Lab 2. UNIX commands.

Purpose and rationale

The purpose of this lab is to quickly get students up to speed with basic usage of the UNIX development environment, as a preparation for all future lab activities.

Lab environment

All work should be done on a machine in the department's Linux cluster. You can refer to **ssh** for more information on how to log into a remote machine. Also refer to our Lab1 directions. You can use **atoz, sp1, sp2** or **sp3**.
sp1, sp2 and sp3 will require students to be on campus to use them directly **or**, from off-campus, they can use either VPN access or come in through Athena to get to them (ssh).
atoz can be accessed directly from either on campus or off.

[**NOTE**: I accessed all four by logging into "athena", typing "ssh atoz" or "spX", typing "yes", and re-entering my password.]

Part 1. Introductory UNIX lab2 (also known as *Give-Linux-some-time*):

1. Read/browse the **man** pages for the following Shell commands.
2. To view the manual for the command "script", type **man script**.
3. Use the space bar to scroll through the display from **man**.
4. Type **q** to quit each session.
5. **SEARCH**. Some of the commands below will show up as BASH_BUILTINS
    a. In this mode, the needed information is somewhere in a big display.
    b. Example: When doing a **man history**, you get more information that you expect.
        i. Type **/history** to **search** for the word "history" and see occurrences of that word.
        ii. Then typing an **n** will take you to the next occurrence.
6. Check out the "man" pages for the following two columns of commands.

script	cp
man (note the standard sections of the manual i.e 1, 2, 3 ...)	diff
	rm
who (also try w)	history
gcc	jobs
touch	make
top	ssh
mkdir	head
ls	tail
ps	logout
cd	vi
file	view (*This one is buried in the **vi** page…search for it.)*
cat	exit
wc	
grep	

➔ more directions on next page

Part 2. Prepare a script to show your work:

Run the script command to make typescript of your terminal session. At the prompt,
type: **script StudentName_lab2.txt**
Practice the above Shell commands using the below list.

- At the end of the practice session, please be sure to exit script session with **exit** command.
- You might run into errors while executing these examples. Take a look at the errors and see if they make sense. Correct the issues and rerun the commands.
- Follow the commands as listed below. The occasional extra command (like **ls** , **pwd,** or **cd**, for example) are just fine.

cd csc60	Move to your directory for this class.
mkdir Lab2	Make a directory named Lab2.
pwd	Print current working directory (Lab2).
	We will be moving back and forth between csc60, Lab2, and xyz.
mkdir xyz	Make a new directory xyz
cd xyz	Change current directory to xyz
pwd	Check that you moved from one directory to another.
cd ..	Change to upper directory
pwd	Print current working directory. You should be back in Lab2
ls > file1	List directory content and redirect output to a file called "file1"
cat file1	Display text content in file1
less file1	Like cat but paginated
q	To quit the **less** command
file *	Check file types of all files
wc file1	Word count the file1
wc *	Word count all files in directory
grep lab file1	Find word *lab* in file1.
cp file1 file2	Copy file1 to a new file2
ls	Check that you have both files
cd xyz	Move one directory below Lab2.
cp ../file1 .	Copy file1 from directory above to here. *Notice the dot at the end of command.*
ls	Check that you got file1 here.
mv file1 file2	Rename file1 to file2
ls	Check to see that file 1 changed to file 2
mv ../file1 .	Move file1 from directory above to here
cd ..	Move up to Lab2 and see that the file moved up.
ls	Check that you now have file1 here.
cmp file1 file2	Compare file1 with file2, show differences. Same file so no differences.
ls > xyzlist	Create a different file
cmp file1 xyzlist	Now compare two files known to be different
diff file1 xyzlist	Like cmp except shows more info
rm file1	Remove file1.
ls	Verify its removal.

➔ more commands on next page

ps -u	Show all user's running Process ID's
ps -l	Show processes (lower case L) (including Process ID Parent Process ID)
!!	Repeat previous command
history	A list of the commands you have done.
!3	Repeat command number 3 from history
	[*NOTE 1*: The **above** command might cause you to exit the script. To re-open the script and append to it, type: **script –a StudentName_lab2.txt**]
cd ..	Move to the upper directory, csc60.
	[***NOTE 2*:** The commands **below** will require that you be on in the directory where lab1.c resides, so move to the directory where your lab1.c file resides, and then try these commands.
head lab1.c *or* **head -20 lab1.c**	List 1st 10 or 20 lines of code
tail lab1.c *or* **tail -20 lab1.c**	List last 10 or 20 lines of code
ls -al | less	Directory listing (too long) 'piped' to 'less' for viewing
history	History of commands given
Quit the script session	
	[*Note 3*: The script ends when the forked shell exits: (a control-D to exit the ***Bourne shell*** (sh(1)), and exit, logout or control-d (if ignoreeof is not set) for the ***C-shell***, csh(1)). To determine what shell you are in, type: **echo $SHELL**
exit	Exit your login on sp1, sp2, sp3, or atoz.

Deliverables

Please upload your Lab 2 script file (**StudentName_lab2.txt**) to SacCT.

Note to folks with their own UNIX/Linux machines:

I expect you to do the above assignment. I expect to see the "history" command. If you feel it invades your privacy, then you have two choices:
(1) Log off and back in to start a fresh new session;
(2) or else do your work on *athena* like everyone else.