61A Lecture 2

Wednesday, September 4, 2013

Names, Assignment, and User-Defined Functions

(Demo)

Types of Expressions

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Primitive expressions:

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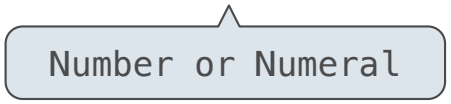
Primitive expressions: 2



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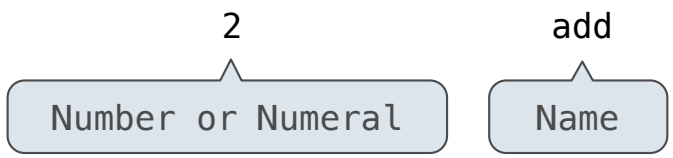

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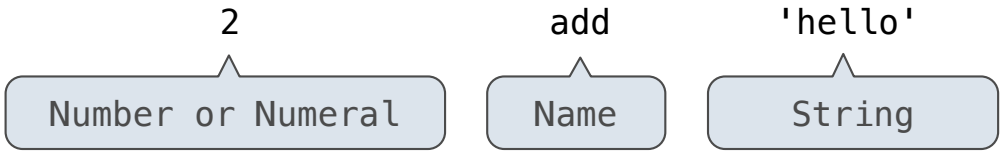

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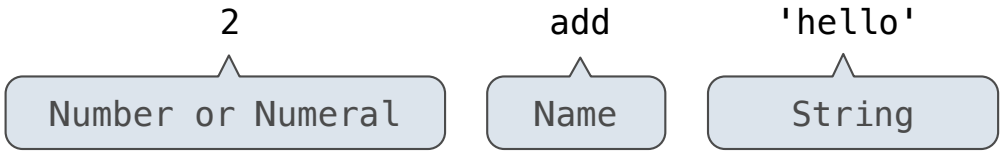

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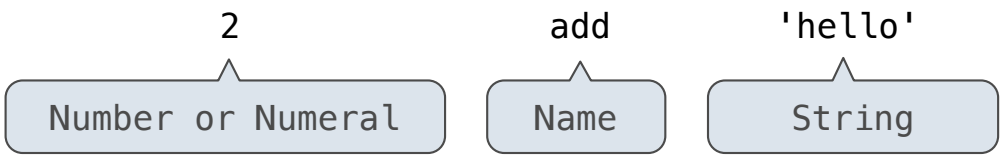

Call expressions:

```
max ( 2 , 3 )
```

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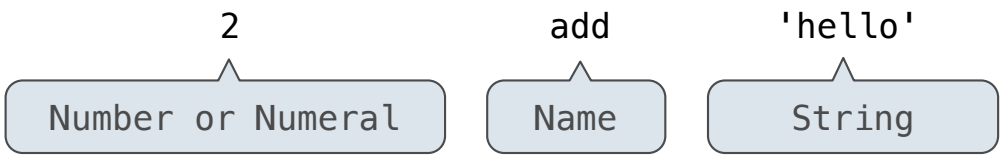

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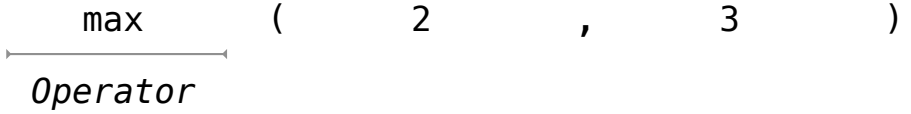

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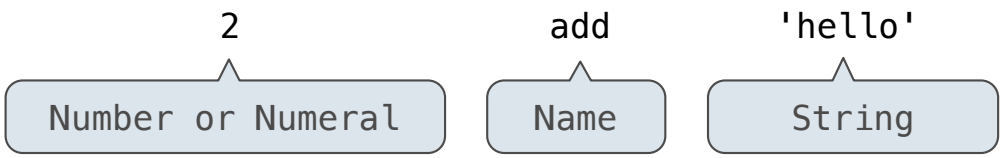

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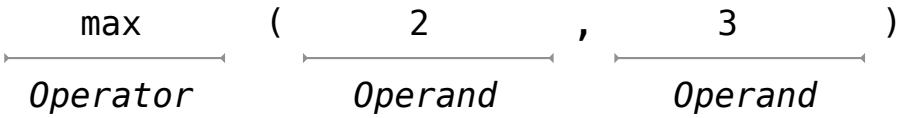

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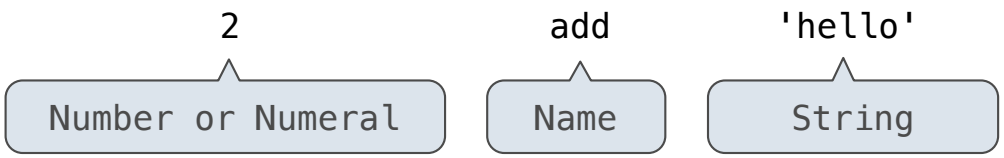

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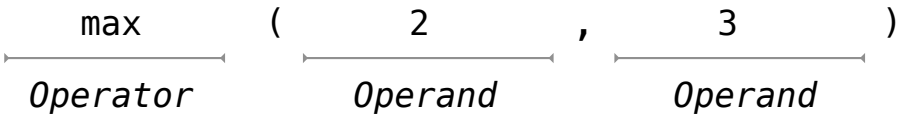


```
max(min(pow(3, 5), -4), min(1, -2))
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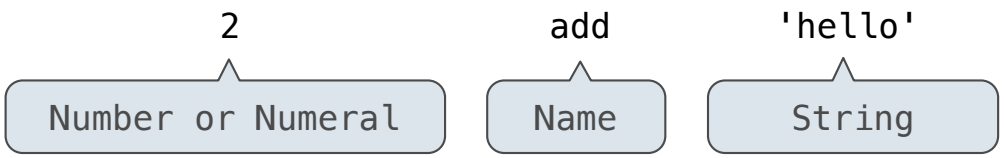

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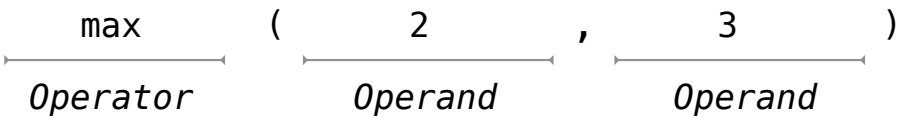

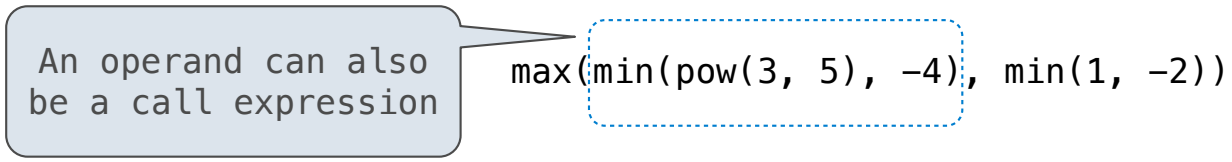

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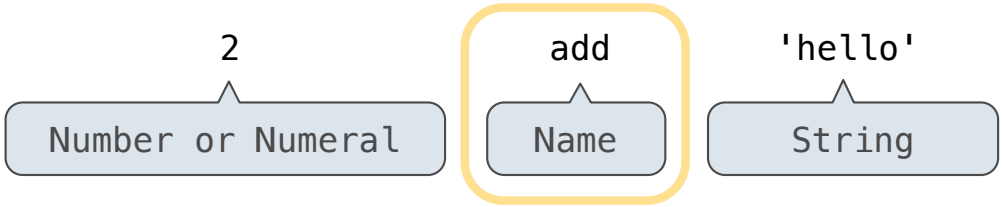

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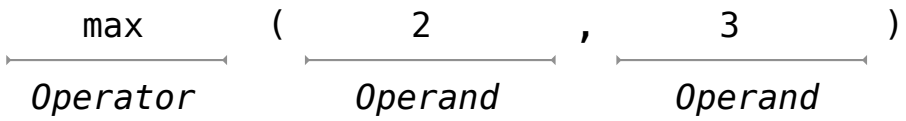

An operand can also be a call expression

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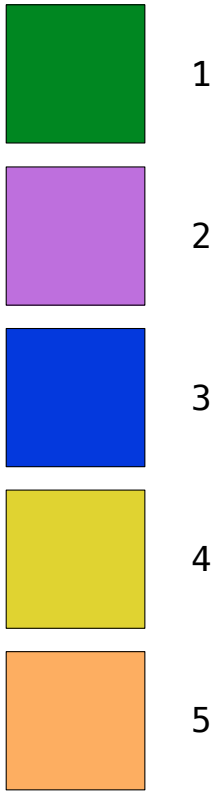

Environment Diagrams

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Environment diagrams visualize the interpreter's process.

Example: http://goo.gl/J2W5NL

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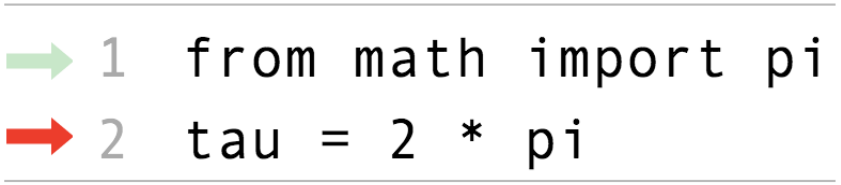

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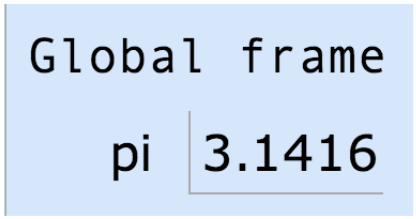

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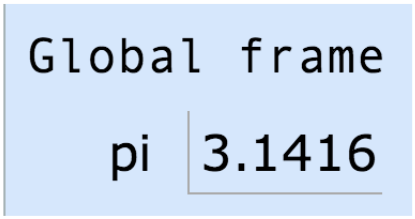

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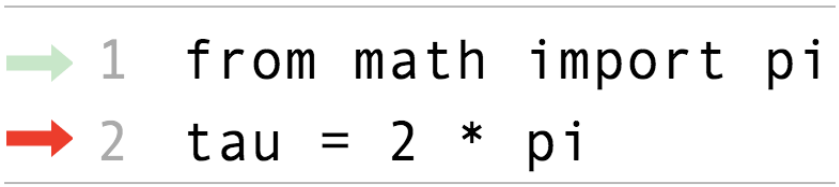

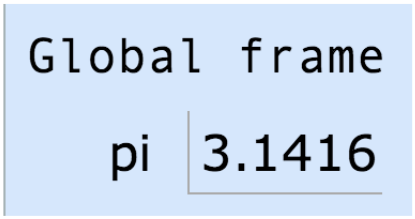

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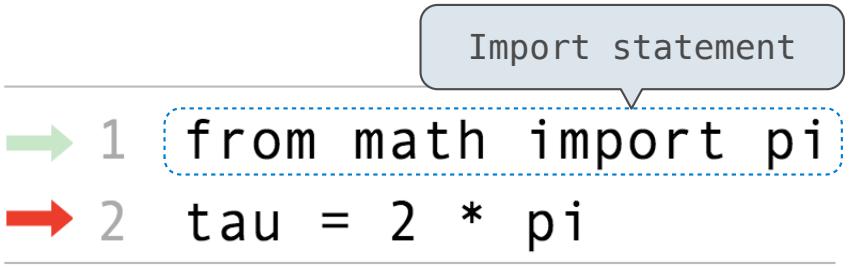

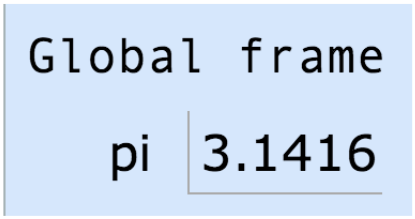

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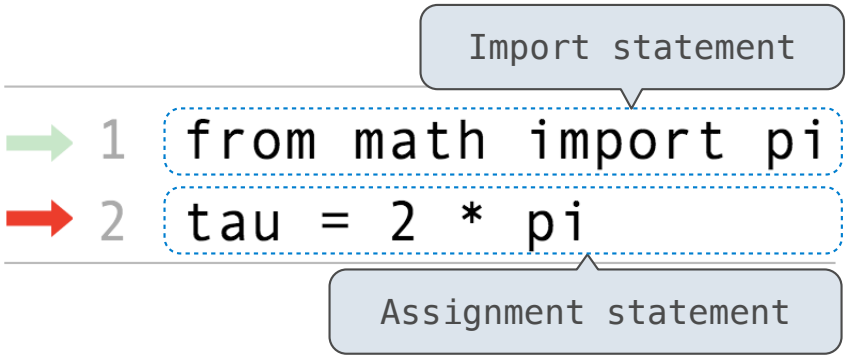

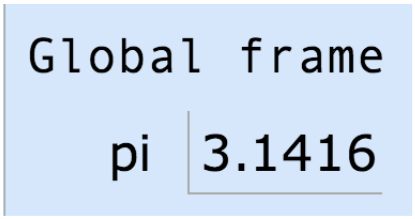

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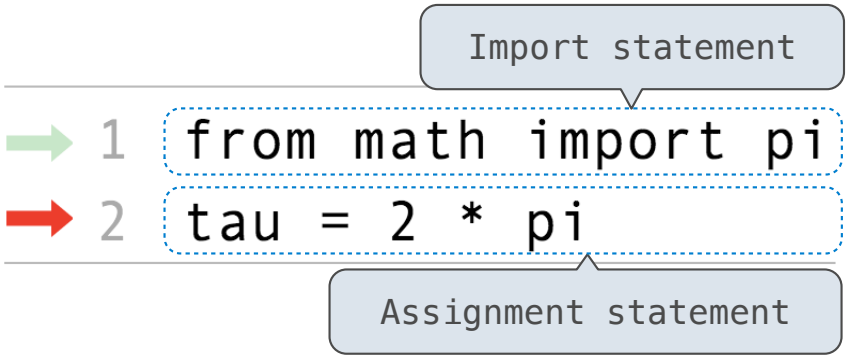

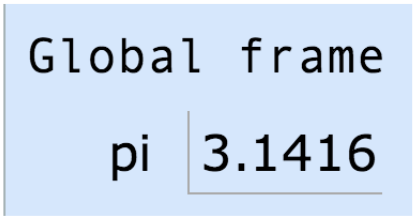

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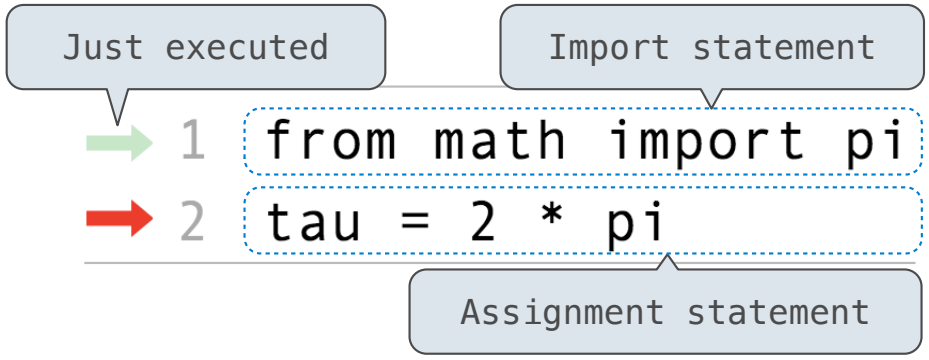

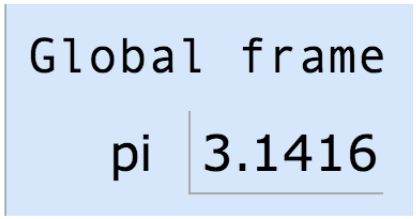

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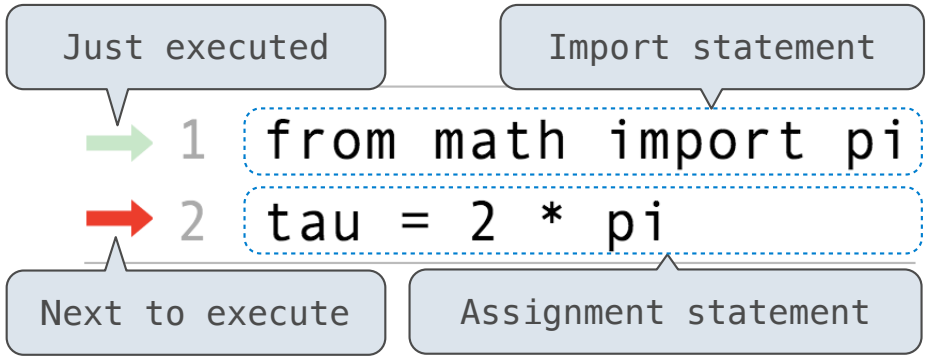

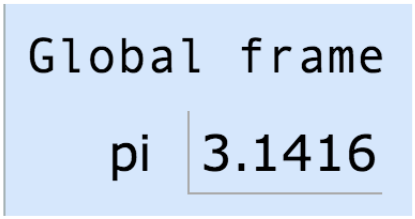

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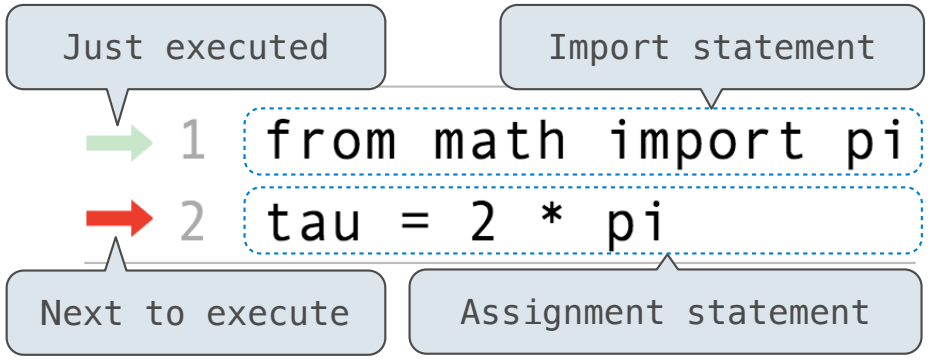

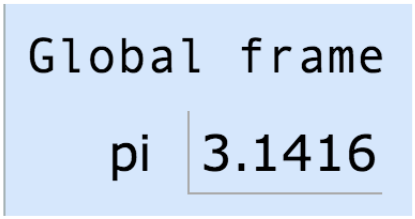

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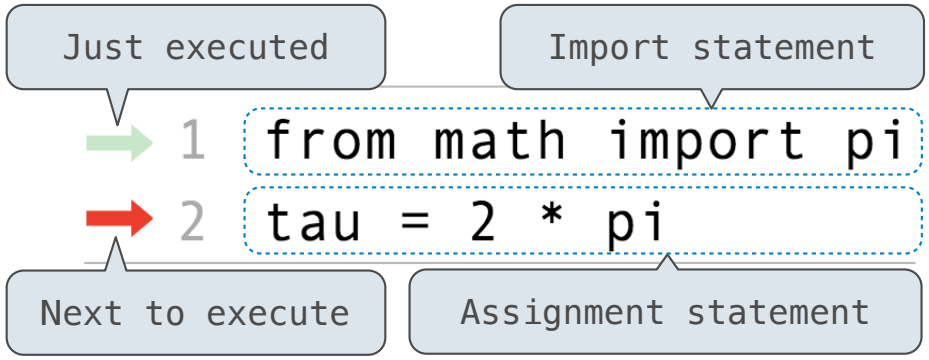

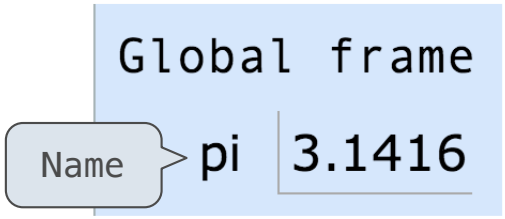

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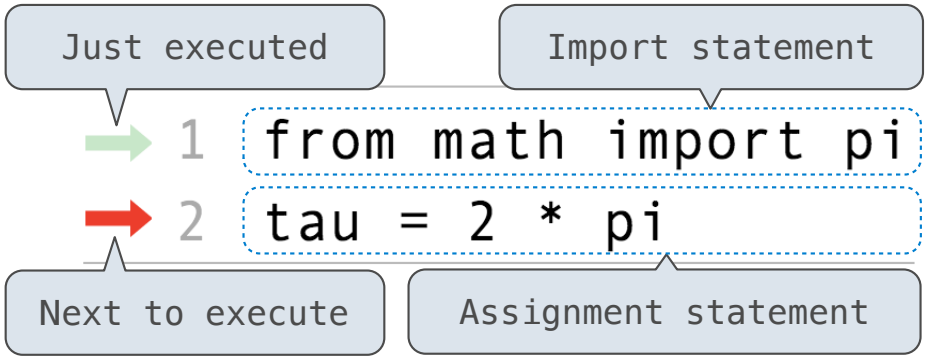

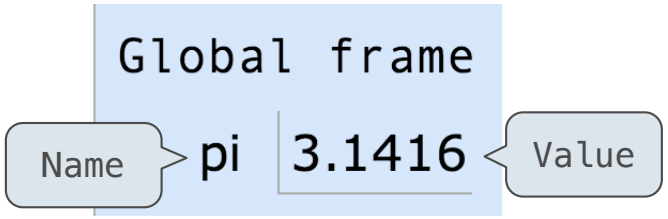

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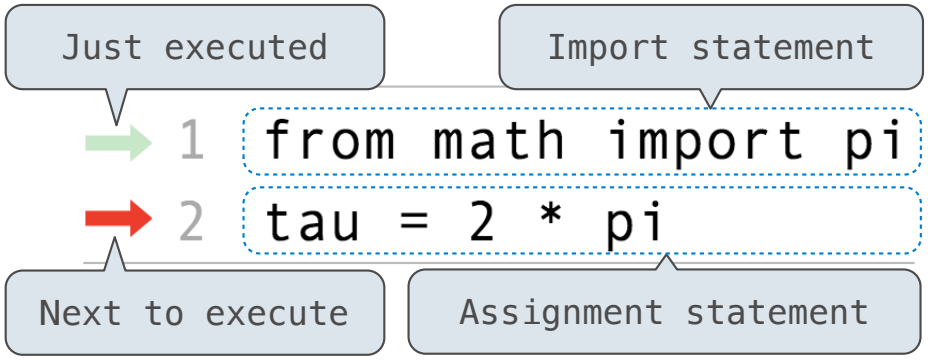

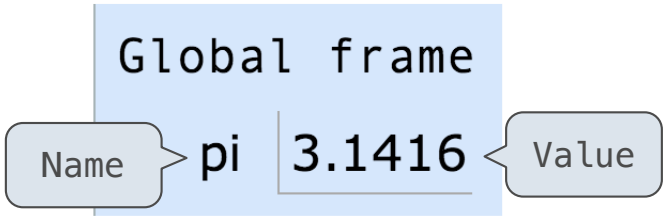

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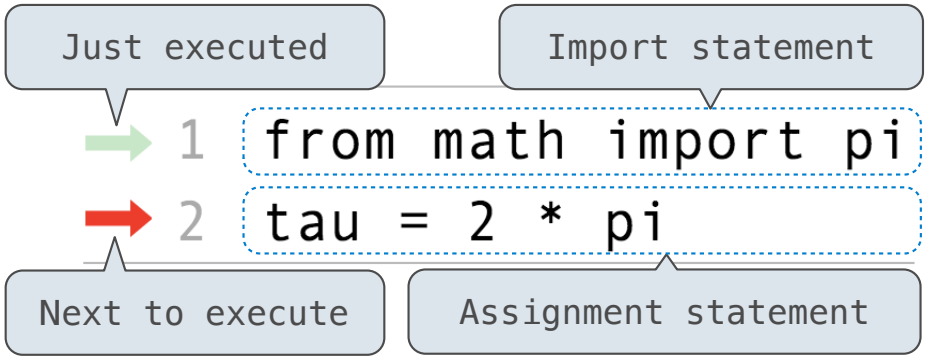

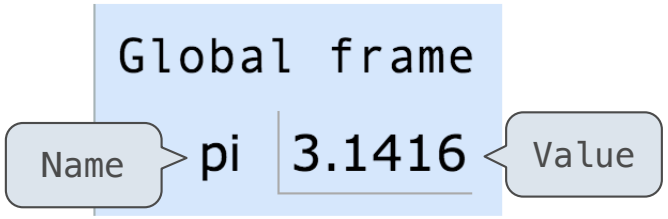

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(Demo)

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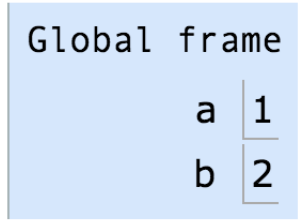
Assignment Statements

Example: http://goo.gl/Ppn26M

Assignment Statements

```
1  a = 1
2  b = 2
3  b, a = a + b, b
```



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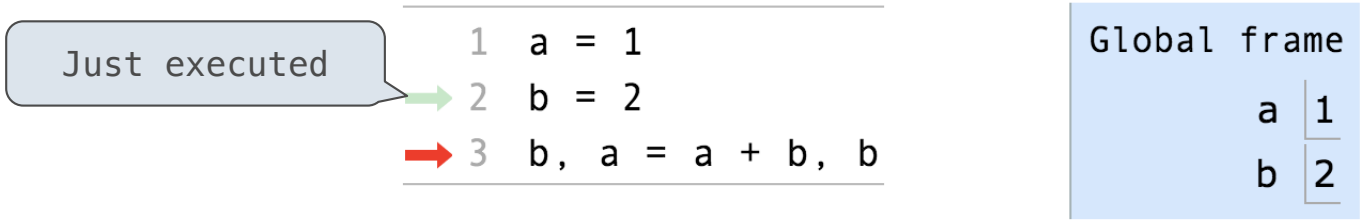

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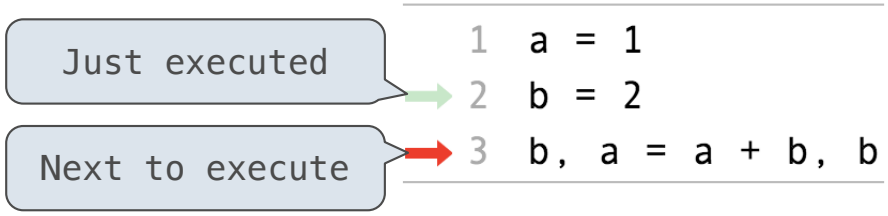

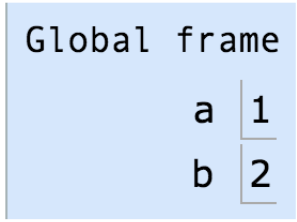

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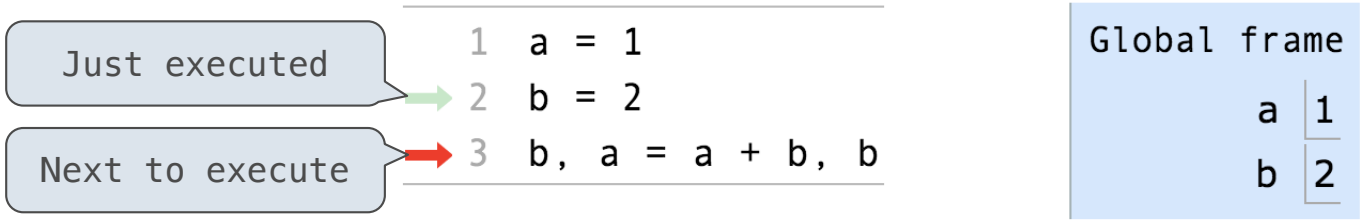

Execution rule for assignment statements:

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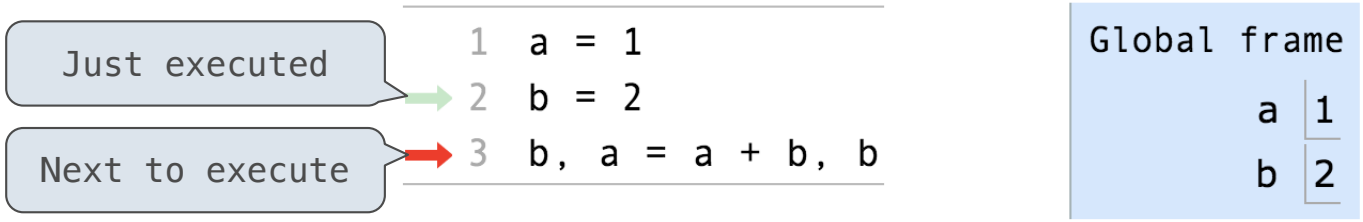

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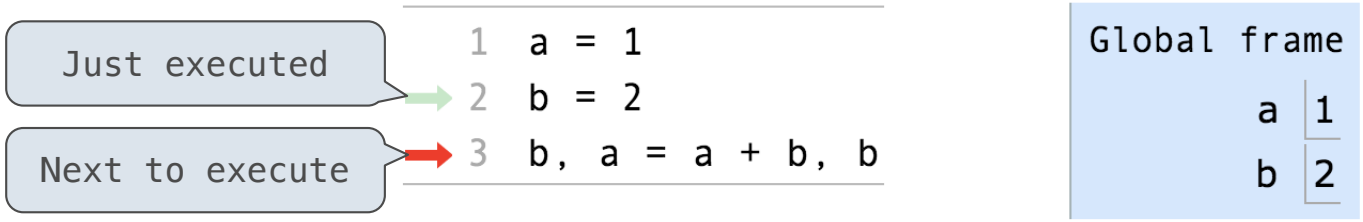


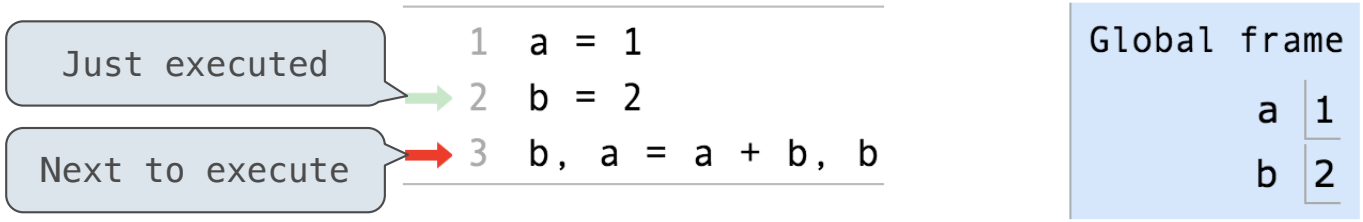
Execution rule for assignment statements:

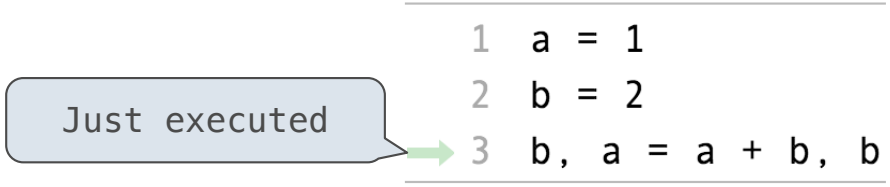
1. Evaluate all expressions to the right of = from left to right.

2. Bind all names to the left of = to the resulting values in the current frame.

Example: http://goo.gl/Ppn26M

Assignment Statements





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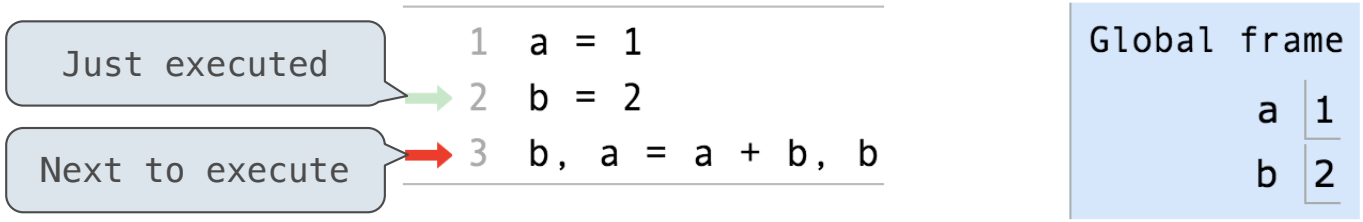

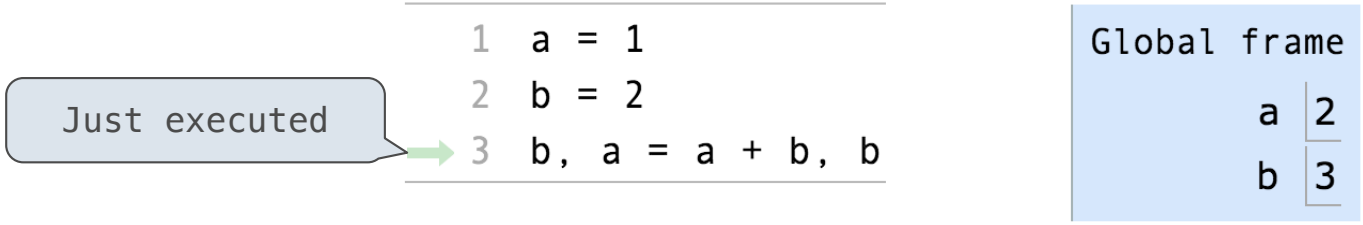

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Discussion Question 1 Solution

(Demo)

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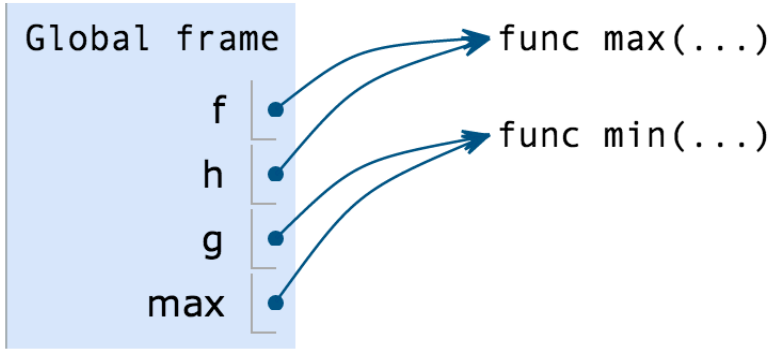

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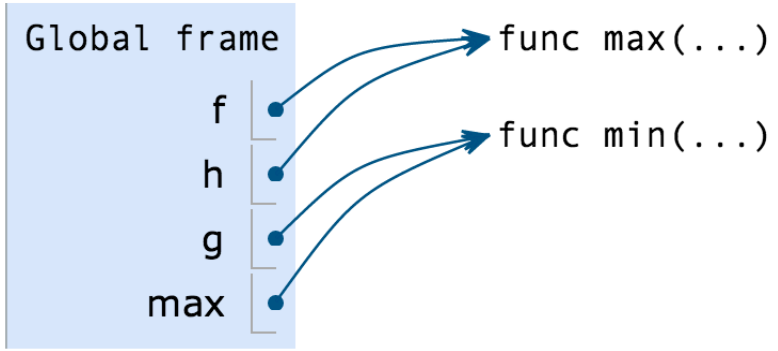

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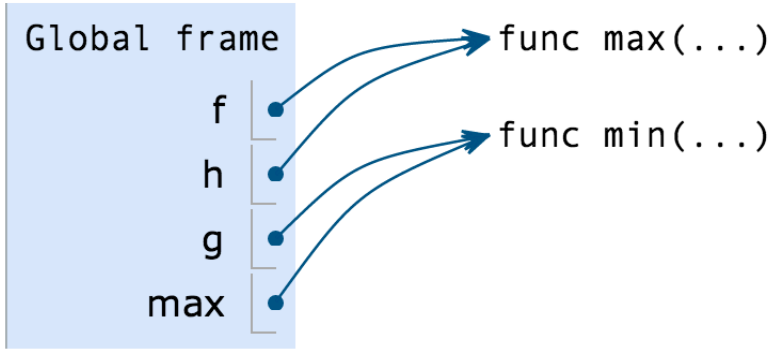

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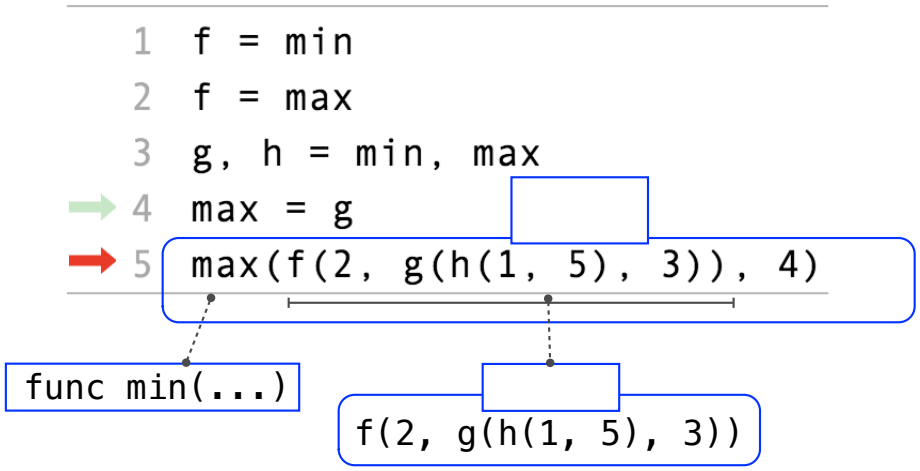

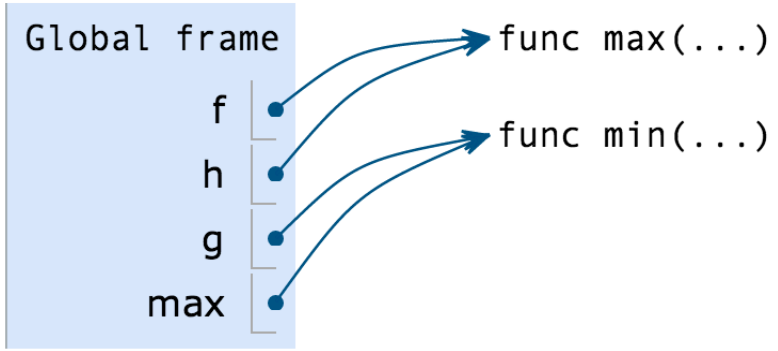

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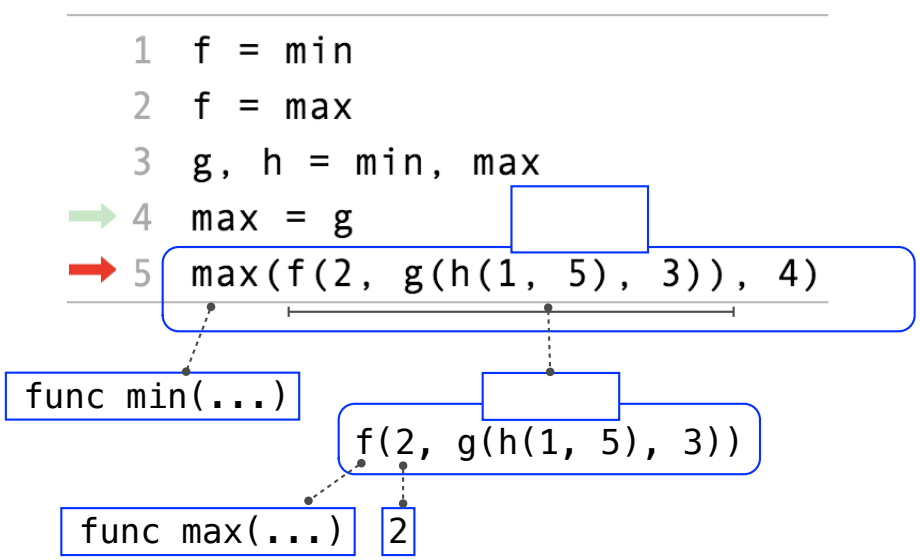

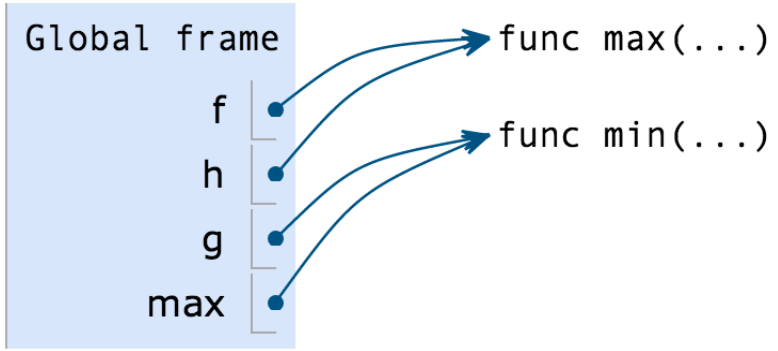

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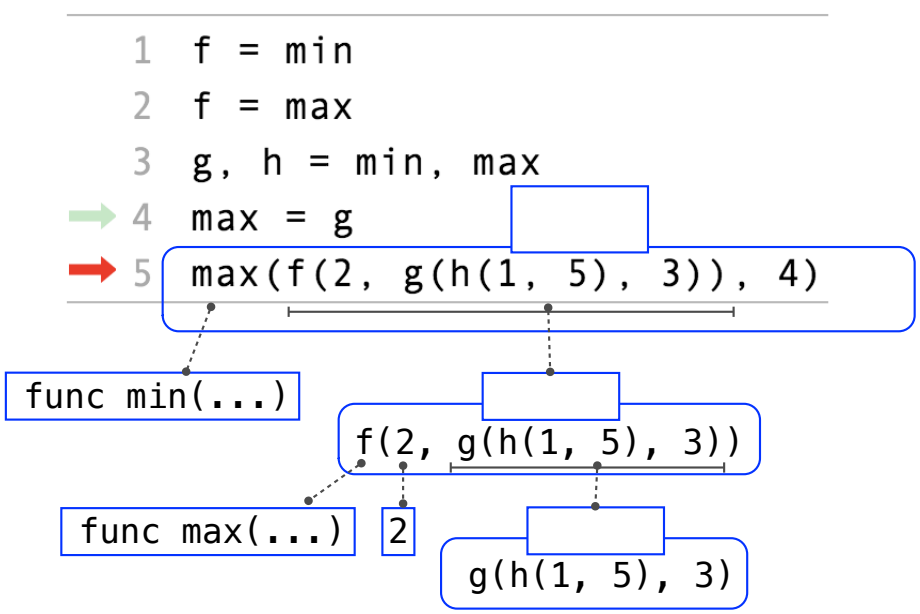

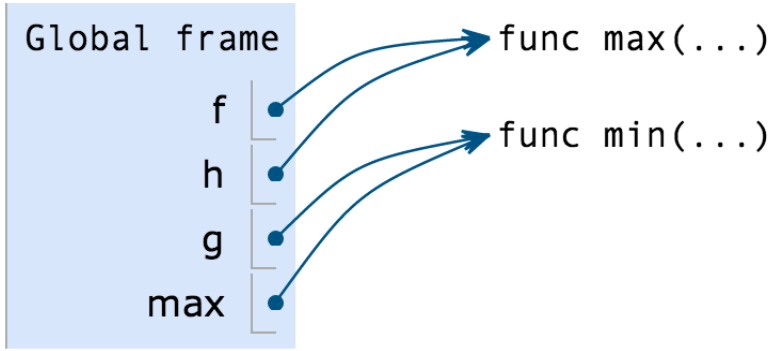

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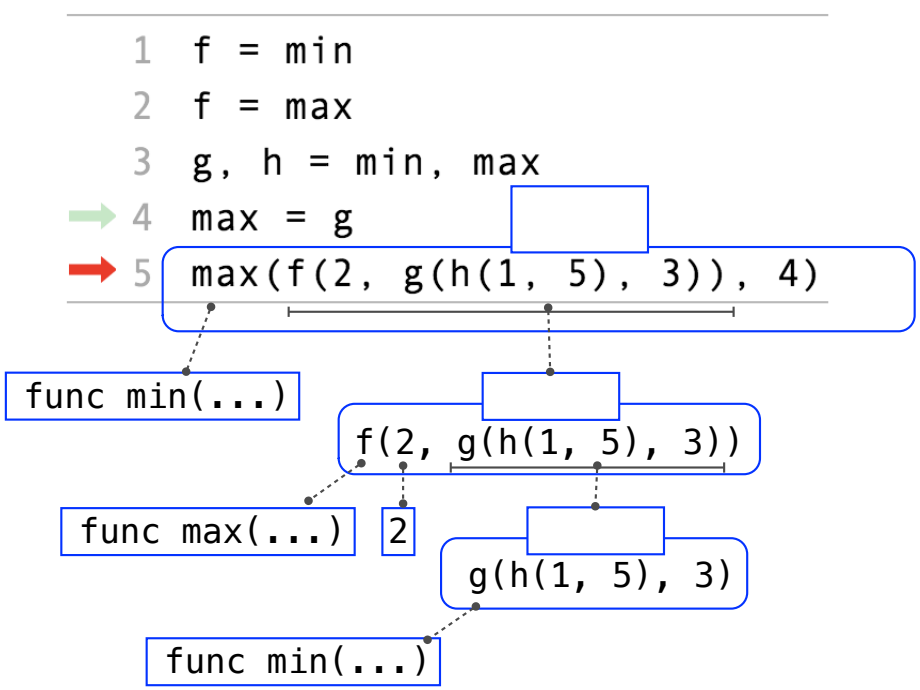

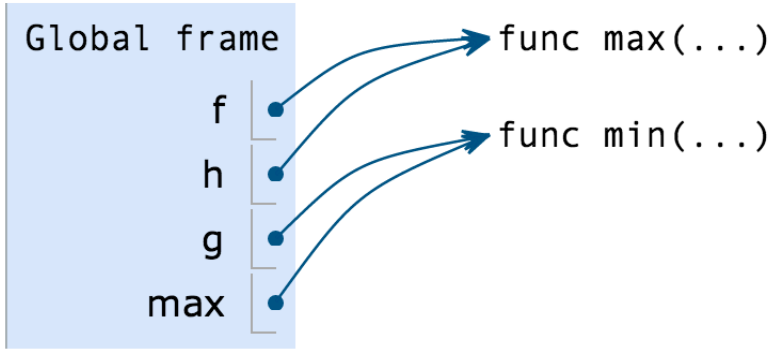

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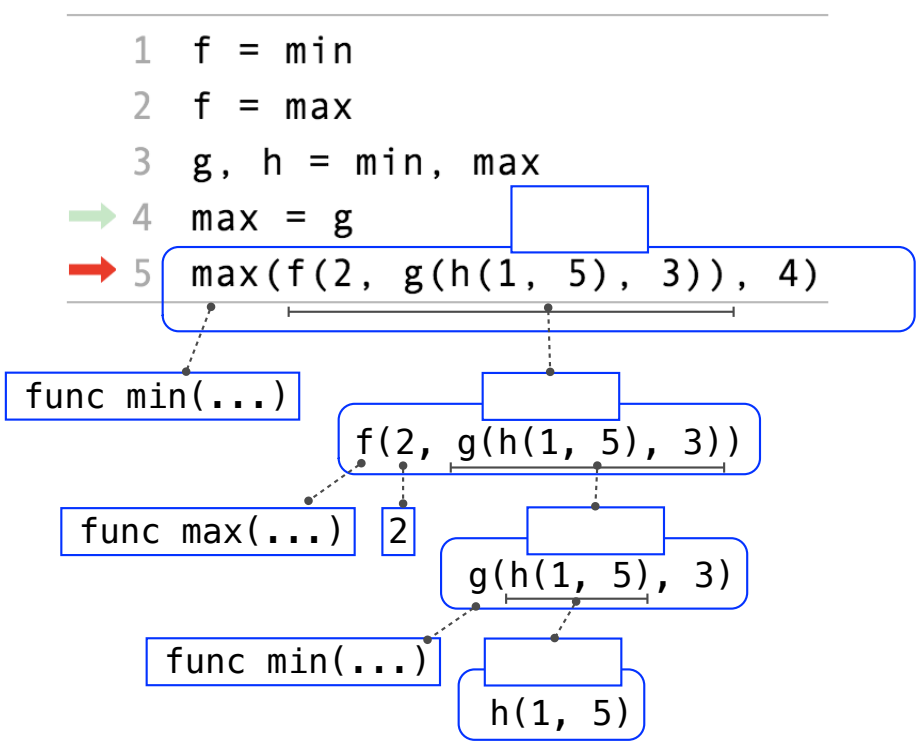

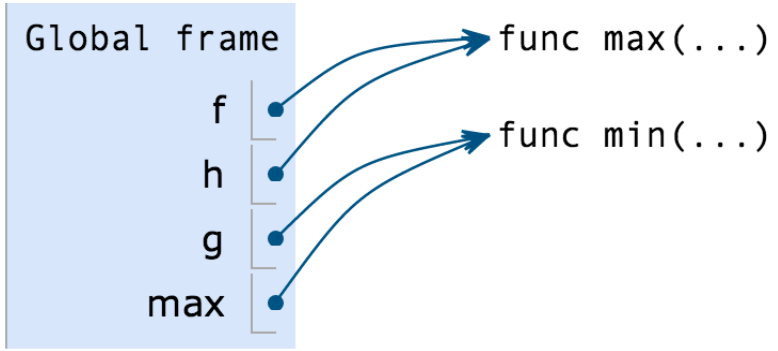

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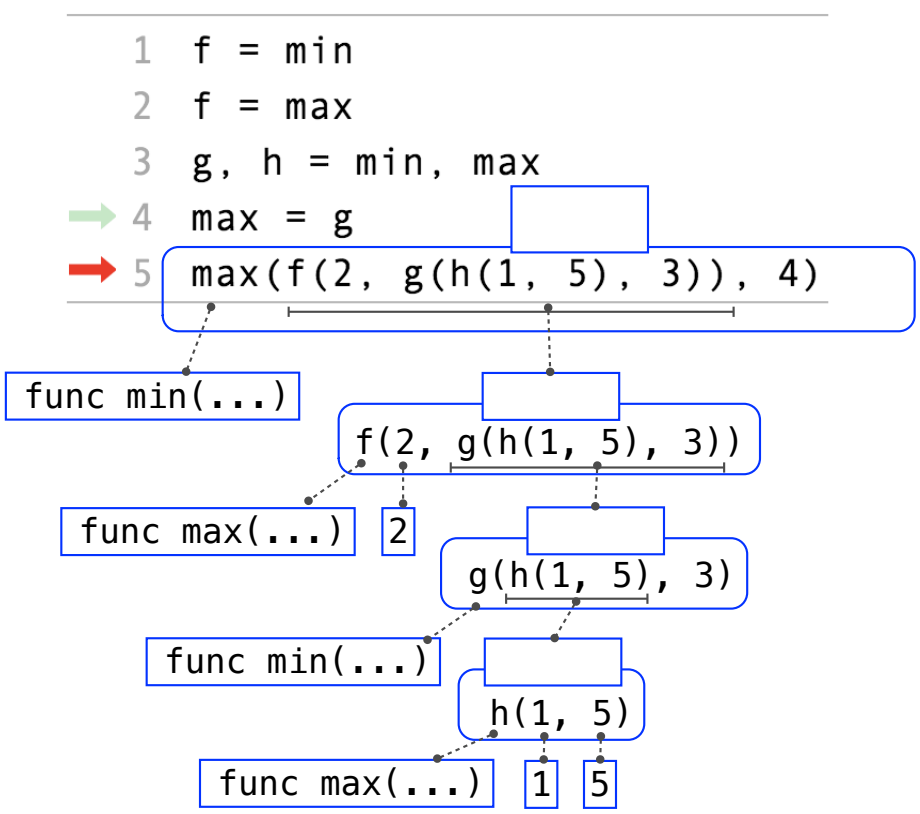

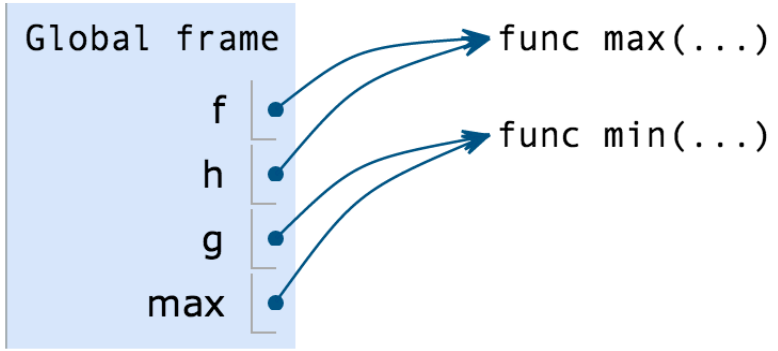

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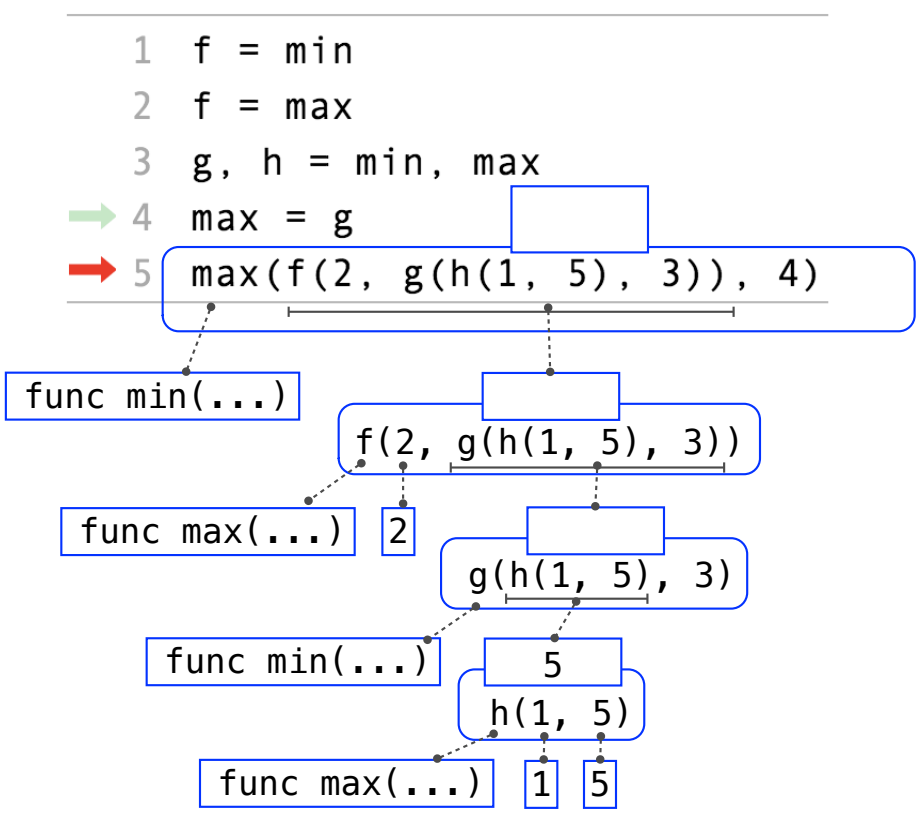

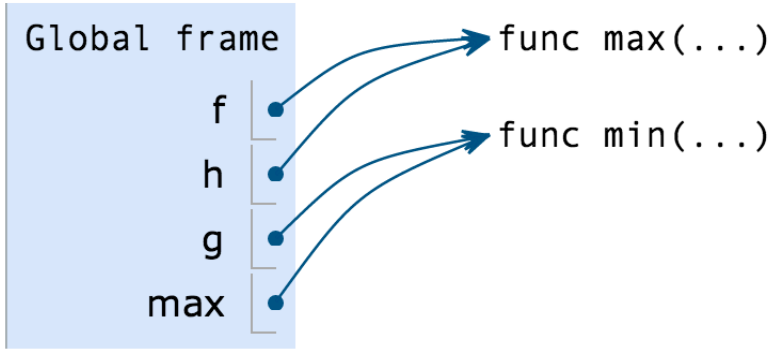

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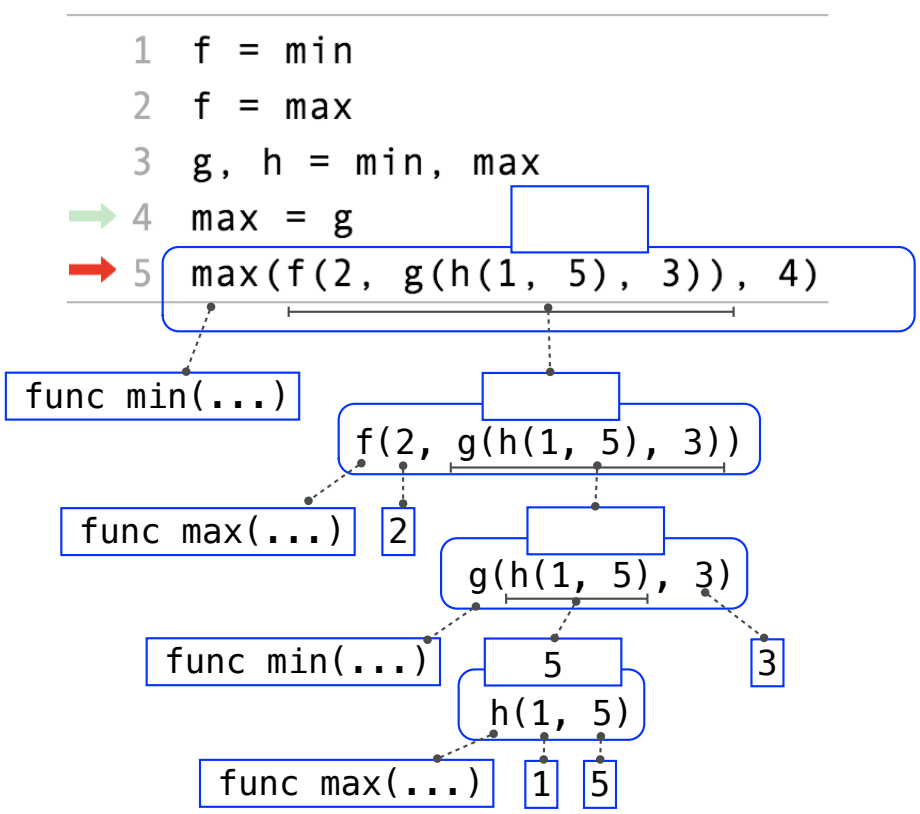

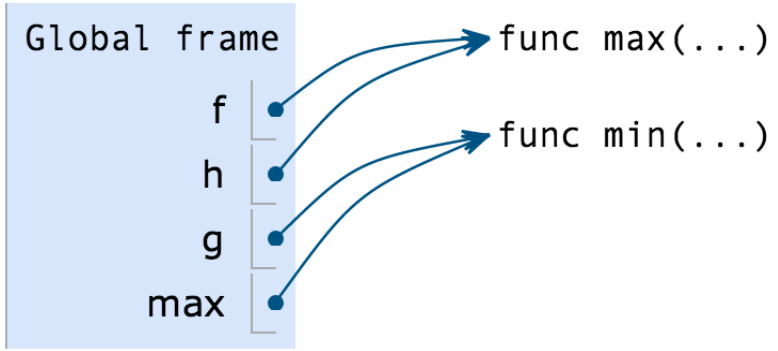

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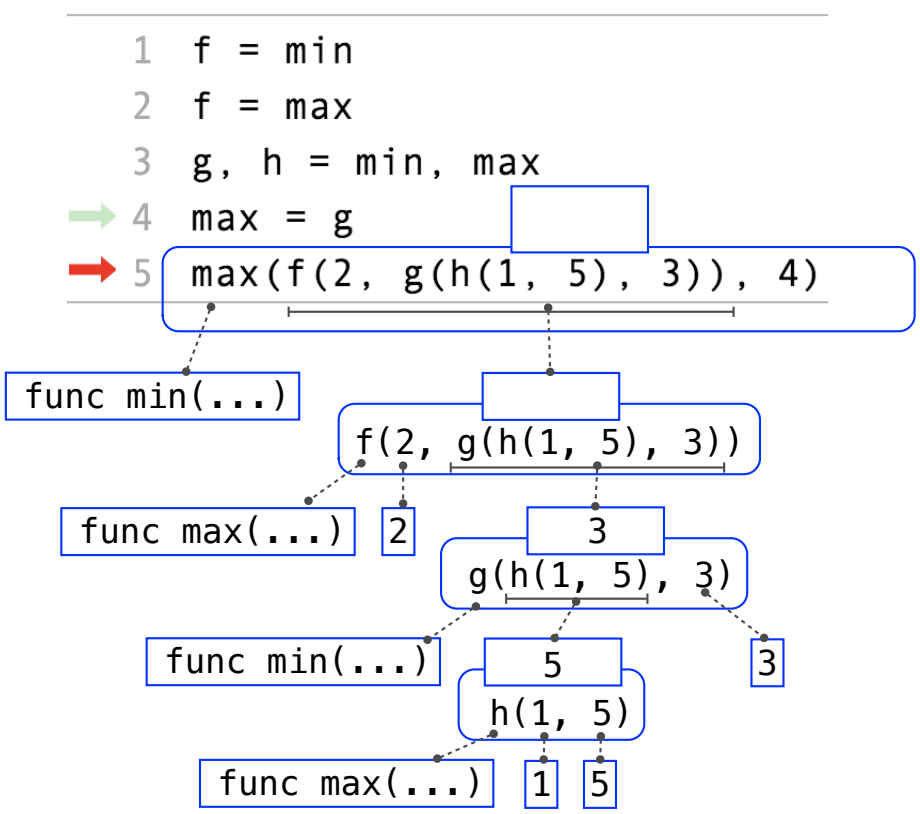

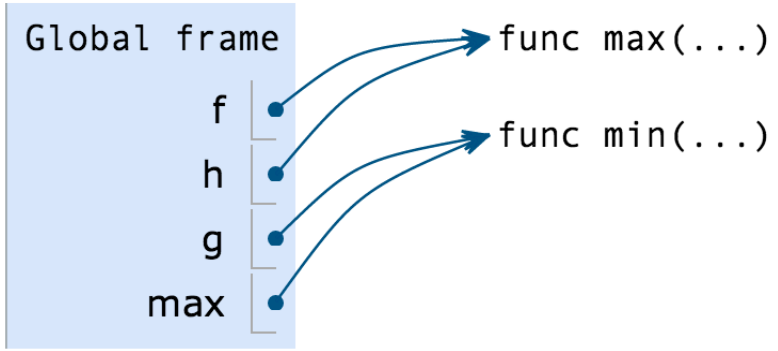

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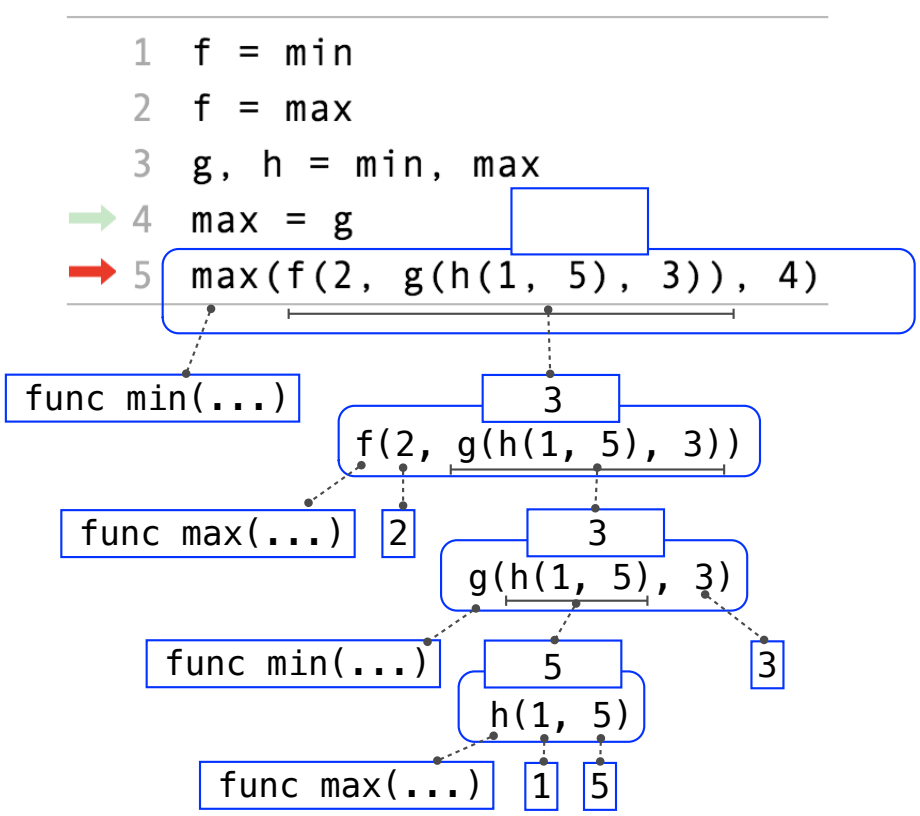

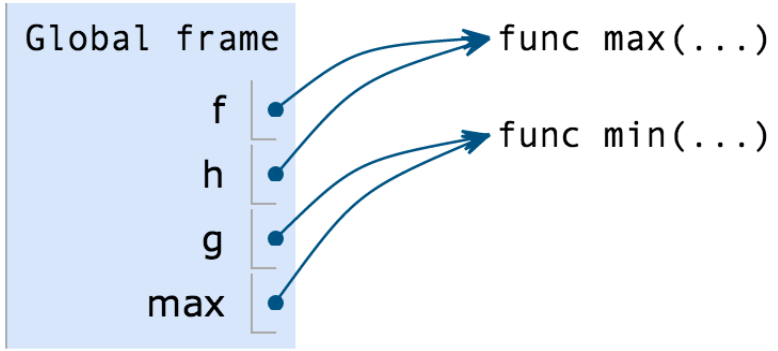

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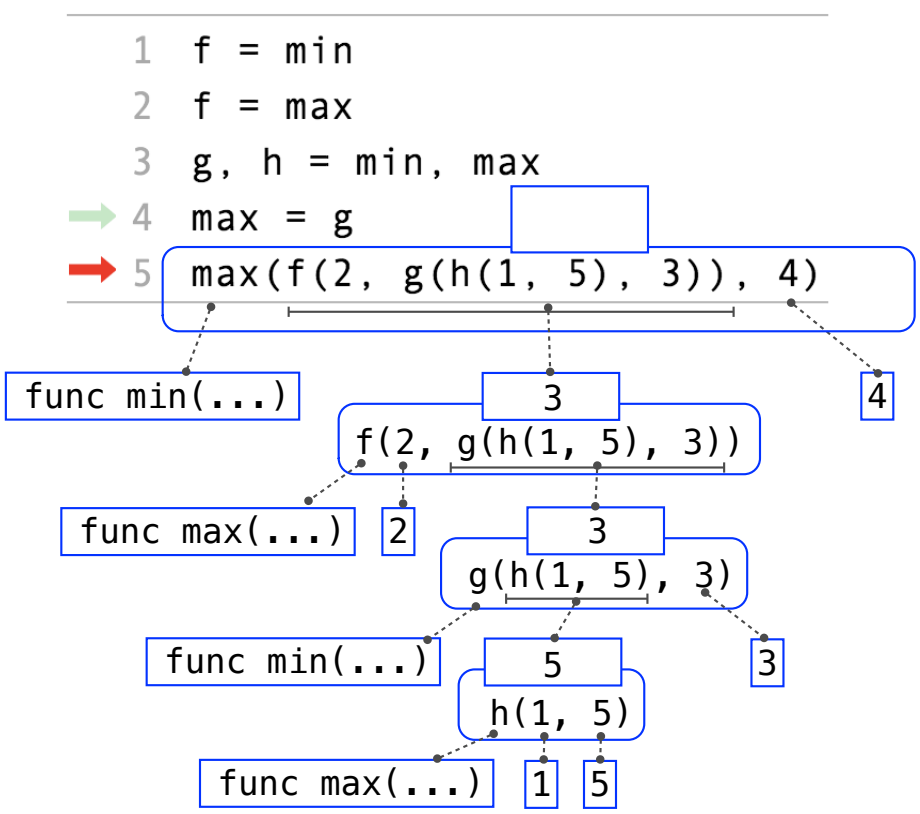

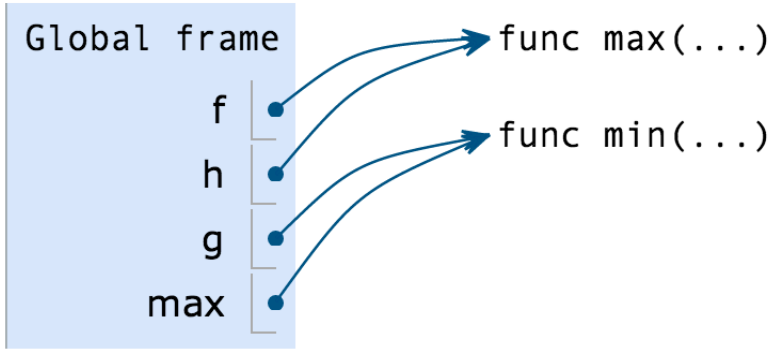

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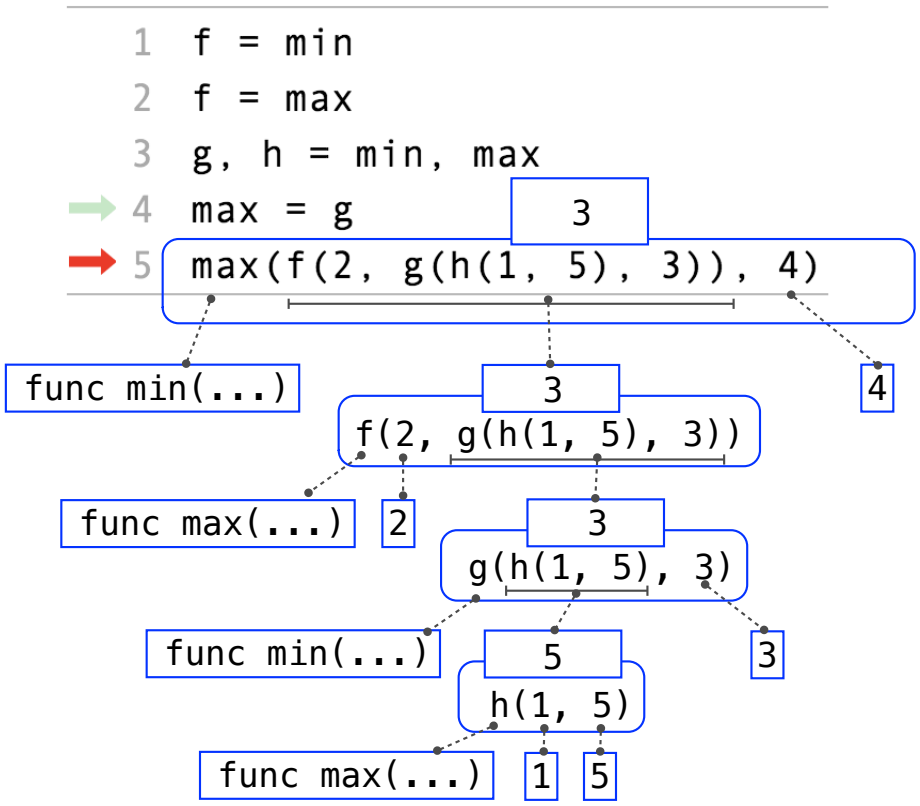

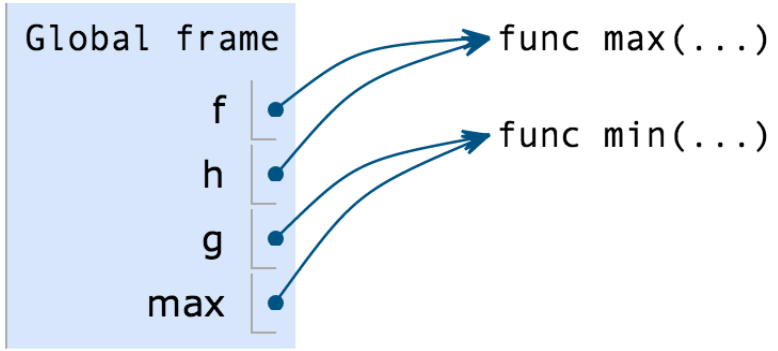

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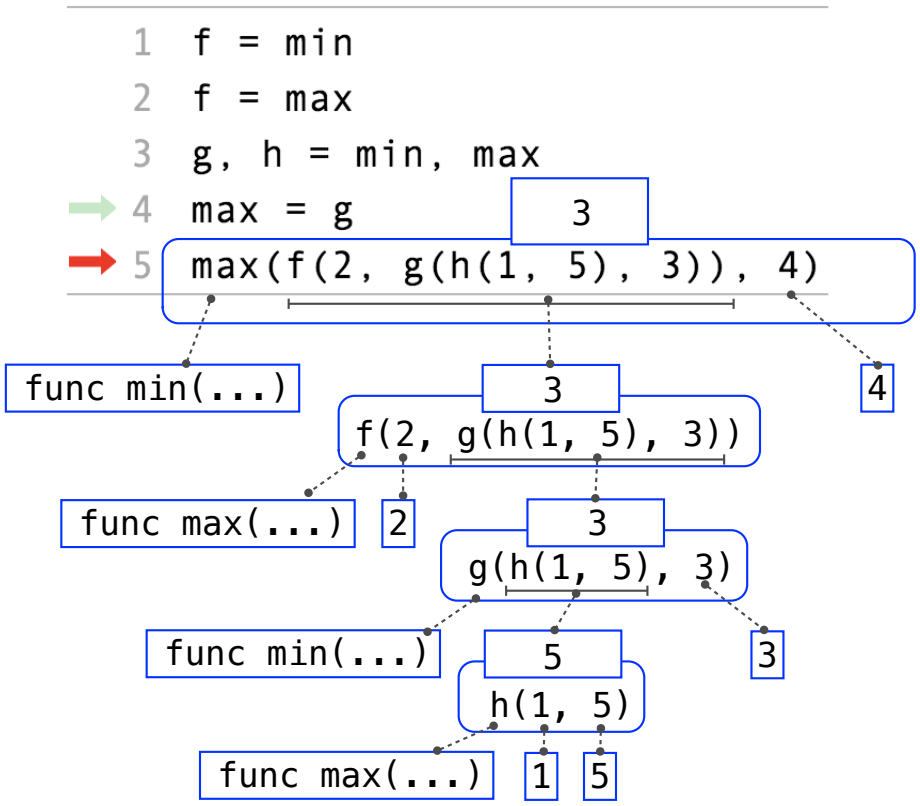

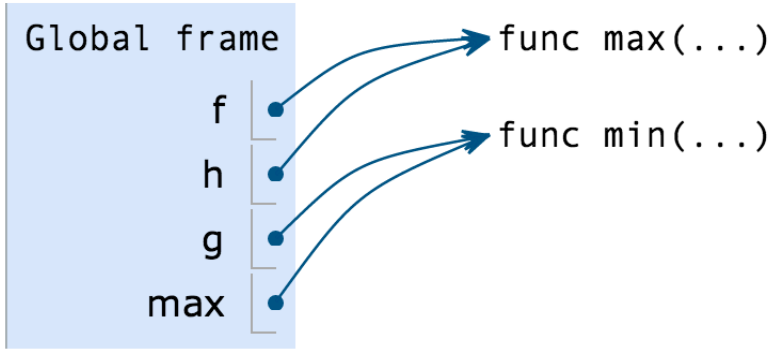

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Defining Functions

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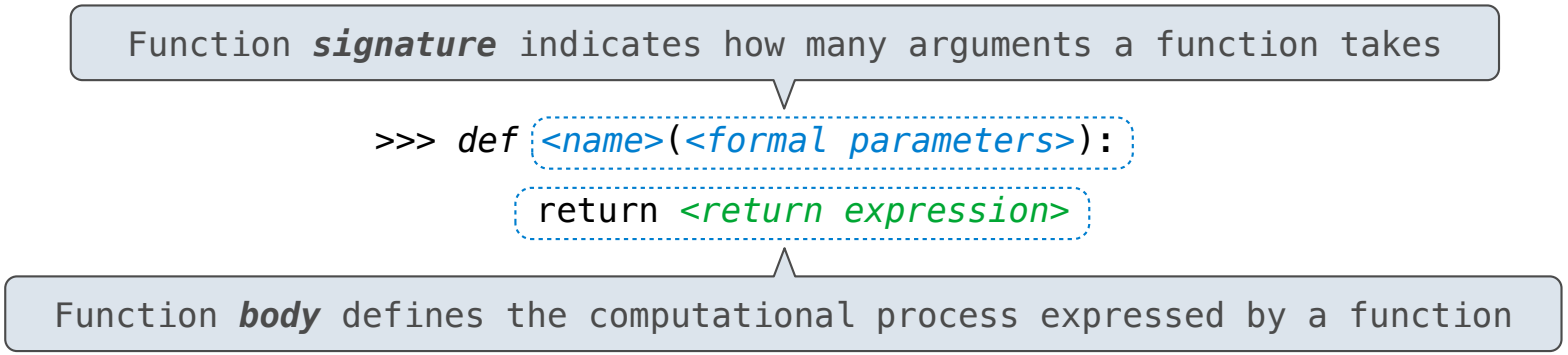

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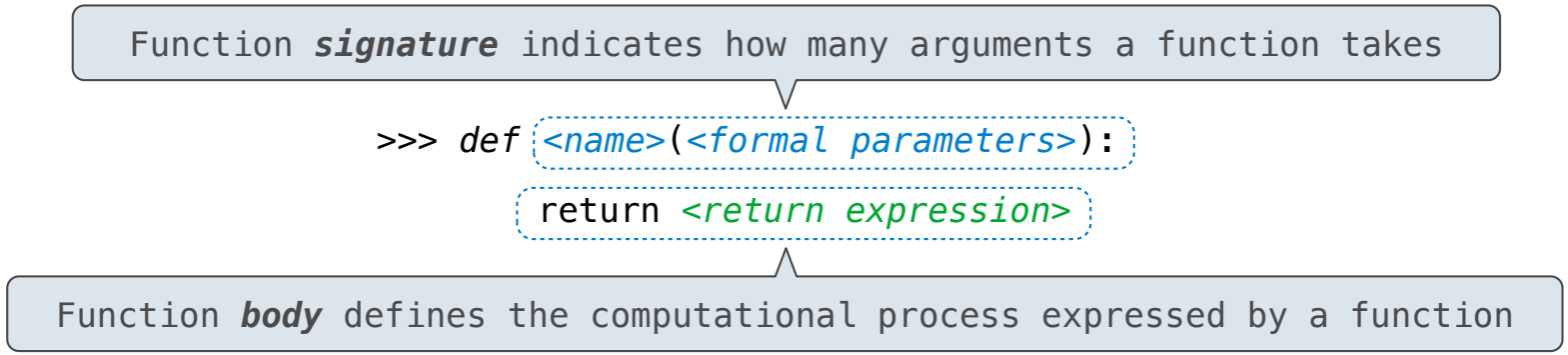

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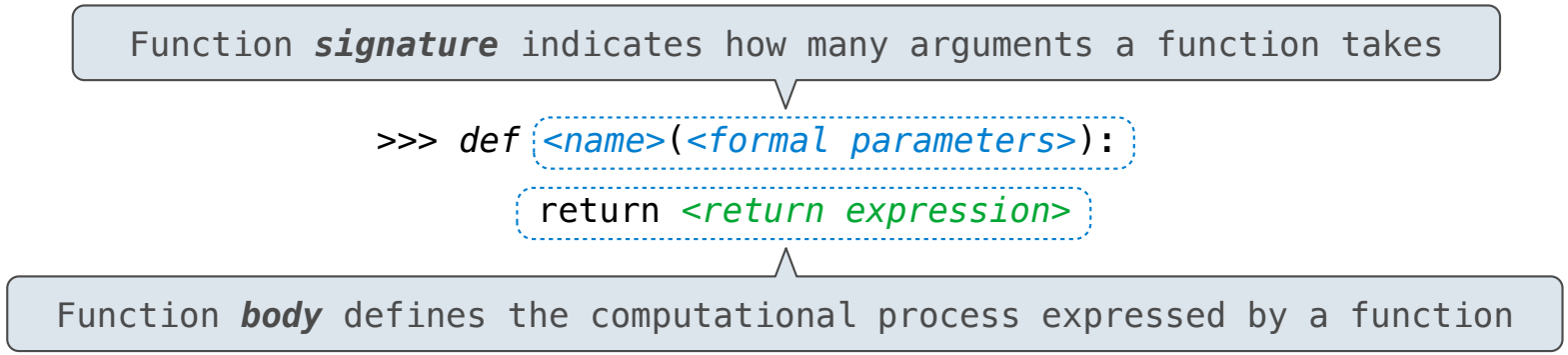

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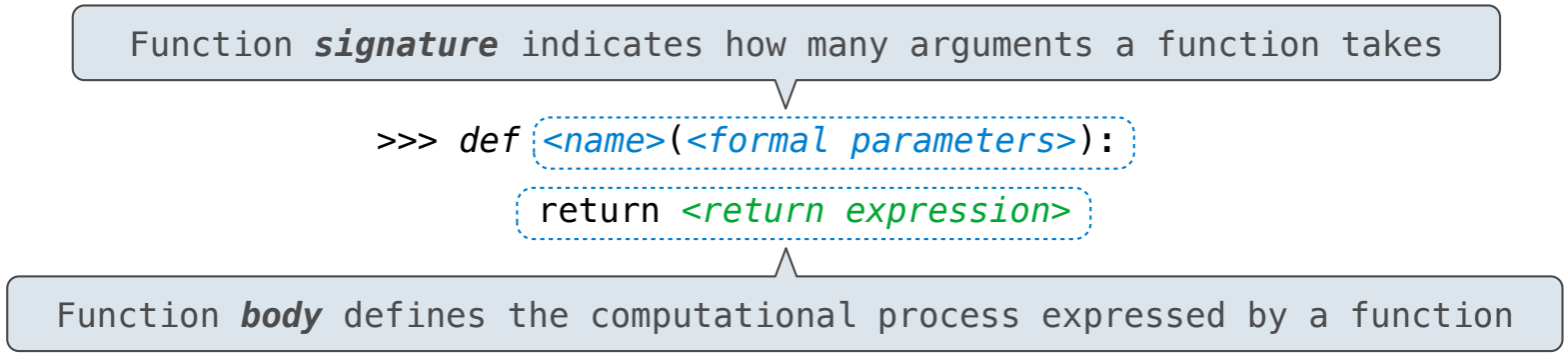

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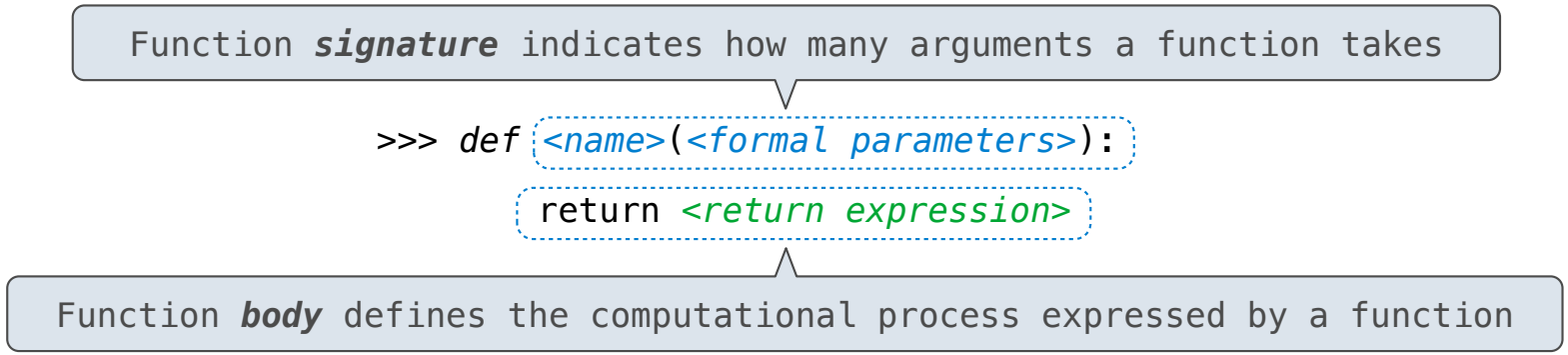

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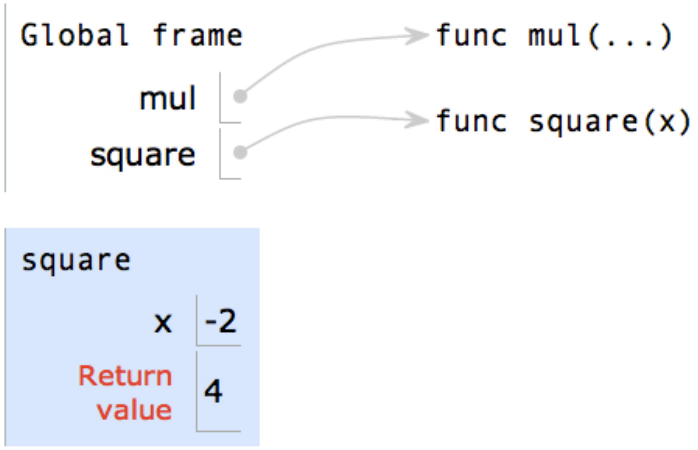

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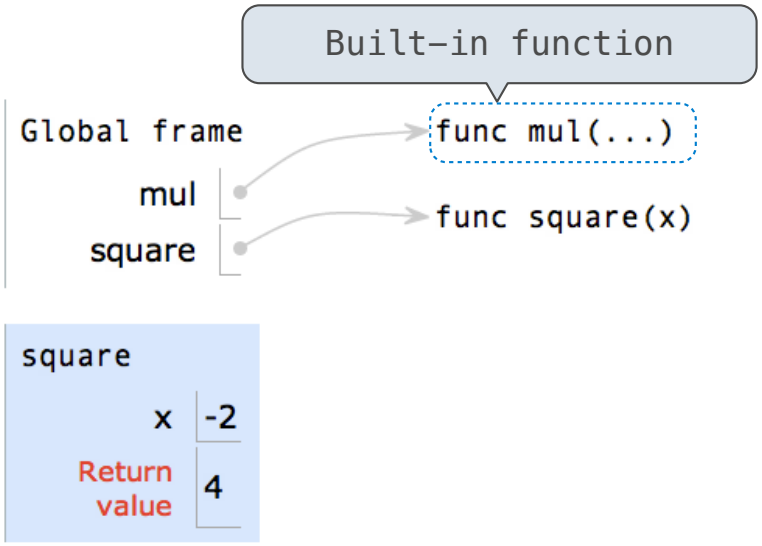

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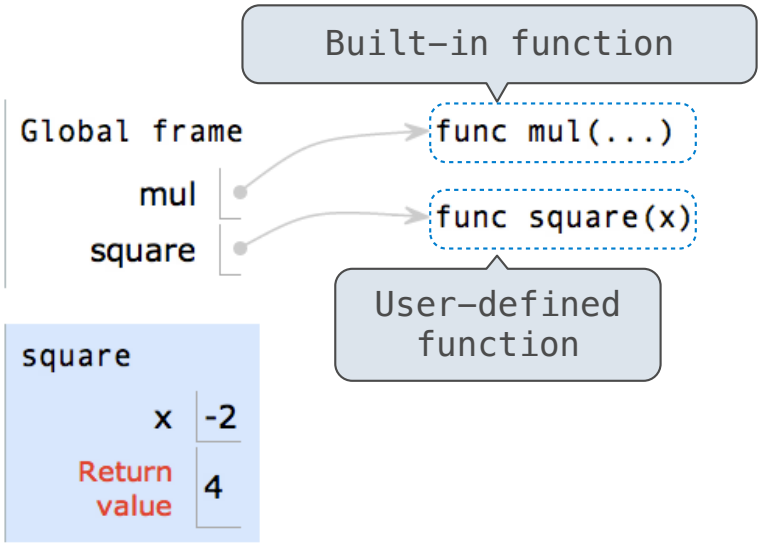

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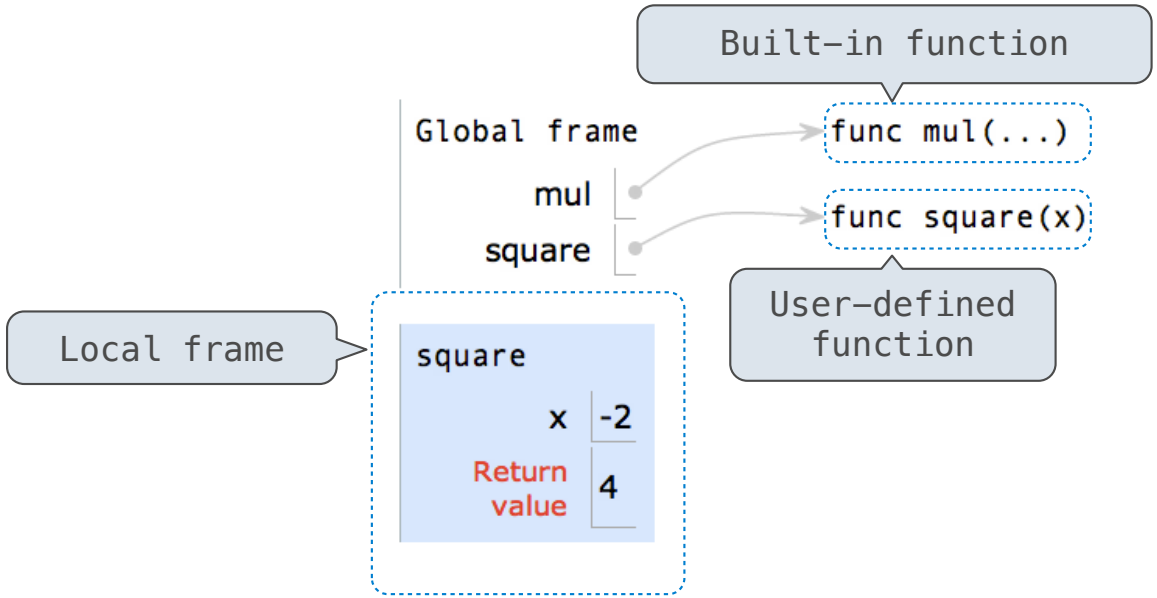

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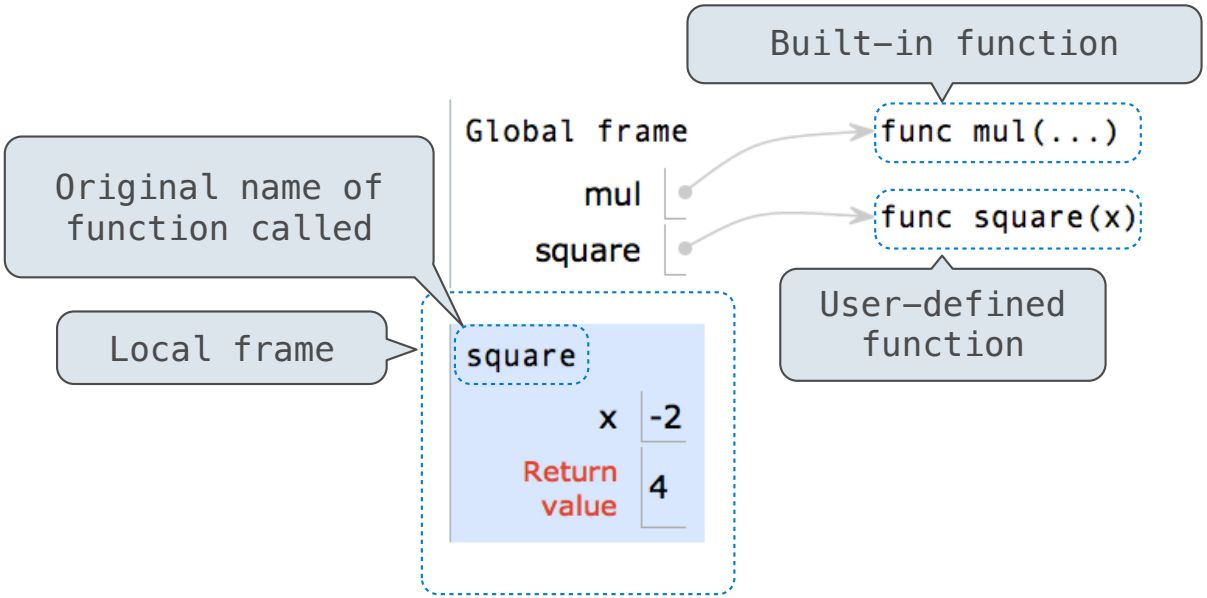

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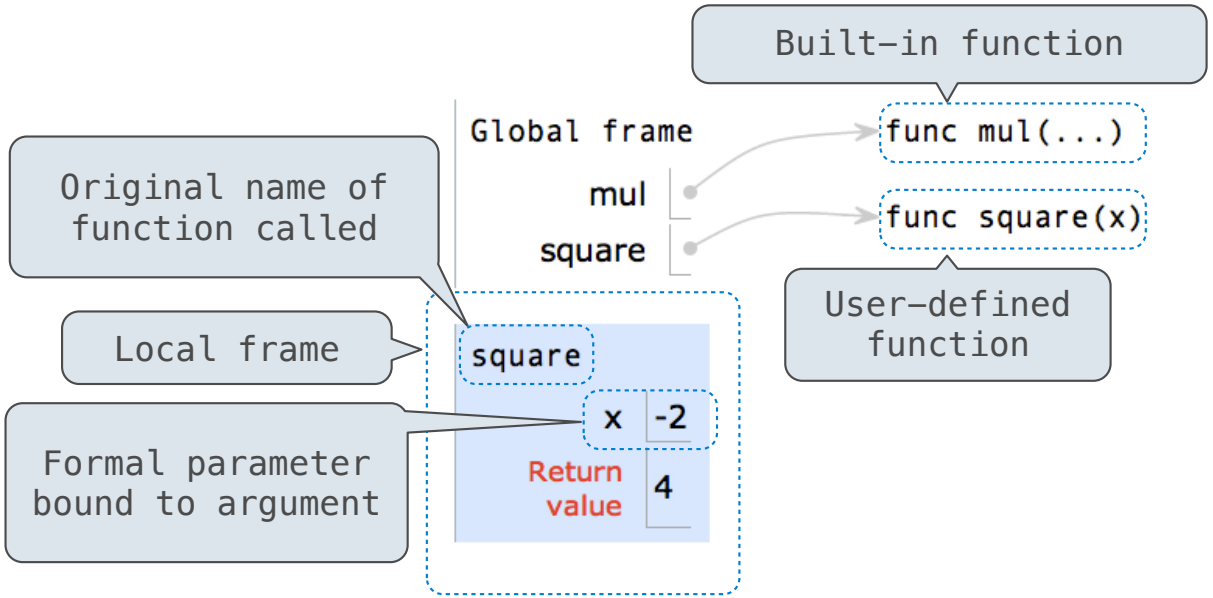

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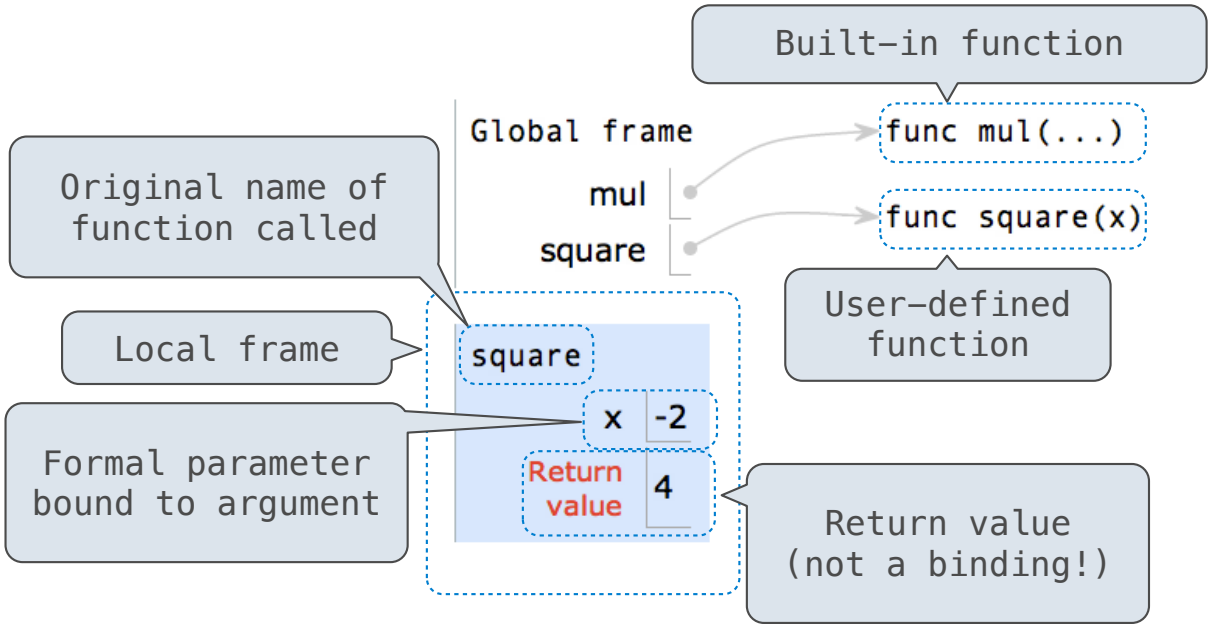

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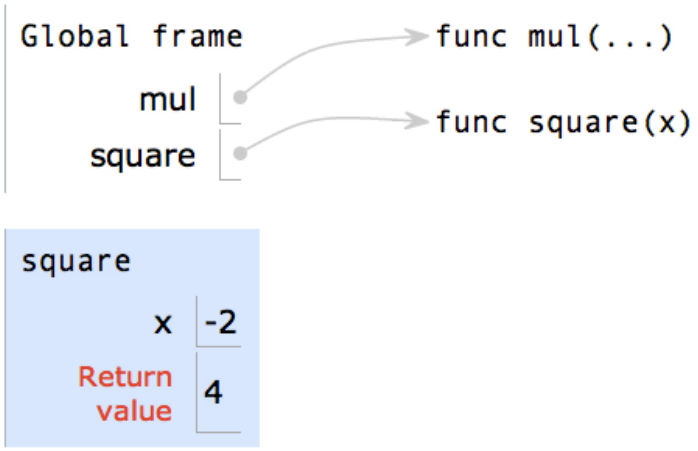

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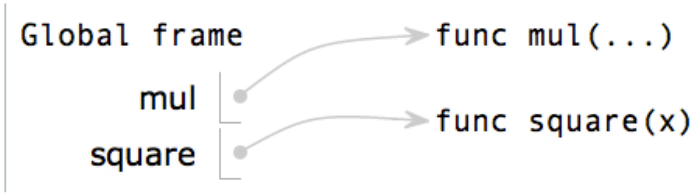

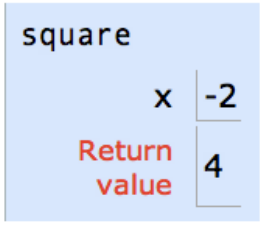

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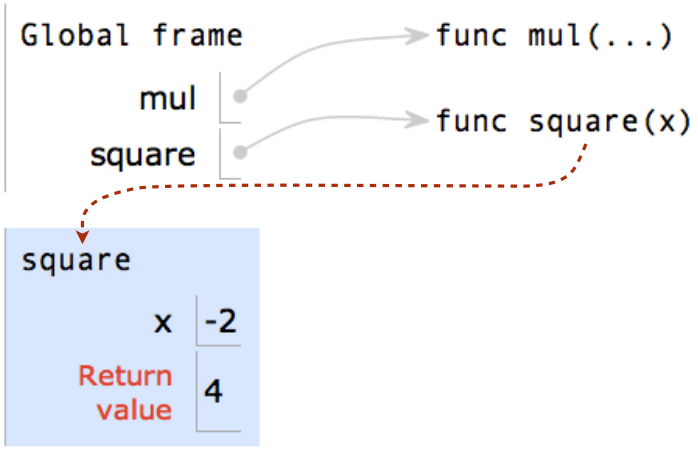

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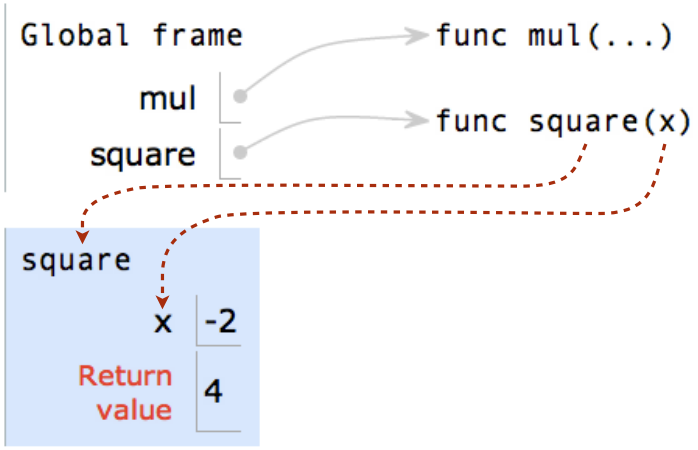

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(Demo)

The Print Function

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just return values

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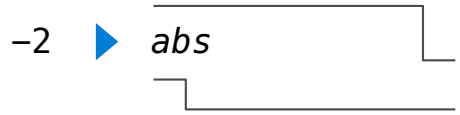

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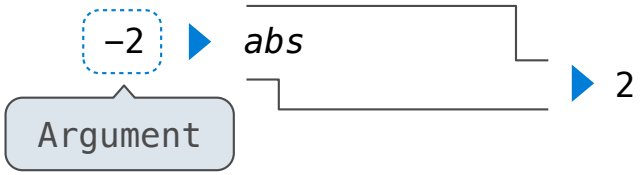

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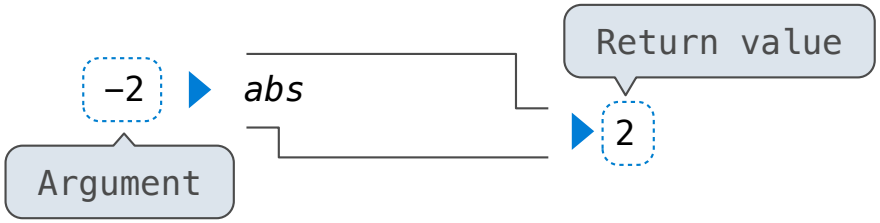

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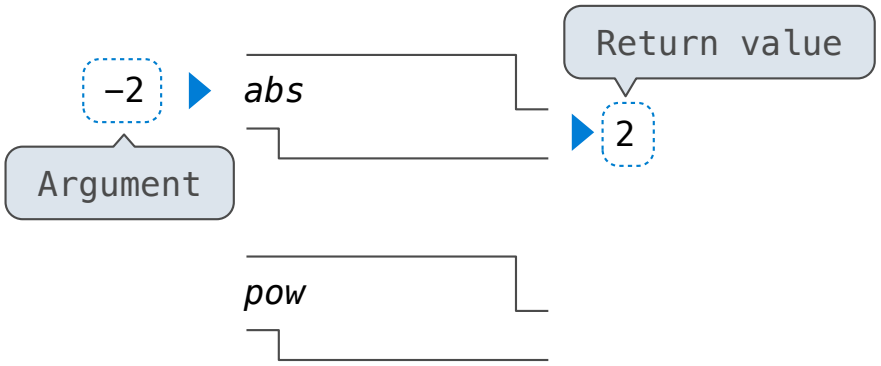

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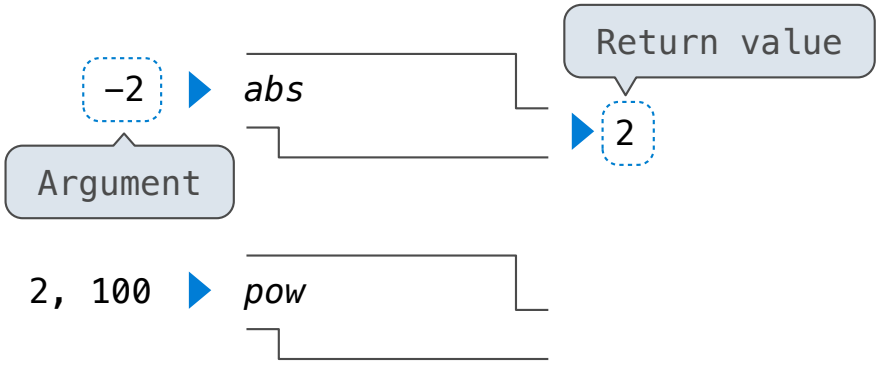

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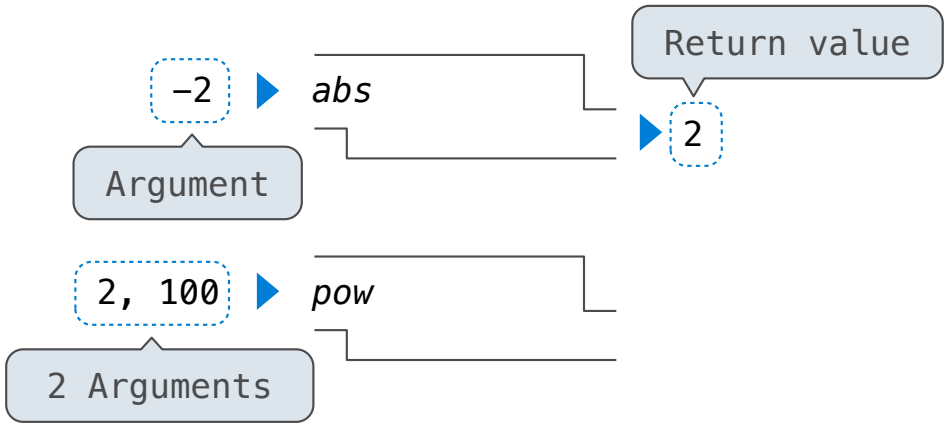

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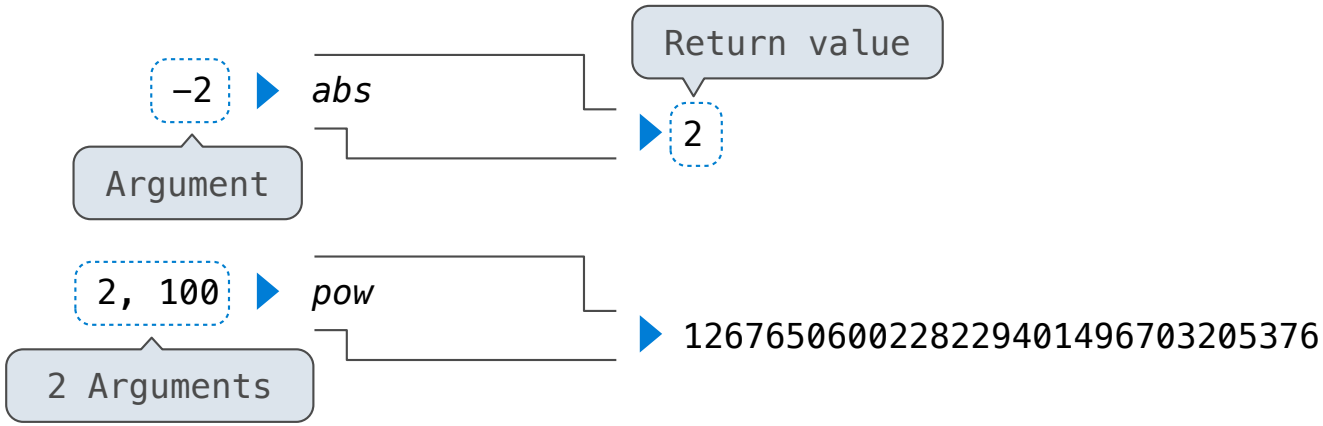

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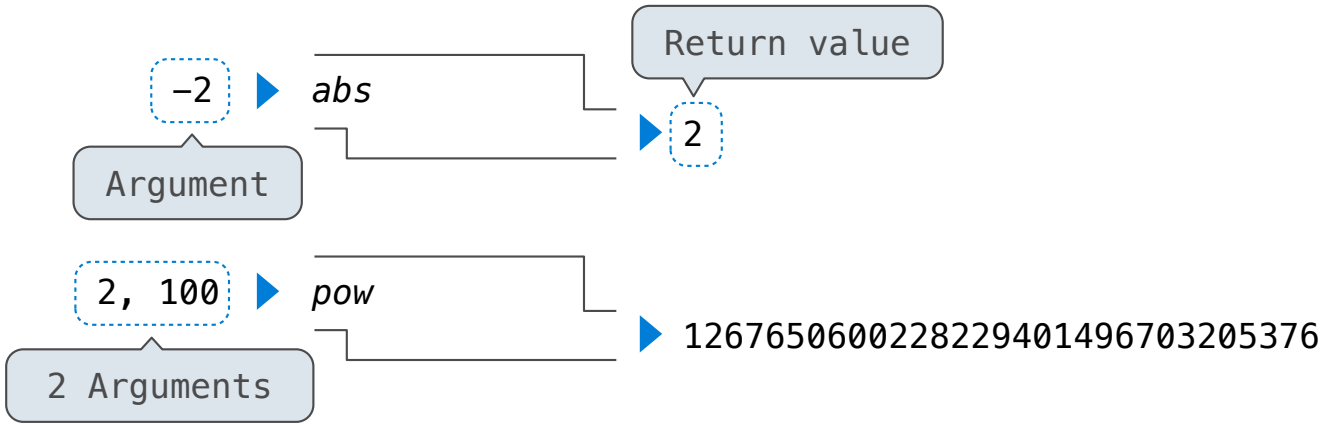

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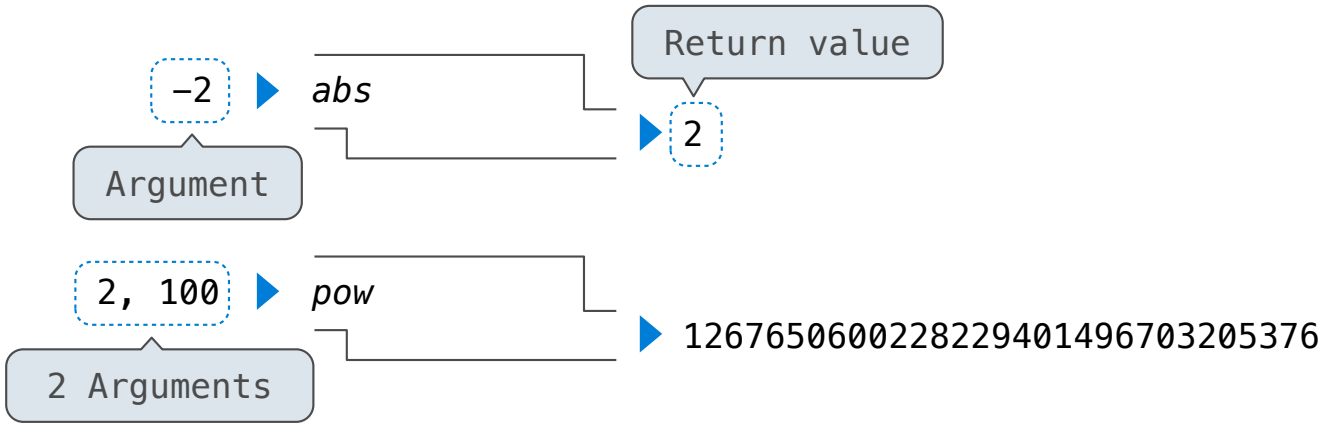

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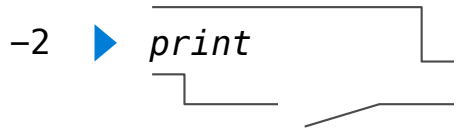

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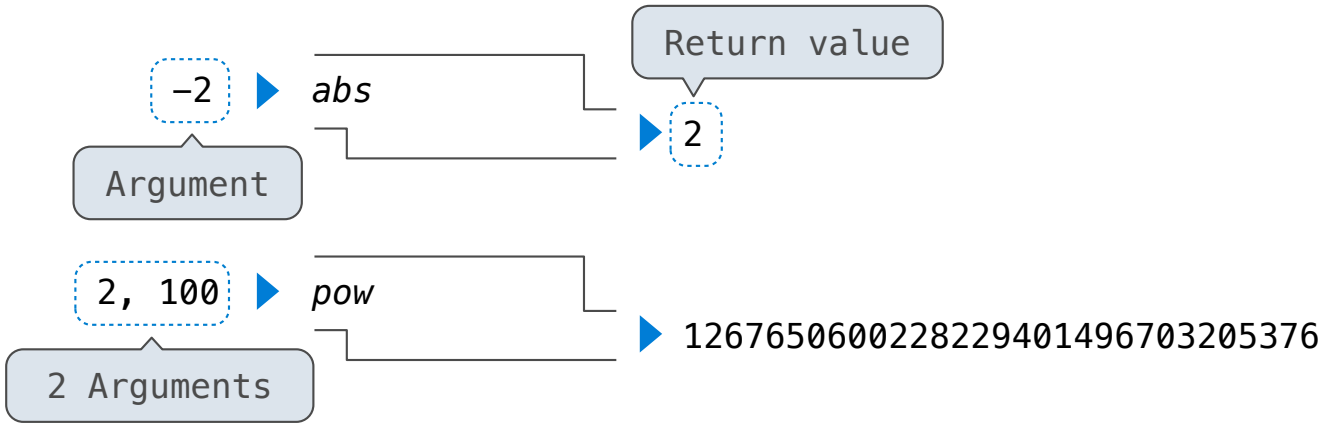

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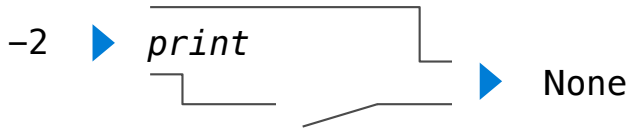

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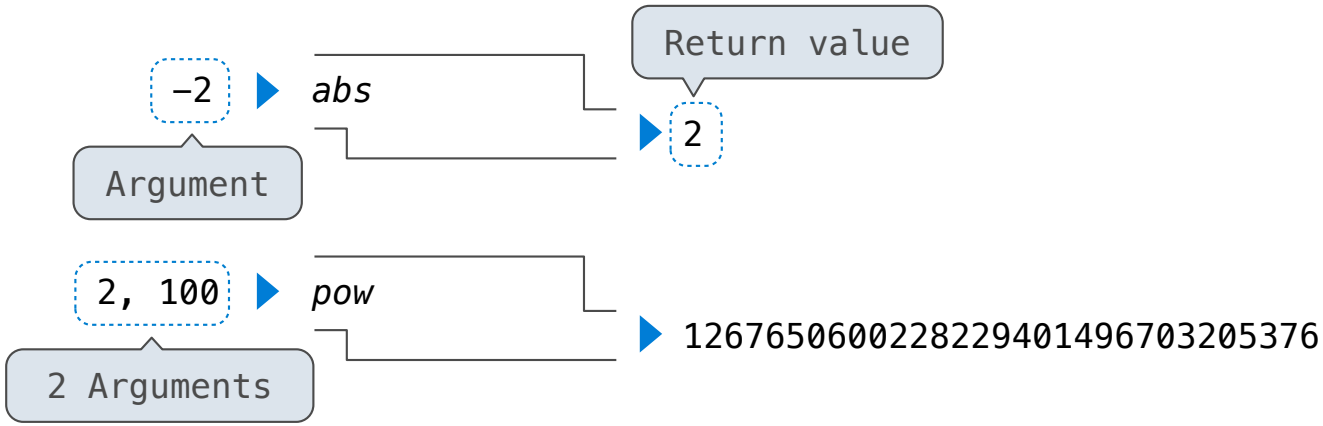

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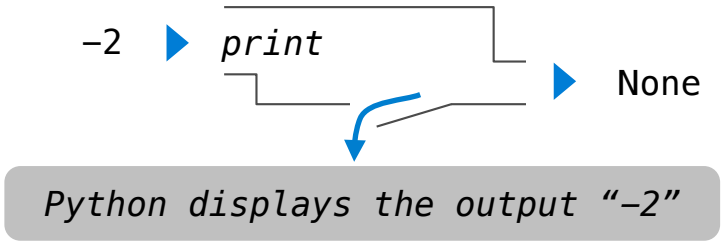

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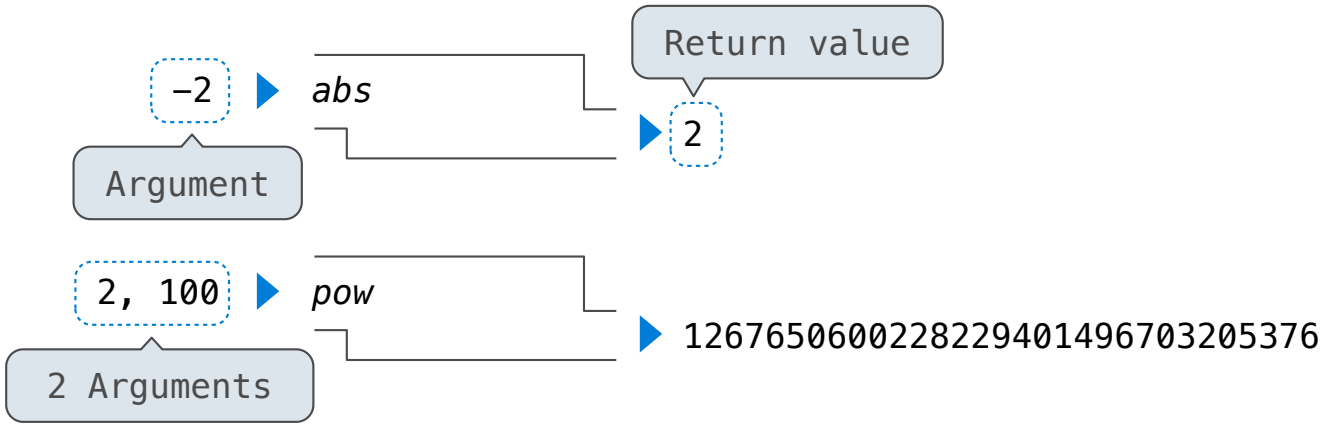

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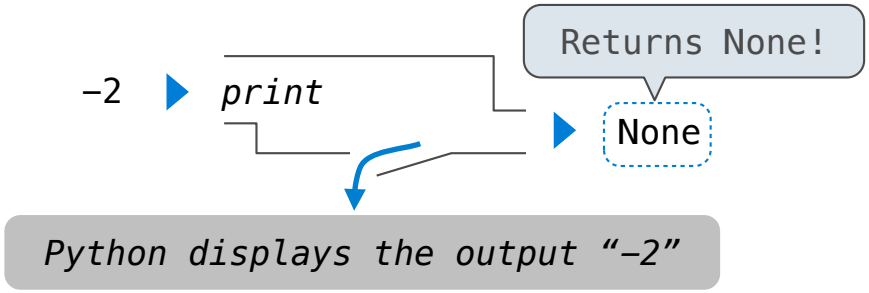

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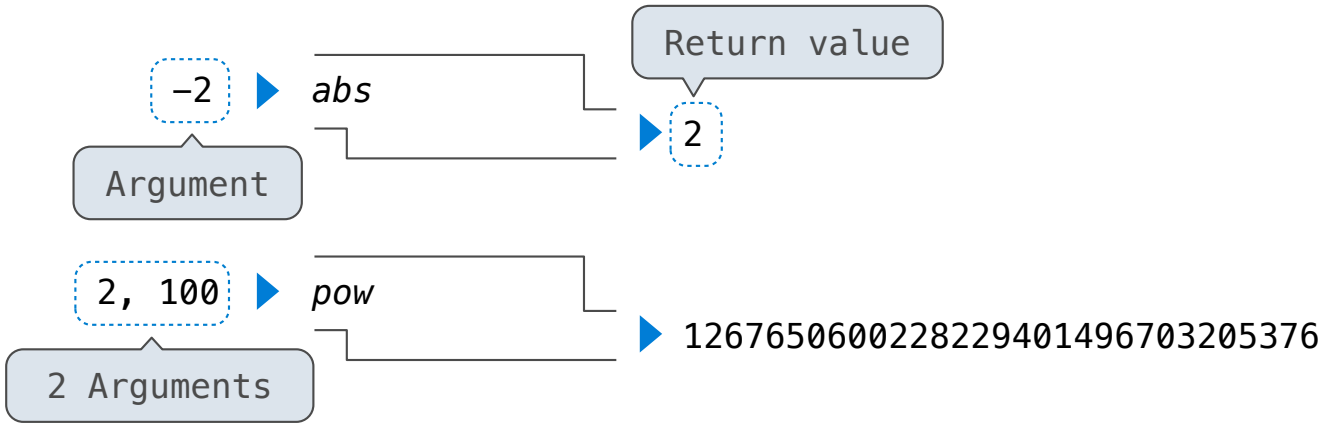

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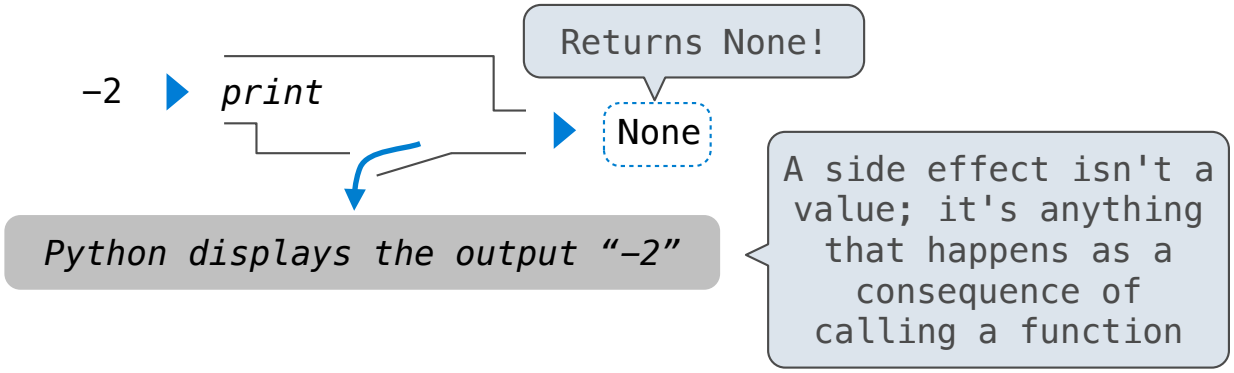

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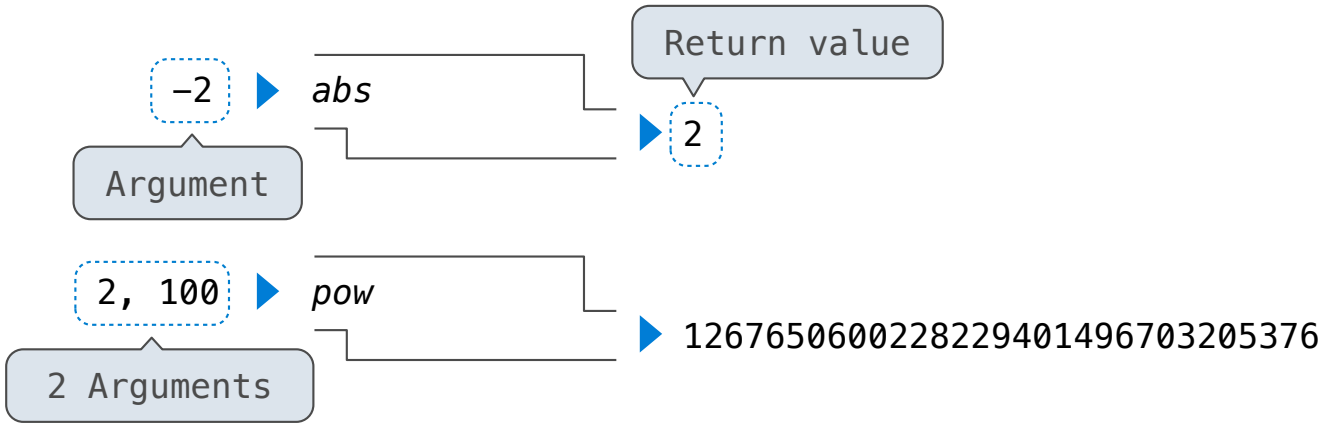

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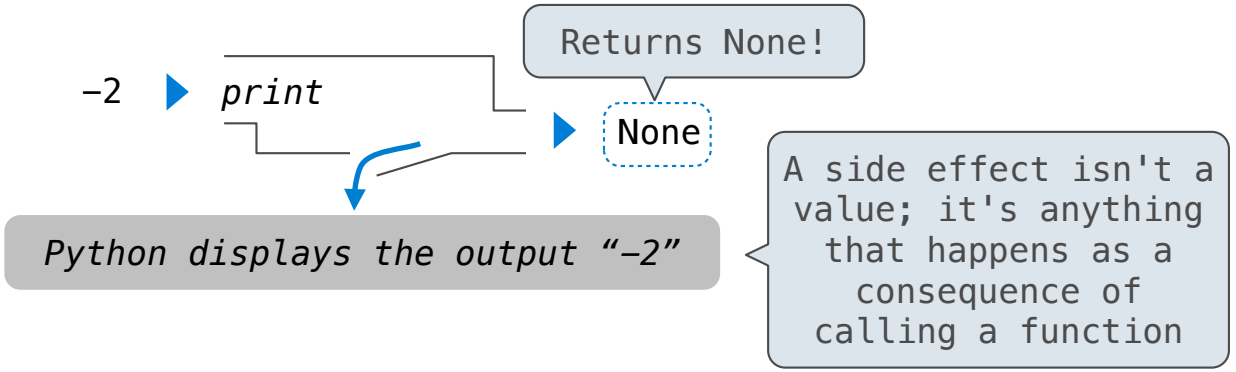

Important: *The interactive interpreter (>>>) displays the value of an expression, unless it is None*

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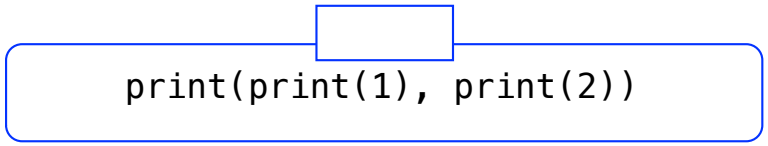

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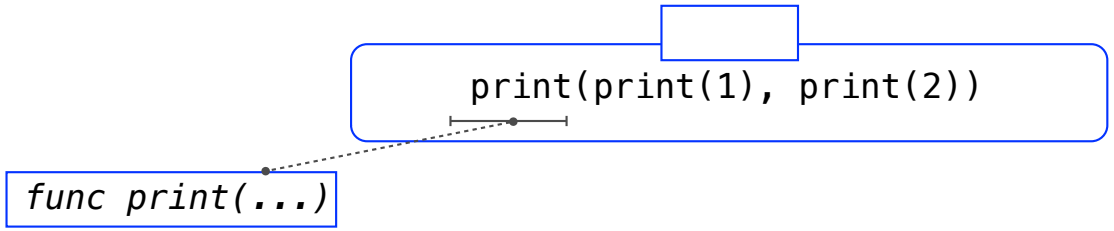

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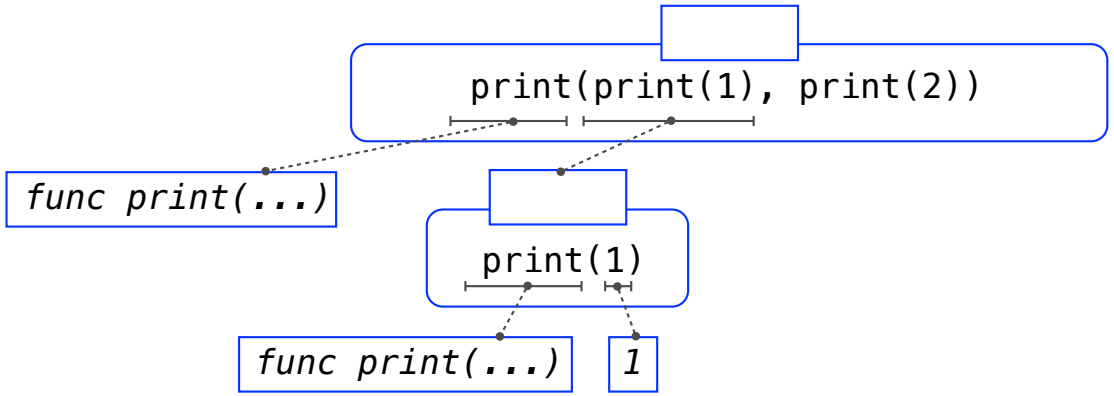

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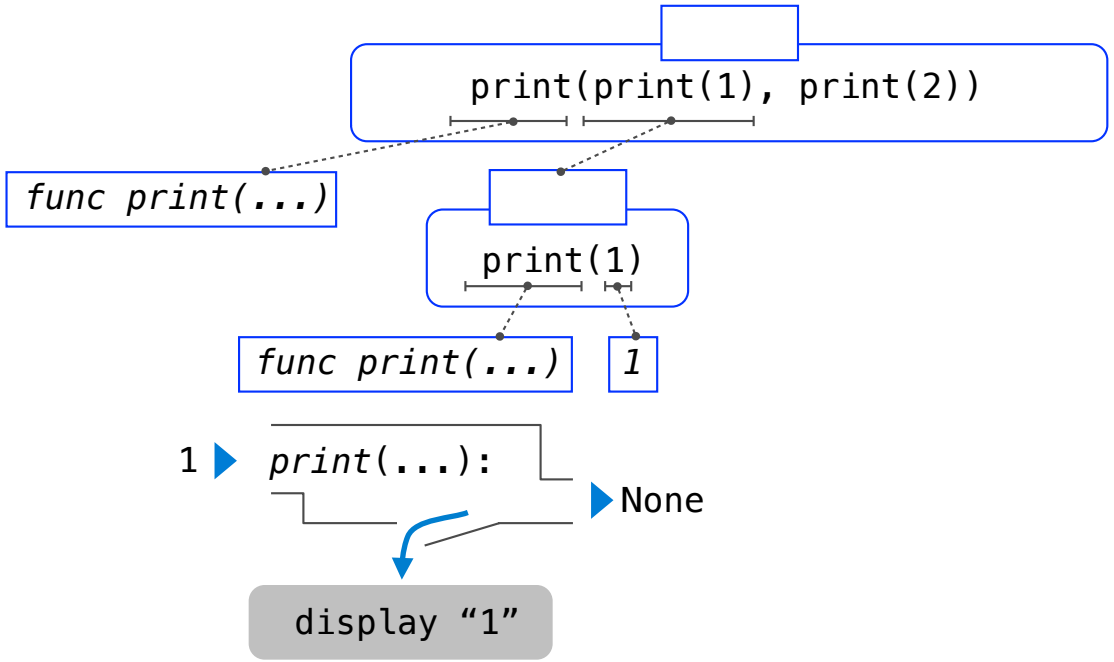

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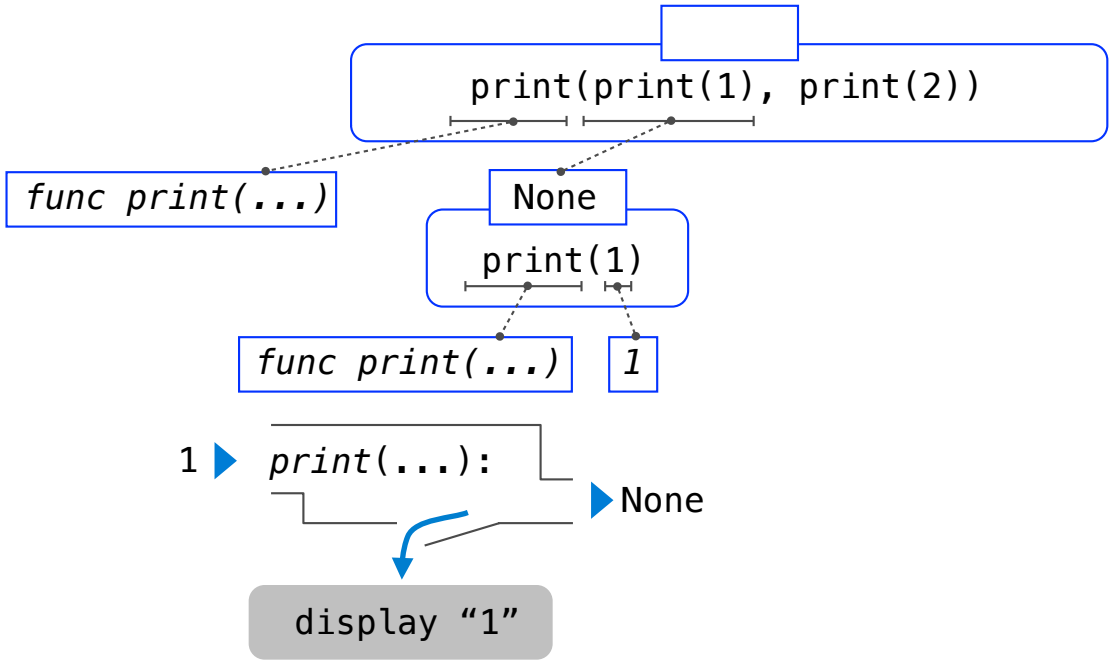

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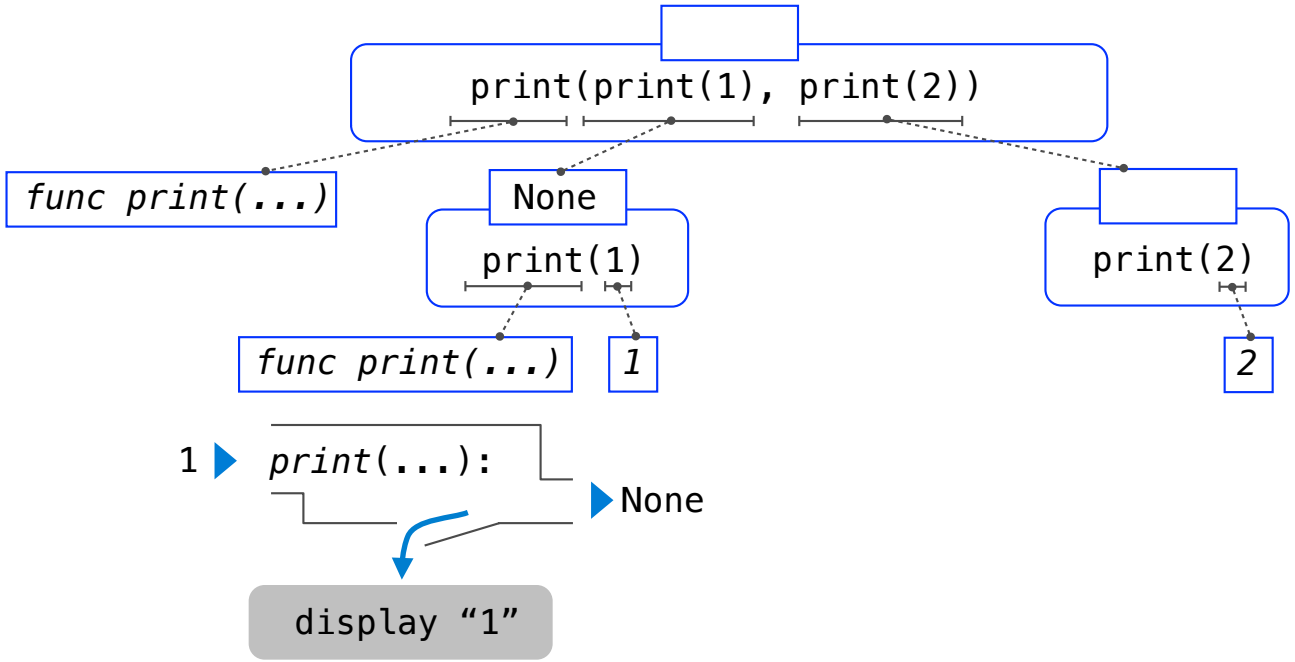

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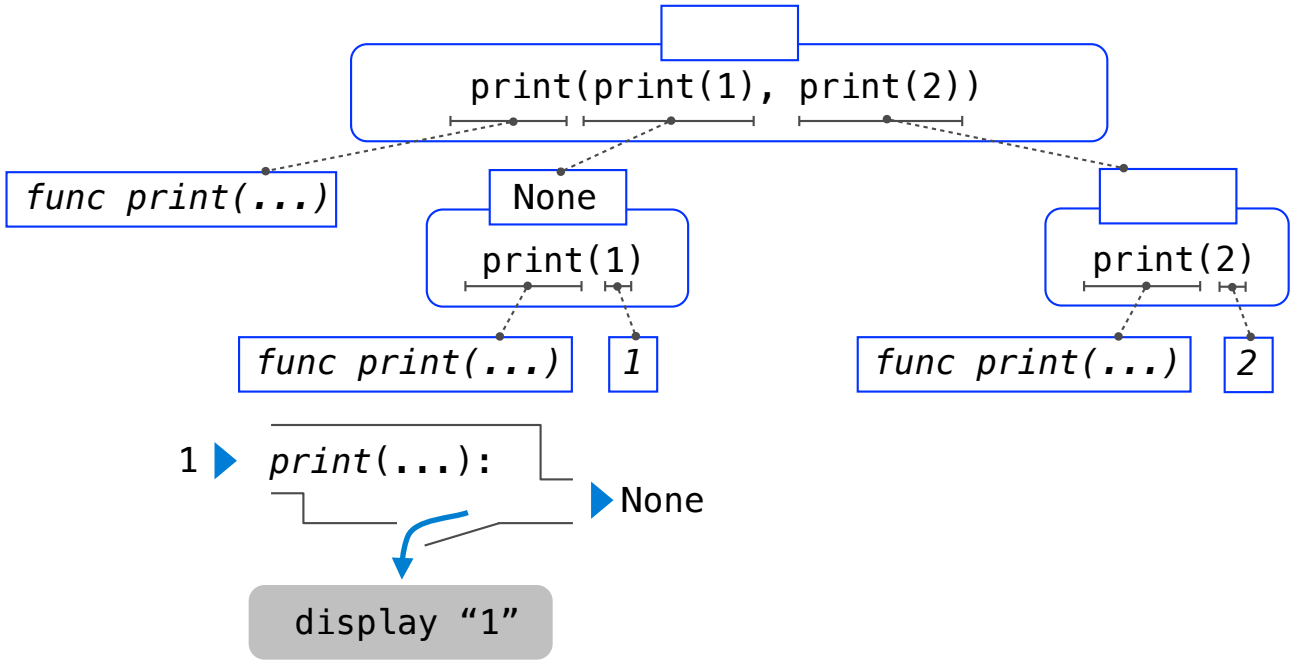

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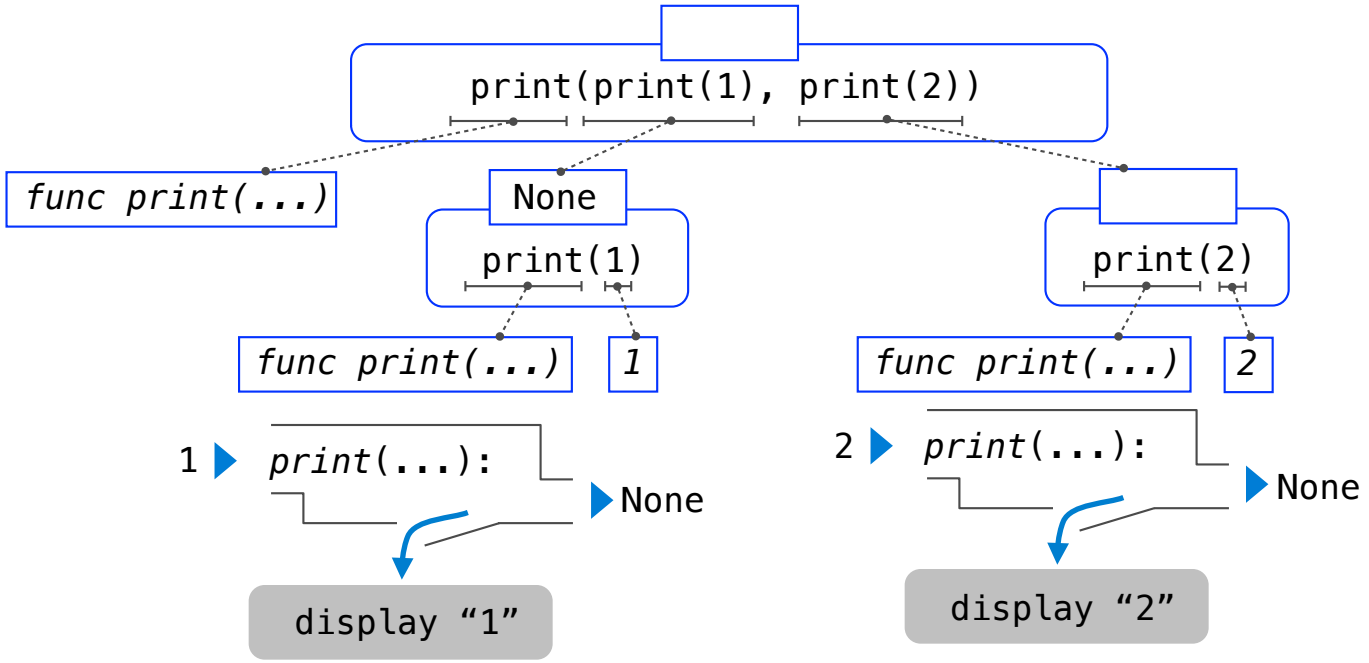

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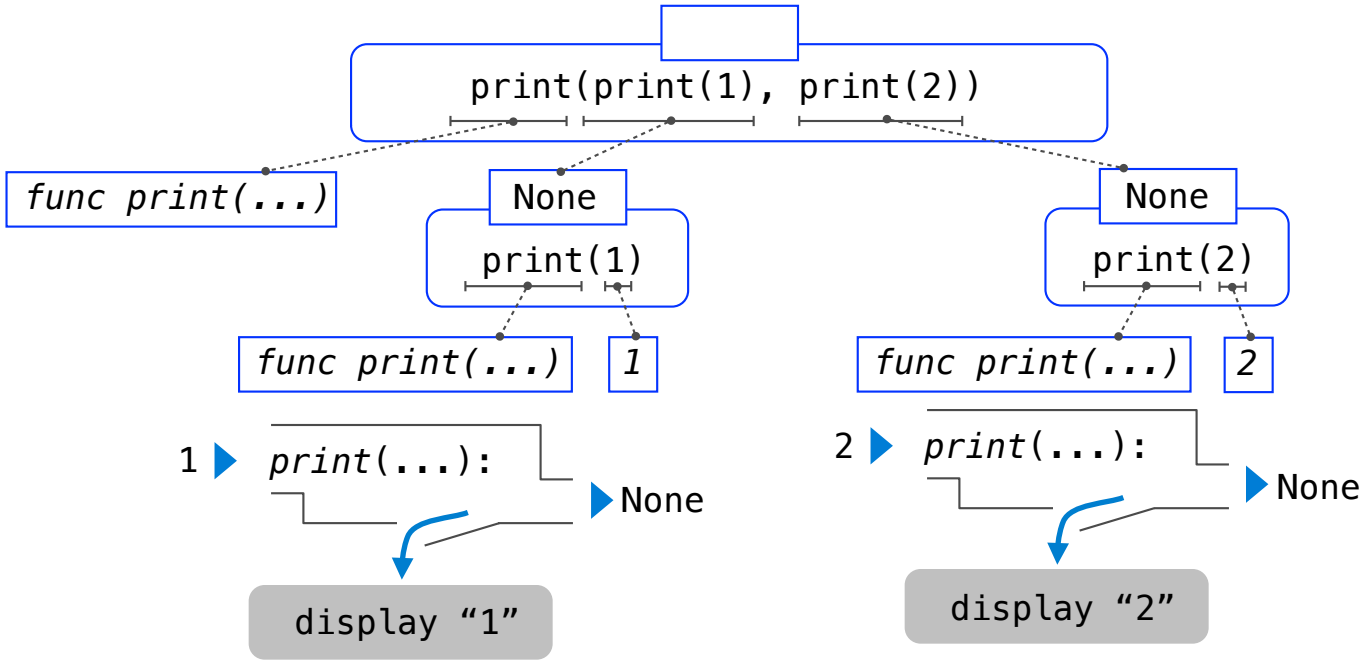

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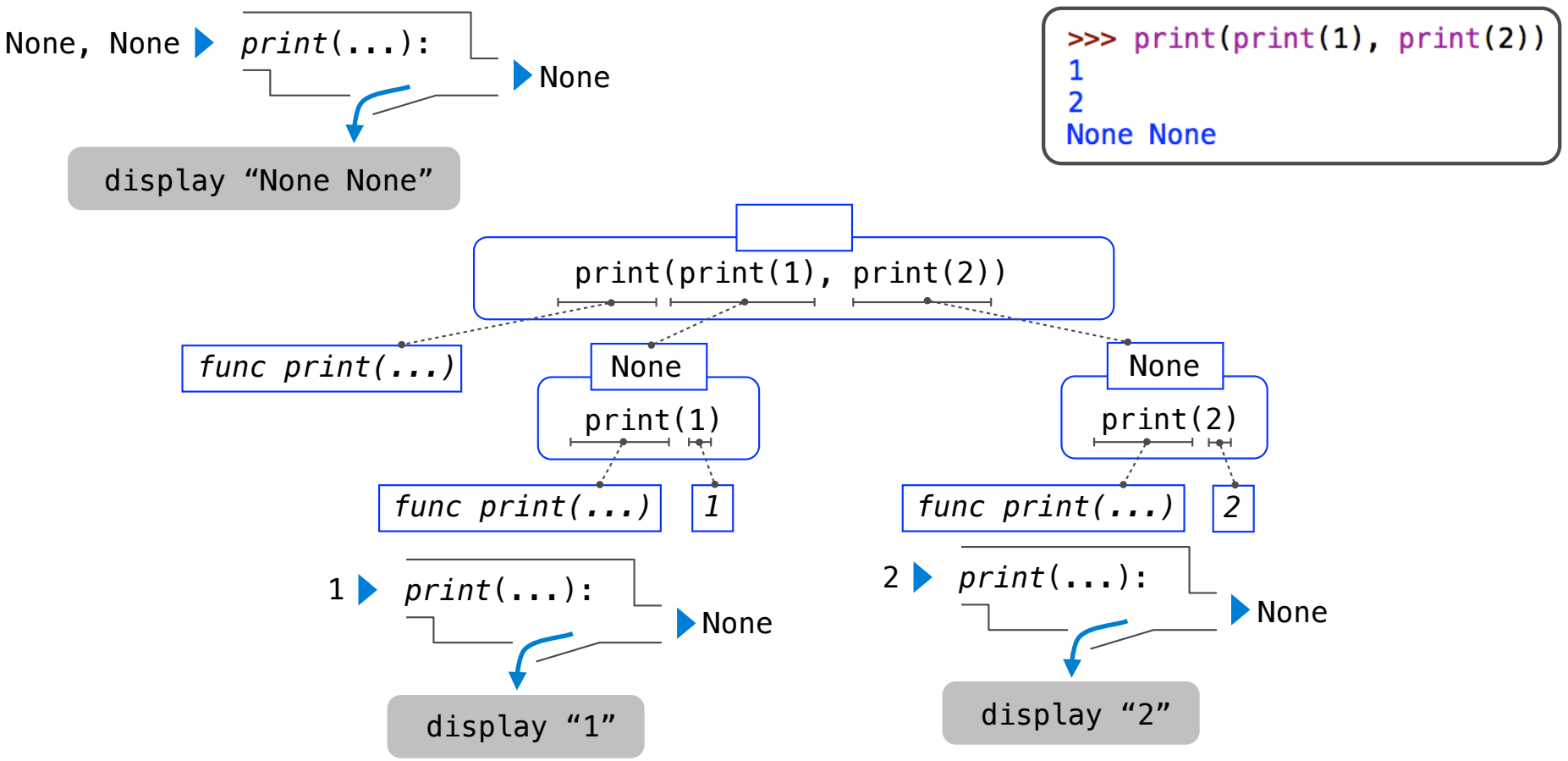

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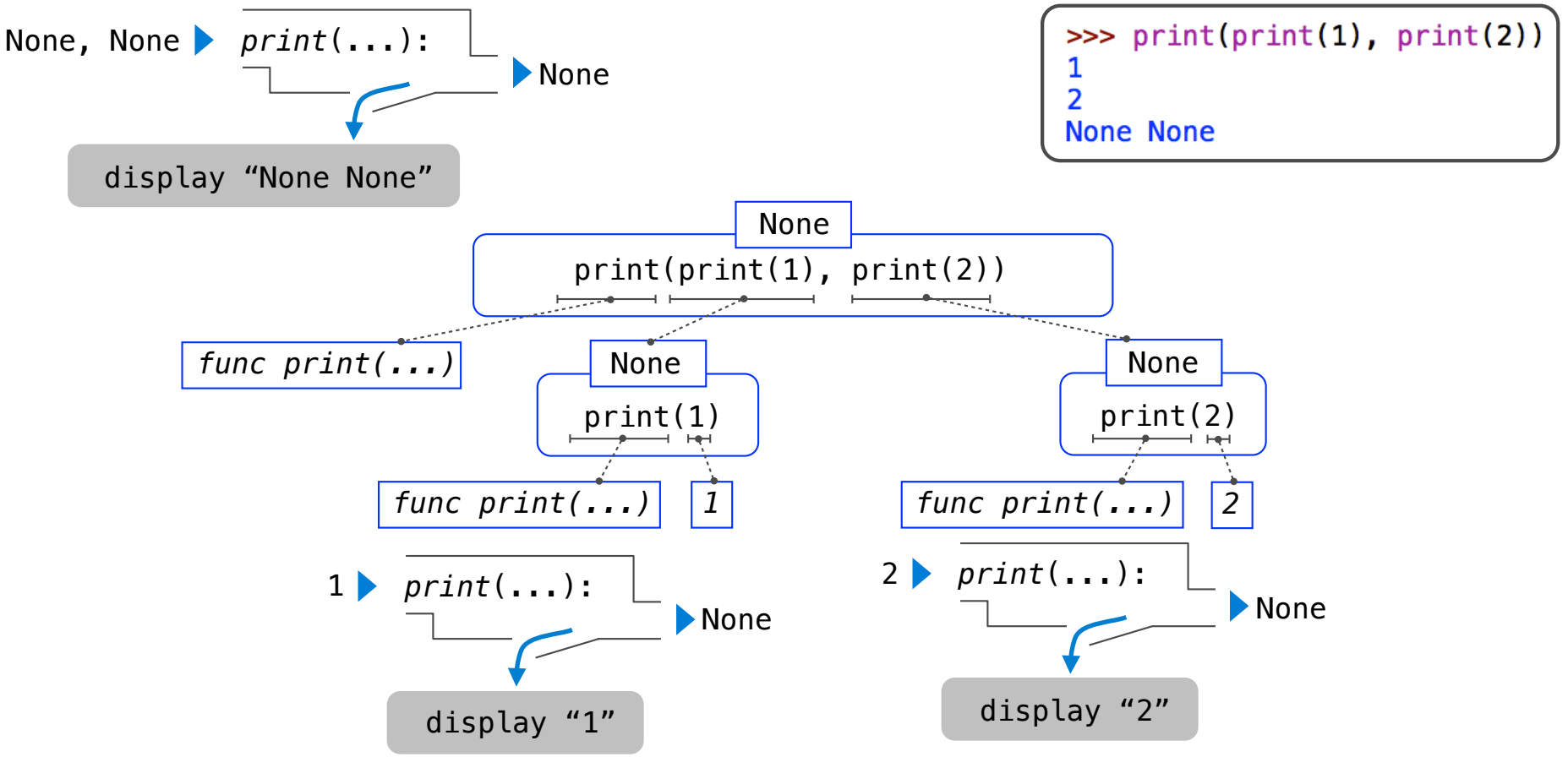

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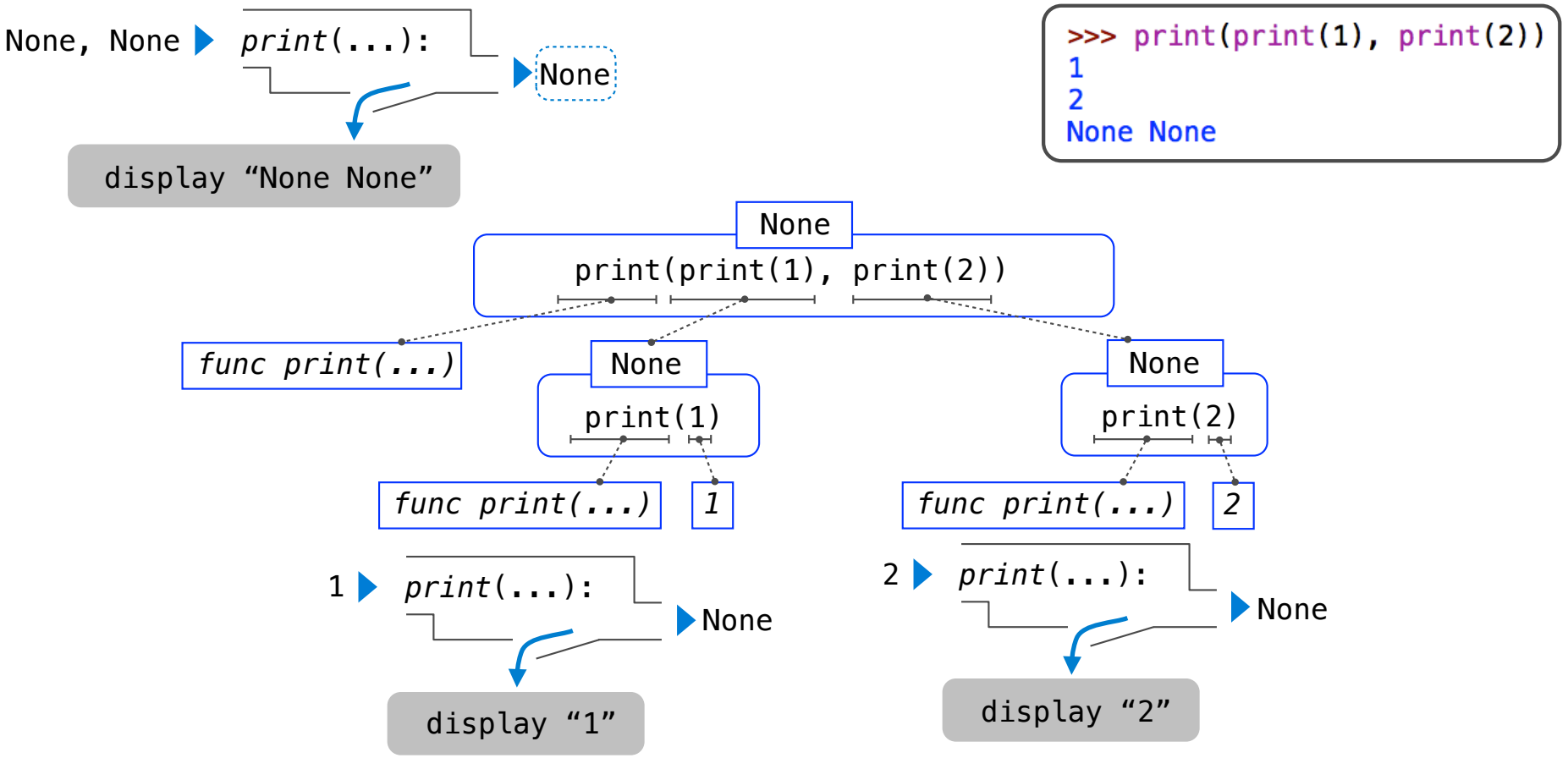

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