Assignment: Working with Linux

# Installation/Configuring Linux

* Execute the Oracle VM Virtual Box installable ‘VirtualBox-4.3.28-100309-Win.exe’
* Run the desktop icon ‘Oracle VM VirtualBox’.
* Create a new virtual machine. Specify memory as 2042 MB.
* Now open the ‘Settings’ window. Go to Storage > Controller: IDE > CD/DVD Drive > Select the Ubuntu iso file shared with you i.e. ‘ubuntu-14.04-desktop-amd64.iso’
* Start the created virtual machine.
* Choose ‘Install Ubuntu’ option.
* In order to close the virtual machine, select Machine > Close… > Save the machine state.

**Assignment 1 (Simple BASH commands):**

**Try following on linux terminal:**  
  
$ echo hello world – displays hello word   
$ passwd- Asks for current password, on authentication, enables you to change the current password.

$ date- displays the system date and time  
$ hostname- displays name of the current logged in user  
$ arch- gives the system architecture , ie. X86\_64, ie. Ubuntu (64 bit)  
$ uname -a --gives the host name, date time , and system architecture  
$ dmesg | more(you may need to press q to quit) -- gives further system information  
$ uptime - time for which the system has been up and running  
$ who am I –gives a name of the user with the date and time  
$ who – gives a list of all users on the OS  
$ id – gives the id for various domains , such as uid=1000, ie. User id, gid=1000(Shravya) etc  
$ last – gives a log of all the users since system was created, also details of system crash, reboot and logged in users  
$ finger – couldn’t install finger, ubuntu needs to be upgraded  
$ w – gives a log of Login time. Idle time, etc  
$ top (you may need to press q to quit) – gives a list of all processes initiated by which user, along with their cpu %, and mem% utilized.

$ echo $SHELL – gives you the location of the shell , /bin/bash  
$ echo {con,pre}{sent,fer}{s,ed} --- gives a list of all permutations with the words in the brackets  
$ man "automatic door" -- no manual entry for automated door  
$ man ls (you may need to press q to quit) – gives more information about command ls and additional info on ls  
$ man who (you may need to press q to quit) -- gives more information about command who , and various additional commands to be run with who  
$ who can tell me why i got license --

$ lost – command not found  
$ clear – clears the screen  
$ cal 2000 – displays the calendar for the year 2000  
$ cal 9 1752(do you notice anything unusual?) displays the calendar for month sepember(9) of year 1752  
$ bc -l(type quit or press Ctrl-d to quit) - verion of bc, information about the software, that it is a free software without warranty.   
$ echo 5+4 | bc -l – computes the output and displays the computed output  
$ yes please(you may need to press Ctrl-c to quit) – runs an infinite loop of “please”  
$ time sleep 5 – the system sleeps for 5 secs  
$ history – gives a list of all commands that have been executed so far

**Assignment 2 (Simple operations on file & directory):**

1. Enter cd ~. Using the picture below, create two subdirectories named india and China—note China starts with a capital letter and india does not.
2. Under india and China, create three more subdirectories each – clothing, food, and sports.
3. Use the Internet and lookup a few facts about clothing in India. Use the editor to create a file and write what you found in the editor. Save the file. Did you create it in the correct subdirectory? If not, move the file to the clothing subdirectory under india.

**~ goes to the root and then to the destination folder.**

1. In the correct subdirectory, use the editor to create a file and write about your favorite Indian food. Save the file. Make sure it is in the correct subdirectory!
2. Use the Internet to lookup a few facts about sports in China. In the Sports subdirectory under india, use the editor to create a file that describes what you found about sports in China. Yes, this is the incorrect place, but it gives you a chance to practice moving in the next step!
3. Move the file you just created from the sports subdirectory under india to the sports subdirectory under china.

**Mv info-clothing.txt ~/india/clothing/**

Copy the file from the clothing subdirectory under india to the clothing subdirectory under china. **cp info-clothing.txt ~/india/clothing/**

1. Copy the file from the food subdirectory under india to the food subdirectory under China. Edit the new file to reflect your favorite meal that could be cooked in China.
2. Delete the subdirectory clothing under india.

**Assignment 3 (vi Editor):**

1. Create a new document ‘history\_linux.txt’ & type the following contents:

You might be suprised to discover that Linux has been around in it's current form sinc the early 90's but the fondations go back much longer.

Late 1960's - Unix is developed developed and released in 1970's. It is widely adopted in business and academic circles.

1. Save & close the file.
2. Reopen the file in vi editor.
3. Go to the end of the document and type in the following paragraph:  
   1983 - a programmer Richard Stallman creates the GNU Project. It is an attempt at creating a Unix type operating system but composed of entirely free software.
4. Correct  the three  spelling errors and  remove the extra word "developed".
5. Add the words "Here is year wise Linux history!" to the end of the first paragraph.
6. Delete the words "developed and" from second paragraph.
7. Replace all occurrences of "is" with "was".
8. Swap the second & third paragraphs.
9. Save the file and quit.

**https://www.cs.colostate.edu/helpdocs/vi.html**

**Assignment 4 (File Permissions):**

1. Create a group xoriant.
2. Create 2 users tom & jerry inside ‘xoriant’ with the home directories /home/tom & /home/jerry
3. In tom’s home directory, create a directory ‘tom\_docs’.
4. In jerry’s home directory, create a directory ‘jerry\_docs’.
5. Login as tom or jerry as per requirement using ‘su’ command.
6. Create a file inside each directory i.e. ‘tom\_resume.txt’ & ‘jerry\_resume.txt’.
7. Add some contents into the files.
8. Change the permission of tom\_resume.txt to writable at user level & group level.’
9. Change user to jerry & try to update tom\_resume.txt using vi editor.
10. Similarly apply writable permission at jerry\_resume.txt at user & group level. Try to update jerry\_resume.txt through tom’s login.

Pico save-ctrl+O  
enter , then ctrl+x

1. Make tom\_docs writable at group level. Add sticky bit to tom\_docs directory. Try to delete this directory using jerry’s login. It should not allow.

**Assignment 5 (Process related information):**

1. Start an editor ‘gedit’.
2. Display the information about all processes running on your machine.
3. Find the process id of gedit process. 4192
4. Stop gedit process. Kill 4192
5. Again start gedit.
6. Find whether gedit is running or not.
7. Display the process tree.pstree
8. Display currently running process along with memory & CPU usage.

**Assignment 6 (Inter machine files transfer):**

1. Transfer a file from one to another machine.
2. Transfer a directory including all its contents from one to another machine.