

# CSCI 211: Unix Lab

## Homework 6 Solutions

### Note:

1. You must rely on UNIX commands only to solve the problems. No manipulation on Windows is allowed (such as scrolling the PuTTY screen).
2. A line of commands involving pipe ('|') or with ';' is not considered a single command.
3. You must perform the check-in and check-out operation for each problem as specified below. Without that, no credit will be given.

### Before doing the homework:

Run the command "source /lab6/quiz/prep.sh" exactly once.

### Before doing EACH problem:

Run the command "source /lab6/quiz/checkin.sh <n>" exactly once, where <n> is the problem number.

### After doing EACH problem:

Run the command "source /lab6/quiz/checkout.sh <n>" exactly once, where <n> is the problem number.

### After finishing all the problems:

1. Run the command "source /lab6/quiz/wrapup.sh" exactly once.
2. Submit this file with your answers.

Save this file as yourlastname\_yourfirstname\_Lab6.rtf and then submit online at <http://www.networks.howard.edu/lij/courses/2016/211/>

## Problems:

All the following operations should be performed in the directory tree rooted at '~/lab6' unless specified otherwise.

In the answers, "\*\*\*\*\*" means a string specific to your user account, "#####" means a number specific to your user account.

1. **(2 pts)** Show all the words misspelled in the file 'employee'.

Command used:

```
spell employee
```

Words misspelled:

```
adm
*****
MacLeod
mgt
mis
Neason
NeSmith
```

2. **(2 pts)** Show the first 6 lines of the file 'long'.

Command used:

```
head -6 long
```

Or,

```
head -n 6 long
```

First 6 lines:

```
*****ED, 60443674; PLACERS, GORY
CONFRATERNITY, 64692823; mellifluousnesses, GIVEABLE
INTERRUPTS, 14054058; chromaticism, ANNEXED
Huygens, 75902838; NODDING, BEHAVIOURALLY
VOLU*****, 67357994; DETOXIFICATIONS, FOETIDNESS
IOWA, 39315359; KILKENNY, PRURIENCE
```

3. **(2 pts)** Show the last 6 lines of the file 'long'.

Command used:

```
tail -6 long
```

Or,

```
tail -n 6 long
```

Last 6 lines:

```
consoles, 6978465; BACKSLIDING, waspish
ITCHING, 30664748; waning, unscramble
DANIELS, 38076854; DOUGHTY, honestly
aquarium, 58631016; Macao, durations
faddists, 42924104; ATTESTED, MS
baryons, 62172973; ADVERSENESSSES, *****sm
```

4. **(3 pts)** With pipe and two commands, use two different approaches to show the 177<sup>th</sup> to 181<sup>th</sup> character of the file 'long'.

Commands used for the first approach:

```
head -c 181 long | tail -c 5
```

Commands used for the second approach:

```
tail -c +177 long | head -c 5
```

The 177<sup>th</sup> to 181<sup>th</sup> character:

```
*****
```

5. **(2 pts)** Show the 2<sup>nd</sup> column of the last two lines in the file 'employee' with the default delimiter.

Command used:

```
cut -f 2 employee | tail -2
```

The 2<sup>nd</sup> column of the last two lines:

```
NeSmith Donald
```

```
Student *****
```

6. **(4 pts)** The program 'make\_expr' can take a file with a column of numbers and convert them to an expression adding all the numbers together. Use that and the command line calculator to calculate **non-interactively** the average of the numbers in the last column of the file 'employee'. Provide 2 digits after the decimal point for the result. Hint: Leverage output redirection for file creation and increment.

Commands used:

```
cat employee
```

```
cut -f 4 employee > t
```

```
echo "scale = 2" > t1
```

```
~/lab6/make_expr t | head -c -1 >> t1
```

```
echo " / " >> t1
```

```
wc -l t | cut -d ' ' -f 1 >> t1
```

```
echo "quit" >> t1
```

```
bc t1
```

The average:

```
(The number may vary.)
```

```
70327.61
```

7. **(3 pts)** Create a new file named 'people'. Its content is the file 'employee' with its fourth column replaced by the numbers from the first n lines of the file 'long', where n is the number of lines in 'employee'.

Commands used:

```
cut -f 1-3 employee > data1
```

```
wc -l employee
```

```
head -13 long | cut -d ' ' -f 2 | cut -d ';' -f 1 > data2
```

```
paste -d "\t" data1 data2 > people
```

8. **(2 pts)** Show the available disk space under the "/home" directory.

Command used:

```
df /home
```

The available disk space under the "/home" directory:

(The amount could vary a little bit.)

89808984 kilobytes, or 89.8 gigabytes

9. **(2 pts)** Show the total amount of disk space occupied by the "lab6" directory under your home directory.

Command used:

```
du -s ~/lab6
```

The total amount of disk space occupied:

(The amount could vary a little bit.)

2628 kilobytes

10. **(2 pts)** Find the path of the 'whatsup' program that you can run anywhere.

Command used:

```
which whatsup
```

The path:

```
~/lab6/moon/whatsup
```