

Welcome to Week 7

CSCA20



Assignment 1

DUE SUNDAY NIGHT!

Don't submit last minute!



Assignment 1

Don't forgets

- **Comments** (See Rule of Thumb on Piazza)
- **Docstrings**
- **Doctests**
- **PEP8 Style**
- **Double check that you submitted the right files!** (At least one person messes up every year!)

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This Week's Topic

F  **LES**

Opening files

```
with open(file) as myFile:
```



Open a file by name
(In the same directory)



Store the file
into a **variable**

Now we can **do something** with our file inside the with block.

When the block finishes executing, the **file will be closed automatically.**

Opening files

```
myFile = open(file)
```



Store the file
into a **variable**



Open a file by name
(In the same directory)

myFile will be the **variable** that **holds the open file**. We can **work with it the same way** we would in a with block, except we must **remember to close the file** when we're done.

Opening files

```
myFile = open(file, mode)
```



Open a file by name
(In the same directory)



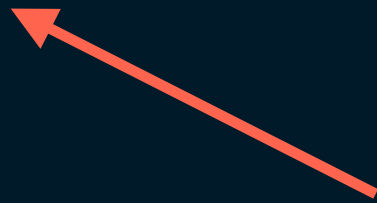
Indicate **what we want to do** with the file

We can (and should) indicate what we intend to do with our open file:

“r” : read.	Read the contents of the file only
“w” : write	Clears the file for writing into
“a” : append	Write into the file after its content

Closing files

```
myFile.close()
```



We need to make sure that
the file we indicate is currently **open**

If we opened a file manually, as was shown
on the previous slide, **we must ensure that**
we close it before the program exits.
This is very important!

Why Should I Close A File?

Why do you **shut your computer down** instead of **pulling the power cord** out?

We **don't want to cause conflicts** with other applications that might use the file later.

We **don't want to hog more memory** (RAM) than we need.

It's **like clicking "eject"** before pulling out a flash drive.

Which way is better?

with Block

You don't need to worry about closing files

If your code causes an error, the file will close automatically

You have to remember to indent the block

Manually

It's easy to forget to close open files

If your code causes an error, your program will crash

No indenting is needed. (Yay?)

Looping Through a File

```
for _____ in myFile:
```



Line in you open file
(In the same directory)



myFile is an
open file

When we **loop through a file by element**, we **read one line at a time**; up to each newline (“\n”) character — what you get when you hit the enter key on your keyboard

Important File Methods:

File.readline()

Reads the next unread line in the file.

(This tracks your place in the file)

File.readlines()

Returns a list containing all the lines in the file.

File.write(text)

Writes the given text to the open file.

Like **print**, except the output goes into the file.

CSV Files

CSV stands for **Comma Separated Values**.

A CSV file is a **translation of a table into text**. Programs like MS Excel, and Numbers read and generate CSVs out of spreadsheets.

Values in the table are separated with commas, without spaces. Think of these commas as dividers in a table.

CSV Files

Name	Age	Gender
Linda	34	F
Joseph	8	M



```
Name, Age, Gender  
Linda, 34, F  
Joseph, 8, M
```

WEEKLY CHALLENGE

This Week's challenge is a **quiz**, with a question similar to what you would see on the final exam.

All of you will take the quiz. You win a prize if you can get at least **50%**.

This will not count towards your final grade, but it will help you get ready for the final.

