CSCI 1411: Fundamentals of Computing
Lab 7
Due Date: 8:30 AM October 06, 2020

Name: Kerry Gip

Goals:

- Understanding the basic file processing concepts and techniques for reading and writing text files in Python.

Development Environment: IDLE

Deliverables:

1. This lab handout with 4 screen shots (2 for part I, 2 for part II).
2. Your Python code for Part II of this lab. Name the file using the following format: yourlastnameFirstnameLab07b.cpp
   Example: If your name is Jamal Jones then you will name the file as follows: JonesJamalLab7b.cpp
3. Input file and output file for Part II of this lab.

How to take a **screen shot**:

- For a Windows 10: Use Snipping Tool to copy and CTRL + V to paste screen shot.
- For Mac: Shift + Command + 4 to copy and CTRL + V to paste screen shot.

Part I – Skill Practice (10 pts)

- Start IDLE
- Create a new file.
- Type the following code in the file. …. **Do not cut and paste.** You will learn more by typing it in.
- The following program will read the names (first name and last name) from a file ("in.txt"). Email addresses and user names will be generated using the names and will be written to a new file.
- Remember to update the first 3 lines with your own first name, last name and the date of the lab.

```
# Your first name
# Your last name
# Date: The current date
# Description: This program shows techniques of reading and writing text files in Python

def main():
    print("This program creates a file of emails and usernames from a file of names")

    # open the input file
    infile = open("in.txt", "r")

    # get the file names of output file
    outfileName = input("What file should the usernames go in? ")

    # open the output file
    outfile = open(outfileName, "w")

    # process each line of the input file
    for line in infile:
        # get the first and last names from line
        first, last = line.split()
        # create the ucdenver email address
        email = (first + "." + last).lower() + "@ucdenver.edu"
        uname = (last[:]+first[0]).lower()
        # write it to the output file
        print(email + " " + uname)
        print(email + " " + uname, file=outfile)
    # close both files
    infile.close()
    outfile.close()
    print("Emals and usernames have been written to", outfileName)
```

- Save the file as “YourLastNameYourFirstNameLab07a.py”
- Save “in.txt” file in the same folder as your “YourLastNameYourFirstNameLab07a.py” file is located.

- Click Run -> Run Module
- If you get any syntax error, try to correct the syntax error.
- Type main()
- The program will ask for the output file name.
- Output will look like the following:

```
>>> main()
This program creates a file of emails and usernames from a file of names
What file should the usernames go in? out.txt
john.doe@ucdenver.edu doej
jane.smith@ucdenver.edu smithj
sara.thomas@ucdenver.edu thomass
frank.brown@ucdenver.edu brownf
mike.devis@ucdenver.edu devism
william.smith@ucdenver.edu smithw
jessica.garcia@ucdenver.edu garciaj
bob.lopez@ucdenver.edu lopezb
Emails and usernames have been written to out.txt
>>>
```

- "Out.txt" file will be located in the same folder as your Python program.
- Open the "Out.txt" file.
- Sample "in.txt" file:

```
John Doe
Jane Smith
Sara Thomas
Frank Brown
Mike Devis
William Smith
Jessica Garcia
Bob Lopez
```

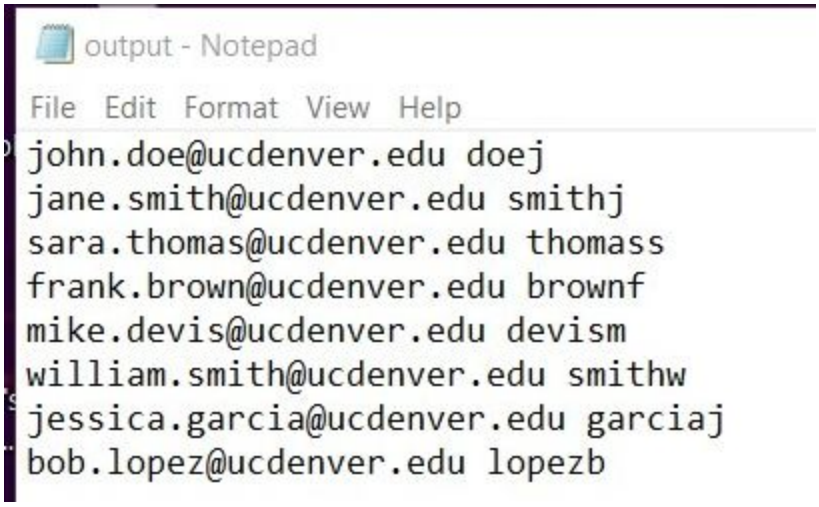
- Sample output file ("Out.txt"):

```
john.doe@ucdenver.edu doej
jane.smith@ucdenver.edu smithj
sara.thomas@ucdenver.edu thomass
frank.brown@ucdenver.edu brownf
mike.devis@ucdenver.edu devism
william.smith@ucdenver.edu smithw
jessica.garcia@ucdenver.edu garciaj
bob.lopez@ucdenver.edu lopezb
```

- **Capture 1 screenshot of your output and attach it here.**

```
================== RESTART: C:/Users/kerry/Desktop/Lab07 File.py =========
This program creates a file of emails and usernames from a file of names
What file should the usernames go in? output
john.doe@ucdenver.edu doej
jane.smith@ucdenver.edu smithj
sara.thomas@ucdenver.edu thomass
frank.brown@ucdenver.edu brownf
mike.devis@ucdenver.edu devism
william.smith@ucdenver.edu smithw
jessica.garcia@ucdenver.edu garciaj
bob.lopez@ucdenver.edu lopezb
Emails and usernames have been written to  output
>>>
```

- **Capture 1 screenshot of your output file and attach it here.**



Part II – Finding the average score (15 Points)

- Write a program to calculate the average scores of the students.
- Your program should read input from a file
- Each line of the file contains the username of the student (1 word) followed by 5 quiz scores
- Your program will read input from file and calculate the average scores for each student.
- Your program will write the output in another file.
- In the output file, your program should write the student name followed by their average score.
- Your program will do the following:
    - Ask user for an input file name
    - Read the name and quiz scores from the file
    - Calculate the average score for each student
    - Ask user for an output file name
    - Write the username followed by the average score of the student in the output file.
- Sample input file:

johnd 20 30 12 25 50
janeb 10 10 20 23 10
saran 23 10 30 30 30
frankb 25 21 22 30 23
marys 10 10 10 10 10

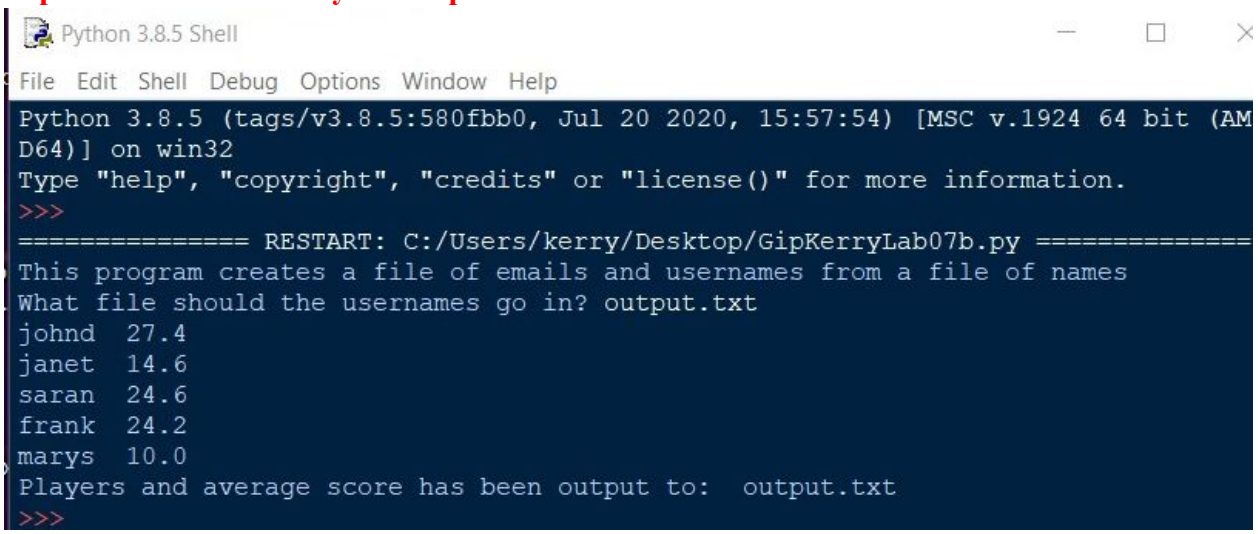
- Sample Input/Output:

```
>>> main()
Please enter the name of the input file: score.txt
Please enter the name of the output file: output.txt
johnd  27.4
janet  14.6
saran  24.6
frank  24.2
marys  10.0
```

- The sample output file:

```
johnd 27.4
janeb 14.6
saran 24.6
frankb 24.2
marys 10.0
```

- **Capture 1 screenshot of your output and attach it here.**



- **Capture 1 screenshot of your output file and attach it here.**

- **Upload this lab handout with required screen shots and your code file to Canvas to submit the lab.**