

Name: _____

Problem	Points	Score
1	50	
2	50	
Total	100	

Notes:

- (1) Please follow the instructions in this exam for how to submit your work. Submit two files, *p01.py* and *p02.py*, in this directory:
`/data/courses/ece_3822/2019_spring/exams/exam_03/<lastname_firstname>/`
- (2) You can use all the web resources at your disposal except other human beings (and talking to someone via a chat line counts as an interaction with a human being 😊)

Problem 1: Write a program to find any line that contains two matching words on a line in a text file, and to display N lines before and after the matching line. We refer to this as a “windowed grep”. The interface to your program must be:

```
[host] python p01.py 1 word1 word2 */*.txt
```

Matches must be **CASE INSENSITIVE**. The second word must occur *after* the first word on the line. The remaining command line arguments are files to be processed. The output format must follow the example below.

Consider this example:

```
nedc_999_[1]: more /data/courses/ece_3822/2019_spring/exams/exam_03/picone/p01.txt
This is a simple test file.
Here is another line.
And another line.
My name is Joe.
My name is Mary.
More lines follow.
Even more lines follow.

nedc_999_[1]: cd /data/courses/ece_3822/2019_spring/exams/exam_03/picone/
nedc_999_[1]: p01.py 3 name joe p*.txt
File: p01.txt
-----
And another line.
My NAME is JOE.
More lines follow.
-----
File: p02.txt
-----
-----
nedc_999_[1]: p01.py 1 joe name p*.txt
File: p01.txt
-----
-----
File: p02.txt
-----
-----
nedc_999_[1]:
```

Print the filename only once – when you open the file for processing. Print the matched area delimited by “-----” for every match that you find.

Problem 2: Write a Python program that traverses a directory tree and prints all filenames that contain the string specified from the command line. For example, we learned how to use find:

```
nedc_999_[1]: cd /data/courses/ece_3822/2019_spring/eeg_reports
nedc_999_[1]: find . -type f -name "*7757*"
./01_tcp_ar/077/00007757/s003_2013_10_07/00007757_s003.txt
./01_tcp_ar/077/00007757/s001_2011_05_16/00007757_s001.txt
./01_tcp_ar/077/00007757/s002_2012_12_17/00007757_s002.txt
```

Your Python script, p02.py, should take these arguments:

```
nedc_999_[1]: p02.py <string> <path>
```

and produce the same result.

You cannot call shell commands from within Python. You must use Python library functions to traverse the directory tree. You must write your own code to do the filename matching.

Matches in this case should be **CASE SENSITIVE**.