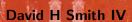


Topic 3: Lists and Strings



University of Illinois Urbana-Champaign

Mon, Aug 28 2021

Announcements

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Due tommorow night:

Homework 3 (Part 1), Post Reading 3 (Part 2) PrairieLearn:

2 zyBooks: Topic 3 (Part 2) - Participation

Strings

Poll Question: String Len

What is the value of my_str_length after the following code has run?

```
1 my_str = "le chat"
2 my_str_length = len(my_str)
```

- 6

- 5

Poll Question: String Concatenation

What is the value of x in the following expression?

```
"New" + "York"
```

- **TypeError**
- "New""York"
- "New+York"
- "New York"
- "NewYork"

What is the result of the following segment of code?

```
1 x = "ABCDE"
2 print(x[-3])
```

- IndexError
- , Α,
- 'В'
- 'C'
- 'D'

Poll Question: Changing Strings

What is the value of str1 after the following segment of code executes?

```
str1 = "urbana"
2 str1[0] = "e"
```

- SyntaxError
- IndexError
- **TypeError**
- 'erbana'
- 'eurbana'

Lists



Poll Question: Indexing with Lists

What is the result of the following code?

- 1 = [1, 2, 3, 4]2 x = 1.pop(1)y = 1.pop(1)4z = 1.remove(1)
- 5 print(x, y, z)
 - 2 3 None
 - None None 4

 - 2 3 4
 - IndexError

```
1 x = max("hello")
2 print(x)
```

- ValueError
- TypeError

Poll Question: Appending

What is the the value of x after the following code runs?

```
[1, 2, 3]
2 x = x.append(4)
```

- [1, 2, 3, 4]
- AttributeError
- [1, 2, 3, [4]]
- None

Poll Question: Appending

What does list1 contain after the code above executes?

```
1 \text{ list1} = [1, 2]
2 list1.append([3, 4])
```

- [1, 2]
- [1, 2, 3, 4]
- **(** [1, 2, [3, 4]]
- [[1, 2], [3, 4]]

Poll Question: Extending

What is the result of the following code if the user types in hello and world?

```
1 x = list(input())
2 y = list(input())
3 x.extend(y)
```

- ["hello", "world"]
- B ["h", "e", "l", "l", "o", "w", "o", "r", "l", "d"]
- [["hello"], ["world"]]
- [["h", "e", "l", "l", "o"], ["w", "o", "r", "l", "d"]]

Poll Question: Changing Lists

After the following code executes what gets outputted to the screen?

```
1 list1 = ["a", 5, "c", 234, ["hello", "world"]]
2 list1[4] = "Hello, World!"
3 print(list1)
```

- ['a', 5, 'c', 234, "Hello, World!"]
- TypeError
- SyntaxError
- ['a', 5, 'c', 234, ["hello", "world", "Hello, World!"]]
- ['a', 5, 'c', 234, ["Hello, World!"]]

Poll Question: Mutability

How many objects are created?

```
1 x = [1, 2, 3, 4]
```

- 2 y = x
- y += [1, 2]
- $4 \times += \lceil 1 \rceil$

 - 4

Given the following list which of the following function calls will find the largest element?

[1, 2, 3, 4, 5]

- max(x)
- maximum(x)
- x.max()
- x.maximum()

Poll Question: Max Function

What will be outputted to the screen when the following code runs?

```
1 x = max(["hello", "this", "is", "a", "test"])
print(x)
```

- "hello"
- "this"
- "a"
- "test"
- ValueError

Poll Question: Max Function

```
1 x = max(["hello", "this", "is", "a", "test"])
2 print(x)
```

- Material "hello"
- B "this"
- @ "is"
- 📵 "a"
- "test"

Poll Question: Index Function

```
1 x = ["hello", "this", "is", "a", "hello"]
y = x.index("hello")
3 print(y)
```

- **6** 5

Which of the following is the correct way to count the number of 1s in the list x and store the result in a variable y?

```
[1, 2, 3, 4, 5, 1, 2, 3, 2, 1, 2, 4, 1]
```

- y = count(x, 1)
- y = x.count(1)





Poll Question: Tuple Creation

Which of the following is an invalid way to make a tuple?

- x = tuple(1, 2, 3, 4)
- x = tuple([1, 2, 3, 4])
- x = tuple("1234")
- \mathbf{D} x = (1, 2, 3, 4)

Poll Question: Tuple Creation

What gets printed to the screen?

```
1 x = tuple("12345")
print(x)
```

- ("1", "2", "3", "4")
- (1, 2, 3, 4)
- ("1234")
- (1234)

Poll Question: Modify Tuple

What is the result of the following code?

```
1 x = (1, 2, 3, 4)
2 \times [1] = 5
```

- 3 print(x)
 - (5, 2, 3, 4)
 - (1, 5, 3, 4)
 - TypeError
 - SyntaxError

Poll Question: Creating Tuples

What is the result of the following code?

```
x = (1, 2, 3, 4)
y = (1, 2)
3 z = x + y
4 print(z)
```

- ((1, 2, 3, 4), (1, 2))
- **B** (1, 2, 3, 4, 1, 2)
- [(1, 2, 3, 4), (1, 2)]
- TypeError

General Syntax and Function Review

- lacktriangle () o For creating tuples.
- $\textbf{2} \ \ \textbf{[]} \rightarrow \mathsf{Creating lists}.$

Conversion/creation functions:

- **1 tuple()** \rightarrow Takes a string, list, or set and converts it to a tuple.
- list() Takes a string, set, or tuple and converts it to a list.

Order and Mutability

	Ordered	Mutable
String		
List		
Tuple		

Reminders



Reminders

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