CSC 111:
Intro to Computer Science through Programming

Spring 2017
Prof. Sara Mathieson
Admin

- Pick up a midterm study guide (coversheet on back)

- Homework 5 posted (due the Tues after spring break)

- Lab today: 20-30 minute practice midterm questions, then lab

- Midterm review (start Friday, finish Monday)
Outline: 3/1

- Discuss midterm
- Recap and finish “hello_world.txt” file
- Continue: reading and writing files
- Go over Homework 2
Midterm
Midterm: out Tues 3/7, due Friday 3/10

+ Take in the Neilson Library during any open hours
+ Time limit of 2 hours
+ No electronic devices or notes except a “cheat sheet”
+ Cheat sheet:
  • Created by you
  • Handwritten (no printed material)
  • 2-sided sheet (8.5 x 11)
+ For code, it does not have to be perfect syntax
Midterm: how to study?

- Think about the process of creating your cheat sheet as the studying process
- Go over all class notes, homeworks, labs (including solutions)
- For things that are not very solid yet, try out small examples in IDLE or try to redo a portion of the code without looking at any solutions (min/max functions for example)
- Try practice problems in the book
- More practice: https://www.codecademy.com/learn/python
Informal quiz (discuss with a partner)

1) What tasks are being accomplished in A and B? How can you tell from the first line of each?

   A
   ```python
   my_file = open("hello_world.txt", "w")
   my_file.write("Hello World!\n")
   my_file.write("Author: Sara Mathieson\n")
   my_file.write("This is testing out files\n")
   my_file.close()
   ```

2) The first parameter of `open(..)` must be what type?

   B
   ```python
   my_file = open("hello_world.txt","r")
   all_text = my_file.read()
   line_lst = all_text.split("\n")
   for line in line_lst:
       print(line)
   my_file.close()
   ```

3) What is this: "\n"?

4) What does `read()` return?
Informal quiz (discuss with a partner)

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   A: writing a file ("w" mode), B: reading a file ("r" mode)

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   string

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   new line character

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1) What tasks are being accomplished in A and B? How can you tell from the first line of each?
   
   A: writing a file (“w” mode), B: reading a file (“r” mode)

2) The first parameter of open(..) must be what type?
   
   string

3) What is this: “\n”? 
   
   new line character

4) What does read() return?
   
   the entire file as a string
Continue Hello World file
**Important file methods**

- **open**: i.e. `my_file = open(“numbers.txt”, “r”)`
  
  Note: built-in method, 3 modes for now: read ("r"), write ("w"), append("a")

- **read**: i.e. `all_text = my_file.read()`
  
  Note: returns the entire file as a single (potentially large) string

- **readline**: i.e. `line = my_file.readline()`
  
  Note: returns the next line of the file

- **readlines**: i.e. `all_lines = my_file.readlines()`
  
  Note: returns the entire file as a list of lines

- **close**: i.e. `my_file.close()`
  
  Note: should always be done after reading or writing a file
Three more useful methods...

+ `.strip()` for string: removes whitespace at the beginning and end of a string

+ `.append(element)` for list: add an element to a list, replaces our idea of `lst = lst + [element]`

+ `.index(element)` for a list or string: returns the index of the element
Homework 2 Examples
(we will do next time)