CSE 163

Introduction to Python II:

Strings and Lists

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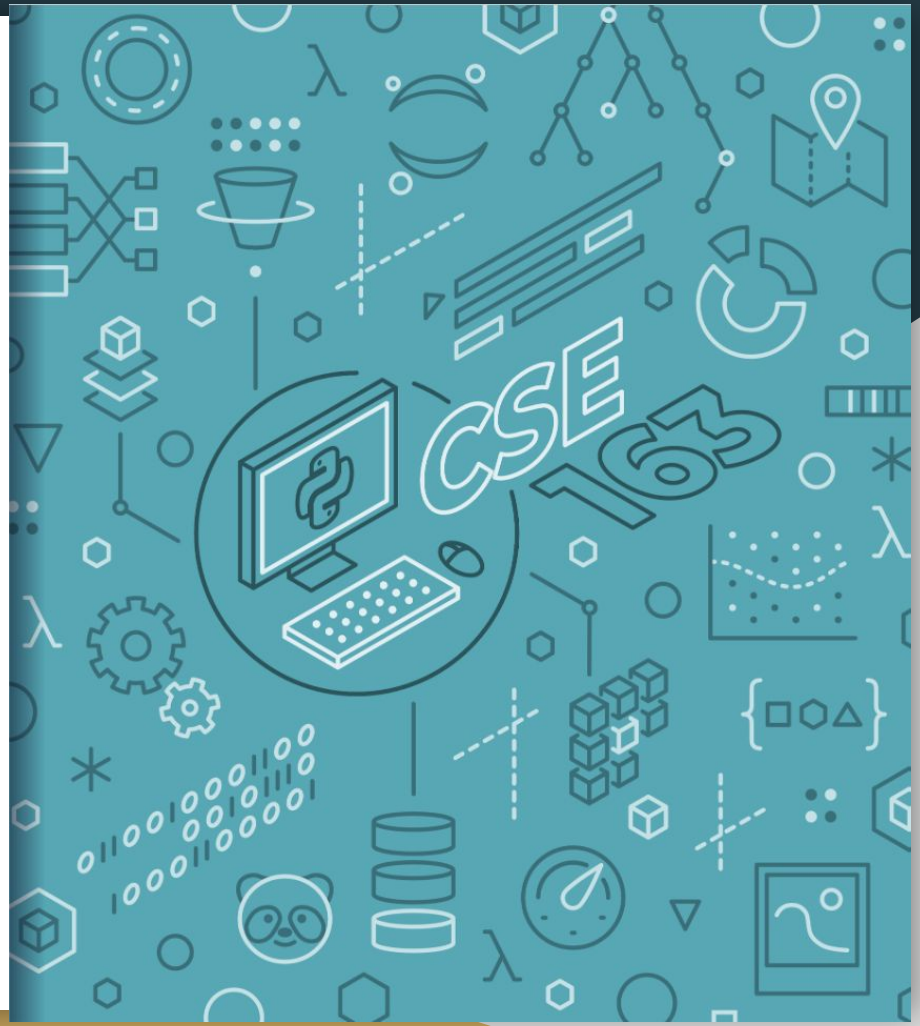
Spring 2026

💭Icebreaker (discuss with neighbors): ‘
Read any good books lately?
Add to our Slido!

slido.com
#cse163



Announcements

- **Lesson 2 Canvas Quiz due tonight at 11:59pm!**
  - Need to score 100% to count as completion (***unlimited attempts***)
- **Checkpoint 1** due on Gradesciope **Monday, April 6th by 11:59pm!**
- **Take Home Assessment 1: Processing** due on Gradescope **on Thursday, April 9th at 11:59pm!**
  - Will be released later today (~5pm)
- How was your first section?
- Make sure you have access to all the course materials
  - Ed, Gradescope, Canvas
  - **If you just enrolled**: wait about 24 hours for the rosters to update
- If you are having trouble running Python files, please come to office hours.

Lesson Recap: Strings and Lists

- ***Strings***
  - Text data that has indices for characters
  - Has functions to transform (and return new) strings!
  - String slicing

- ***Lists***
  - Indexed-sequence (like strings) but can hold any value!
  - For Java people – a lot like an ArrayList

- ***Documentation***
  - Doc-string (“““ documentation ”””)

String Methods vs. len

Call functions on strings using syntax

```
s.function(params)
```

This is not true for len (or other built-in Python functions)

```
len(s)
```

Can you think of other built-in Python functions?

Strings vs. Lists

```
s = 'hello world'
# Length
len(s)  # 11

# Indexing
s[1]           # 'e'
s[len(s) - 1]  # 'd'

# Looping
for i in range(len(s)):
   print(s[i])

for c in s:
    print(c)
```

```
l = ['dog', 'says', 'woof']
# Length
len(l)  # 3

# Indexing
l[1]           # 'says'
l[len(l) - 1]  # 'woof'

# Looping
for i in range(len(l)):
   print(l[i])

for word in l:
    print(word)
```

Function Comments

- ***Function comments*** are the best way for others to know what your code does!
  - Maintain good grammar
  - Focus on what your function does, rather than how it does it?
  - ***Ask yourself***: If I came back to this code after 1-2 years, can I easily understand what this function does by reading my comment?
  - Someone else should be able to understand, maintain, and develop with your code

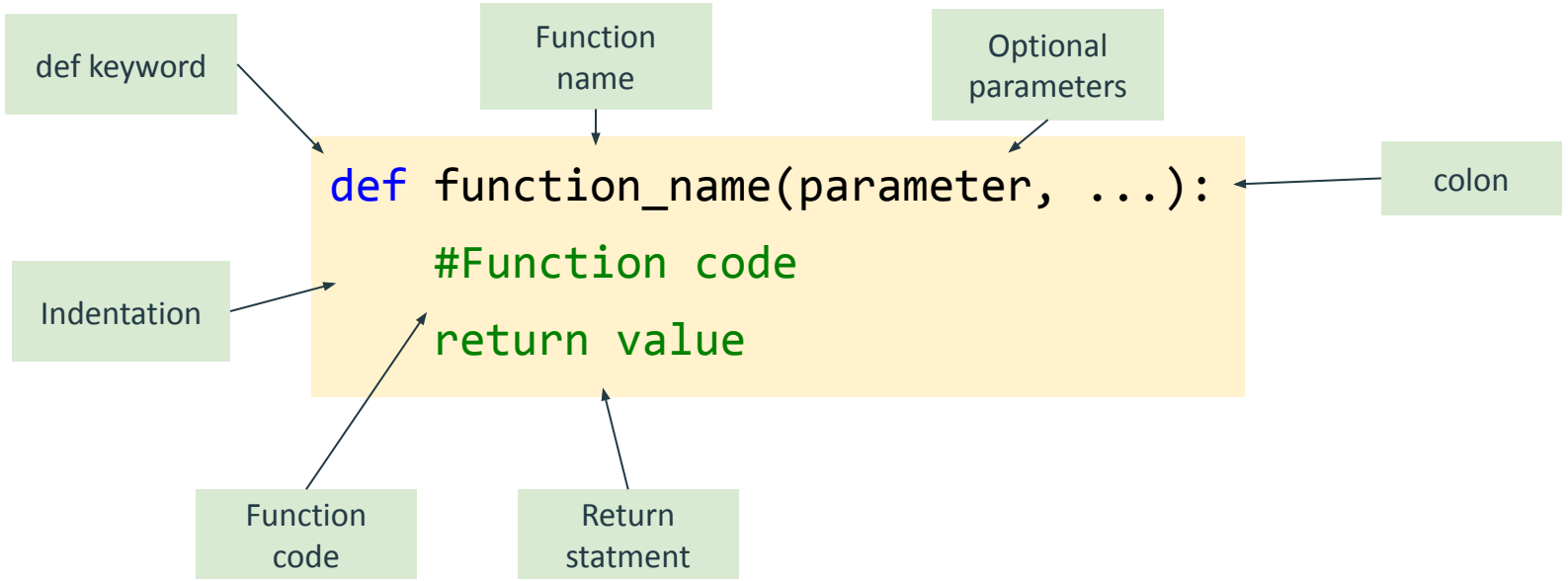
- ***Function comments*** should be concise and provide a good explanation of what the function is doing. Some things to think about:
  - What is the overall purpose of your function?
  - Does your function take in any special parameters?
  - What does it output? What does it return?

Which function comment is “better”?

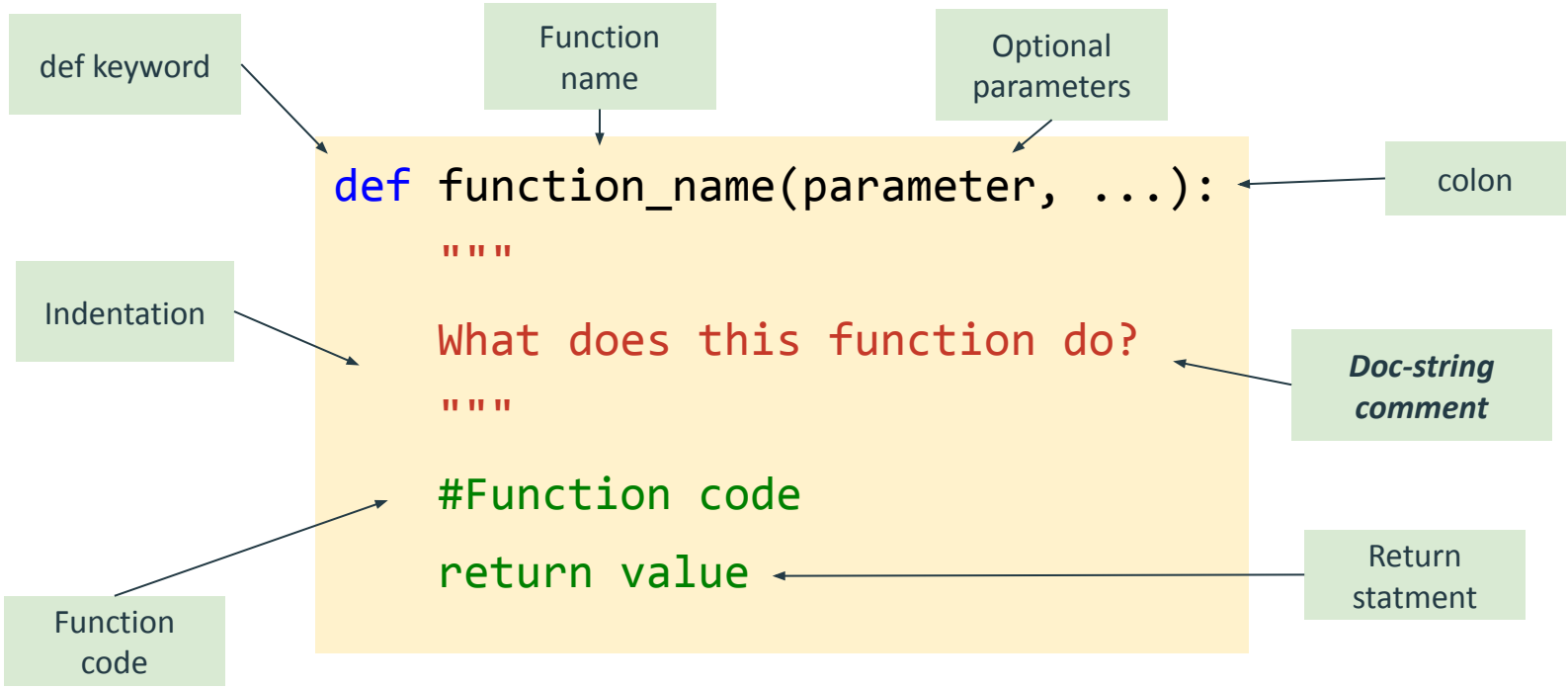
```
def sum_what(nums):
    """
    Takes in a list of
    numbers and returns the
    sum of those numbers.
    """
    total = 0
    for i in nums:
        total += i
    return total
```

```
def sum_how(nums):
    """
    Takes in a list of numbers,
    then calculates the sum of
    all numbers using a for loop
    to iterate through all numbers.
    """
    total = 0
    for i in nums:
        total += i
    return total
```

Recap: Anatomy of a Function



Recap: Anatomy of a Function



None Value

- ***None*** is a special value in Python that represents the ***absence of a value***
- You don't have to know a lot about ***None*** for this course except:
  - It can cause your program to crash if you ask a None value to do something
  - You might have cases where you return None (can lead to unexpected behavior or errors in your program)
  - Check for None using the ***is*** keyword, instead of ***==***

```
def increment(x):
    if x < 0:
        return None
    else:
        return x + 1

if increment(-1) is None:
    print('Failed')
```

Group Work: Best Practices

- When working with a new group for the first time:
  - Introduce yourself!
  - If possible, angle one of your screens so that everyone can see and discuss together
  - Be respectful of each other and allow everyone to speak

- Tips:
  - Start with making sure that everyone agrees to work on the same problem
  - Allow everyone to contribute or a chance to ask questions.
  - Ask if everyone agrees and periodically ask each other questions.
  - Call TAs or Adrian over if you need any help.
  - Don’t sit in silence.