61A Lecture 29

Friday, April 10

Announcements

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- Homework 8 due Wednesday 4/15 @ 11:59pm (small)

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  - Early point #1: Questions 1–12 submitted (correctly) by Friday 4/17 @ 11:59pm

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  - Early point #2: All questions (including Extra Credit) by Wednesday 4/22 @ 11:59pm

Data Processing

Processing Sequential Data

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- Declarative programming languages to manipulate and transform data
- Distributed computing

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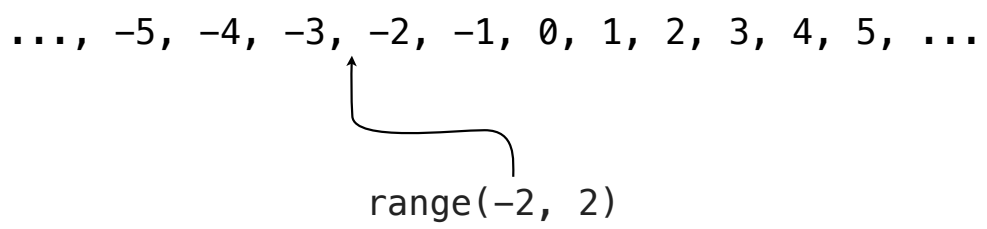

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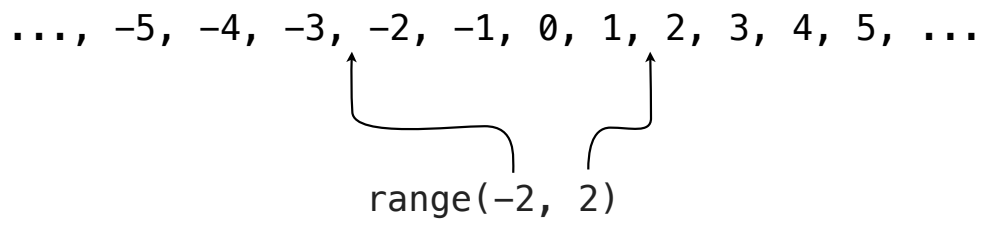

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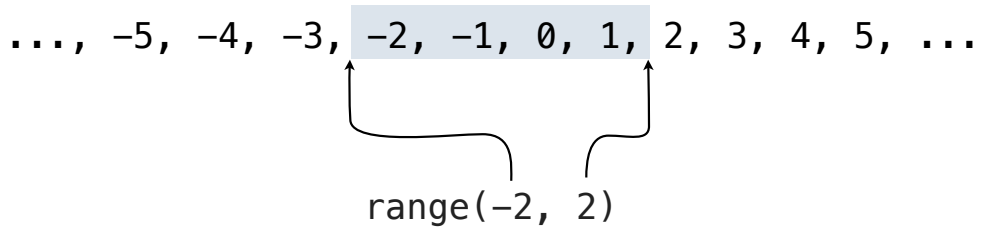

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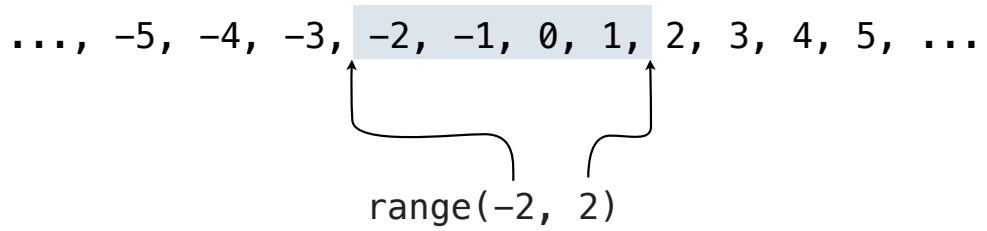

(Demo)

Iterators

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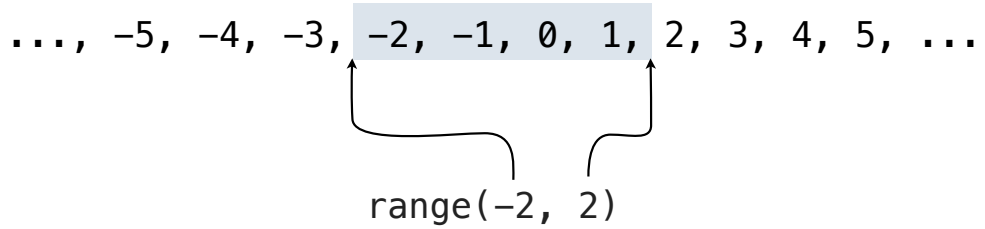

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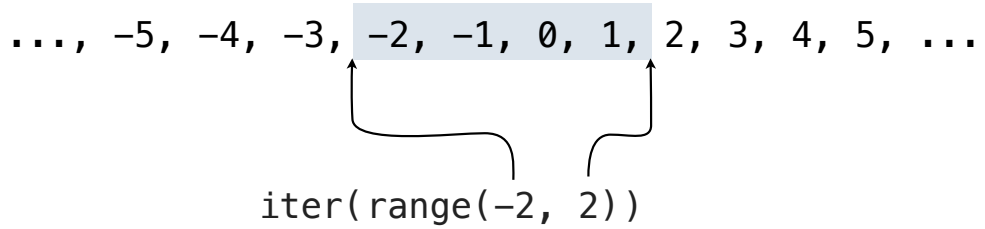

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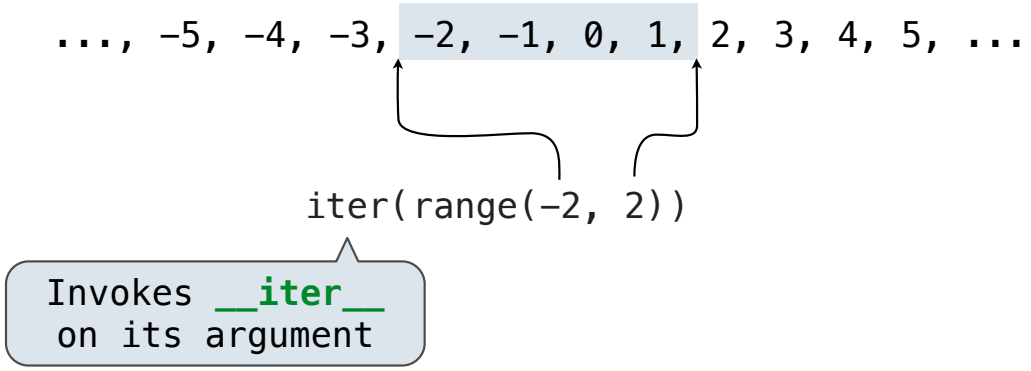

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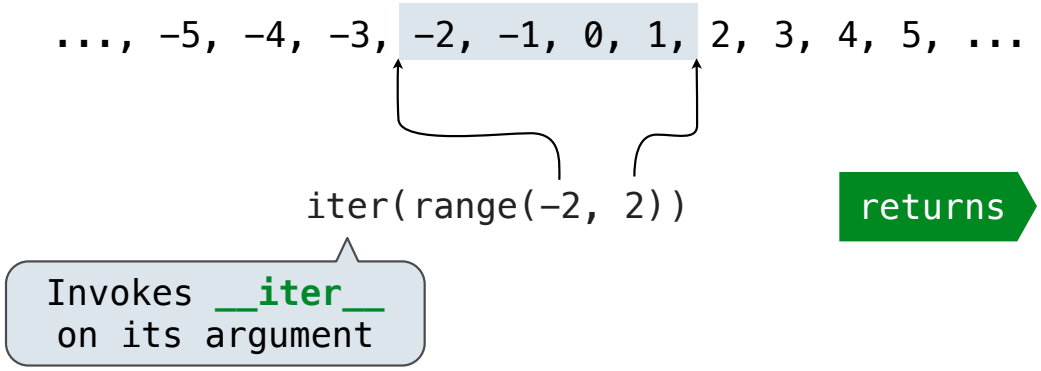

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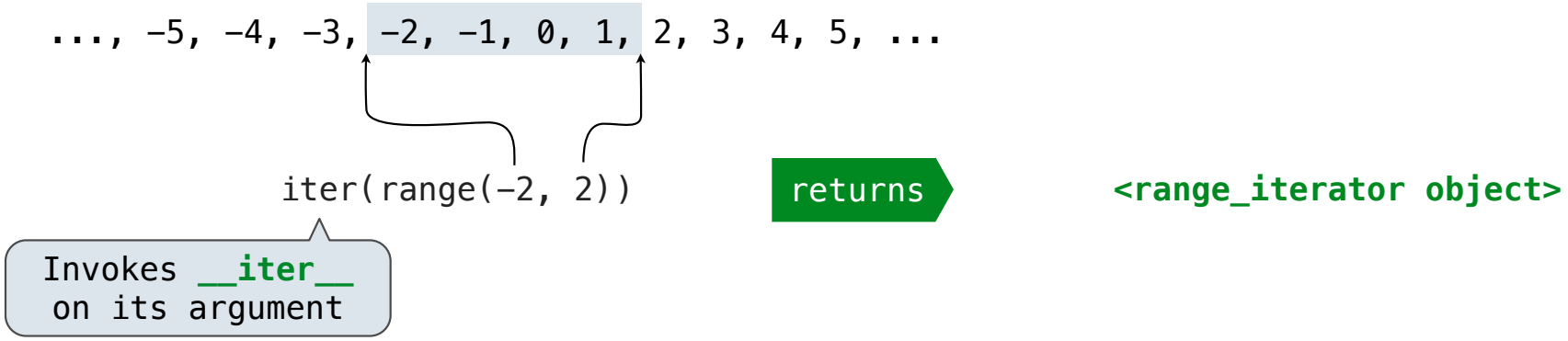

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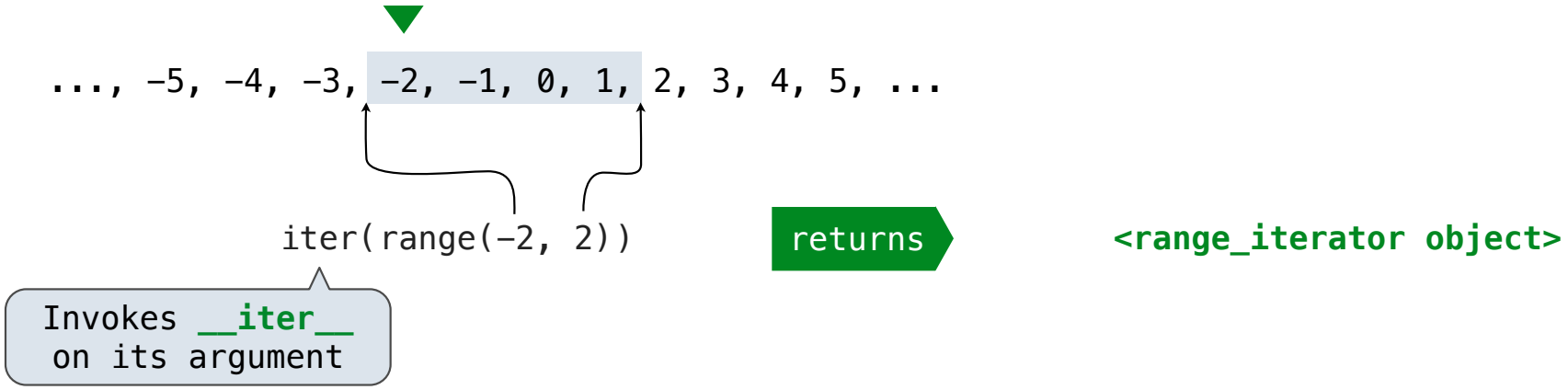

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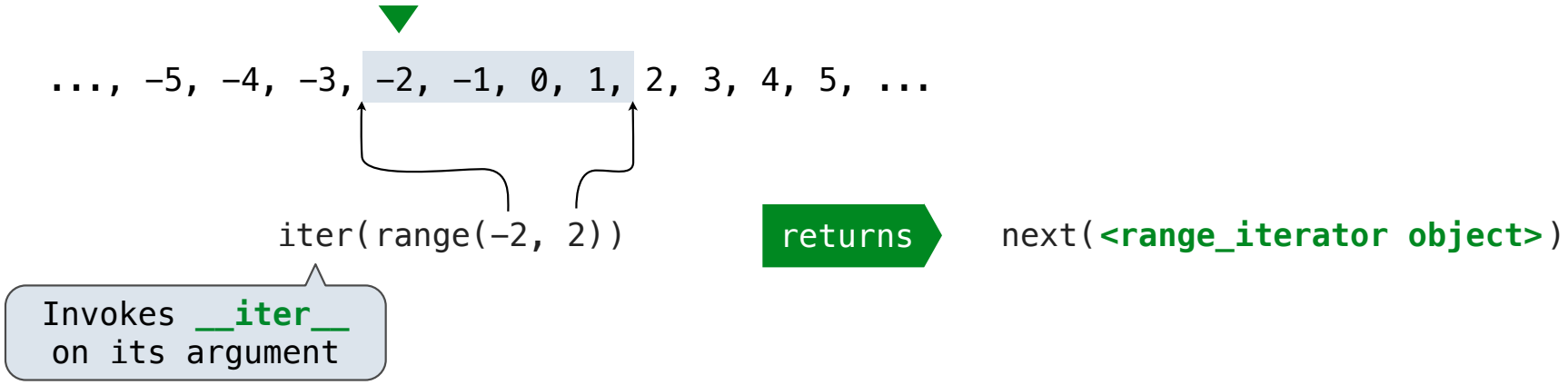

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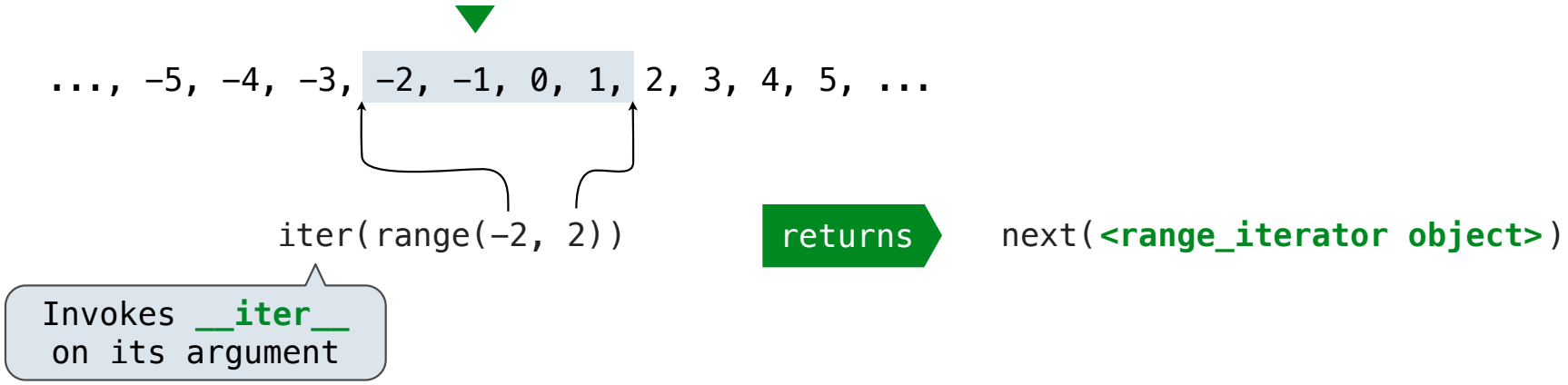

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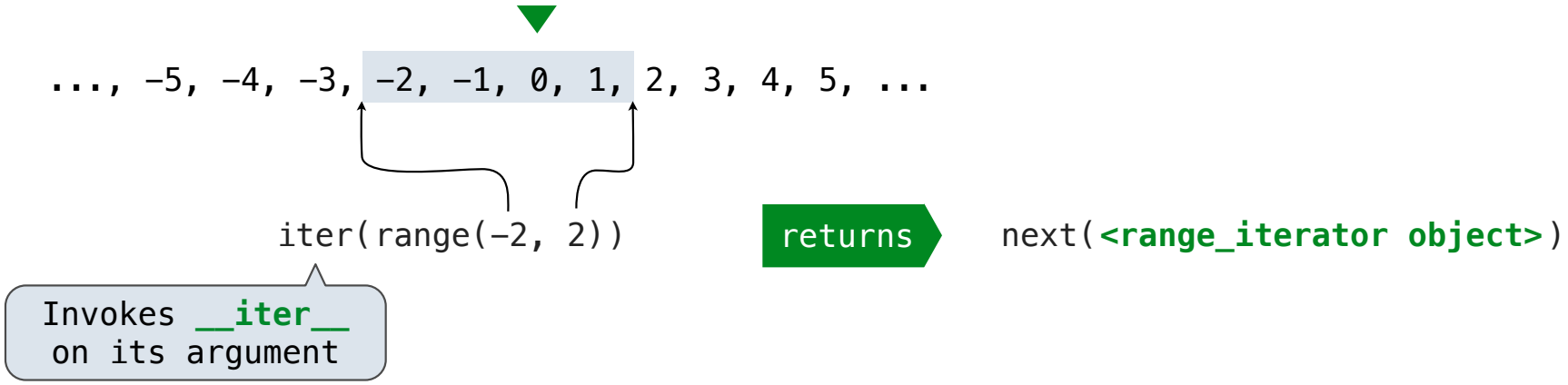

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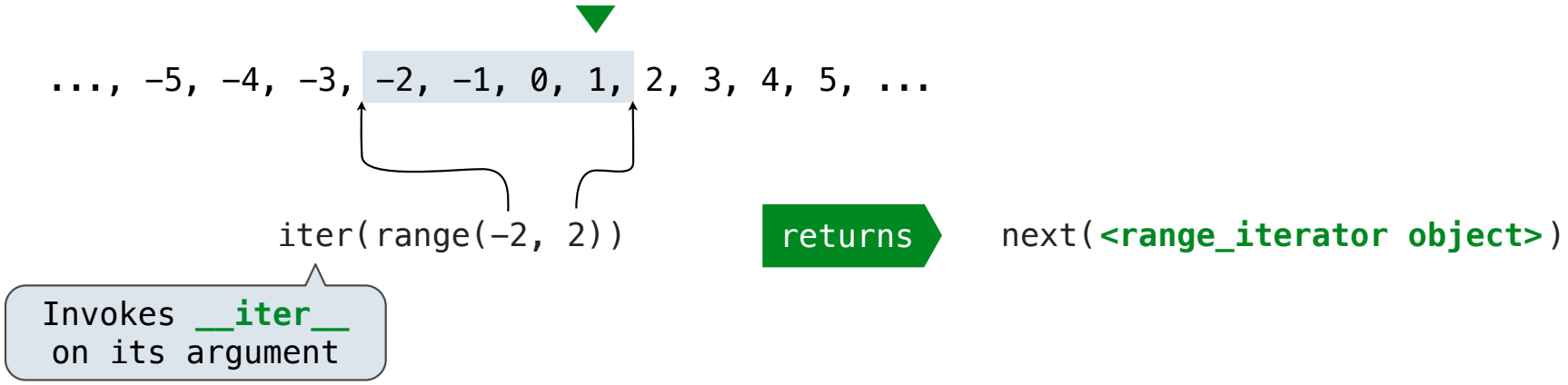

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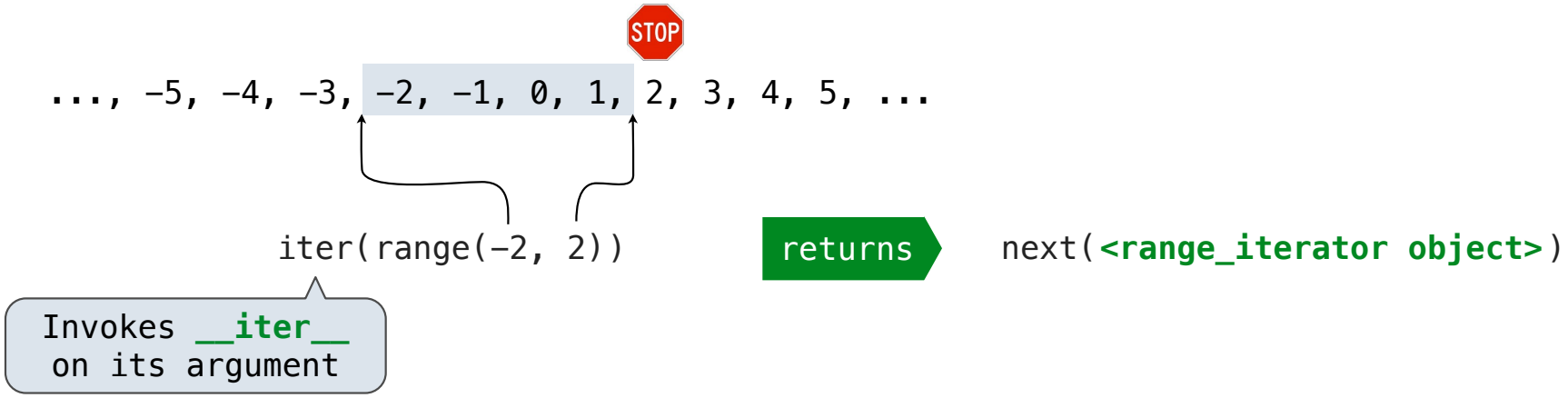

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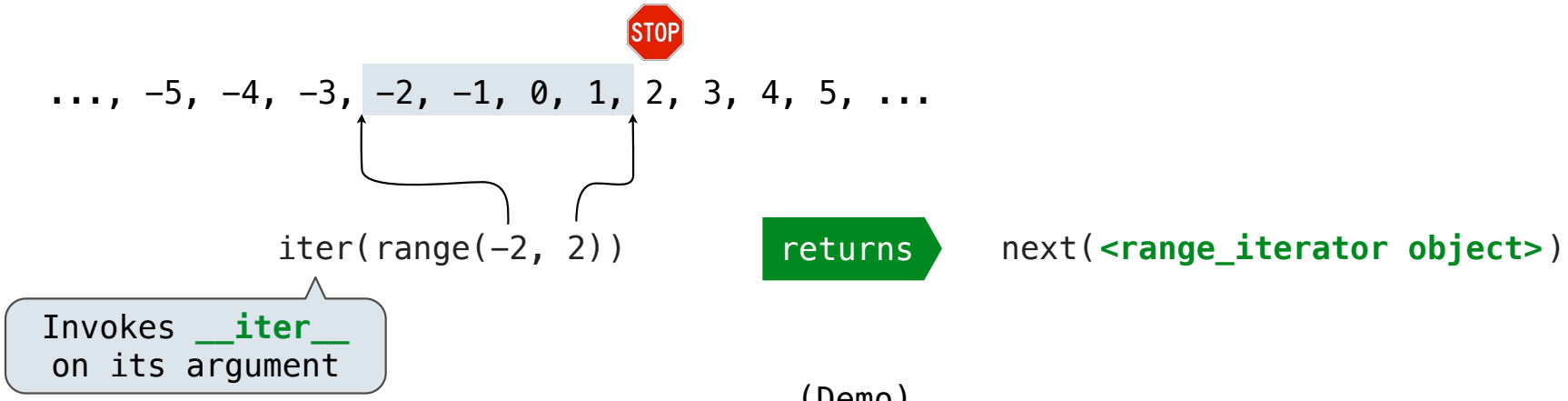

(Demo)

Iterable Objects

Iterables and Iterators

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Iterator: Mutable object that tracks a position in a sequence, advancing on **`__next__`**

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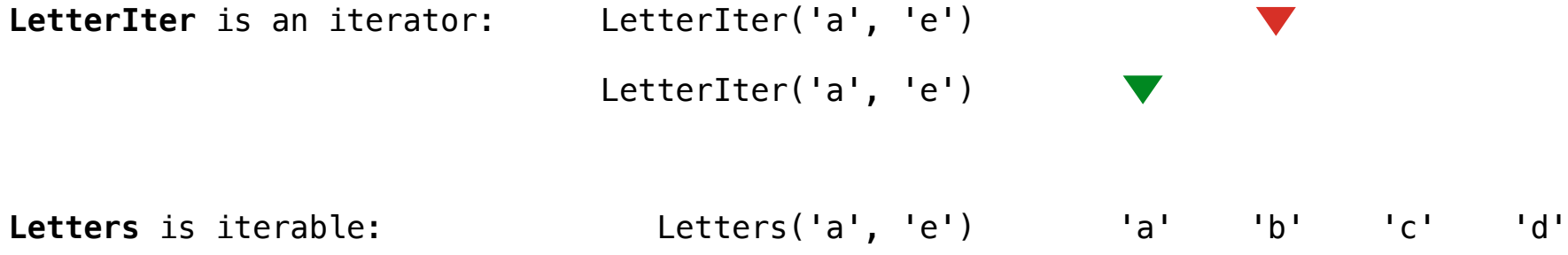

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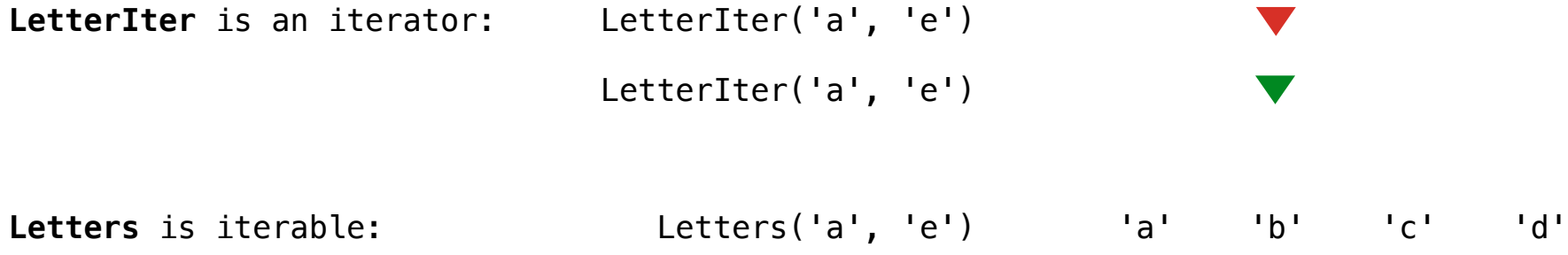

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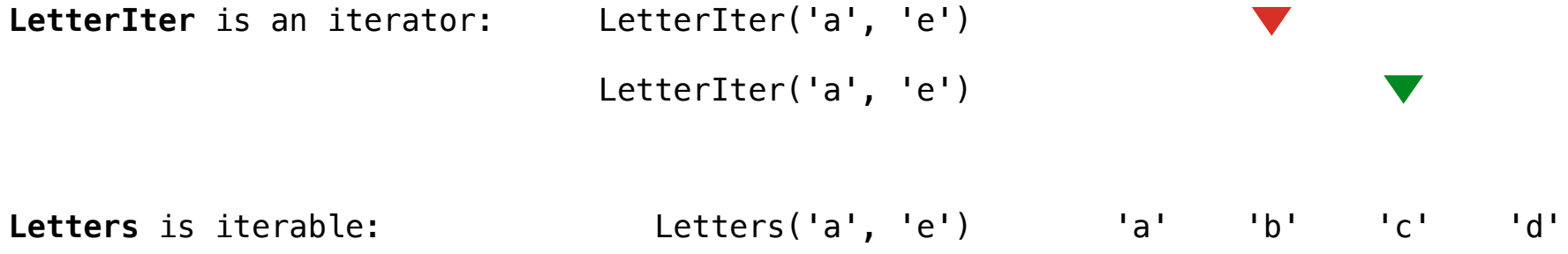

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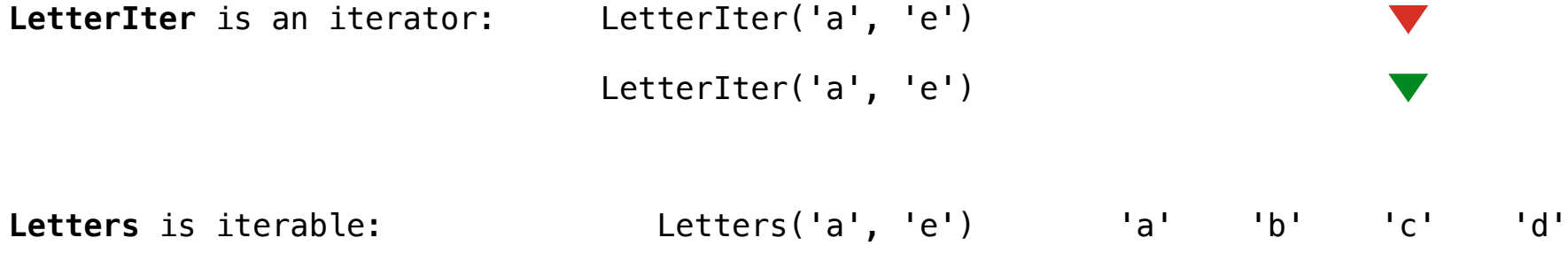

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(Demo)

Built-in Iterators

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(Demo)

For Statements

The For Statement

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for <name> in <expression>:
    <suite>
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>>> counts = [1, 2, 3]
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        print(item)
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```
>>> counts = [1, 2, 3]
>>> items = counts.__iter__()
>>> try:
        while True:
            item = items.__next__()
            print(item)
    except StopIteration:
        pass # Do nothing
1
2
3
```

Generator Functions

Generators and Generator Functions

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>>> def letter_generator(next_letter, end):
        while next_letter < end:
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>>> def letter_generator(next_letter, end):
        while next_letter < end:
            yield next_letter
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>>> def letter_generator(next_letter, end):
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>>> s = letter_generator('a', 'z')
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(Demo)