

CS146 HW1  
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### Assignment #1 - Due First Lecture of Week 2 at beginning of lecture

All of these questions should be answered while you are logged into the machine "odin.ics.uci.edu" (biggest machine of openlab cluster). Submit solutions using "submit" command. Note that most questions have many correct answers. (You only need to provide one correct answer to each question for full marks.)

- 1) What is your home directory? How did you find out (commands used)?
  - /home/mbolibol. I found out the path by typing "cd" to get the home directory and then typing the "pwd" command to print the absolute path of the current directory.
- 2) What is your UID? How did you find out (commands used)?
  - My UID is 41927(mbolibol). I used the command "id"
- 3) To what group(s) do you belong? How did you find out?
  - Using the "id" command, I belong to the groups: 1001(ugrad).
- 4) What is your "kill" character used for?
  - The kill character is to delete characters up to a point. This point is determined by the character combinations pressed. Combinations are CtrlK, CtrlU, AltD, and AltBackSpace.
- 5) If you remove execute permission for yourself from a directory (see chmod(1)), are you still allowed to create files in that directory?  
Can you cd into it? Can you "ls" it? Can you "ls -l" it?
  - I cannot cd into the directory. I can run the "ls" command but when trying to view more information about the contents of the directory I get a permission denied error. I can also "ls -l" it but all information pertaining to the contents of the directory are marked with "?" to denote insufficient permissions.
  - Notes (Don't submit!):
    - Ls would still work since it just needs to be able to read the directory file
    - You can cd into a directory but if you don't have read permissions you won't be able to see anything
    - Executing a directory = allowed to go into it, allowed to see into it. You can only cd into it or cd through it if you have execute permissions
    - Read but no execute: you cannot cd into it. From anywhere above the directory, you can ls into it
    - No read but execute: you can cd into it but when you do ls you get permission denied

- Only execute: cd into it but you can't do anything
- Setuid = you can only remove your own files

6) If you make a hard link to a file, and then remove the original file, are the contents of the file actually removed? Why? How about if you make a symbolic link? Why?

- Hard link to a file and then remove: the contents of the file are not removed. The inode association is only removed for that file. If there are other associations to the same file, they will still have access to the file through their own association. The file will only be removed if the OS sees that the number of associations to that file among everywhere in the system is 0.
- Symbolic link: the file is removed since it is just an alias or rather a pointer to a file (path name). The link is still there but it points to a deleted file aka junk. It is a dangling pointer.

7) Are you allowed to "mv" a directory? Are you allowed to "cp" a directory? If so, how?

- Yes we can "mv" a directory. We do so by typing the command "mv" followed by the source of the directory (either absolute or relative path) and then followed by the destination (either absolute or relative path). Same can be done with moving the directory into another path in the system.
- By default you cannot copy a directory. We would need to specify the "-r" flag in the command to indicate a recursive copy. This is so all of the files and subdirectories from the source are copied into the destination.

8) How many mounted file systems are there on odin.ics.uci.edu? How did you find out? (Commands)

- I counted 142 different file systems currently mounted on odin. I used the "mount" and redirected the output to a file and then counted how many entries existed in file (mount > mount.txt).

9) Using only "ls" (and maybe "grep"), can you find out the name of your login terminal? How? (Hint: cheat by first typing "who am i". Look also at the -L option of "ls".)

- Using the "whoami" command, I was able to get clues as to what login terminal I am using. It returned "pts/21" so I went to look for this file in the dev folder.

10) In slide 8 from lecture #1, assume binary 00000000 represents register D0. Then the address translation from "FFDC" to binary is incorrect. Correct it. What is the machine language (binary)

representation of the MOVE instruction? What about MUL? (Before you ask: yes, different instructions can take up different numbers of bytes/words.)

- 1100101 00000000 11111111 11011100
- MOVE: 1100101
- MUL: 1100101 01011101