CS 1112: Introduction To Programming

File Writing

(Various Ways)

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Friendly Reminders

- Your ***safety*** and ***comfort*** is important!
  - If you choose to wear a mask you are welcome to do so
  - *We will interpret wearing a mask as being considerate and caring of others in the classroom (not that you are sick), and realize that some may choose to mask to remain distanced*
- Remember to always be **kind, respectful, supportive, compassionate and mindful of others!** ☺
- Be an ***active*** participant in your learning!
  You're welcome and ***encouraged*** to ask questions during class!
- If you feel ***unwell***, or think you are, please stay home
  - *Contact us!* *We will work with you!*
  - Get some rest ☺
  - View the recorded lectures – *please allow 24-48 hours to post*

Announcements

- **Quiz 8** will be on **RegEx and File I/O** is due by 11:00pm on Mon. **4/14** **(Tonight!)**
  - *Last quiz!*
- ***Quizzes: Remember we will drop your lowest two (2) quiz scores.***
- **PA07** (on **RegEx**) is due by 11:00pm on Wed. **4/16**
  - *Last programming assignment (PA)!*
- ***Exam 2: grades will be posted on Canvas and on Sherlock once grading is complete***

- ***Please double-check your PA grades on Gradescope (Canvas should match)***
- ***Please double-check your Quiz score on Canvas (Sherlock will not show updated scores)***

Review Solution to the last in-class "lab" activity

`file_reading_RegEx_ica.py`

Let's take a look at the solution!

Writing to a file

- **Using open() function – "w"**
  - File stream (a variable that stores the open file)
  - **Syntax: open(file_name, mode)**
  - `file = open("my_file.txt", "w")` # **w** = write *(replaces the contents of the file)*

  - Can use **`write()`** function to write to this file:
  - `file.write("This is written to the file")`

  - We must remember to close the file after use!
  - `file.close()`

[Once we write to a file…]
We can check the contents of that file (reading)

```
# checking contents of the file
file = open("my_file.txt", "r")  # Open file for reading
print(file.read())  # Read all of the file at once (printing it)
file.close()  # Close the file
```

Writing to a file

- **Using open() function – "a"**
  - File stream (a variable that stores the open file)
  - **Syntax: open(file_name, mode)**
  - `file = open("my_file.txt", "a")` # **a** = append *(adds to the end of the file)*

  - Can use **`write()`** function to write to this file:
  - `file.write("Let's APPEND to this file")`

  - We must remember to close the file after use!
  - `file.close()`

Writing to a file

- **Using "with open as"**
  - file_var (a variable that stores the open file)
  - **Syntax: `with open(file_name, mode) as file_var`**
  - `with open("my_file.txt", "w") as file_var`

  - Can use `write()` function to write to this file:
  - `file_var.write("Line one to file\n")`
  - `file_var.write("Line two to file\n")`

  (Don't forget 'new line' character!)

  - Using this form of opening a file for writing, we **do NOT** have to close the file after use! The file is closed on our behalf (so, it still gets closed, but we don't have to worry about it.)

Writing to a file

- **Using "with open as"**
  - file_var (a variable that stores the open file)
  - **Syntax: `with open(file_name, mode) as file_var`**
  - `with open("my_file.txt", "w") as file_var`

  - Can use `print()` function ***instead*** to write to this file:
  - `print("New text added using print() line 1", file=file_var)`
  - `print("New text added using print() line 2", file=file_var)`

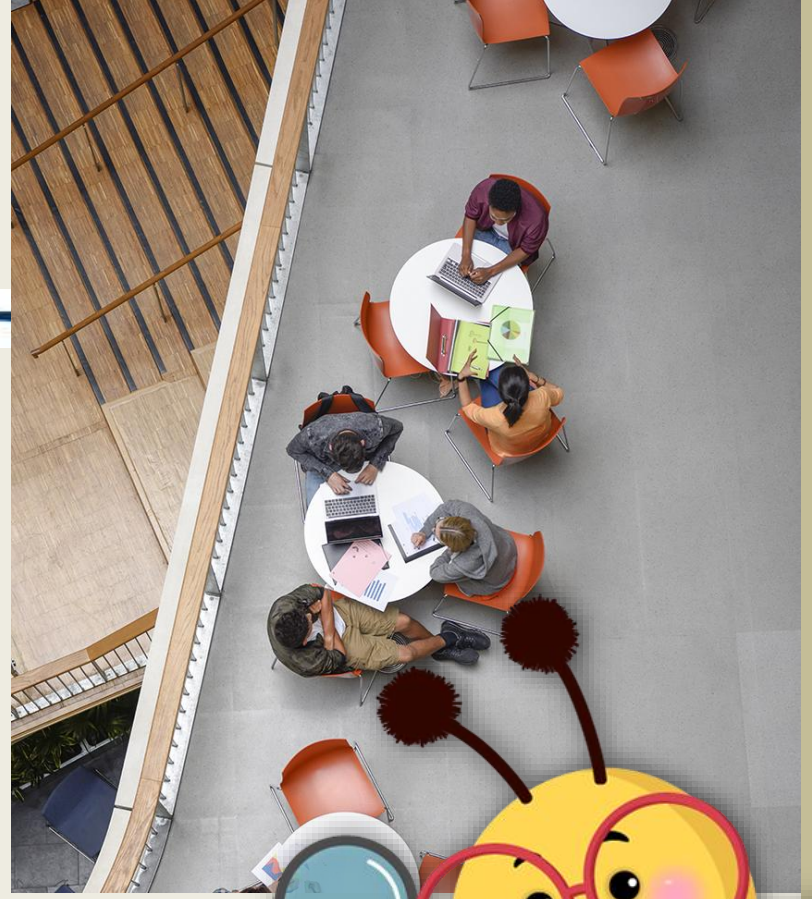
Don't forget to specify the file!

[Once we write to a file…]
We can read the contents bit by bit using a loop

 # read the contents of the file a line at a time, using a while loop

```
# Assume we have opened a file called "cities.txt" for reading...
# Assume the file variable is called data_file
city = data_file.readline()
while (city):  # while there is more data to read from the file…
    print(city)  # print, or do whatever with "city"
    city = data_file.readline()  # read another line from file
```

Once there is **nothing else** left to read, the while loop will **end**



Final Project: Chasing Clues

→ DID EVERYONE FILL OUT THE FORM?

Python Demonstration

Let's jump on PyCharm!

file_writing_1.py
file_writing_2.py

(+ associated text files)

In-Class "lab" Activity!

Activity for Today!

- In pairs or groups up to three work on the following activity.
- **file_reading_writing_ica.py**
- *Practicing gathering data, writing it to a file, then reading the data and performing a calculation with that data*

Remember to check-in with a TA before leaving class today!

Reminder: CS Laptop Loaner Program

- This course requires students to have a **laptop**
- I realize that not everybody might have one (nor necessarily need one for their desired major / path…)
- If you do not have a laptop for any reason… ***not to worry!***
- The CS department's Systems staff has a notebook / laptop loaner program and will be able to loan you a notebook / laptop computer for the duration of the semester if you don't have one or if you cannot afford one.
  - Also available if your laptop is broken and under repair, we can arrange for you to receive a loaner laptop for a week or two until your own laptop is fixed

Interested? Link: https://www.cs.virginia.edu/wiki/doku.php?id=cs_laptop_loaner

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