

Topic 3: Lists, Strings, Sets and Dictionaries

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Announcements

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① Quiz 1 is this Thursday:

- ① <https://ae3.engineering.illinois.edu/computer-based-testing-facility/information-for-students/exam-preparation/>
- ② <https://ae3.engineering.illinois.edu/computer-based-testing-facility/information-for-students/exam-preparation/>
<https://ae3.engineering.illinois.edu/computer-based-testing-facility/information-for-students/exam-procedure/>
- ③ Links are in chat, on the course website, and on the uploaded slides for future reference
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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)
```

- ☐ A 6
- ☐ B 8
- ☐ C 7
- ☐ D 5
- ☐ E 3
- ☐ F 4

Poll Question: String Concatenation

What is the value of x in the following expression?

```
1 x = "New" + "York"
```

- ☐ A TypeError
- ☐ B "New""York"
- ☐ C "New+York"
- ☐ D "New York"
- ☐ E "NewYork"

Poll Question: Negative Indexing

What is the result of the following segment of code?

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

- ☐ A SyntaxError
- ☐ B IndexError
- ☐ C 'A'
- ☐ D 'B'
- ☐ E 'C'
- ☐ F 'D'

Poll Question: Changing Strings

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

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

- ☐ A SyntaxError
- ☐ B IndexError
- ☐ C TypeError
- ☐ D 'erbana'
- ☐ E 'eurbana'

String Formatting

List Functions

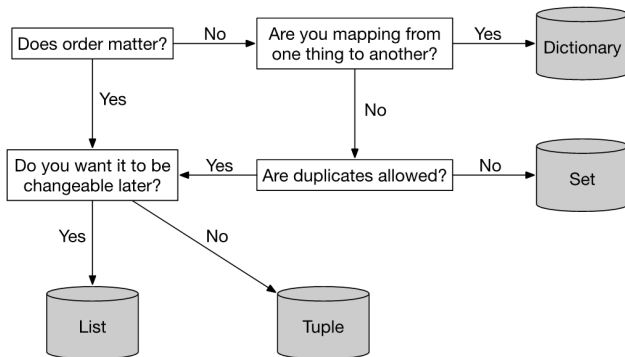
What is the value of x after the following code executes:

```
1 x = "{1} {0} {1}".format("S", "O", "Y")
```

- ☐ A "S O Y"
- ☐ B "SOY"
- ☐ C "O S O"
- ☐ D "Y O Y"
- ☐ E "OSO"

Data Structures

A Review of Data Structures



Lists

Poll Question: Indexing with Lists

What is the result of the following code?

```
1 l = [1, 2, 3, 4]
2 x = l.pop(1)
3 y = l.pop(1)
4 z = l.remove(1)
5 print(x, y, z)
```

- ☐ A 2 3 None
- ☐ B None None 4
- ☐ C 2 3 4
- ☐ D IndexError

Poll Question: Appending

What does `list1` contain after the code above executes?

```
1 list1 = [1, 2]
2 list1.append([3, 4])
```

- ☐ A [1, 2]
- ☐ B [1, 2, 3, 4]
- ☐ C [1, 2, [3, 4]]
- ☐ D [[1, 2], [3, 4]]

Poll Question: Changing Lists

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

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

- ☐ A ['a', 5, 'c', 234, "Hello, World!"]
- ☐ B TypeError
- ☐ C SyntaxError
- ☐ D ['a', 5, 'c', 234, ["hello", "world", "Hello, World!"]]
- ☐ E ['a', 5, 'c', 234, ["Hello, World!"]]

Sets

Poll Question: Making Sets

Which of the follow are valid ways to construct a set?

- ☐ A `x = set(1, 2, 3)`
- ☐ B `x = set([1, 2, 3])`
- ☐ C `x = [1, 2, 3, 4]`
- ☐ D `x = {1, 2, 3, 4}`
- ☐ E `x = {[1, 2, 3, 4]}`

Poll Question: Making Sets

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- 1 **set()** → Creates either a new set by either accepting and converting another sequence type (e.g., list, tuple) or creates an empty list if it's not given anything.
- 2 **set literal** → Written using the `{}`.

Poll Question: Set Tracing

What is the final value of set1 after the following code finish's executing?

```
1 set1 = {"hi", 2, 3}
2
3 set2 = set([2, 3, 4])
4 set2.add("hi")
5
6 set1.update(set2)
```

- ☐ A {"hi", 2, 3, 4}
- ☐ B {"hi", 2, 2, 3, 3, 4}
- ☐ C {2, 3, 4}
- ☐ D {2, 3}

Dictionaries

Poll Question: Accessing Element in Dictionary

Given the following dictionary, what is the correct way to access the value with the key "foo"?

```
1 d = {"foo": 5, "bar": 10, "baz": }
```

- ☐ A You can't. Dictionaries are unordered.
- ☐ B `d[0]`
- ☐ C `d("foo")`
- ☐ D `d["foo"]`

Poll Question: Accessing Element in Dictionary

What is the resulting value of `d` after the following code is executed?

```
1 d = {"foo": 5, "bar": 10, "baz": 2}
2 d["foo"] = 2
3 del d["baz"]
```

- ☐ A You can't. Dictionaries are unordered.
- ☐ B {"foo": 2, "bar": 10}
- ☐ C {"foo": 5, "foo": 2, "bar": 10, "baz": 2}
- ☐ D {"foo": 5, "foo": 2, "bar": 10}
- ☐ E {"foo": 2, "bar": 10, "baz": }

Final Reminders

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