CS 279 - Week 8 Lab Exercise

Deadline

Due by the end of lab on 2022-10-13.

How to submit

Submit the files specified below on https://canvas.humboldt.edu.

Purpose

To practice with more file globbing pattern options, to practice with some `grep` command options, and to practice writing some Basic Regular Expressions (BREs).

Important notes

- Remember: On the public course web site, at the end of the **References** section, there is a handout about how to use **ssh** to connect to `nrs-projects.humboldt.edu` and how to use **sftp** to transfer files to and from `nrs-projects.humboldt.edu`.

- Work in PAIRS for this lab exercise:

  - two people at one computer,
  - one typing (driver),
  - one saying what to type (navigator),
  - both discussing along the way!

  When done, the driver should e-mail the files to the navigator, so BOTH of you can EACH submit them.

Lab Exercise setup

- use `ssh` to connect to the one of your accounts on `nrs-projects.humboldt.edu`

- make and protect a directory `279lab8` using the commands:

  ```
  mkdir 279lab8
  chmod 700 279lab8
  ```

- go into that directory using:

  ```
  cd 279lab8
  ```

Problem 1

In a file named `279lab8-prob1.txt`, put:

- your names

- your answers to the following

Write a file glob pattern (such as could work in commands such as `ls`, `cp`, etc.) for each of the following.

1 part a

Write a file glob pattern that will match files with suffix `.txt` whose names (before the `.txt`) are of length 4. (For example, `oh57.txt` should match, `yep57.txt` and `no3.txt` should not match.)

1 part b

Write a file glob pattern that will match files whose names start with `X`, `Y`, or `Z`, and have the suffix `.cpp`.

1 part c

Write a file glob pattern that will match files whose names contain at least one digit (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 0) within it. (There is more than one reasonable pattern for this.)

1 part d

Write a file glob pattern that will match files whose names start with a lowercase letter and contain at least two consecutive digits within it. (For example, `oh57.cpp` should match, `Yep57.txt` and `no3.py` and `try3x5` should not match.) (There is more than one reasonable pattern for this.)

1 part e

Write a file glob pattern that will match files whose names are length 3 or longer.

1 part f

Write a file glob pattern that will match files whose names are length 2 or longer and start with an uppercase letter, followed by anything except a vowel (anything except a, e, i, o, u, A, E, I, O, U). (There is more than one reasonable pattern for this.)

Problem 2

In a file named `279lab8-prob2.txt`, put:

- your names
- your answers to the following

Write a `grep` command for each of the following.

2 part a

A programmer misspelled the project name `Best Value` as `Boast Value` in files they worked on within the current directory! Write a command that will list JUST the names of files that need to be fixed.

2 part b

Now write a command that will show each line with `"Boast Value"` in it, each preceded by the file name it is in and the line number it is on.

2 part c

The programmer made this mistake in different combos of lowercase & uppercase! Write a command finding files containing `"Boast Value"` in any combination of case, giving a count of the number of occurrences in each file in the current directory.

Problem 3

In a file named `279lab8-prob3.txt,` put:

- your names
- your answers to the following

Write a Basic Regular Expression (BRE) (such as could work in commands such as `grep`) for each of the following, writing your BREs within double-quotes.

3 part a

Write a BRE pattern that will match any line starting with `Romeo:` (this might grab each of Romeo's first lines from a script, for example).

3 part b

Write a BRE pattern that will match any line containing `CS` followed by a blank followed by a 3-digit number. (There is more than one reasonable BRE for this.)

3 part c

Write a BRE pattern that will match any line ending with a semicolon.

3 part d

Write a BRE pattern that will match any line ending with either a semicolon OR a curly brace OR a closing parenthesis.

3 part e

Write a BRE pattern that will match any line containing `one` followed by any single character followed by `two`.

3 part f

Write a BRE pattern that will match any line containing `main.txt` (but not one containing just `mainytxt` or just `main3txt` etc.).

3 part g

Write a BRE pattern that will match any line starting with an `x` followed by zero or more `y` characters.

3 part h

Write a BRE pattern that will match any line that starts with a lowercase letter and ends with an uppercase letter.

3 part i

Note that `!` is special and will need to be escaped. Write a BRE pattern that will match the first line that should start a CS 279 bash shell script that is following class coding standards.

3 part j

It may vary a bit by locale, but basically the character class `[[:blank:]]` matches space and tab.

Using this character class, write a BRE pattern that will match any line ending with one or more spaces and/or tabs.

Submit these files to Canvas:

- `279lab8-prob1.txt`

- `279lab8-prob2.txt`

- `279lab8-prob3.txt`

BOTH of you should then submit copies of these problems' files to Canvas for this lab exercise.

Once both of you have submitted these lab exercise files, you may leave lab if you wish. Or, you can ask questions, read the course text, etc. But note that questions about today's lab exercise will get first priority.