

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>

Recap

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?

```
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()
```

A

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

B

```
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?

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

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

string

- 3) What is this: `"\n"`?
- 4) What does `read()` return?

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my_file = open("hello_world.txt", "r")  
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A: writing a file ("w" mode), B: reading a file ("r" mode)

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

string

- 3) What is this: `"\n"`?
new line character
- 4) What does `read()` return?

B

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my_file = open("hello_world.txt", "r")  
all_text = my_file.read()  
line_lst = all_text.split("\n")  
  
for line in line_lst:  
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A: writing a file ("w" mode), B: reading a file ("r" mode)

A

- 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

B

```
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()
```


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

```
>>> lst = [17,10,1]
>>> lst.index(10)
1
>>> lst.index(1)
2
>>>
>>> string = "Spring break is coming soon"
>>> string.index("p")
1
>>> string.index("i")
3
>>> string.index("break")
7
>>> string.index("i",4)
13
>>> string.index("i",13)
13
>>> string.index("i",14)
19
>>>
```

Homework 2 Examples

(we will do next time)