**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. Refer to our Lab1 directions. You should use **atoz, sp1, sp2** or **sp3, instead of athena**.  This is practice for a task later in the semester.

[**NOTE**: I accessed all four by logging into “athena”, typing “ssh atoz” or “ssh 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 Shell commands listed below in #6..
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
   1. In this mode, the needed information is somewhere in a big display.
   2. Example: When doing a **man history**, you get more information that you expect.
      1. Type **/history** to **search** for the word “history” and see occurrences of that word.
      2. Typing an **n** will take you to the next occurrence.
6. Check out the “man” pages for the following two columns of commands.

script

man (note the standard sections of

the manual i.e 1, 2, 3 ...)

who (also try w)

gcc

touch

top

mkdir

ls

ps

cd

file

cat

wc

grep

cp

diff

rm

history

jobs

make

ssh

head

tail

logout

vi

view (*This one is buried in the* ***vi*** *page…search for it.)*

exit

* more directions on next page

**Part 2. Prepare a script to show your work:**

Run the script command to make a script of your terminal session. At the prompt,

type: **script StudentName\_lab2.txt**

Practice the Shell commands using the below list.

* The Part 1 instruction to read/scan the various commands is **not** to be included in your script file.
* At the end of the practice session, please be sure to exit script session with **exit** command.
* If you need to leave the script before you are finished,

re-open the script and append to it bytyping: **script –a StudentName\_lab2.txt**

* You might run into errors while executing these examples. Look at the errors and see if they make sense. Correct the issues if possible and rerun the commands.
* Follow the commands as listed below. The occasional extra command (like **ls** , **pwd,** or **cd**, for example) are just fine.

**history -c** To clear the previous history so your script is not a mile long.

**cd csc60** Move to your directory for this class.

**mkdir lab2** Make a directory named lab2.

**cd lab2** Move to directory 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. *Note the* **space-dot** *at the end of the*

*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. *Note the* **space-dot** *at the end of the*

*command.*

**cd .**. Move up to Lab2

**ls** Check that you now have file2 here.

**→ more commands on next page → → →**

**cd xyz** Move back down to directory xyz

**ls**  Check that xyz still contains both file1 and file2.

**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.

**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 first 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 Canvas.

**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 three choices:

1. Log off and back in to start a fresh new session;
2. At the prompt, type: **history -c** which will clear the command history of your computer

(3) Do your work on *athena* like everyone else.