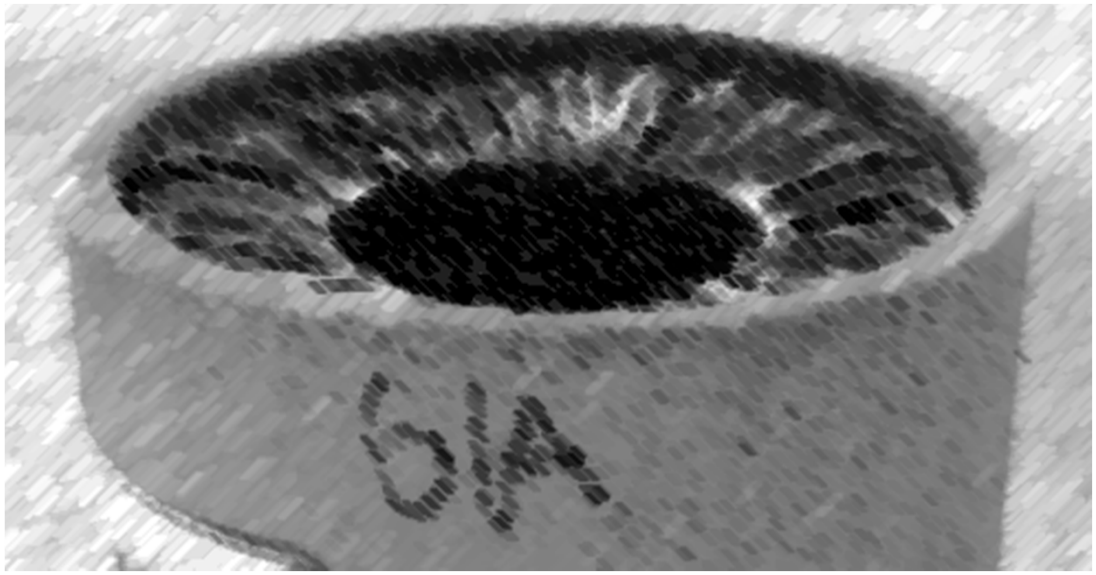


CS61A Lecture 2

Amir Kamil
UC Berkeley
January 25, 2013

Announcements

- Reminder: hw0 due tonight!
  - Read html file for instructions
  - Use our .py templates for homework and projects
- Find answers to your questions on Piazza
  - Use search functionality
  - Don’t post private question unless it is not of general interest
- In-class quiz next Friday
  - Bring a writing implement

Review: Expressions

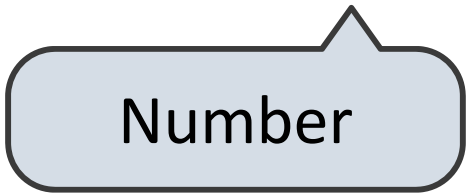
Review: Expressions

Primitive expressions:

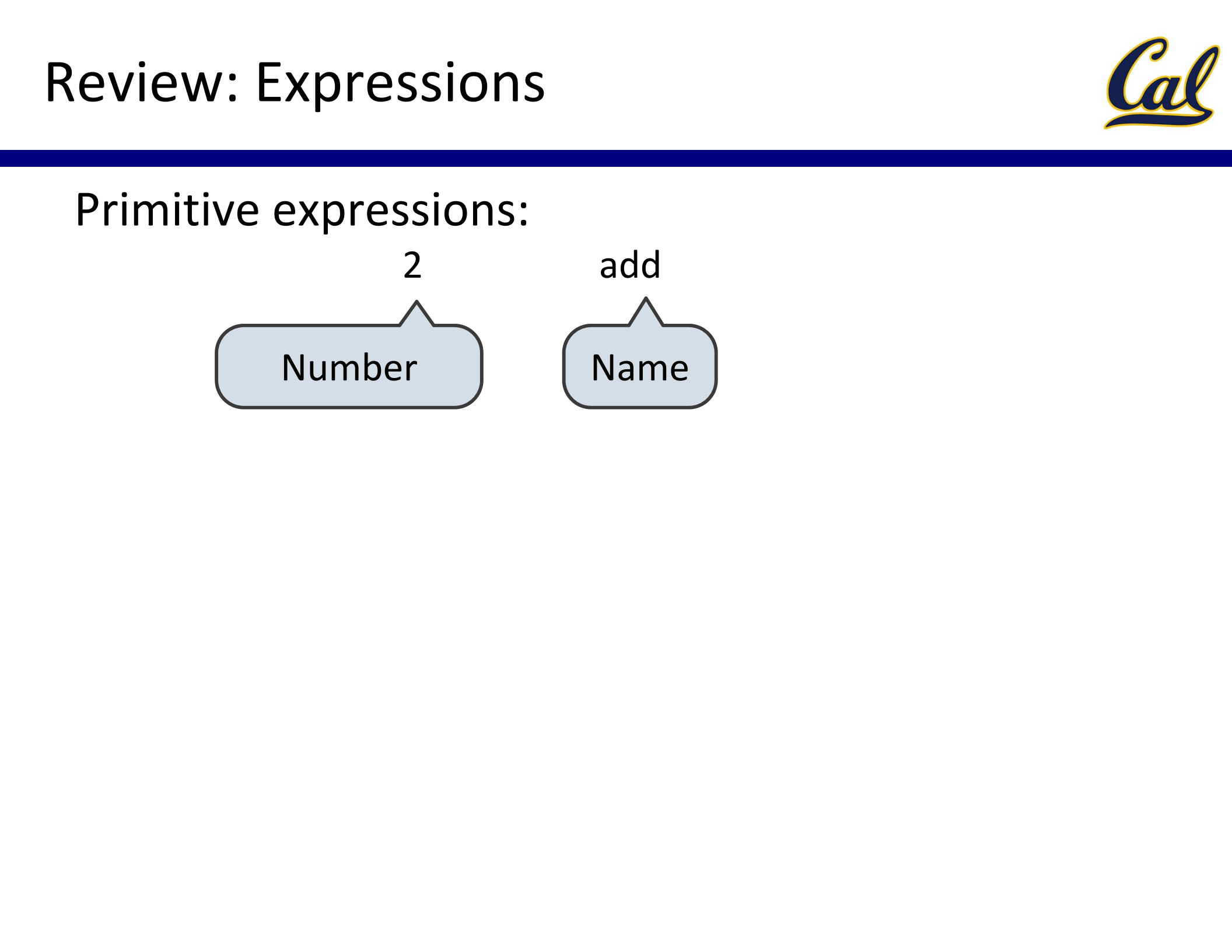
Review: Expressions

Primitive expressions:

2

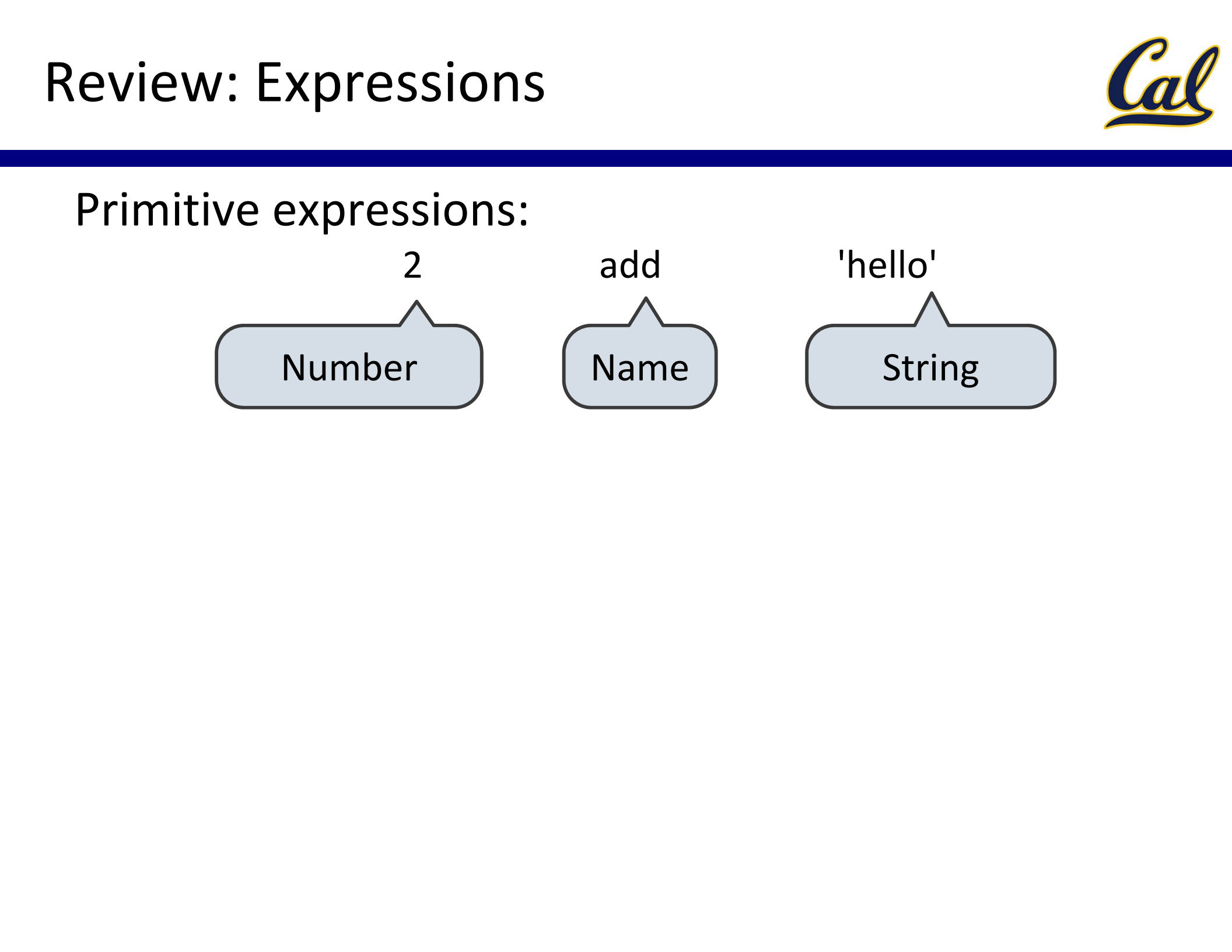


Review: Expressions



Primitive expressions:

Review: Expressions



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Review: Expressions

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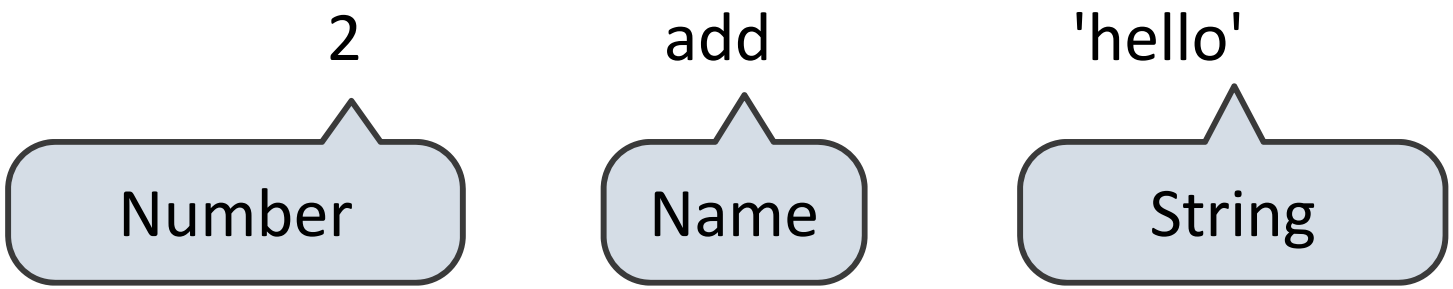
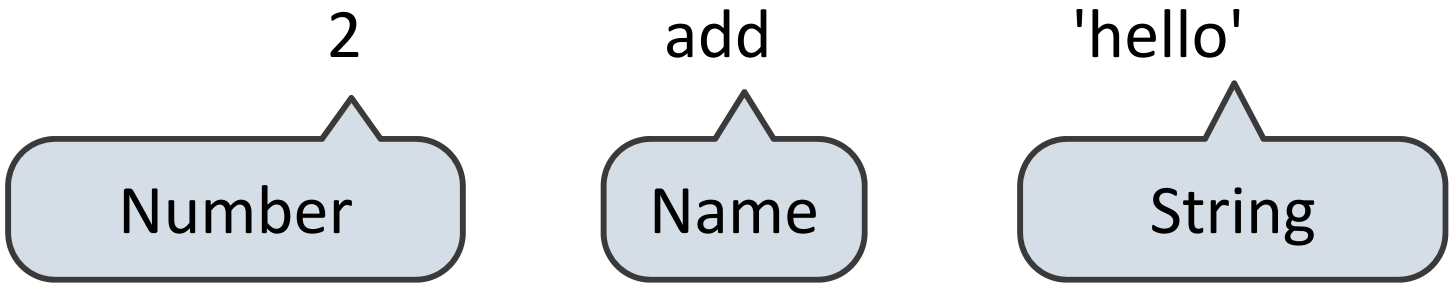


Call expressions:

Review: Expressions

Primitive expressions:



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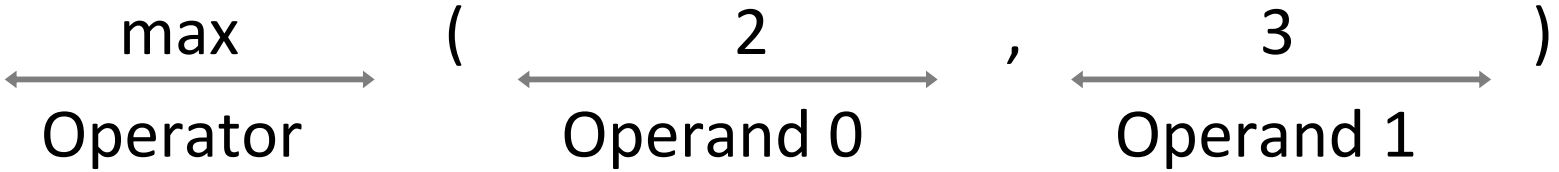

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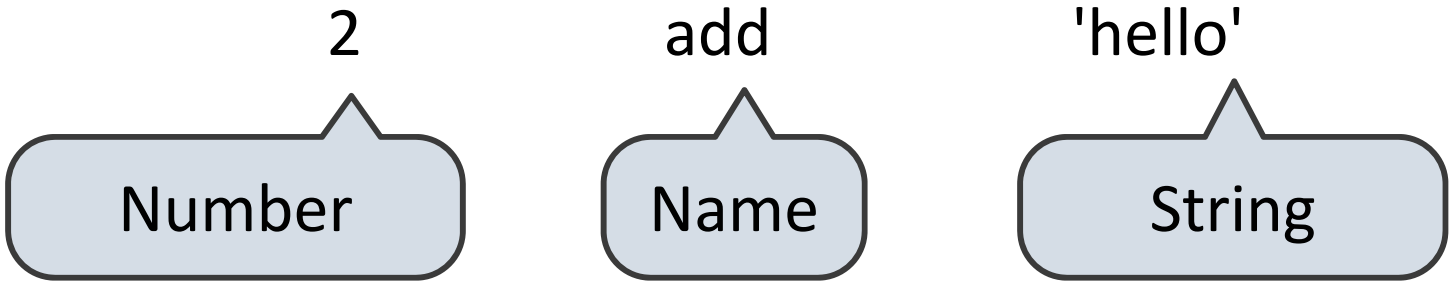

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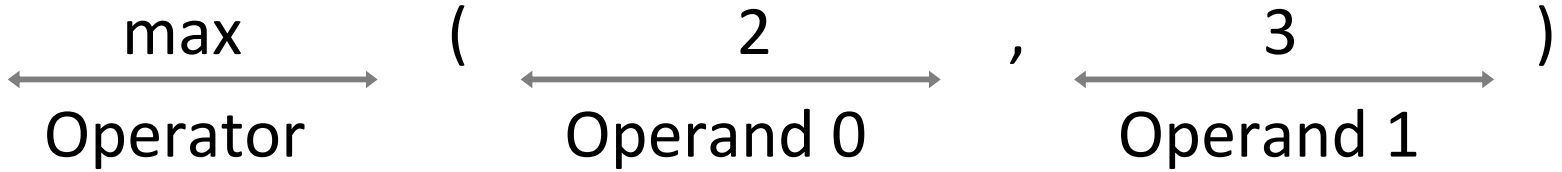

One big nested call expression

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

Review: Expressions

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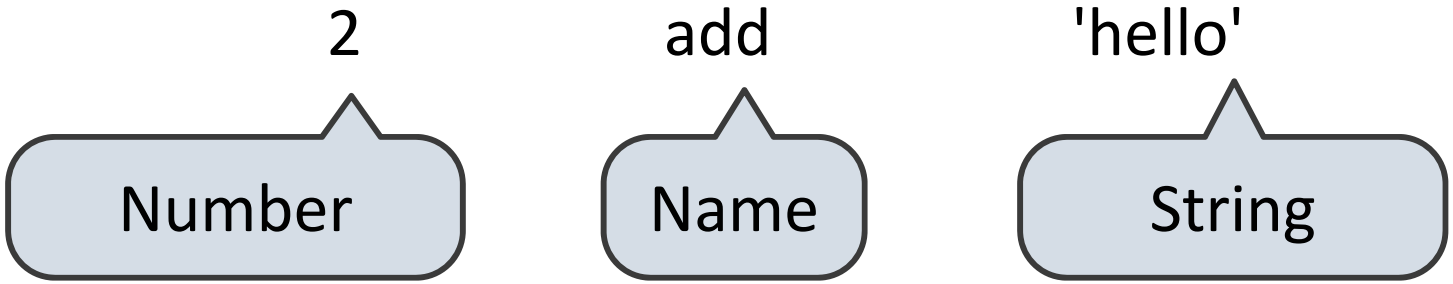

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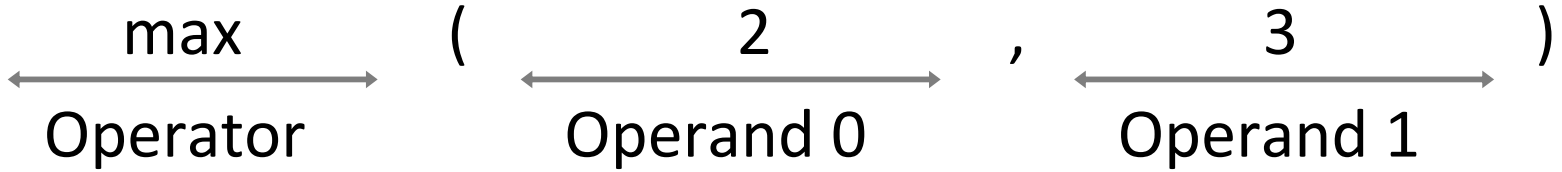

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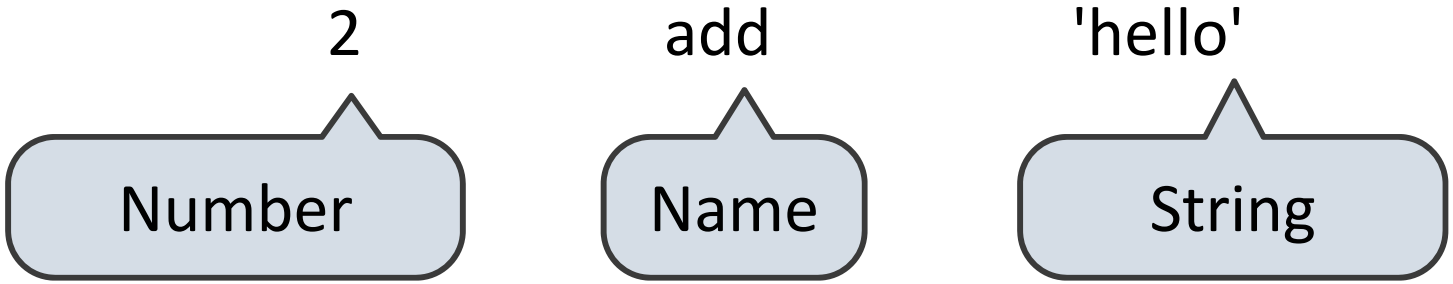

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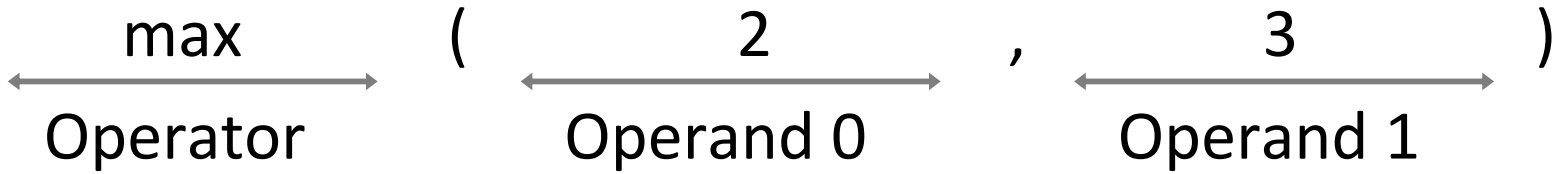

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Review: Evaluation Procedure

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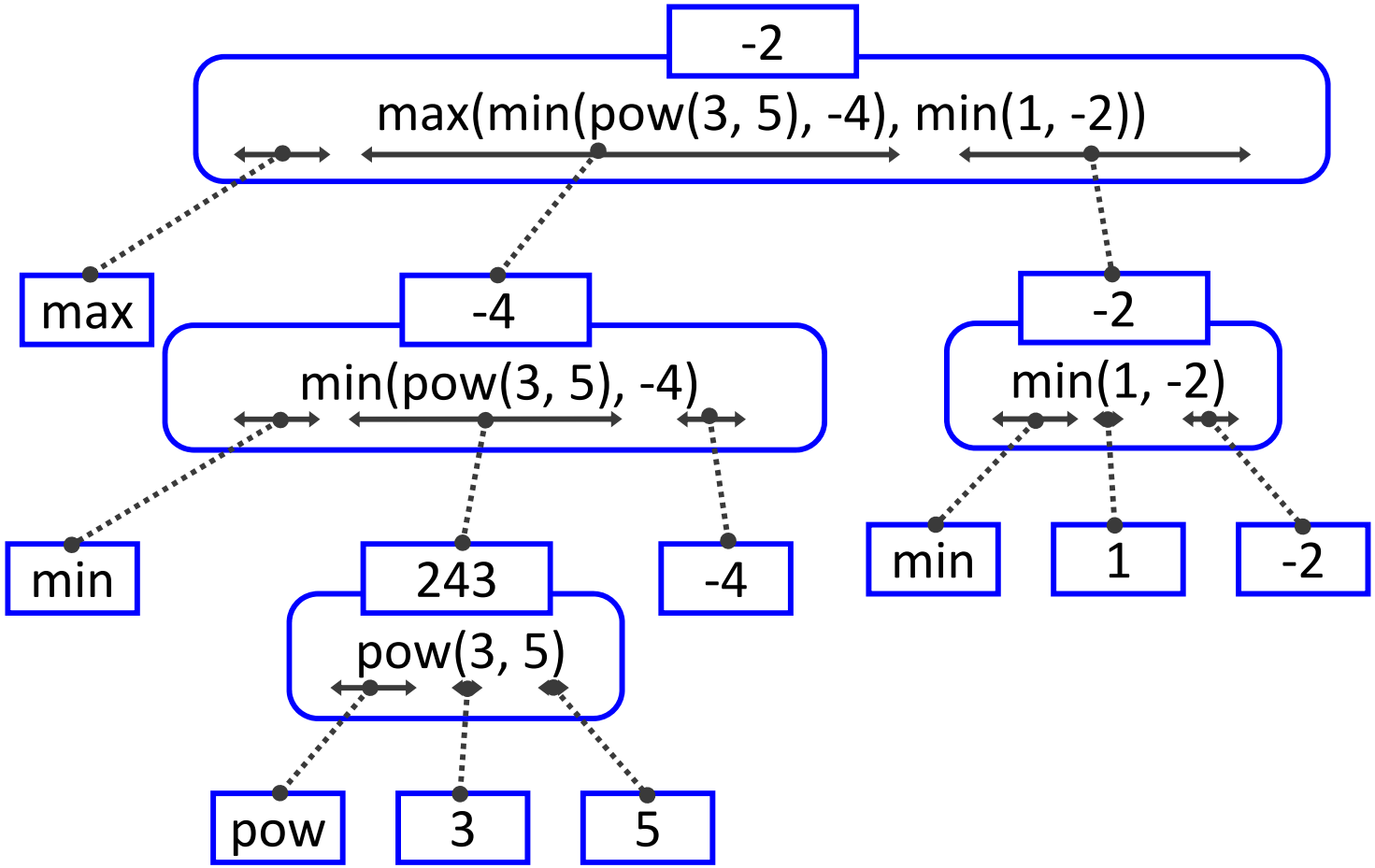

Review: Evaluation Procedure

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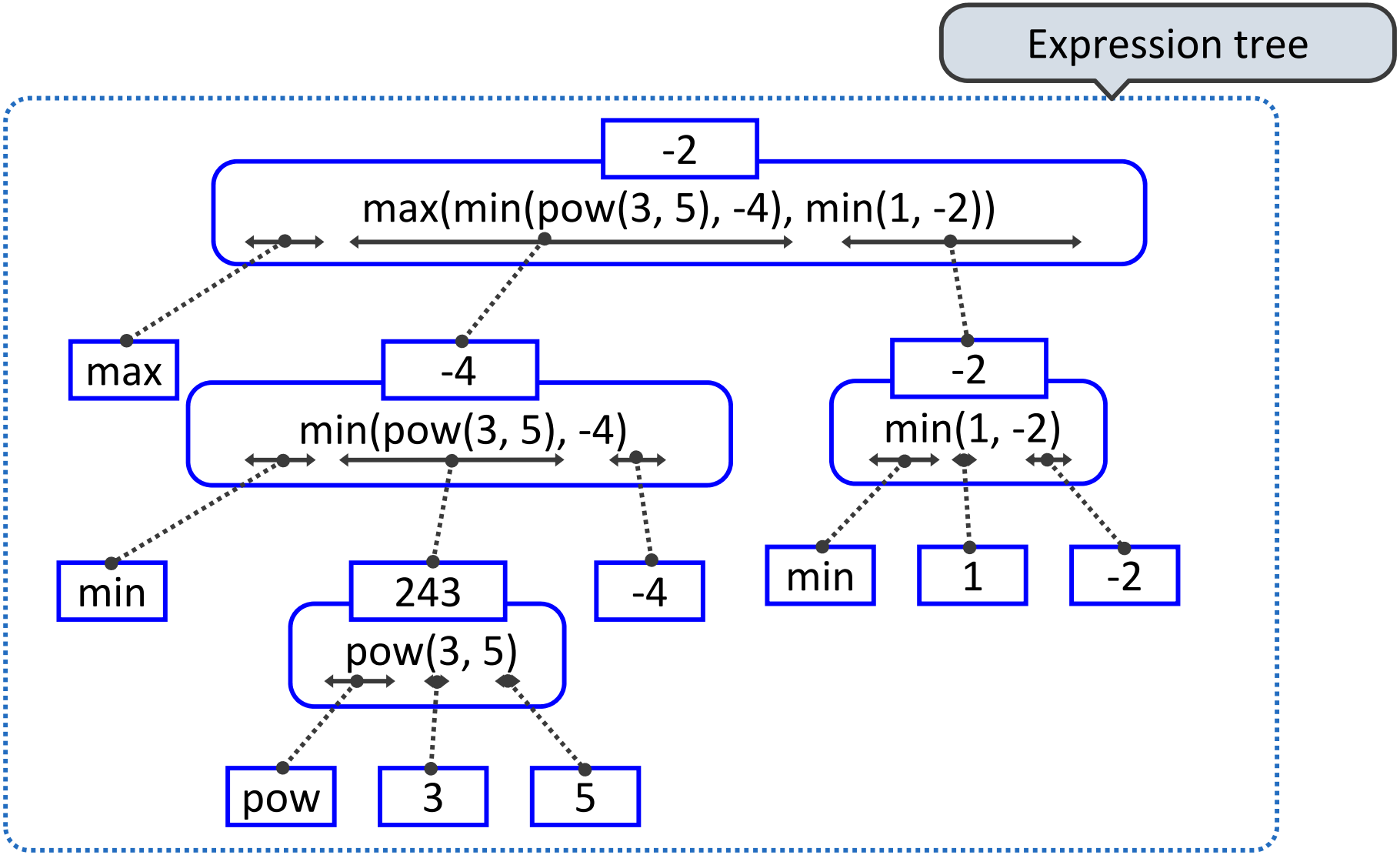

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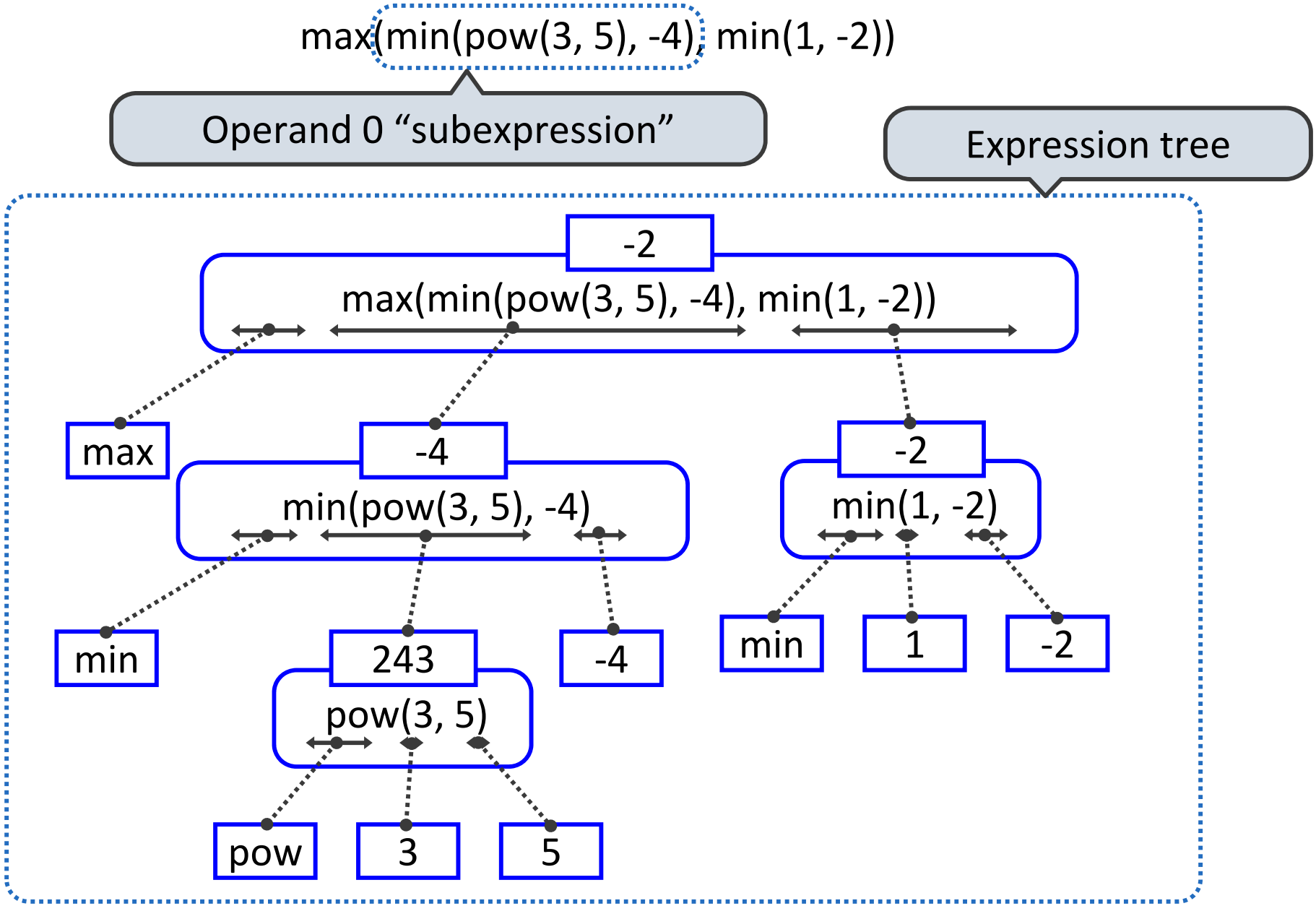

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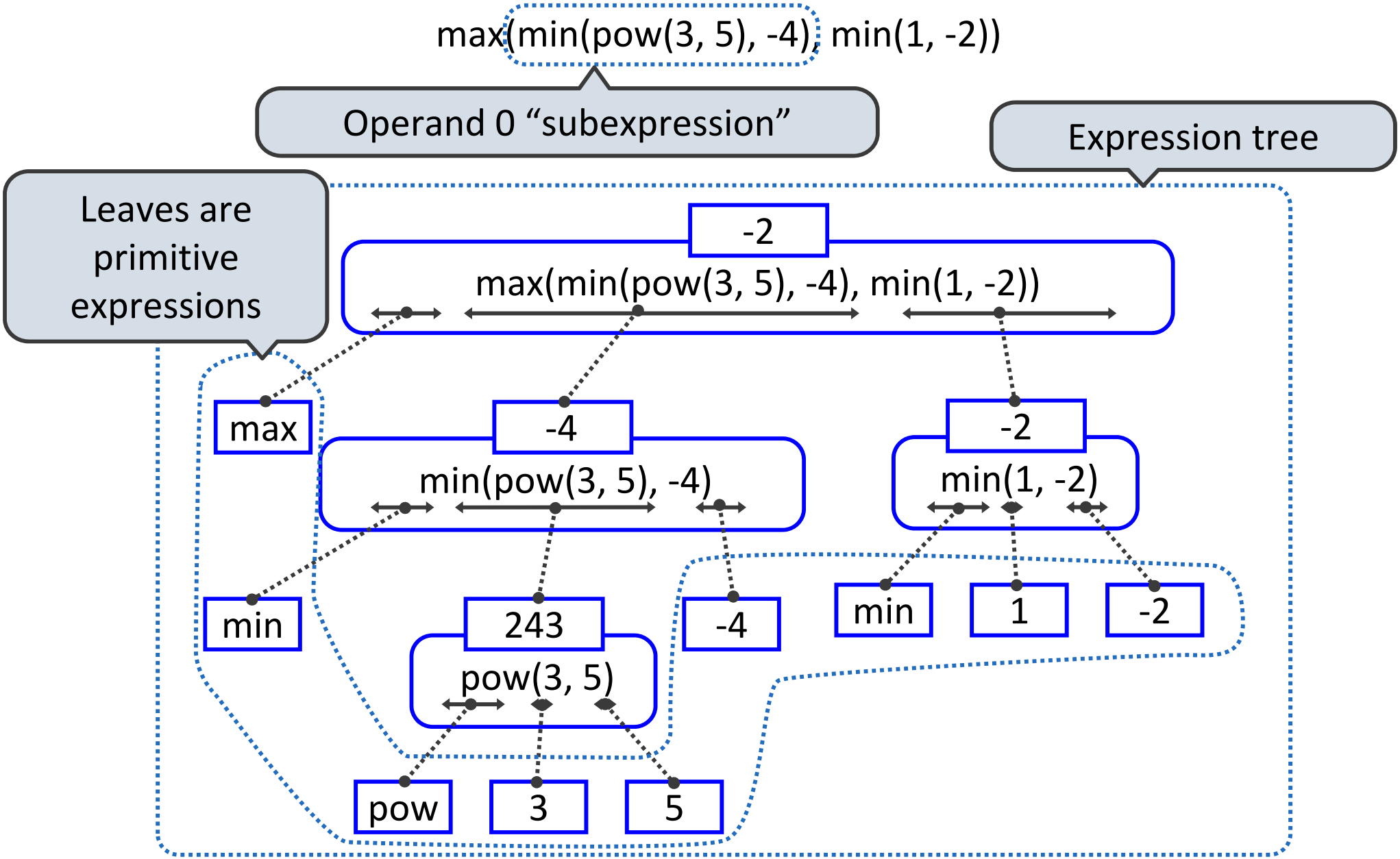

Types of Functions

Pure Functions

Non-Pure Functions

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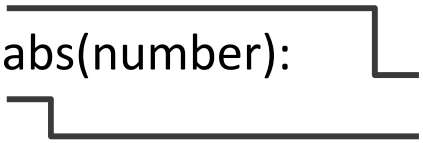

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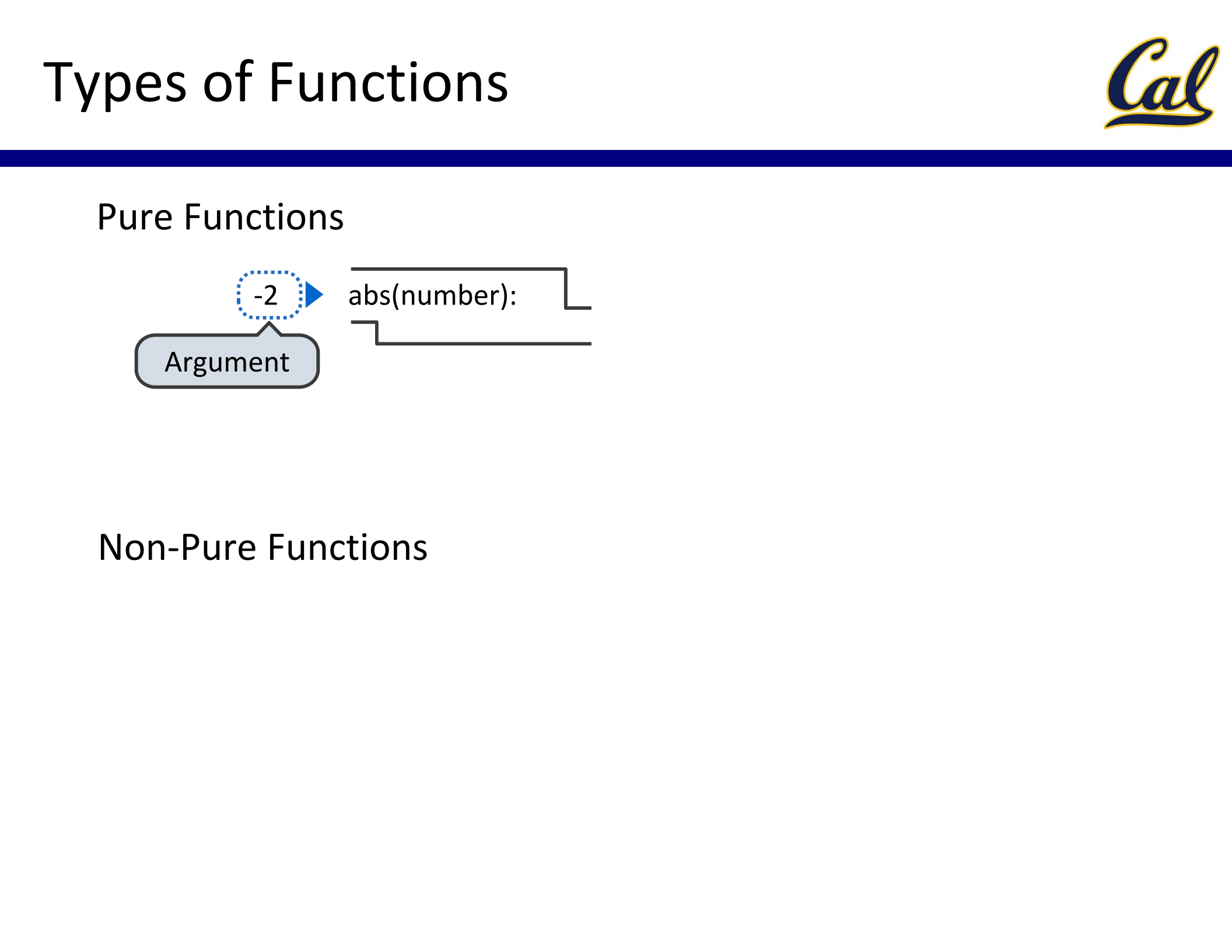
Types of Functions



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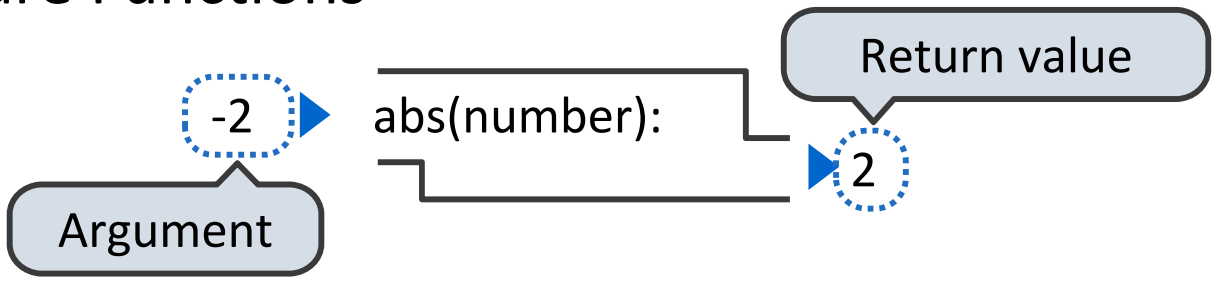
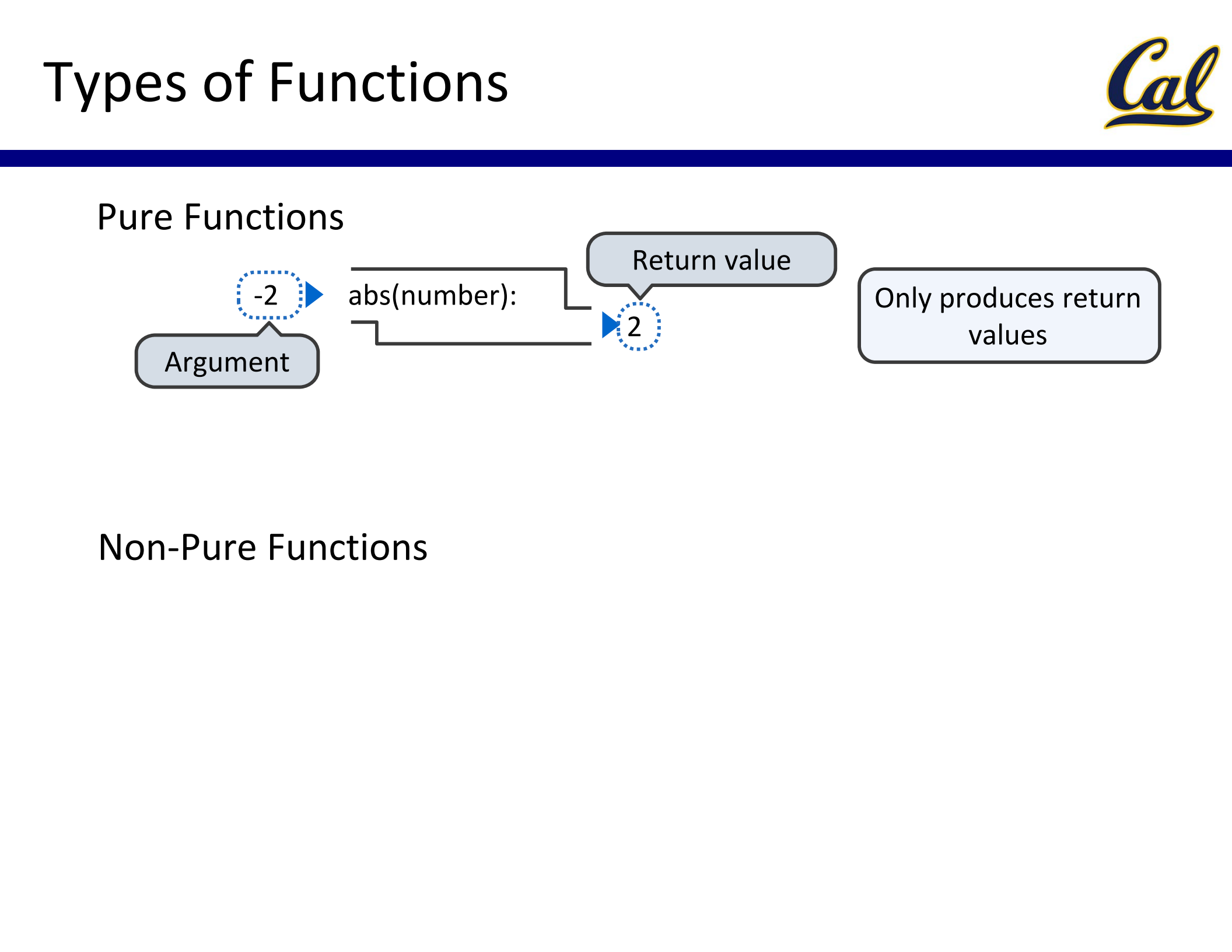


Non-Pure Functions

Types of Functions



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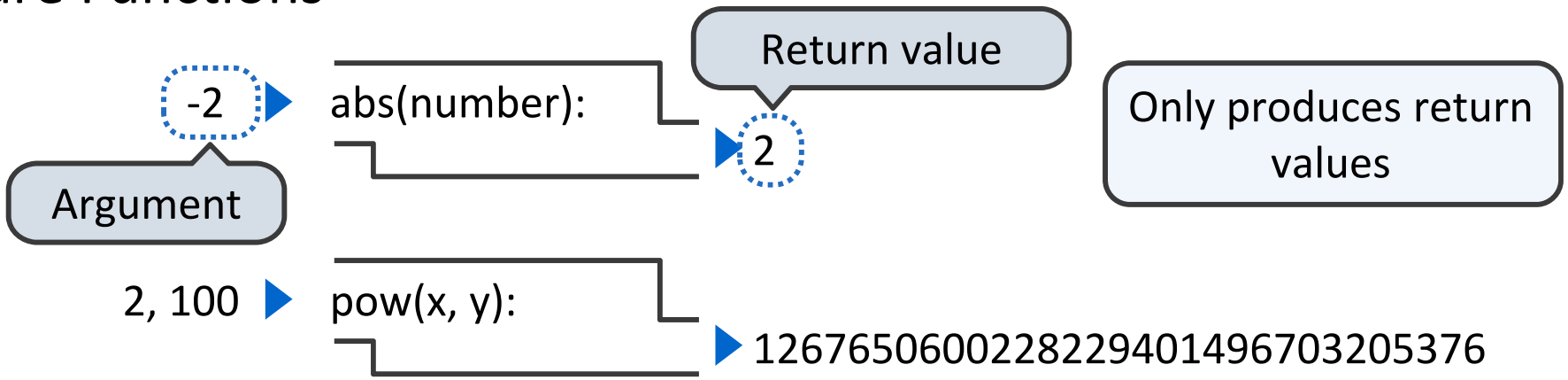

Non-Pure Functions

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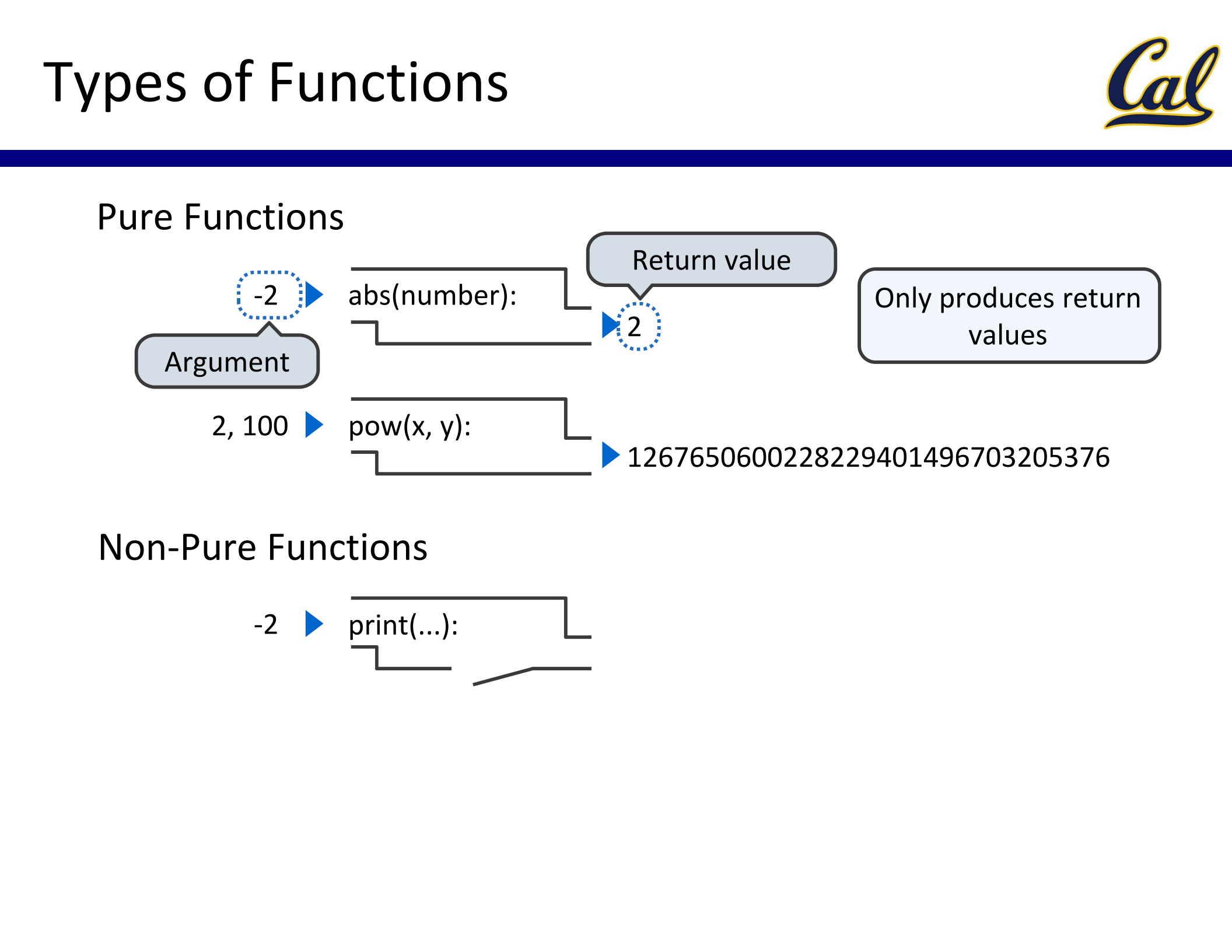


Pure Functions

-2 ▶ abs(number): ▶ 2

Argument

Return value

Only produces return values

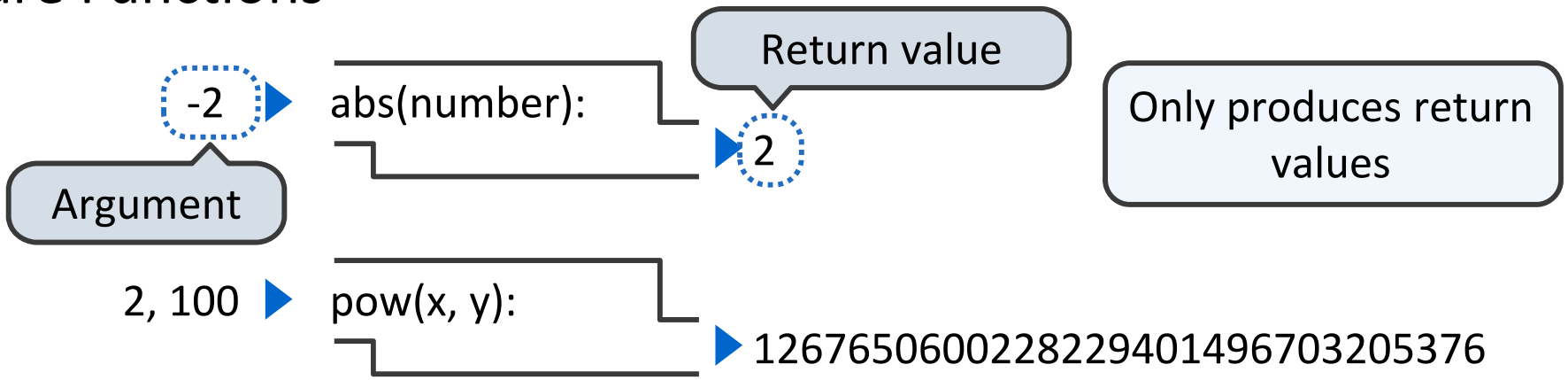
2, 100 ▶ pow(x, y): ▶ 1267650600228229401496703205376

Non-Pure Functions

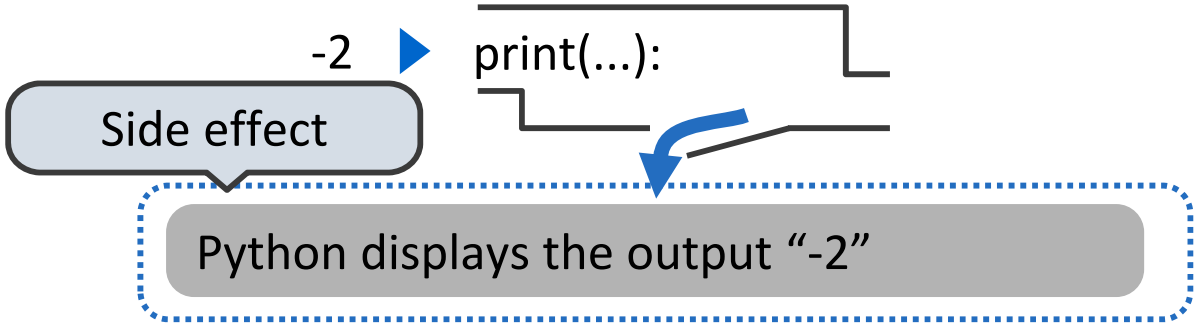
-2 ▶ print(...):

Types of Functions

Pure Functions



Non-Pure Functions



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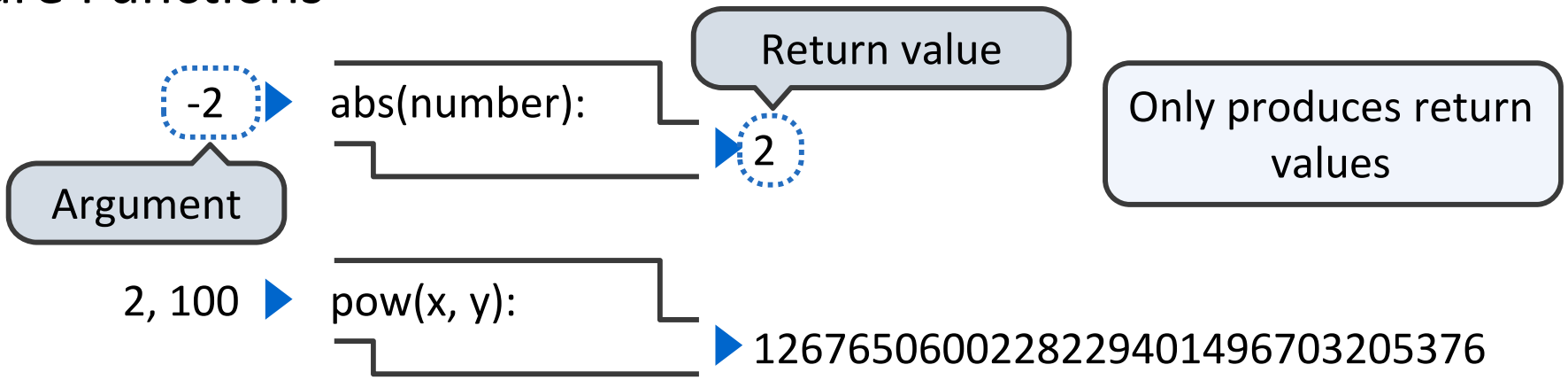

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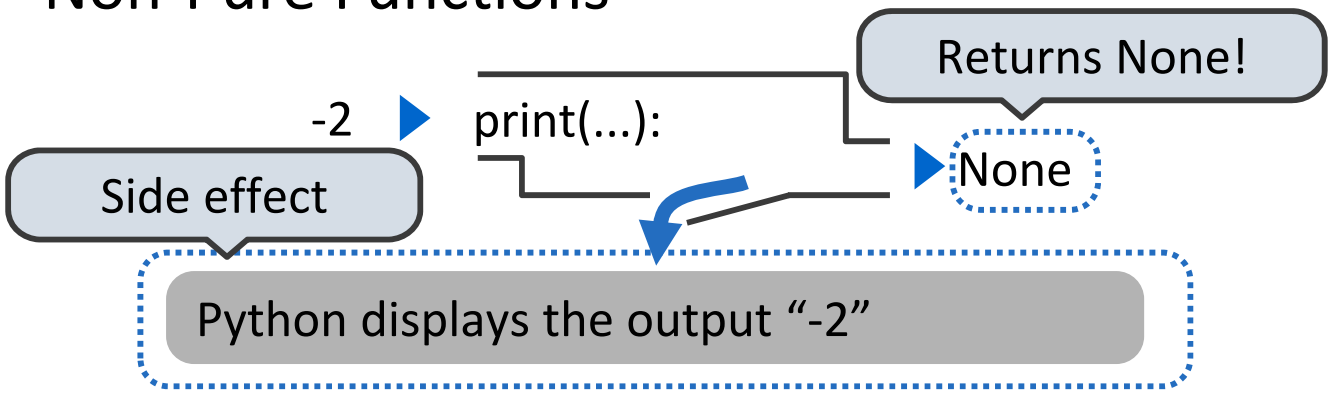

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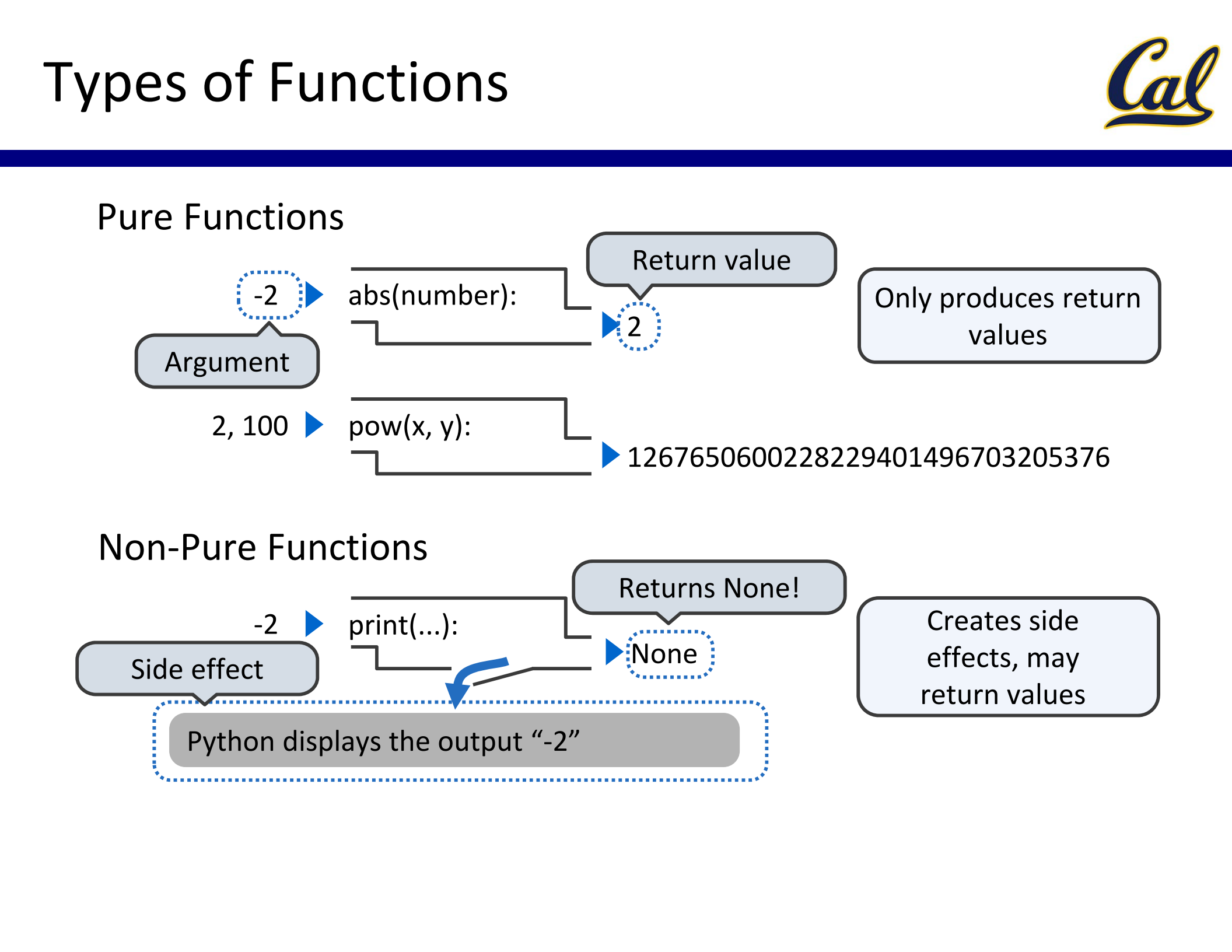

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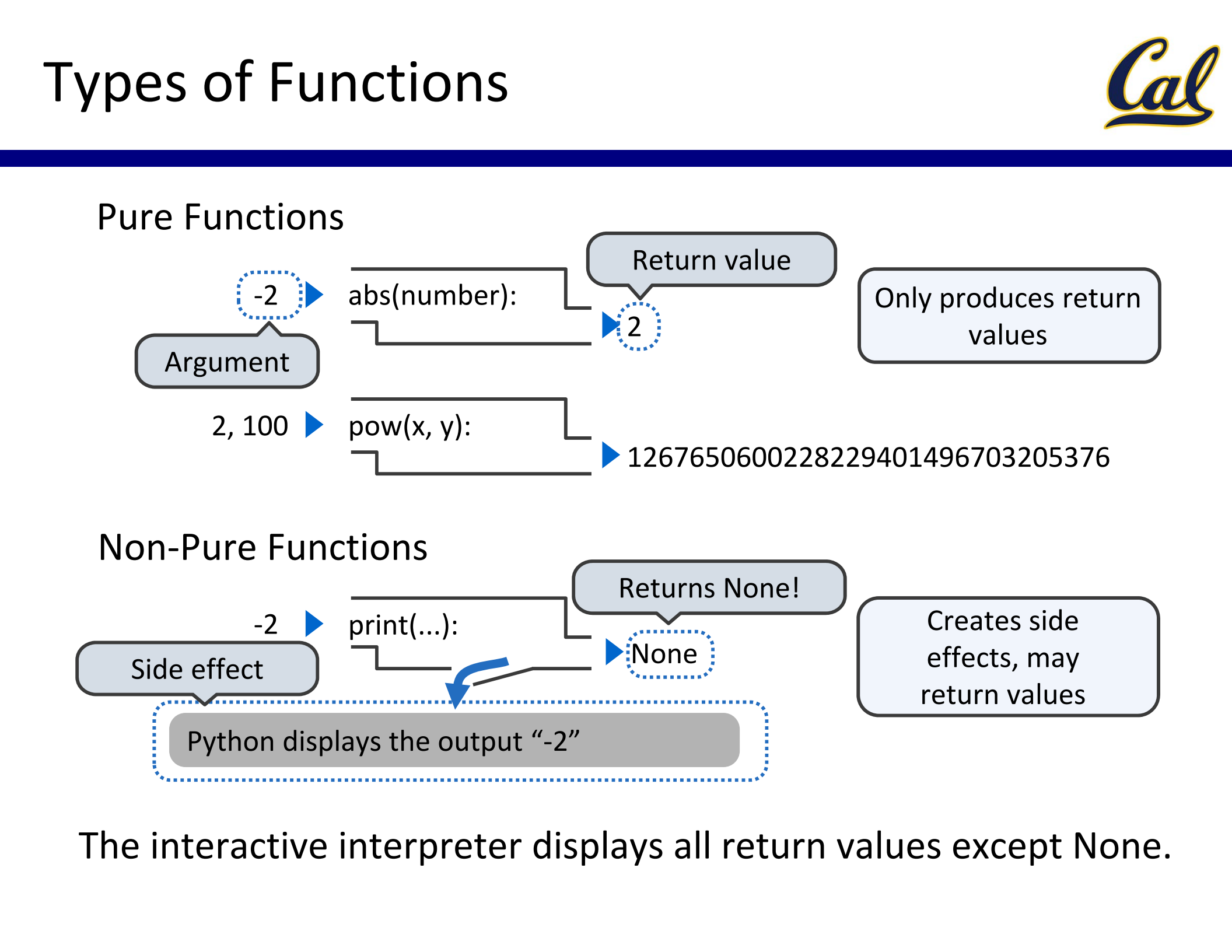
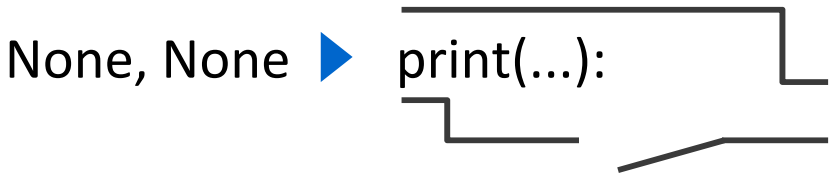


The interactive interpreter displays all return values except None.

Nested Print Expressions




```
>>> print(print(1), print(2))
```

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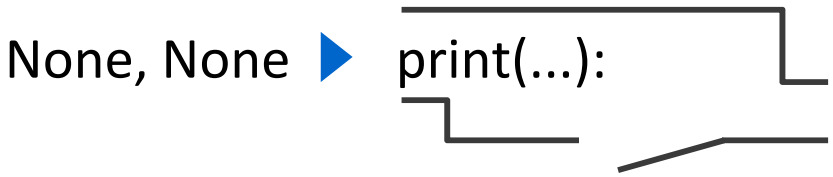


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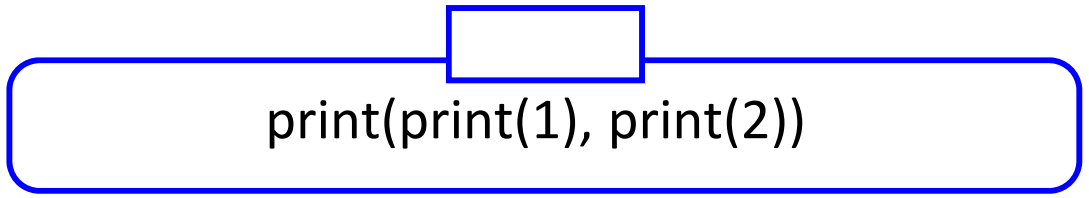

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None, None ▶ print(...):

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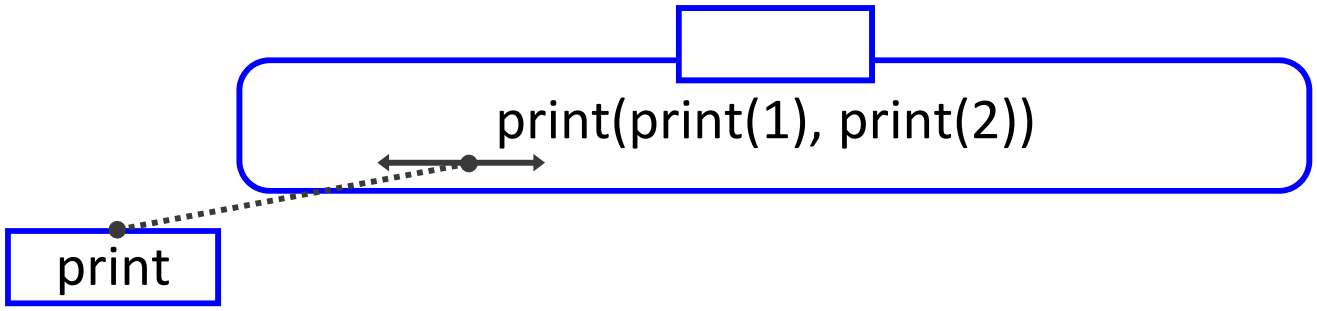

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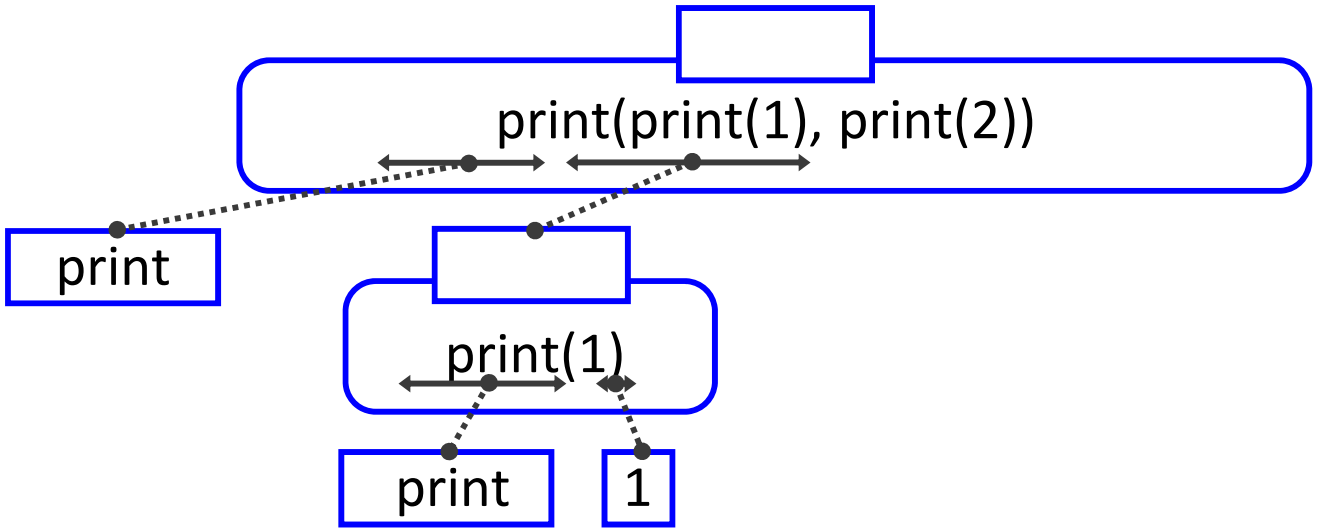

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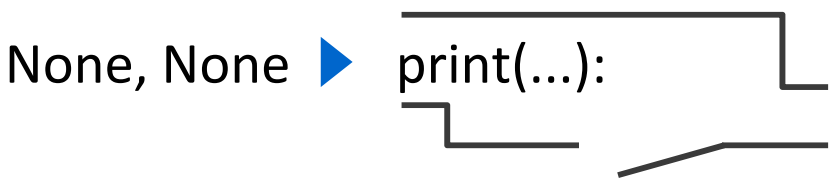
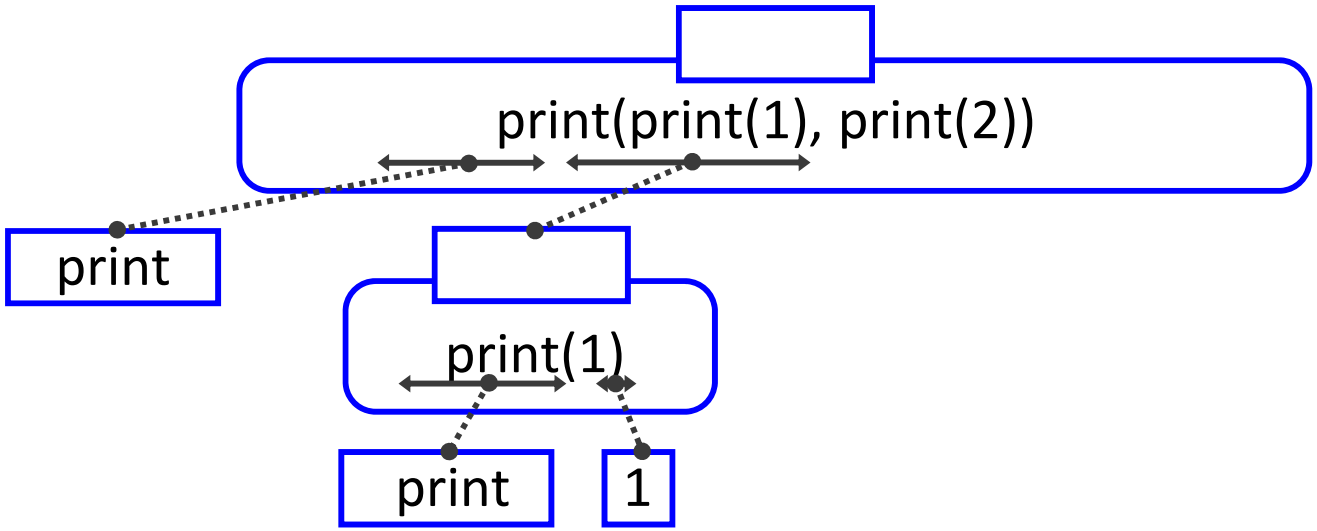
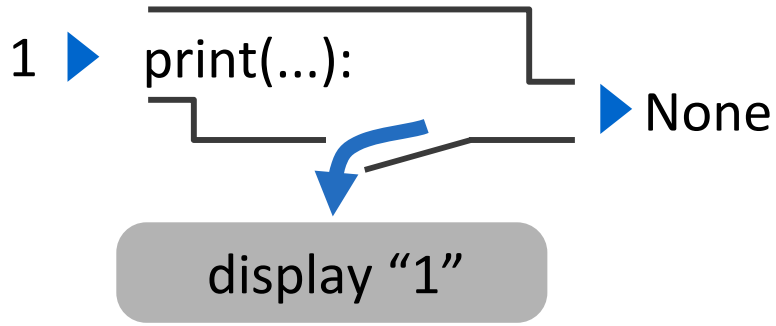



```
>>> print(print(1), print(2))
1
```





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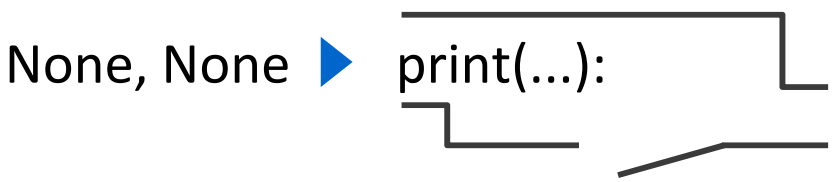


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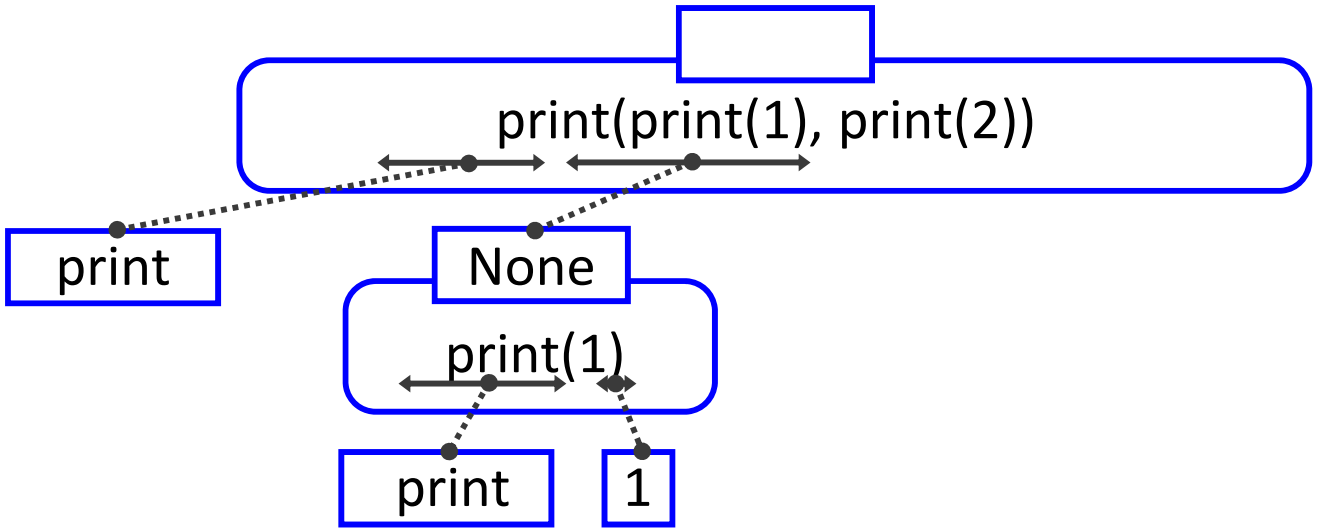

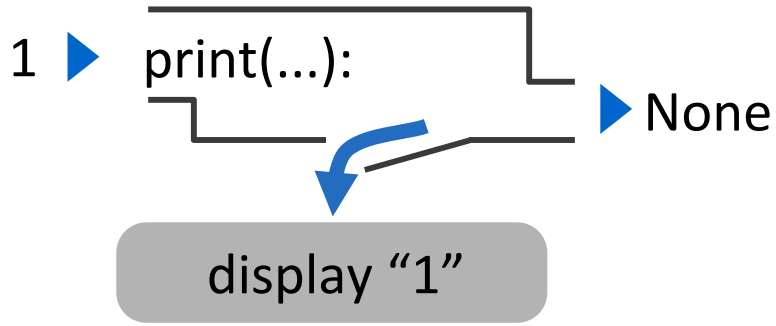

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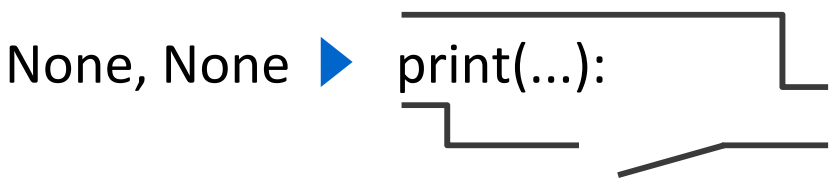


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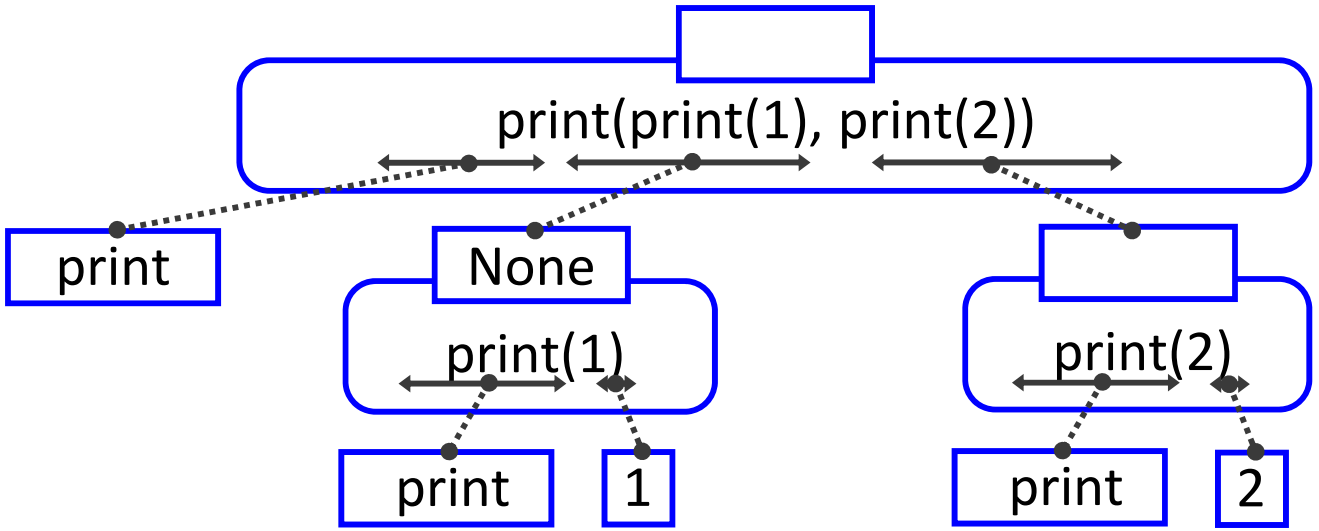

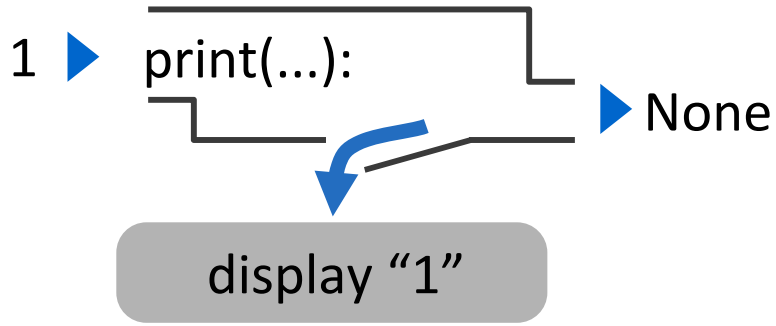

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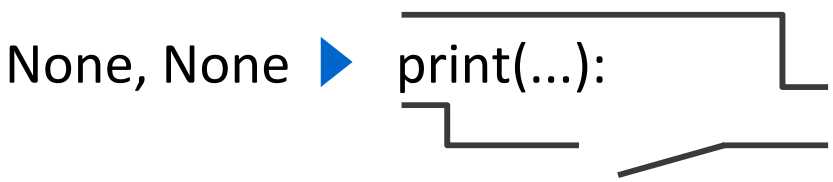


```
>>> print(print(1), print(2))
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2
```

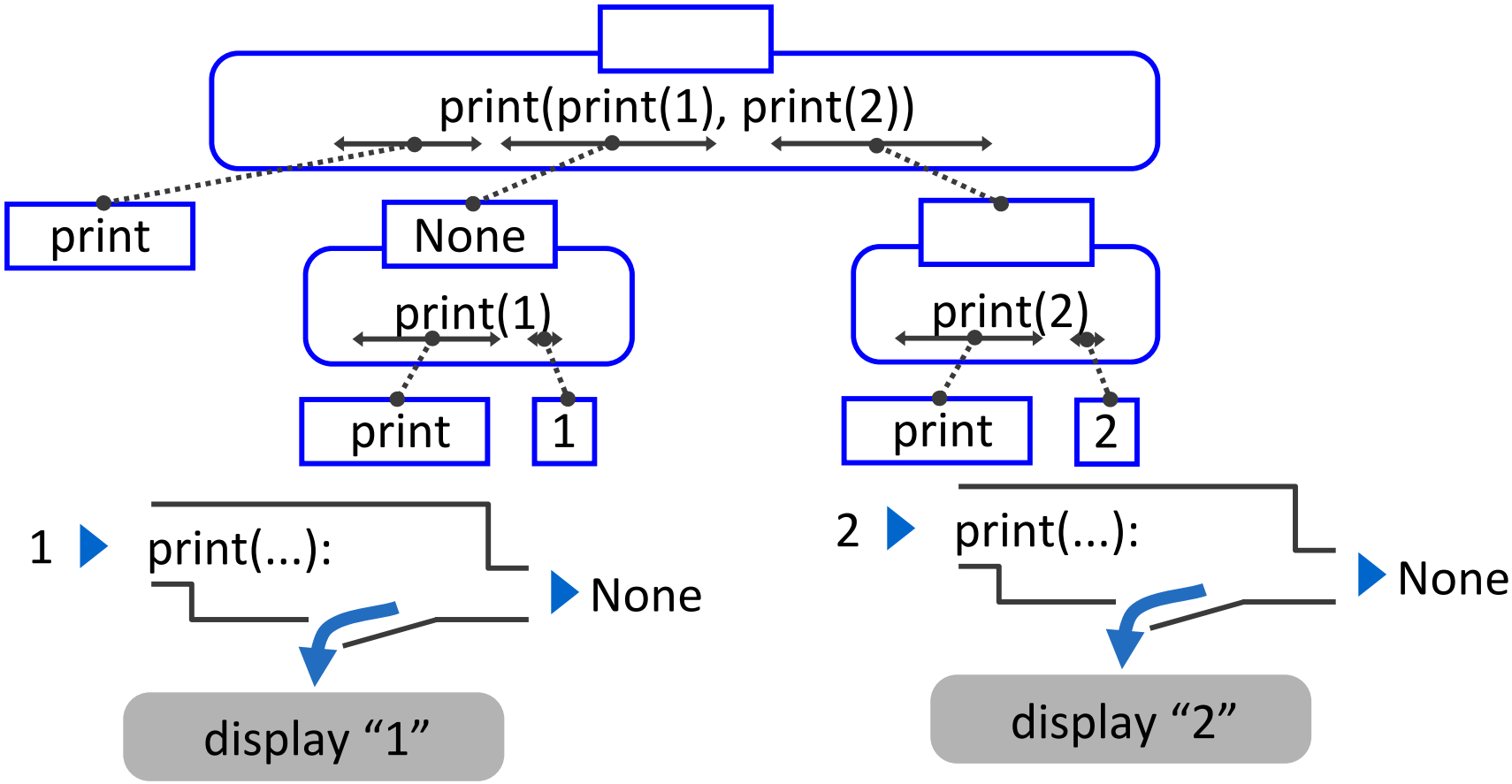

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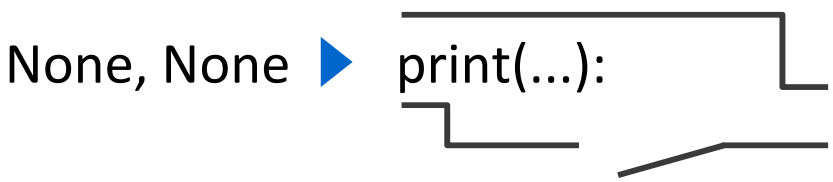


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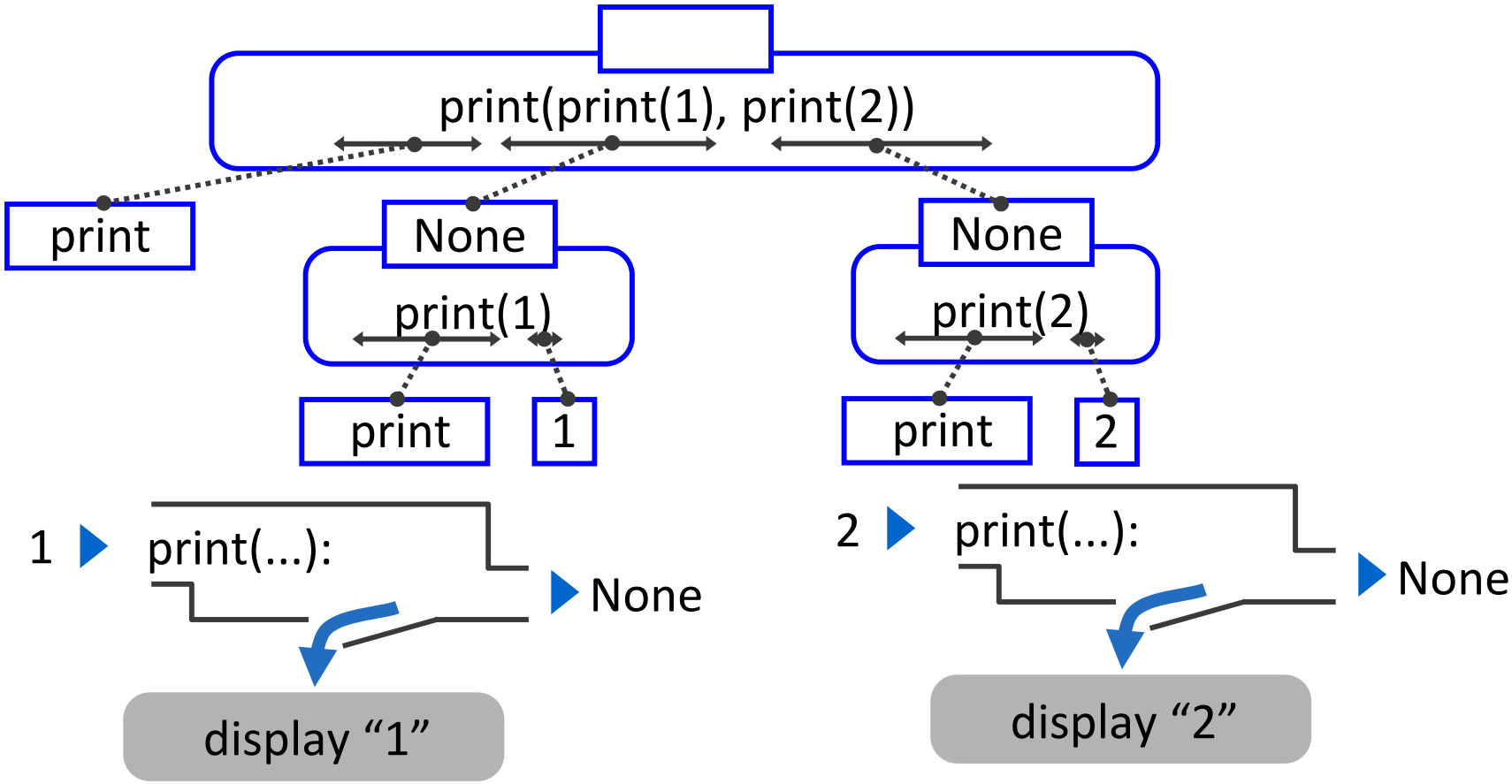

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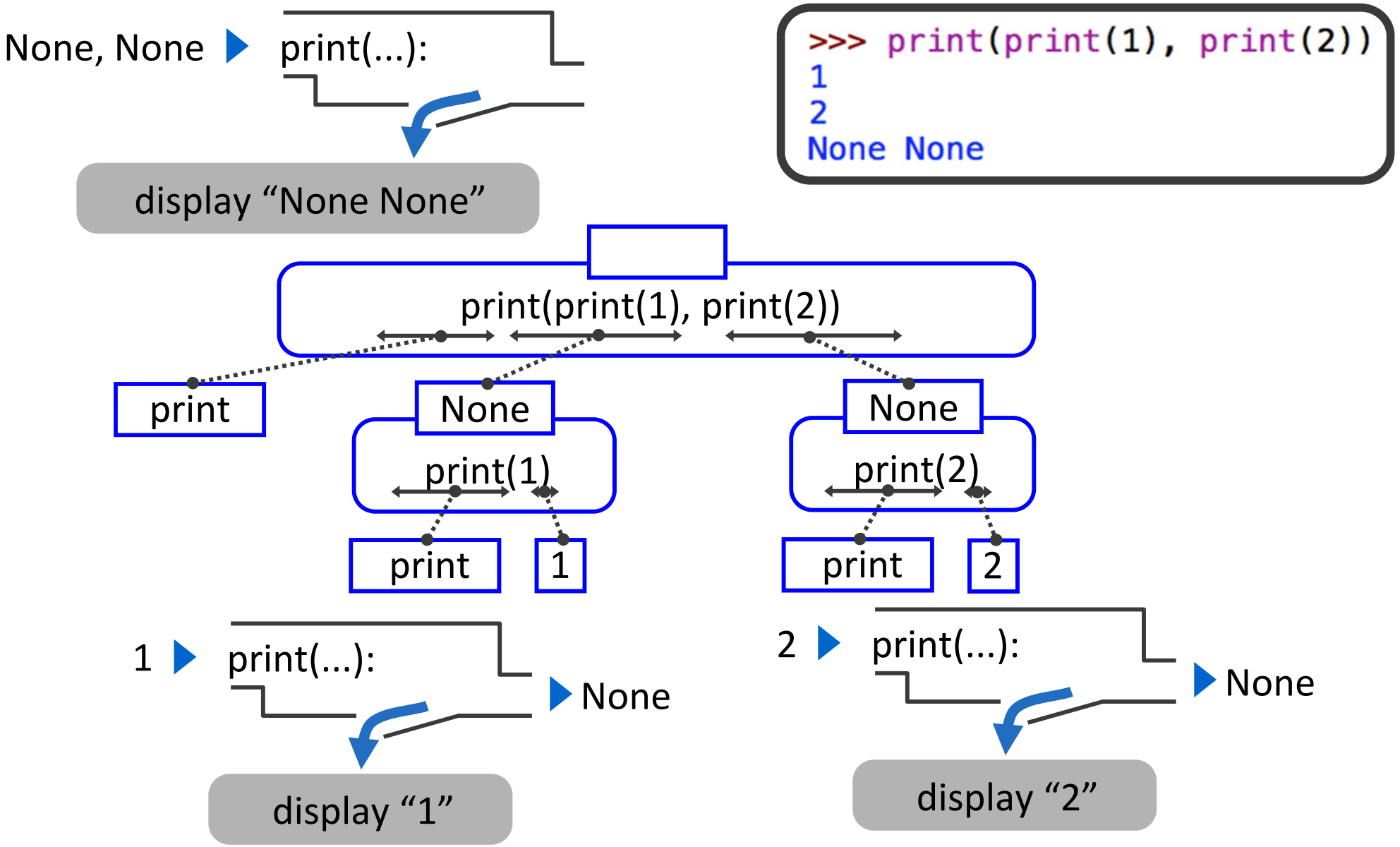

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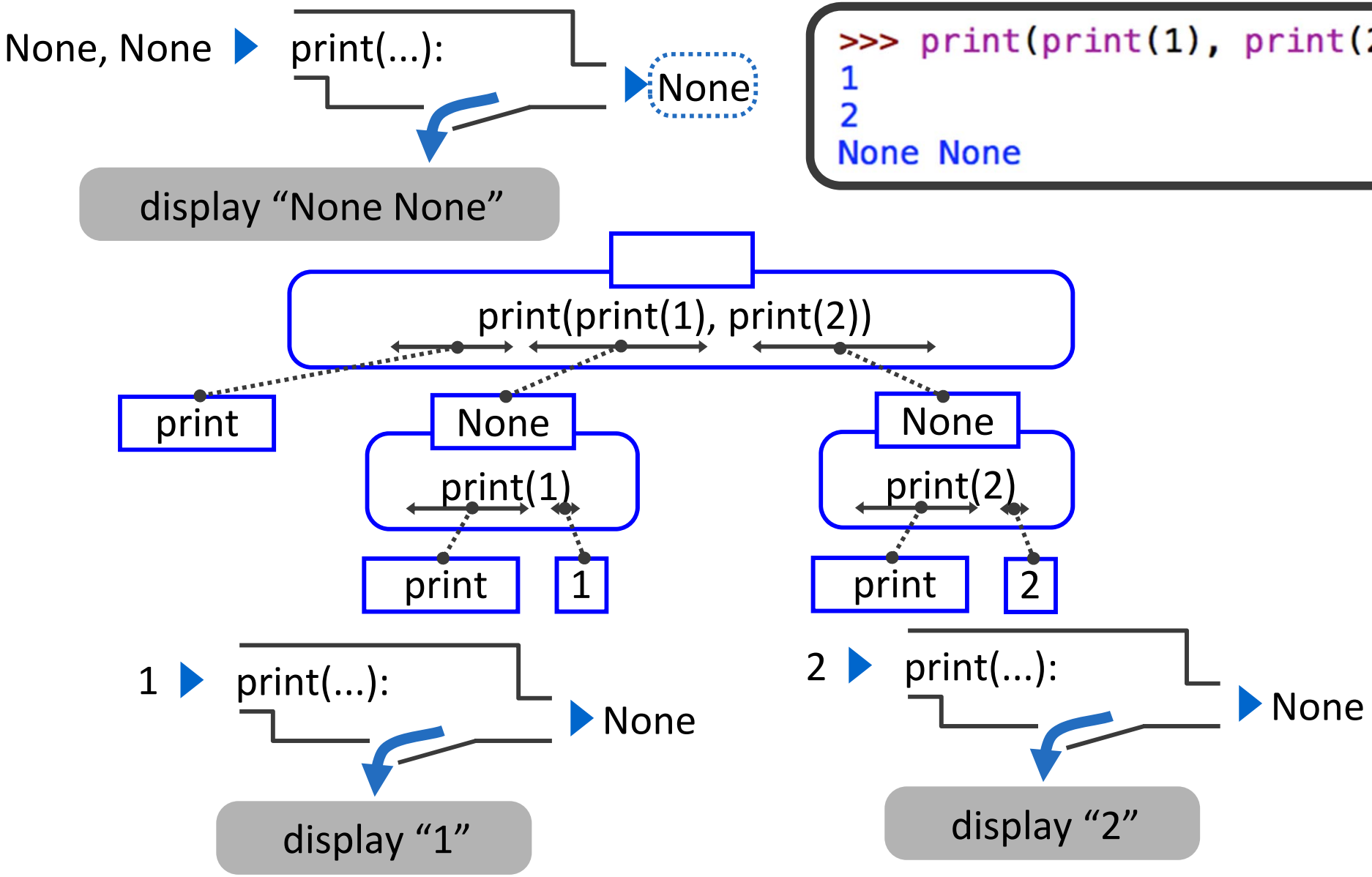

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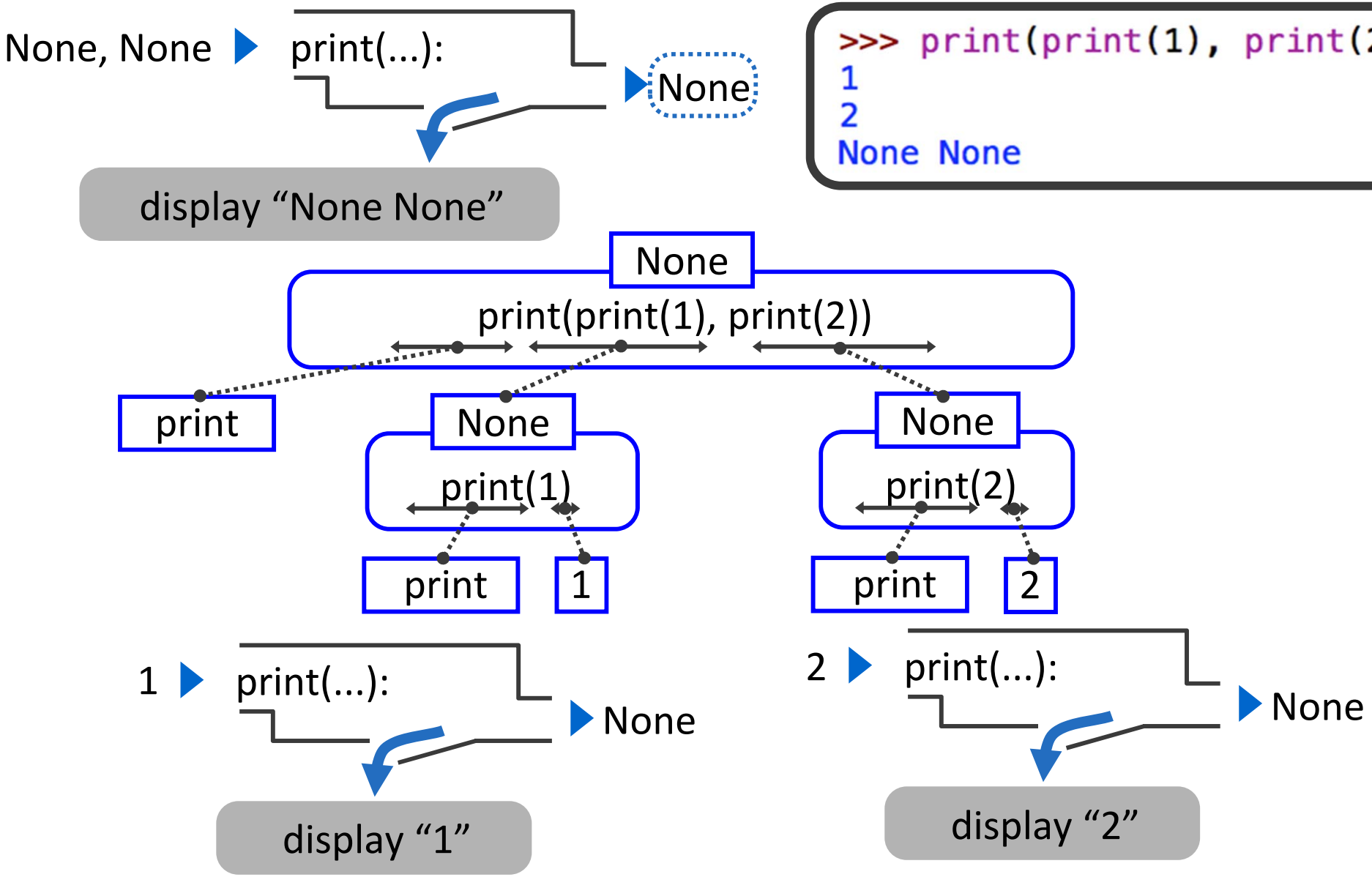

The Elements of Programming

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- Primitive Expressions and Statements
  - The simplest building blocks of a language

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- Means of Combination
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- Means of Abstraction
  - Elements can be named and manipulated as units