61A Lecture 16

Announcements

String Representations

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- The **str** is legible to humans
- The **repr** is legible to the Python interpreter

The **str** and **repr** strings are often the same, but not always

The repr String for an Object

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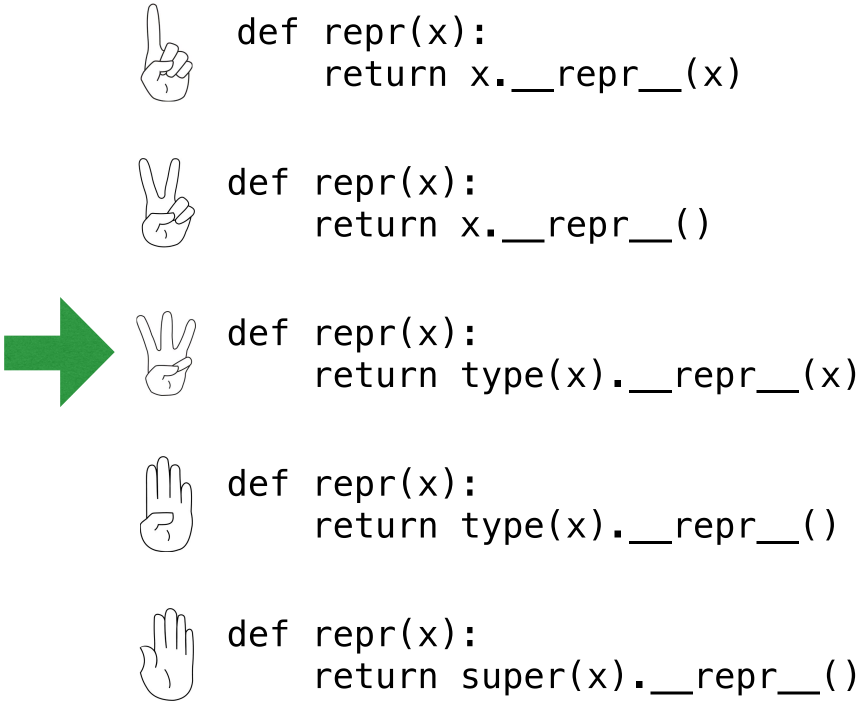

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(Demo)

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Classes that implement `__repr__` and `__str__` methods that return Python-interpretable and human-readable strings implement an interface for producing string representations

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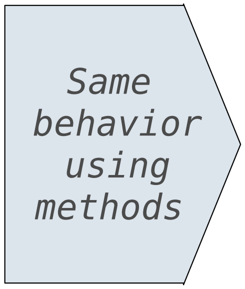

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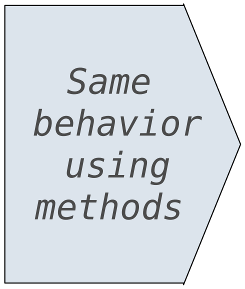

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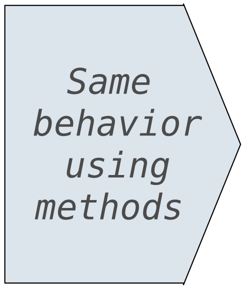
Same behavior using methods

```
>>> zero, one, two = 0, 1, 2
>>> one.__add__(two)
3
```

Special Method Names in Python

Certain names are special because they have built-in behavior

These names always start and end with two underscores

`__init__` Method invoked automatically when an object is constructed

`__repr__` Method invoked to display an object as a Python expression

`__add__` Method invoked to add one object to another

`__bool__` Method invoked to convert an object to True or False

`__float__` Method invoked to convert an object to a float (real number)

```
>>> zero, one, two = 0, 1, 2
>>> one + two
3
>>> bool(zero), bool(one)
(False, True)
```

Same behavior using methods

```
>>> zero, one, two = 0, 1, 2
>>> one.__add__(two)
3
>>> zero.__bool__(), one.__bool__()
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```

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(Demo)

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    >>> f = Ratio(3, 5)
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$$\frac{3}{5}$$

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>>> f = Ratio(3, 5)
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