



Middlebury

CSCI 146: Intensive Introduction to Computing

Fall 2025

Lecture 9: Files, modules and the command line

Goals for today

- Use loops to compute statistics for different inputs
- Describe the motivations for using data structures as the inputs to our functions
- Open a file for reading and read its contents or iterate through its contents line-by-line
- Explain the purpose of and use a `with` block to encapsulate file operations
- Use optional and keyword arguments
- Create a correctly formatted and documented module
- Utilize command line arguments to control program execution
- Launch Python programs from the command line

To follow along, download the following to your `cs146` folder:

- [word_stats.py](#)
- [my_module.py](#)
- [optional_parameters.py](#)
- [line_counter.py](#)
- [sys_args.py](#)
- [small-file.txt](#)
- [pokemon.txt](#)

Reading files in Python

```
with open("some-file-path-with-extension", "r") as file:
    for line in file:
        # Do something with line...
```

If we wrote a function called `process_file(filename)` what are some things about `filename`, or the contents in `filename` we might consider when testing our function?

- Think about "edge cases" or "boundaries" in the data.
- Think about dichotomies (empty/non-empty, alphabetic/numeric).
- Other special cases?

Question 1: What will this code print when invoked as **mystery(10, 2)**?

```
def mystery(a=1, b=3, c=6):  
    print(a + 2 * b + c)
```

- A. 11
- B. 13
- C. 20
- D. 21
- E. 22

Question 2: What will this code print when invoked as **mystery(b=7)**?

```
def mystery(a=1, b=3, c=6):  
    print(a + 2 * b + c)
```

- A. 11
- B. 13
- C. 20
- D. 21
- E. 22

Question 3: Which of the following expressions would print "a,b,c"?

```
print(value, ..., sep=' ', end='\n', file=sys.stdout, flush=False)
```

Prints the values to a stream, **or** to sys.stdout by default.

Optional keyword arguments:

file: a file-like **object** (stream); defaults to the current sys.stdout.

sep: string inserted between values, default a space.

end: string appended after the last value, default a newline.

flush: whether to forcibly flush the stream.

A. `print("a", "b", "c")`

B. `print("a", ",", "b", ",", "c")`

C.

```
print("a", end=",")
print("b", end=",")
print("c", end=",")
```

D. `print("a", "b", "c", end=",")`

E. `print("a", "b", "c", sep=",")`

Question 4: If the following code was in a file named **program.py**, what would be printed if the program was run with .

```
print("Run or import?")  
print(__name__)
```

A. **program**

B. **__main__**

C.
Run or import?
program

D.
Run or import?
__main__

Question 5: If the following code was in a file named **program.py**, what would be printed if the program was imported using **import program**?

```
if __name__ == "__main__":  
    print("Run or import?")  
    print(__name__)  
else:  
    print(__name__)
```

A. **program**

B. **__main__**

C.
Run or import?
program

D.
Run or import?
__main__

Question 6: If the following code was in a file named **program.py**, what would be printed if the program was run using **python program.py 2**?

```
import sys

if __name__ == "__main__":
    print(sys.argv[0]*int(sys.argv[1]))
```

- A. `__main__main__`
- B. `program 2`
- C. `program.pyprogram.py`
- D. This would generate an error.

Reminders

- Midterm 1 on Thursday October 9th from 7:30pm - 10pm in room 102.
- Midterm 1 covers material through last week (does not include new material from today).
- Midterm review on Wednesday:
Notes, review questions, sample exams are posted on the course website (linked on the calendar).
- Programming Assignment 4 due Thursday (initial submission).