

Topic 6: Loops

David H Smith IV

University of Illinois Urbana-Champaign

Wed, July 07 2021

Reminders & Updates

Course Outcomes

- Don't forget to register for this week's quiz with the CBTF.
- Start homework 4 sooner than later!
- Be sure to try the practice quiz at least a few times before the real quiz.
- Be sure to finish zyBooks 6

For Loops

Poll Question: For Loops

How many lines are printed to the screen?

```
1 course_times = {'CS 105': 'F9-11', "CS 125": "MWF11-12"}  
2 for course in course_times:  
3     print(course, 'meets', course_times[course])
```

- ☐ A 0
- ☐ B 2
- ☐ C 4
- ☐ D KeyError

Poll Question: For Loop

How many lines will be printed?

```
1 things = [22, [33, 44], 55, [66]]  
2 for thing in things:  
3     print(thing)
```

- ☐ A SyntaxError
- ☐ B 5
- ☐ C 4
- ☐ D TypeError

Poll Question: For Loop and Range

How many lines are printed to the screen?

```
1 for i in range(0, 10):  
2     print(i)
```

- ☐ A 11
- ☐ B 10
- ☐ C 9
- ☐ D TypeError

Poll Question: For Loop and Range

How many lines are printed to the screen?

```
1 for i in range(-3, 9, 4):  
2     print(i)
```

- ☐ A 3
- ☐ B 4
- ☐ C 5
- ☐ D another number...

Poll Question: Nested For Loops

How many lines are printed to the screen?

```
1 list1 = ['lemon', 'orange', 'lime']
2 list2 = ['banana', 'lemon']
3
4 for thing1 in list1:
5     for thing2 in list2:
6         print(thing2)
```

- ☐ A 5
- ☐ B 6
- ☐ C 7
- ☐ D SyntaxError

Poll Question: Unpacking

What is the value of z?

```
1 x, y, z = [22, [33, 44], [66]]
```

- ☐ A 22
- ☐ B 33
- ☐ C [33, 44]
- ☐ D [66]

Poll Question: Enumerate

What is the contents of new list?

```
1 orig_list = [3, 7, 22, 90]
2 new_list = []
3 for index, value in enumerate(orig_list):
4     if (index % 2) == 0:
5         new_list.append(value)
```

- ☐ A [3, 7]
- ☐ B [3, 22]
- ☐ C [3, 7, 22, 90]
- ☐ D [7, 90]

While Loops

Poll Question: While Loops

How many lines are printed?

```
1 num = 14
2 while num >= 1:
3     print(num)
4     num = num // 2
```

- ☐ A 3
- ☐ B 4
- ☐ C 5
- ☐ D 7

Break vs Continue

Poll Question: Break

How many chars are printed?

```
1 for c in "sleepy":  
2     if c == "e":  
3         break  
4     print(c)
```

- ☐ A 4
- ☐ B 1
- ☐ C 2
- ☐ D 6

Poll Question: Break vs Return

On which inputs do these functions behave differently?

```
1 def func(a_list):  
2     for item in a_list:  
3         if item == "":  
4             break  
5         print(item)  
6     print("done")
```

```
1 def func(a_list):  
2     for item in a_list:  
3         if item == "":  
4             return  
5         print(item)  
6     print("done")
```

- ☐ A ["a", "b", "", "d"]
- ☐ B ["a", "b", "c", ""]
- ☐ C both
- ☐ D neither

Poll Question: Continue

How many items are printed?

```
1 mixed_list = ['hi', '3', math.pi, 'there', ['CS', 105]]
2 for item in mixed_list:
3     if type(item) != str:
4         continue
5     print(item)
```

- ☐ A 0
- ☐ B 3
- ☐ C 2
- ☐ D 6

Break vs Return vs Continue

- **continue** → Skips everything below it and goes back to the beginning of the loop.
- **return** → Leaves function with return value.
- **break** → Exits loop it is apart of.