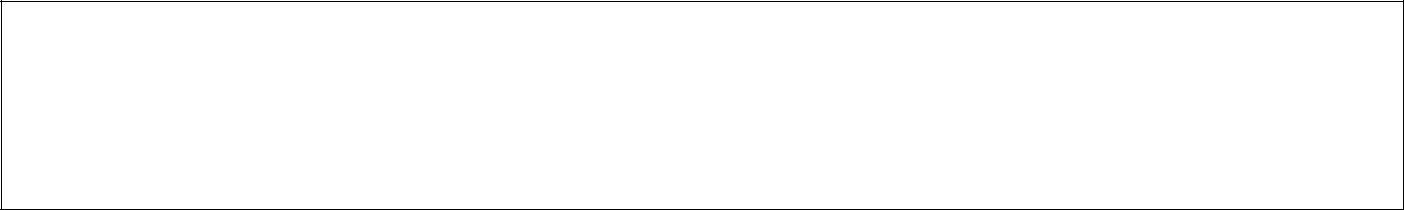
CSC3320 System Level Programming

Lab Assignment 4 - Part 2 (Out of lab)

Instructor: Fil Rondel

Due at 11:59 pm on Friday, Feb. 12 2021

Purpose: Practices on the grep, fgrep, egrep, sed , awk, and sort commands for text processing.

 Note: Please follow the instructions below, and write a report by answering the questions and upload the report (named as Lab4\_P2\_FirstNameLastName.pdf or .doc) to the Google Classroom Out of Lab Assignment folder

Please add the lab assignment NUMBER and your NAME at the top of your file sheet. The following table is from Wikipedia. It shows the eleven highest mountains in Georgia.

Brasstown Bald, (summit),4784,feet,Union County

Rabun Bald, (summit),4696,feet,Rabun County

Dick's Knob, (summit),4620,feet,Rabun County

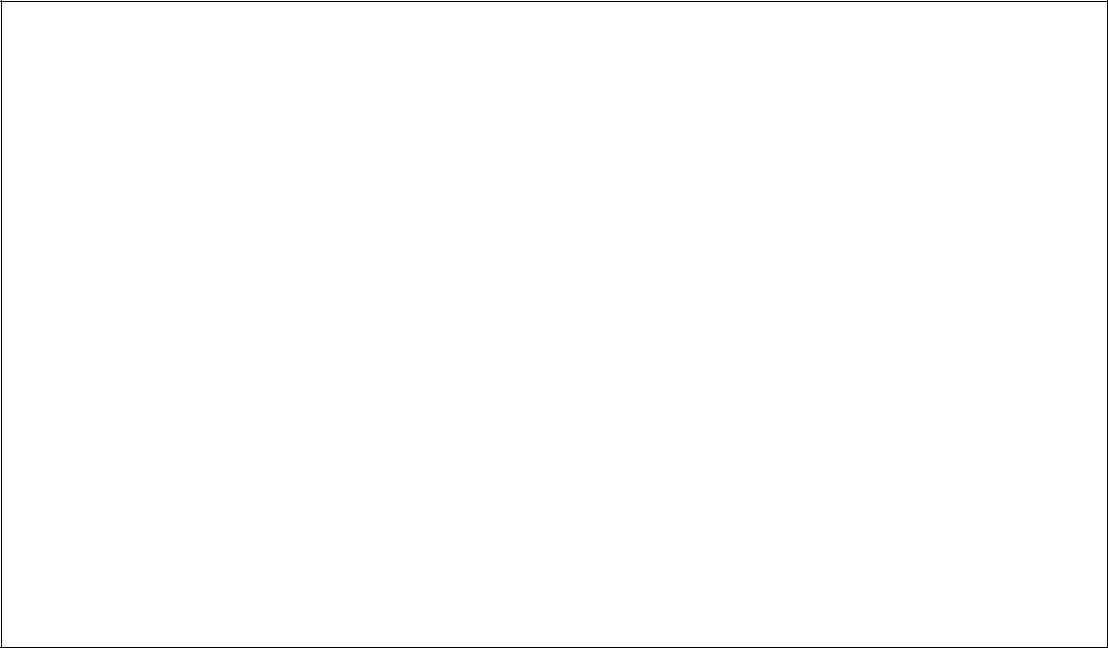
Hightower Bald, (summit),4568,feet,Towns County

Wolfpen Ridge, (ridge high point),4561,feet,Towns and Union

Counties

Blood Mountain, (summit),4458,feet,Union County

Tray Mountain, (summit), 4430,feet,Towns County

 Grassy Ridge, (ridge high point),4420,feet,Rabun County

Slaughter Mountain, (summit),4338,feet,Union County

Double Spring Knob, (summit),4280,feet,Rabun County

Coosa Bald, (summit),4280,feet,Union County

In above table, each line contains 5 fields separated by comma. Open your terminal and connect to snowball server. After that, go to directory Lab4 (cd ~/Lab4) and please download the file " mountainList.txt" by the following

command (internet access required):

cp /home/frondel/Public/mountainList.txt mountainList.txt

Be sure it succeeds using “ls” to see the file name “mountainList.txt” listed.

1. Use grep to print all lines where the mountains are at Towns or Union

County.

grep ‘Towns\|Union’ mountainList.txt

1

Sample Output



1. Use wc and grep to count the number of mountains located at Rabun

County. Hint: please use pipe | .

grep 'Rabun' mountainList.txt | wc -l

Sample Output



1. Finish task 2) by using only grep.

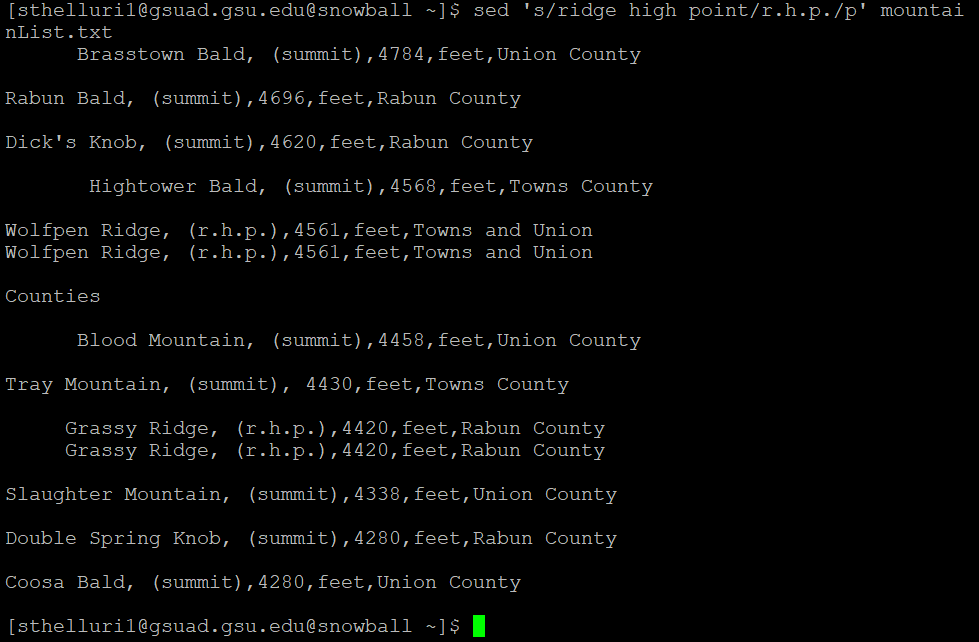
Hint: open the manual page of grep, and check -c option.

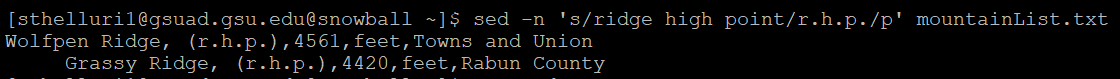
grep -c ‘Rabun’ mountainList.txt

1. A. Type command sed ‘s/ridge high point/r.h.p./p’ mountainList.txt



and execute it. Then attach a screenshot of the output.



* 1. Type command sed -n ‘s/ridge high point/r.h.p./p’ mountainList.txt and execute it. Then attach a screenshot of the output. 



* 1. Open the manual page of sed and describe what does –n do in sed?

The lines you mentioned using p will only be printed once. It suppresses the automatic printing.

* 1. Describe what does the sed command in (B) do?

It prints two different results with automatic printing.

1. Use sed to remove the leading spaces in "mountainList.txt" and print out

the processed lines.

sed 's/^[ \t]\*//;s/[ \t]\*$//' mountainList.txt

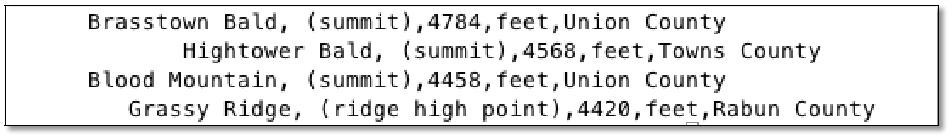
1. Finish task 5) and save the output to file "newList.txt".

cat mountainList.txt | sed 's/^[ \t]\*//;s/[ \t]\*$//' mountainList.txt > newList.txt

1. Use sed to list the lines beginning with white spaces in "mountainList.txt".

sed -n '/^[[:space:]]/p' mountainList.txt

Sample Output



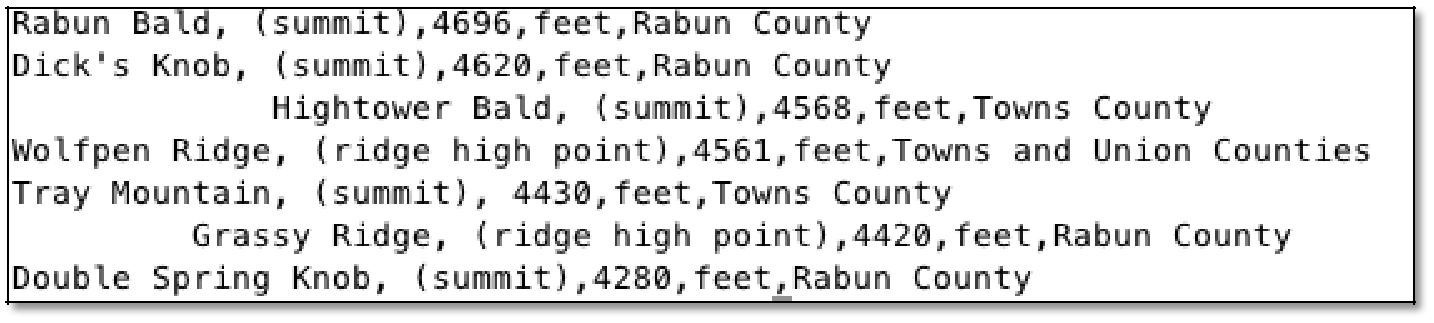
2

1. Use sed to delete the lines where the mountains are only at Union County

in "mountainList.txt".

sed ‘/Union County/d’ mountainList.txt

Sample Output



1. Use sed to remove the middle three fields in each line of

"mountainList.txt". Hint: Think about the meaning of regex '[^,]'

sed -r 's/,([^,]\*){3},/,/g' public/mountainList.txt

sed 's/,.\*,/,/g' mountainList.txt

Sample Output



1. Use awk to finish task 9).

awk '{print $1,$NF}' FS=, OFS=, mountainList.txt

1. Use sed to insert a new line “Table: Eleven highest mountains in Georgia” at the beginning of "mountainList.txt".

sed '1s/^/Table:eleven highest mountains in Georgia/' mountainList.txt

1. Use sort to print out the sorted lines in alphabetical order according to the names of mountains.

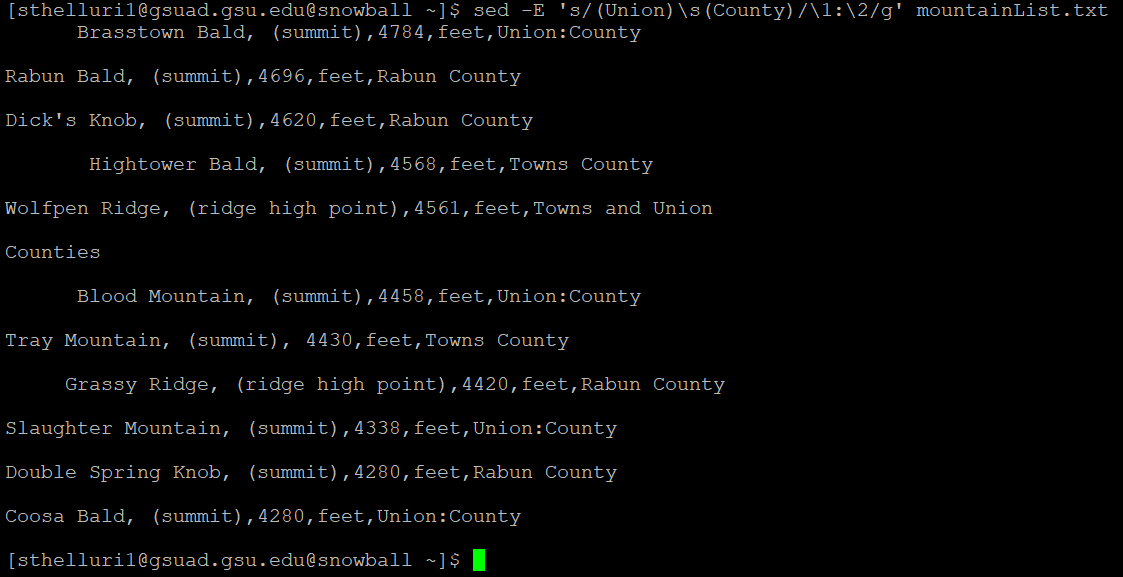
sort -t'.' -k2 mountainList.txt

1. Use sort to print out the sorted lines in descending order according to the height of mountains.

sort -t "," -r -nk 3,3 mountainList.txt

1. “When a pattern groups all or part of its content into a pair of parentheses, it captures that content and stores it temporarily in memory. You can reuse that content if you wish by using a back-reference, in the form:\1 or $1, where \1 or $1 reference the first captured group” (Refer to [1]). For example, the following command add a colon between Union and County sed -E ‘s/(Union)\s(County)/\1:\2/g’ mountainList.txt

Attach a screenshot of the output of the above sed command.



1. Now can you write a command to finish task 9) using sed with backreference? sed -E 's/,.\*/,/' mountainList.txt

Useful Links:

1. Introducing Regular Expression - Capturing Groups and Backreferences https://www.safaribooksonline.com/library/view/introducingregular-expressions/9781449338879/ch04.html
2. Drew's grep tutorial http://www.uccs.edu/~ahitchco/grep/

1. Grep and Regular Expressions!

http://ryanstutorials.net/linuxtutorial/grep.php [4] Web Scraping with Regular Expressions

https://www.datascraping.co/doc/22/regular-expression