LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS, ENGINEERING, and COMPUTER SCIENCE
MAC232 – UNIX Network Operating System
Assignment 2 - Getting to know the Linux shell

SHELL UTILITIES AT THE COMMAND LINE

1. To work on the command line, you need to open a terminal window. Once you have logged in, in the main space, right click the mouse. From the menu that appears, choose "Open in terminal". A terminal window appears which is located in your HOME DIRECTORY in the file system hierarchy. Whenever you open a terminal window OR log in remotely, you will be initially in your home directory.

The Linux shell allows users to interact with the operating system (often called the kernel) on a command line. When you use a terminal window, a prompt is issued requesting a shell command. The prompt on the its network looks like

```
[user@machine]$
```

To learn the full pathname of your home directory, type at the prompt:

```
pwd
```

This is an abbreviation for present working directory.

   a) What is your home directory? _____

   b) Here are some other simple shell commands. Type them in at the prompt. Describe what each of these commands does.

```
date        _____


whoami      _____


cal         _____
```

FILES AND THE FILE SYSTEM

2. To investigate the files that presently occupy your home directory, use the shell command ls (lower case ell then s).

    a) Are there any user created files? To see, type "`ls`" at the prompt. What do you see listed?

```
ls
```
_____

    b) To see the "hidden" or system files in your home directory type ls -a where -a is called an option. What do you see listed?

```
ls -a
```
_____
_____

3. Files can be created in several ways at the command line or by programs (such as an editor or mail).

    a) Standard output can be saved to a file using the '>' or redirection operator. Type:

```
cal > sep2013
      ^^^^^^^
      the new file's name
```

Let's examine the file sep2013 that exist now. Type:

```
file sep2013
```

This shell command tells you details about the file. What did it say about `sep2013`?

_____

In your own words, explain how the file `sep2013` was created.

_____

_____

    b) View the contents of a file on the screen by using cat.

```
cat sep2013
```

What is the contents of the file? _____

    c) Create several other files using cal.

```
cal 10 2013 > oct2013
cal 11 2013 > nov2013
```

Use the command "ls" to check that the files were successfully created. Are they listed?

_____

   d) The cat command is an abbreviation for concatenate which means "to combine". If you type the following, all three files will be written to standard output (the screen)

```
cat sep2013 oct2013 nov2013
```

Were all three files written to the screen, each with a different month?   _____

   e) We can use the '>' operator to create another file. At the prompt type:

```
cat sep2013 sep2013 oct2013 > fall2013
```

   f) Another option of ls is useful here. Type "ls -l" (where the option is an 'ell') to view more information about the files that you now have. How does the size of fall2013 compare with the other 2013 files?

_____

4. Files can be created using the "cp" command. It creates a new COPY of an existing

```
file:cp fall2013 late2013
```

Use "ls" to see that both fall2013 and late2013 exist. Do they both exist now? _____

5. The name of a file can be CHANGED using "mv". No new file is created, an existing file just has its name changed.

```
mv late2013 new2013
```

Use "ls" to confirm that late2013 no longer exists. _____

6. Files can be permanently removed or deleted using "rm". Delete the file named new2013 by typing:

```
rm new2013
```

Confirm that it is removed by using "ls".   _____

7. All the file manipulations so far have been done in your home directory.

   a) To create a new subdirectory of your home directory, use the shell command "`mkdir`" (makedirectory):

```
mkdir cal
```

Using "`ls`" is the new directory listed?   _____

   b) You can directly access the files in the new directory by using "`cd`"(change directory) command. Type at the prompt

```
cd cal
```

Do an "`ls`", are any files listed?   _____

   c) Type "`pwd`" at the prompt to see the directory that you are

   viewing.`pwd`

What is the directory name?   _____

   d) You can move back to your HOME directory at any time by just typing "`cd`" at the

   prompt:`cd`

Type "`pwd`" again; what is the directory name?   _____

8. The new directory is mostly empty (there are some system files.) We will move some files from your home directory to the cal directory. First, type "`cd`" to make sure that you are in your home directory.

   a) We will move the file named fall2013 to the new directory, cal.

```
mv fall2013 cal
```

View the contents of the subdirectory by typing "`ls -l cal`". Is the file fall2013 in the subdirectory cal?

                                                    _____

   b) The full pathname of a directory can be used to create a subdirectory. Since you are still in your HOME directory, type

```
mkdir cal/month
```

Confirm that this worked by typing "`ls -l cal`". _____

    c) Files can now be moved to the remote subdirectory using "`mv`".

```
mv sep2013 cal/month
```

View the files by using "`ls cal/month`" . Is sep2013 in the subdirectory month?_____

    e) Another way to view your files is to look at the whole directory tree. At the prompt type:

```
tree -d
```

Are all your files and directories listed? _____

INTRODUCTION TO THE ON-LINE HELP PAGES

9. a) One utility for on-line help is called "man". To view a simple example, type the following at the prompt. To see more of the description, click the space bar. To quit before the description ends, type "q". Write a brief description of what pwd does:

```
man pwd
```

_____

_____

    b) Another utility is called "`info`". Type the command below at the prompt. To leave info, type "q". To move around, use the arrow keys or type m followed by a menu item.

```
info g++
```

Did the info presentation differ from that of "`man`"?   Explain _____

_____

_____