



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*
- 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**
 - *We will work with you!*
 - Get some rest 😊
 - View the recorded lectures – *please allow 24-48 hours to post*
 - *Contact us!*



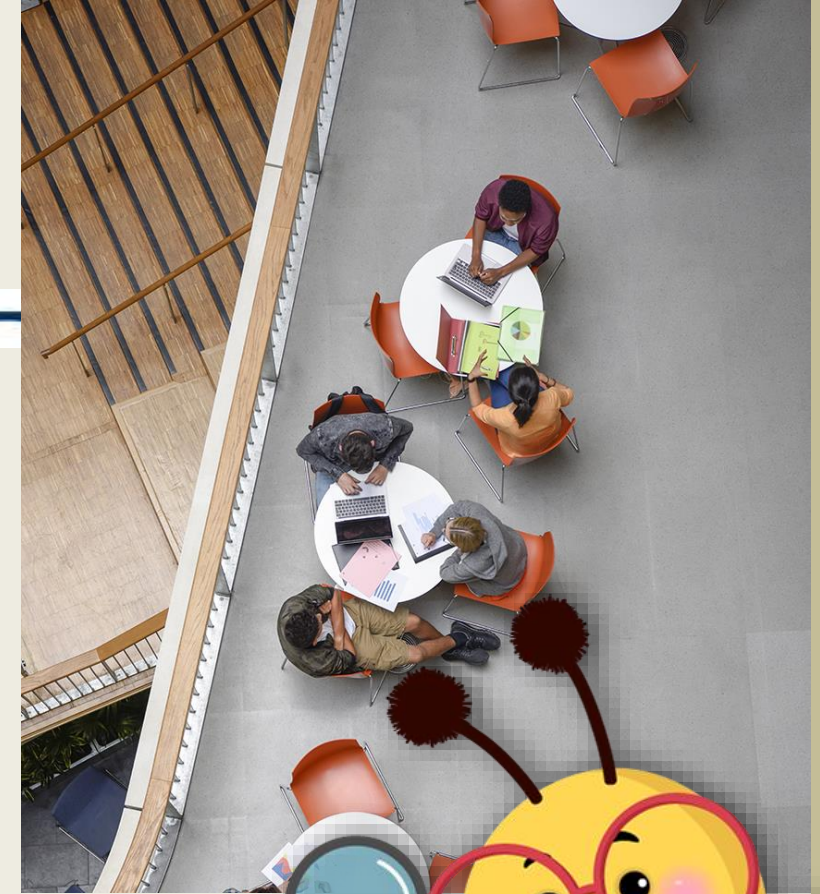
Announcements

- **PA07** is due by 11:00pm on 4/17 (Wednesday) (Last PA!)
 - **Quiz 8** will be on RegEx and File I/O – due by 11:00pm on 4/15 (tonight!) (Last Quiz!)
 - *Quizzes: Remember we will drop your lowest two (2) quiz scores.*
 - *Exam 2: grades will be posted on Canvas and on Sherlock once grading is complete*
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- *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)*
 - *Exam 1: confirm your correction points have been added to your Exam 1 score (see Canvas Grades)*

Review Solution to the last in-class “lab” activity

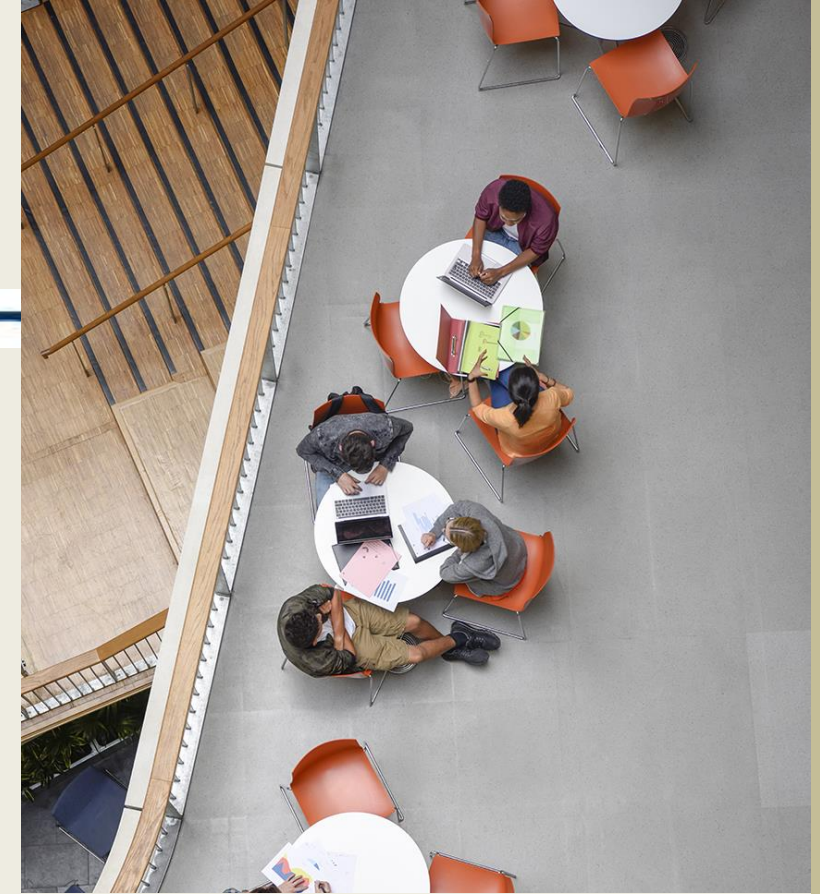
`file_reading_RegEx_ica.py`

Let's take a look at the solution!



Final Project: Chasing Clues

→ FORM YOUR PROJECT GROUPS!



“Project Groups” Google form

→ <https://forms.gle/w8MHTbfLcYTzq86A6>

LET US KNOW IF YOU ARE UNABLE TO SUBMIT TO THIS FORM!

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")

- 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**)

[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

PYTHON DEMONSTRATION

Let's jump on PyCharm!

`file_writing_1.py`

`file_writing_2.py`

`(+ associated text files)`

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!

In-Class “lab” Activity!

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

I am happy to be your sponsor. Please let me know.