





**CIS-350**  
**Infrastructure Technologies**  
**Solution to Lab 5 Report**

NOTE 1: Linux commands, filenames, options, etc. are **case sensitive**. The vast majority of them is written in **lower case**. For example, filenames John, JOHN, and john represent three different files.

NOTE 2: You should find the answers to all questions below in the documents named  [CIS-350-Lab3-Linux Command Prompt.pdf](#),  [CIS-350-Lab4-Linux Command Prompt.pdf](#),  [CIS-350-Lab5-Linux Command Prompt.pdf](#),  [CIS-350 Unix-Linux Features, Commands and Utilities.pdf](#), and the recorded demo of Labs 3-5 and on Panopto and/or MS Teams.

1. What does the `echo $SHELL` command do? Describe briefly.

**The `echo $SHELL` command allows you to find out which shell is the login shell.**

2. What command would you use to output the directory listing (in a long form and including invisible files) to both the computer screen and file *Names* at the same time? **`ls -al | tee Names`**
3. Assume file *Names* contains several spelling errors. What command would you use to find these errors in the file? **`spell Names`**
4. Assume that you created a script file named *displaymenu*. What command would you use to execute the script file? **`./displaymenu`**
5. What command would you use to display the first 5 lines in file *Prog2.c*? **`head -5 Prog2.c`**
6. What command would you use to display the calendar for year 2021? **`cal 2021`**
7. What command would you use to put a shell to sleep for 50 seconds? **`sleep 50`**
8. What would the command `wc -w Names` generate? (*Names* is a file.)

**The command generates the number of words in file *Names*.**

9. What command would you use to find all occurrences of word *Joe* in file *Names*? **`grep Joe Names`**
10. What command displays the current date? **`date`**
11. What command clears the screen? **`clear`**
12. What does a command `chmod u-w+rx designmenu` do? Briefly describe.  
**The command denies the user/owner the write (w) permission and grants him/her the read (r) and execute (x) permission to file *designmenu*.**
13. What command allows the user to check Linux environment, i.e., how environmental variables are set up? **`set` or `env`**
14. What command is derived from the physical device called T-joint attached to a water pipe, for example? (The T-joint lets water out from one source to two outlets.) **`tee`**
15. What command allows you to change the Linux level 1 prompt to *'bash> '? PS1*

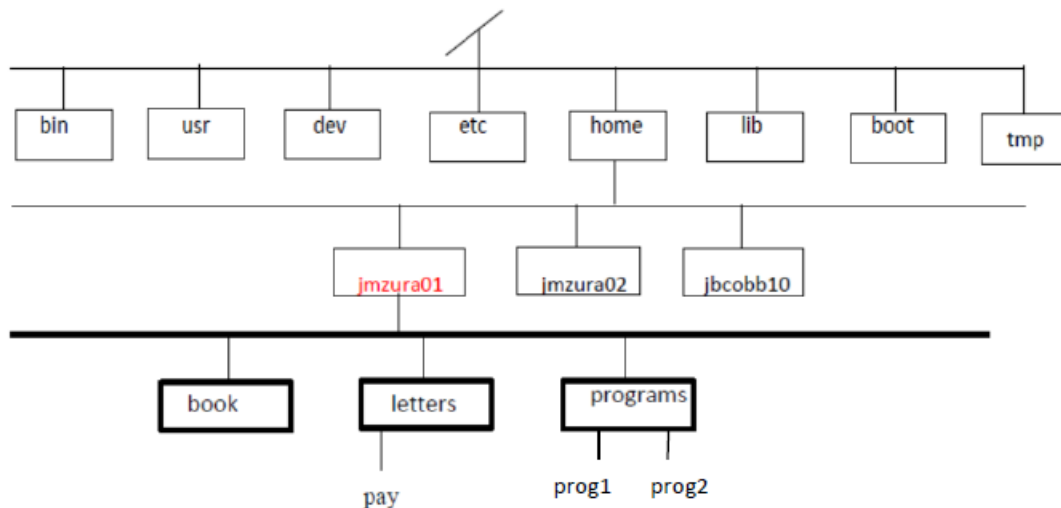
16. What are the two modes that the *vi* editor uses? **The insert mode and the command mode**

17. The *ls -al designmenu* command displayed the following attributes of file *designmenu*. Describe all attributes of file *designmenu*, including the 3 groups of users, access permissions given to each of the 3 groups of users and the permission types, the name of the owner, size of the file, date, and the name of the file.

```
- rwx r-x --- jacob02      850   Mar 13 12:30 2021  designmenu
```

The first hyphen (-) indicates that *designmenu* is an ordinary file. The first 3-tuple (r w x) tells that the owner/user has the read (r), write (w), and execute (x) permissions to the file. The second 3-tuple (r-x) tells that users in the owner's group have the read (r) and execute (x) permissions to the file and do not have the write (-) permission. The third 3-tuple (- - -) tells that all other users do not have any permissions to access file *designmenu*. The owner of the file is *jacob02*. The file occupies 850 bytes and was created or last modified at 12:30 on Mar 13, 2021. *designmenu* is the filename.

18. Look at the Linux directory structure below. Write an absolute path that starts at the root directory (/) and leads to file *pay*? **/home/jmzura01/letters/pay**



19. Look at the Linux directory structure above. Assume that your current directory is *home*. Write a relative path that leads to file *pay*? **jmzura01/letters/pay**