

CS 8 Lab: pa05

November 12, 2014

1 Overview

This week we will learn how to read and write files using Python. This pdf has suggested steps for completing the assignment.

2 Getting Set Up

Pull up the assignment description from <http://cs.ucsb.edu/~koc/cs8/hwexpa/pa05.html> and read through it. Download `words.txt` by following the directions in the project description. Save it to the folder in which you will be saving your code. If you put everything in the same folder, you **don't** have to type `import os` or `os.chdir("filepath")`.

Open up a new python file called `pa05.py` (use past handouts for help if needed). As the first three lines, type in comments containing your full name, lab section time, UCSB UMail email address, and perm number:

```
# Your name, Lab time
# Your UCSB email address
# Your perm number
```

In `pa05.py`, you have to write three functions. Make sure you define them exactly as described on the assignment description. You can start with this:

```
#places all words in "ifile" that start with the character c
#into another file called "ofile" in the same order
def getListBegin(c,ifile,ofile):
    #add code here
```

```
#places all words in "ifile" that end with the character c
#into another file called "ofile" in the same order
def getListEnd(c,ifile,ofile):
    #add code here
```

```
#places all words in "ifile" that contain the string s
#into another file called "ofile" in the same order
def getListContain(s,ifile,ofile):
    #add code here
```

Save your file.

3 Write your code

Inside these three functions, you will need to loop through each line in the input file (as there is one word per line), check if the word/line matches the criteria to move it into the new file, and, if it does, add it to the output file. Here are a few things you may find useful:

- The following code loops through each line in the readable file called input:

```
for aline in input:
    #do something with the text stored in aline, the current line
```

- Remember how string indexing works. For example, if we have a string `ourString = "hello"`, then `ourString[1] = 'e'`.
- At the end of each line of words.txt, there is a newline character: `\n`. You'll want to include this newline character when you write the words into the new file so that each word is on its own line. Also, keep in mind that this character is there when you're writing your `getListEnd` function, and you're checking to see if the last character of the word (not the newline character) is the input character `c`.
- The following code writes whatever is stored in the string called `text` to a writeable file called `output`:

```
output.write(text)
```

- These three functions that you need to write can be written in a very small number of lines (each of mine are just three lines long). If you find yourself writing lots of code, take a moment to re-think your strategy.
- There is a very easy way to check if a string is contained within a string. Keep this in mind when you write the last function. If you don't know how off hand, Google is your friend. =)

Please note: Your `pa05.py` file should ONLY contain these three functions. Any extra code that you use to test your fuctions, including the code to open and close files (see the next section), should NOT be in `pa05.py`.

4 Testing

Follow the steps in either (not necessarily both) sections 4.1 or 4.2 below, depending on your testing environment.

4.1 Running on the command line

If you're on a computer without IDLE or just want to run this on the command line, open up a Terminal window and navigate into the directory where you saved your `pa03.py` file. Type `python3` and press enter. You are now in the Python shell/command line environment. Remember you can exit at any time by typing `quit()`. After you type `python3`, type `import pa05` to import your file. Following the examples on the programming assignment description, we can test the first function as follows:

```
mf1 = open("words.txt","r")
mf2 = open("nlist.txt","w")
pa05.getListBegin("d",mf1,mf2)
mf1.close()
mf2.close()
```

Please be sure to include the close statements, otherwise your file might become corrupted. Now, find this new file `nlist.txt` that you've created. It should be in the same folder that `words.txt` and `pa05.py` are in. It should hold all words from `words.txt` that start with the letter `d`. Continue to test the other functions using the examples on the programming assignment description, and make up some tests of your own.

4.2 Running in IDLE

If you're on a computer with IDLE, go to `Run`→`Run Module` where you have your file. The IDLE prompt window (the window with the `>>>`) should restart. In this window, type the following:

```
mf1 = open("words.txt","r")
mf2 = open("nlist.txt","w")
getListBegin("d",mf1,mf2)
mf1.close()
mf2.close()
```

Please be sure to include the close statements, otherwise your file might become corrupted. Now, find this new file `nlist.txt` that you've created. It should be in the same folder that `words.txt` and `pa05.py` are in. It should hold all words from `words.txt` that start with the letter `d`. Continue to test the other functions using the examples on the programming assignment description, and make up some tests of your own.

5 Turnin

Ready to submit? Make sure you move your file over to CSIL first. Then, in a Terminal, navigate the the directory containing your file. To turn in, type the following command:

```
turnin pa05@cs8 pa05.py
```

and follow the on-screen directions. Remember, I will grade the last submission turned in before the deadline if you turn in multiple versions. **The deadline for this project is Friday, November 14th, 2014 at 11pm. We will not be accepting late submissions, so make sure you give yourself enough time to complete and turn in your project.**