not be changed.

4. List last ten lines of file '`big-file`'.

5. List first hundred lines of file '`big-file`'.

6. List first ten lines of file '`big-file`' which contain word '`password`'.

7. Create shell variable named '`SHELL_TEST`' and put value '`success`' in it.

8. Print value of shell variable with name '`SHELL_TEST`'.

9. Remove all files and directories inside directory '`gone`' without deleting the directory '`gone`'.

10. Copy files and directories (include sub-folders and files) located inside folder '`start`' to folder '`end`'. That is files '`start/file1`' should become '`end/file1`'. The folders '`start`' and '`end`' exist and files/directories which are not common between folders '`start`' and '`end`' should not get affected.

11. Create '`compressed.tar.bz2`' file with folders a, b and files c and d. The whole thing should be done with one command and not two seperate commands.

12. Run the above command in background.

13. Find list of all files and folders in entire harddisk which contain word '`openoffice`' somewhere in their absolute path. Store this list in file '`openoffice.txt`'.

14. Do following things

    (a) Create file number.txt and put number 10 and 20 on seperate lines inside this file.

    (b) Create a C program that takes two integers and prints their sum. Compile this program in such a way that name of executable is '`add`' and not '`a.out`'.

    (c) Run above add program such that it takes input from file number.txt and not from keyboard. Ensure that correct sum 30 is getting displayed.

15. Find ip address(es) of www.google.co.in

16. Create '`small.tar.gz`' file with files 1 and 2. The whole file should get created in one command and not two seperate commands.

17. Extract file '`compressed.tar.bz2`' in current folder.

18. Extract file '`small.tar.gz`' in current folder.

19. Server web.iiit.ac.in has more then one ip address. List all the IP address(es) of server web.iiit.ac.in.

20. Print details of users logged in on mirage.iiit.ac.in server.

21. Get only details of users whose username contains string '`saurabh`' among all users who are logged in on mirage.iiit.ac.in.

22. Find where program named '`alternatives`' is present. (Hint: 'alternatives' is standard program and comes with most fedora / red-hat Linux).

23. Print 'hello world' on screen.

24. Create fiile '`clone2`' using file '`clone1`' such that contents of both files are always same.

25. Create folder '`test`' such that it always has same contents as contents of folder '`Desktop`' located in home folder of current user.

26. Copy file ‘a.txt’ from your current folder to mirage home folder. (The command can include your actual username).

27. Copy file ‘b.txt’ which is in folder ‘abc’ in mirage home folder to current folder. (The command can include your actual username).

28. Run command ‘`locate`’ such that both output and error output go to file ‘atlast.txt’.

29. Store last 15 commands executed in file store.txt.

30. Show last ten scp commands.

31. Terminate all applications with name ’locate’. The command must succeed if user running the command has authority to terminate the locate command(s).

32. List all applications started with command ’python’.

33. How can one print output of both ‘`ls`’ and ‘`ls -l`’ one after another without entering any other command.

34. List contents of current folder when their name starts with word ‘file’ and is followed by only one digit and nothing else after that.

35. List contents of current folder when their name either starts with ’a’, or ’A’ or ’B’.

Assignment Questions

Give appropriate command to achieve following objectives. These are compulsary questions that will be evaluated as part of assignment

1. List files with extension ‘`txt`’ in current directory (not in sub-directories).

2. List files with extension ‘`pdf`’ in current directory and all sub-directories inside it.

3. List files with extension ‘`odt`’ in directory ‘`/home`’ and all sub-directories inside it. The command should work independent of present working directory.

4. List contents of folder ‘`/var`’ without changing current working directory.

5. Add execute permissions to folder 'xyz' for all user, group and other without chaging any other permission.

6. List all lines of files with extension '`txt`' in current directory which contain all three words '`dont`', '`touch`' and '`me`'.

7. Clear screen after waiting for 15 seconds after command is entered

8. Search for word 'alpha' in all lines of files with extension '`txt`' in current directory and its sub-direcotries.

9. Set permissions on file 'abc' such that only user can read, write and execute it. Others and group should not have any access on file.

10. Set permissions on folder 'hide' such that we can do '`cd hide`' but '`ls hide`' is not allowed.

11. Set permissions on folder 'hide' such that we can do '`ls hide`' but '`cd hide`' is not allowed.

12. List lines from line 10 to line 20 (both 10,20 inclusive) of file '`bigfile`'.

13. Count number of lines in all files with extension '`txt`' inside current directory and its subdirectories

14. Count number of lines in all files with extension '`conf`' in entire harddisk.

15. Give reason for fourth question and commands for first three.

    (a) Create empty file named zombie in current folder

    (b) Use '`locate`' command to look for file named zombie in entire harddisk.

    (c) Use '`find`' command to look for file named zombie in entire harddisk.

    (d) Are the two outputs same? If not, then why not?

16. Find all files with extension '`txt`' in current folder which have exactly three lines in them. (Assume: There is no file named total, so it should not come in result come what may).

17. Create zip file named '`homework.zip`' with files a, b and folder c, d stored in it.

18. Extract '`homework.zip`' file in current directory.

19. Copy file 'wow.txt' from mirage.iiit.ac.in home folder to web.iiit.ac.in home folder. The command should work from shell started from any system, except may be mirage.iiit.ac.in server and web.iiit.ac.in server. (The command can include your actual username(s)).

20. Run command '`locate`' such that both output and error output go to file 'atlast.txt' and even get displayed on screen.

21. Assume firefox is running. Find its 'pid' and 'ppid'.

22. Store last fifteen (or less if count less than 15) scp commands used on terminal in file 'store.txt' used to scp something to/from mirage.iiit.ac.in using complete server name and not server IP address.

23. Which command can be used to kill application whose pid is stored in file '`/var/run/yum.pid`' in a manner in which application is allowed to exit properly.

24. Which command or command combination will clear screen, then list contents of current folder, wait for 30 seconds and then again clear screen.

25. List contents of current folder when there name starts with character 'a', has word 'ooh' somewhere in the middle and ends with either 'b', 'B' or 'd'.

Advanced practice questions

Give appropriate command to achieve following objectives. (These questions will not get evalulated for marks. These are optional questions for motivated students)

1. List all executable files (file user owner has executable permissions, do not list folders / links, list only files) in current folder and its sub-folders.

2. Set permissions on folder 'hide' such that users can copy files and directories to folder hide. But cannot do '`ls hide`'

3. List all files with extension '`pdf`' in current folder and its immediate sub-folders. Files inside sub-folders of sub-folders and even deeper should not be listed.

4. See size occupied by folder Desktop inside home folder of current user in human readable format. The command should work for the user logged into system. If some other user logs in the same command should list size occupied by his Desktop folder located in his home folder.

5. Do some change in system such that command '`ifconfig`' will work without '`/sbin/`' prefix, but '`ls`' will stop working.

6. Find all hard-links of/to file '`mutant`' on system.

7. Run command '`ls`' such that output neither gets displayed on screen, nor gets stored in normal file. (Hint: Search for 'bit bucket' on web search engines)

8. Do some change in system such that when user runs '`clear`' command he gets message 'permission denied' and screen does not gets cleared. Rest all commands should work without any problem. You are not allowed to use your own written programs to solve this problem. Use only already existing commands to achieve this. You can optionally add three second delay to make error look more natural.

9. Using '`ps`' command one can find process ID of parent process which started the current process. Which process is Adam/Eve of computer processes? (Hint: There is no process with pid 0 and Adam/Eve can't die)

10. List all processes that were started within last 24 hours. Assume that machine was restarted a month ago and that current month is 'October'. You can also assume that no running program has name or arguments similar to name of months.

11. Copy file 'wow.txt' from mirage.iiit.ac.in home folder to web.iiit.ac.in home folder. The same command should work from all three systems your lab system, mirage server, web server without changing anything. (The command can include your actual username(s)).