61A Lecture 1

Friday, August 30, 2013

Welcome to Berkeley Computer Science!

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John DeNero

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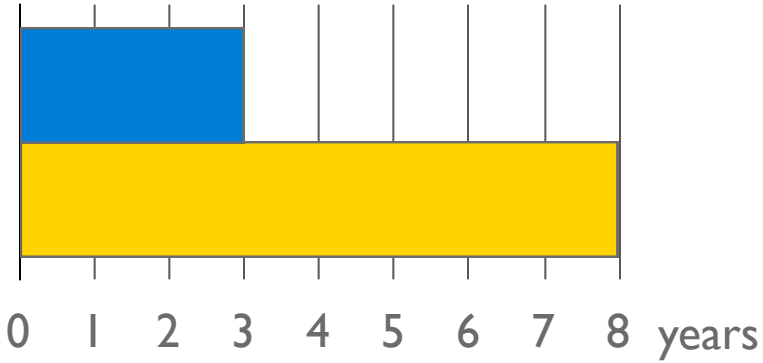

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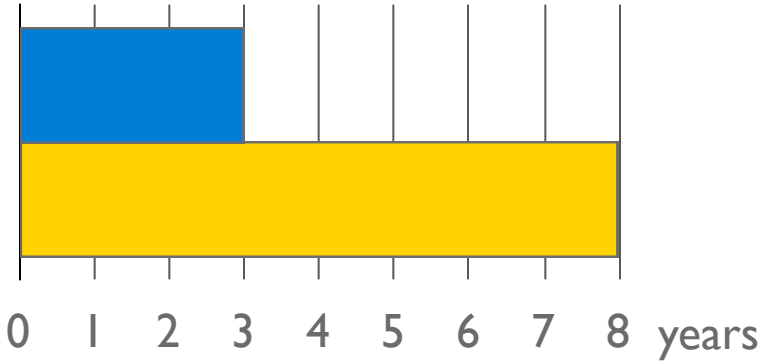

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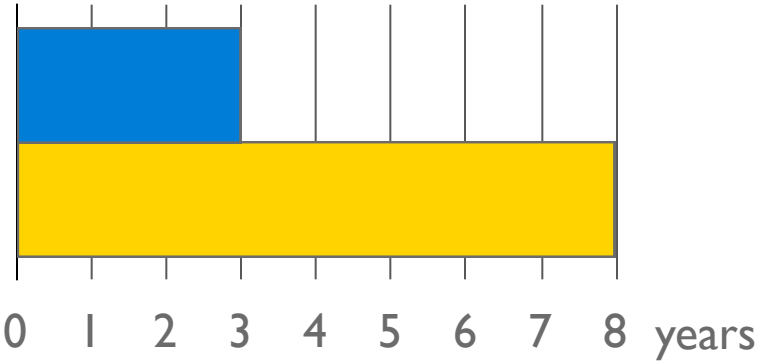

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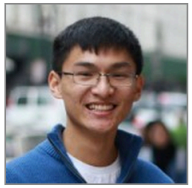




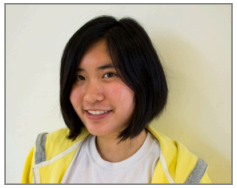



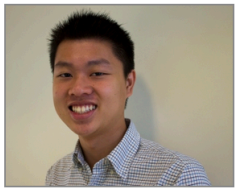


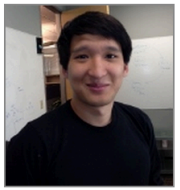

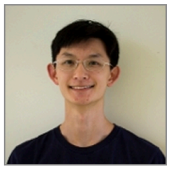
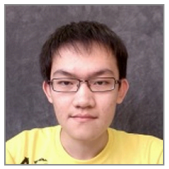


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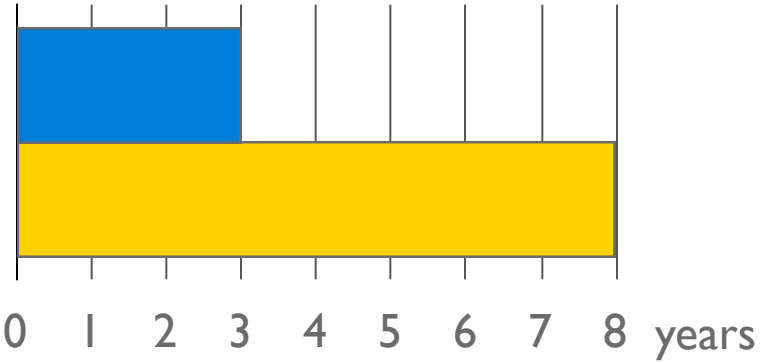

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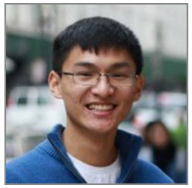




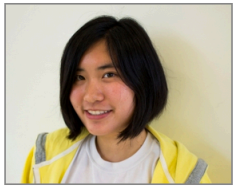



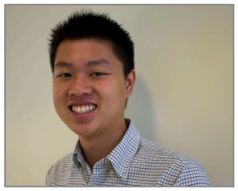


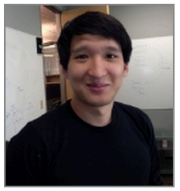

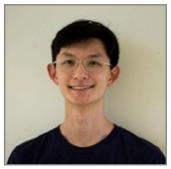
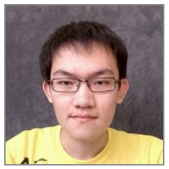


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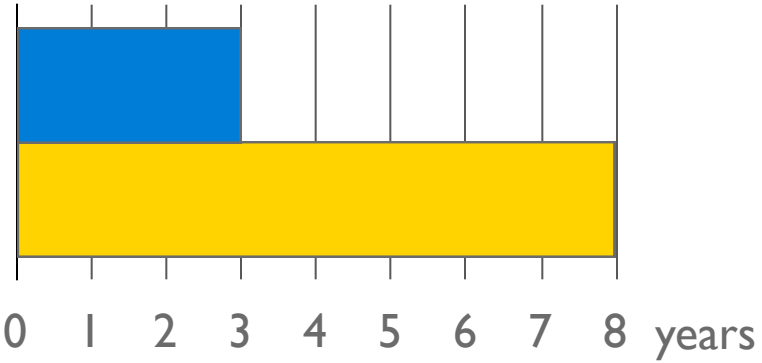

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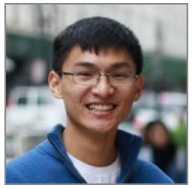




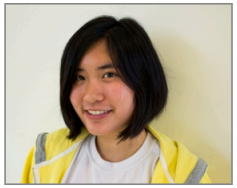



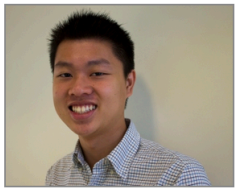


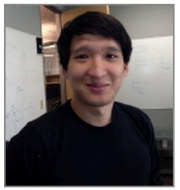

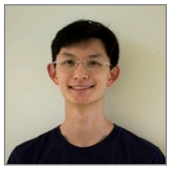
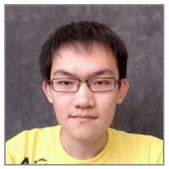


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Lab Assistants ensure that you don't get stuck for too long

An Introduction to Computer Science

What is Computer Science?

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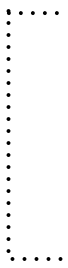
The study of



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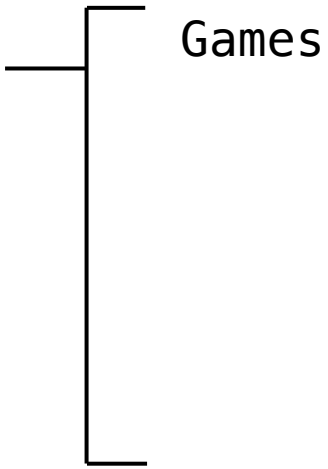

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- A challenging course that will demand **a lot** of you

What is This Course About?

Plone Conference. Photo courtesy of Kriszta Szita

Course Logistics and Policies

Alternatives to This Course

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CS 61AS: Self-paced 61A

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CS 10: The Beauty and Joy of Computing

Course Policies

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```
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All the details are online:

http://inst.eecs.berkeley.edu/~cs61A/fa13/about.html

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  - We let computers detect copying for us

Expressions

Types of expressions

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describes a computation

and evaluates to a value

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Call Expressions in Python

All expressions can use function call notation

(Demo)

Anatomy of a Call Expression

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```
add     (     2     ,     3     )
```

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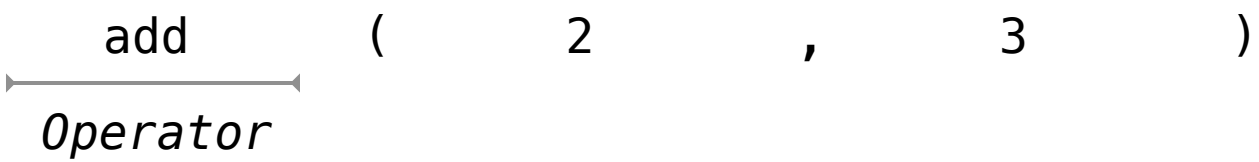

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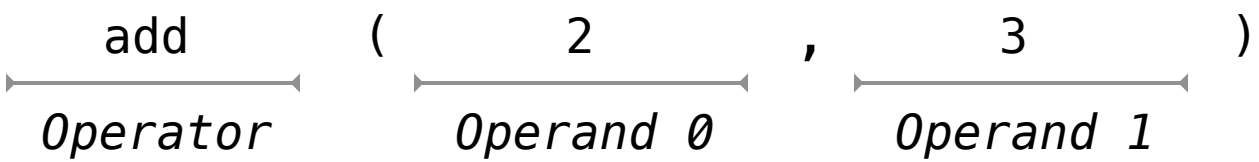

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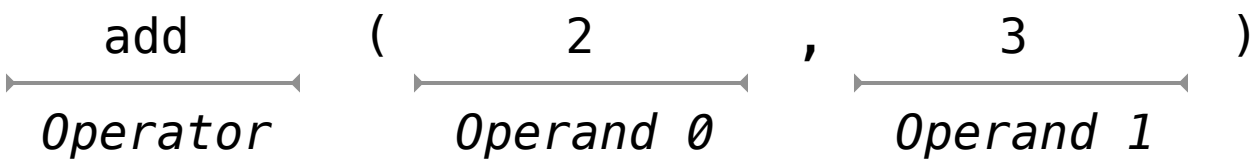

Operators and operands are expressions

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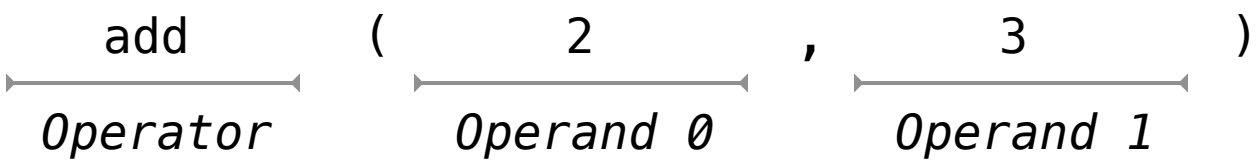

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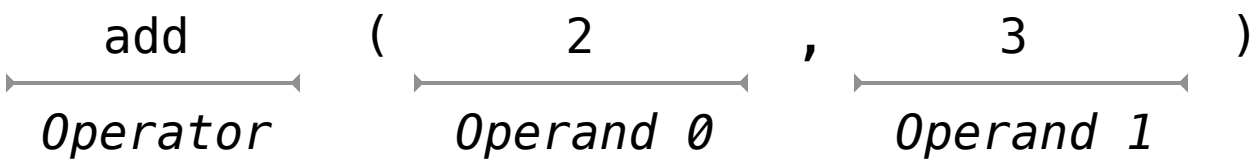

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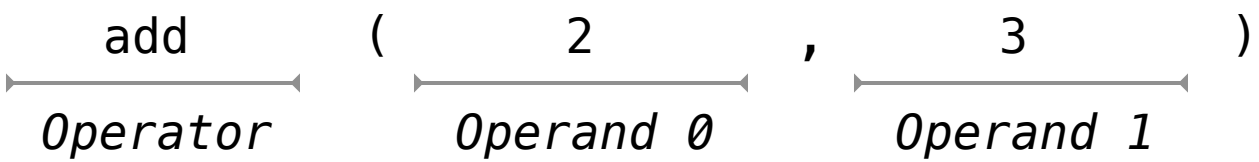

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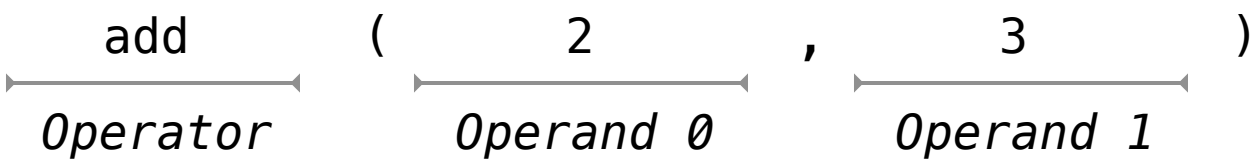

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1. Evaluate the operator and operand subexpressions
2. Apply the function that is the value of the operator subexpression to the arguments that are the values of the operand subexpression

Evaluating Nested Expressions

```
mul(add(2, mul(4, 6)), add(3, 5))
```

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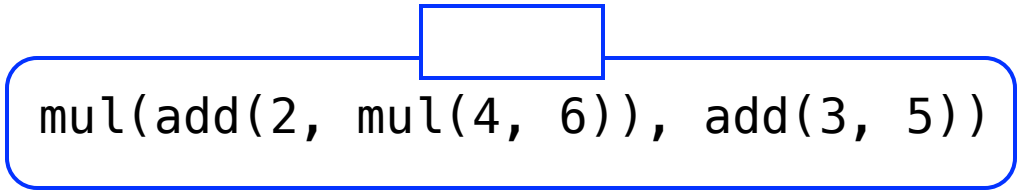

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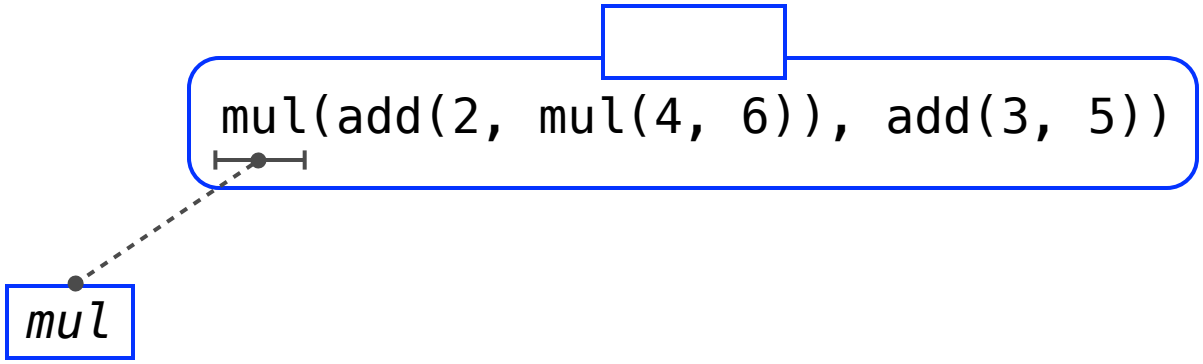

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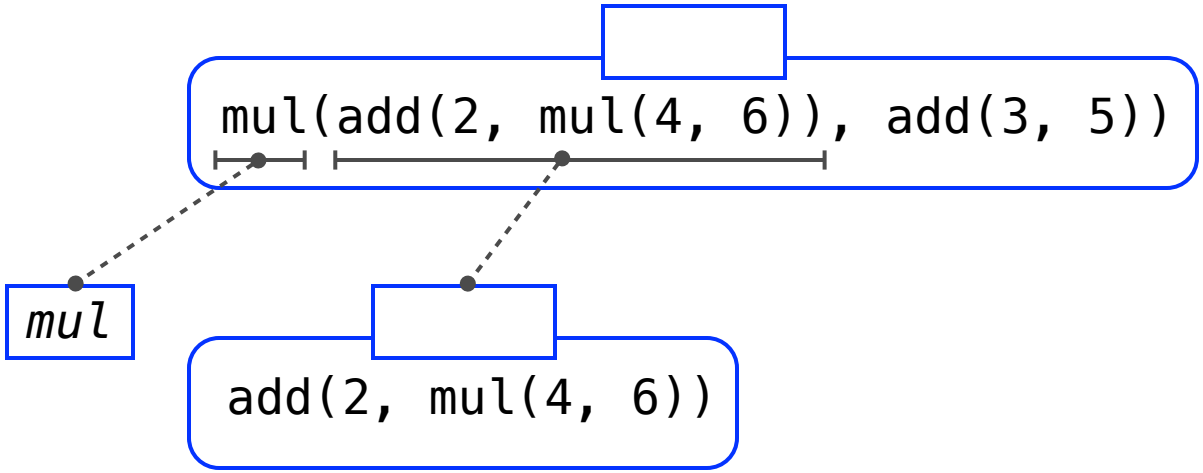
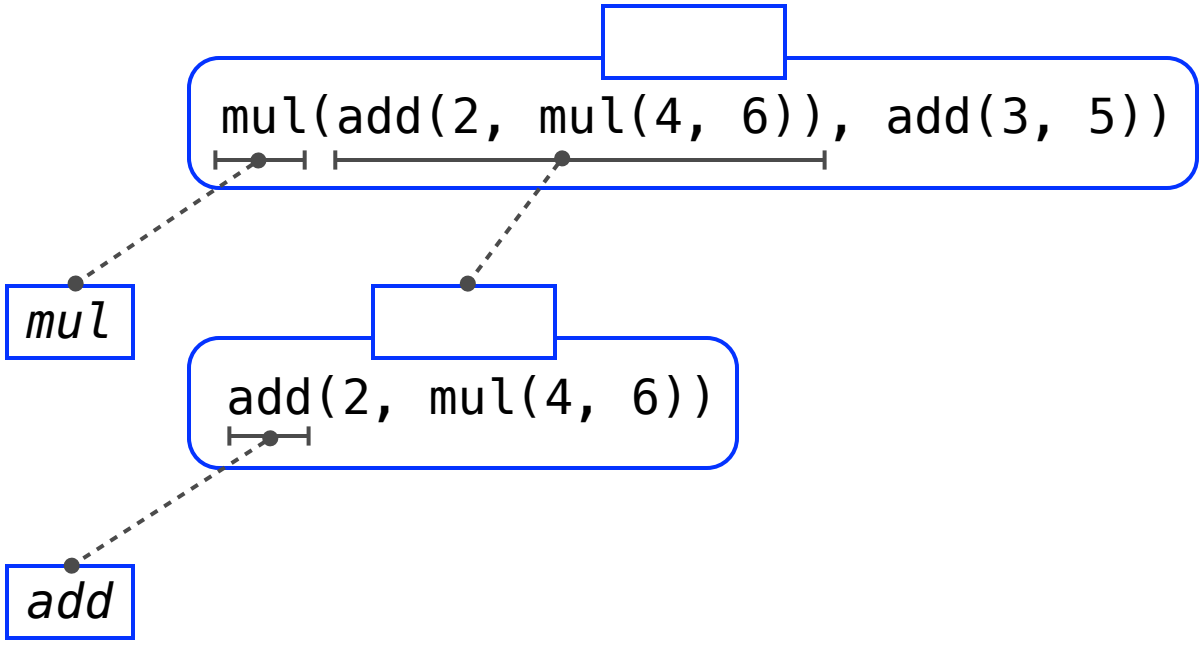


Evaluating Nested Expressions



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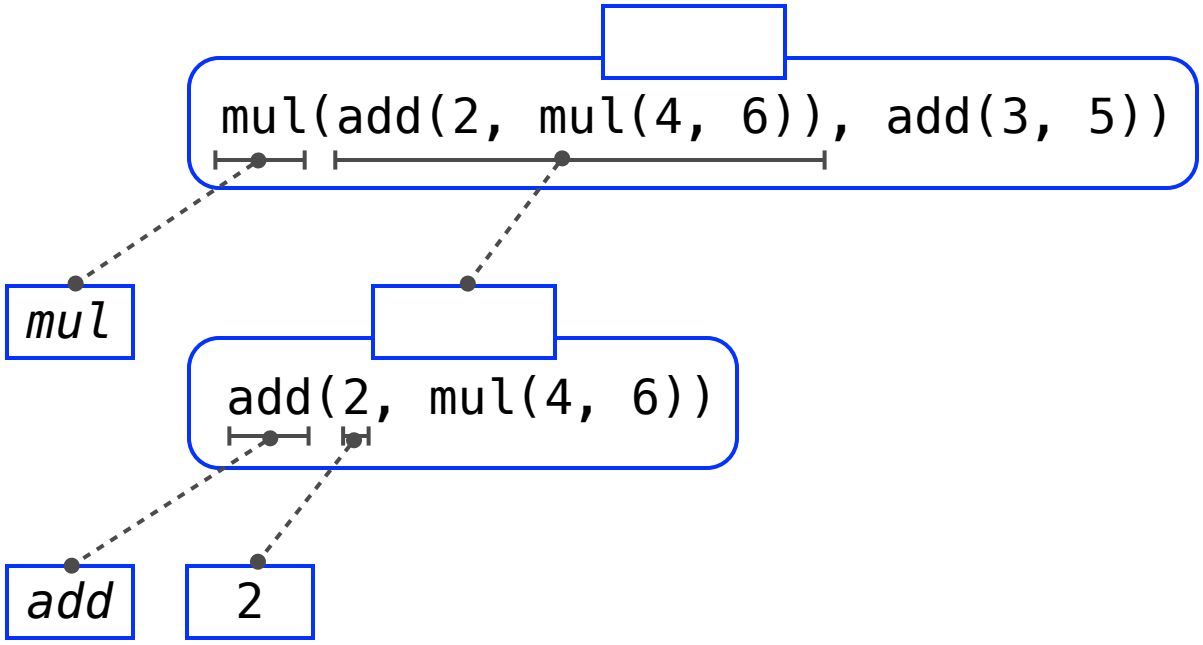

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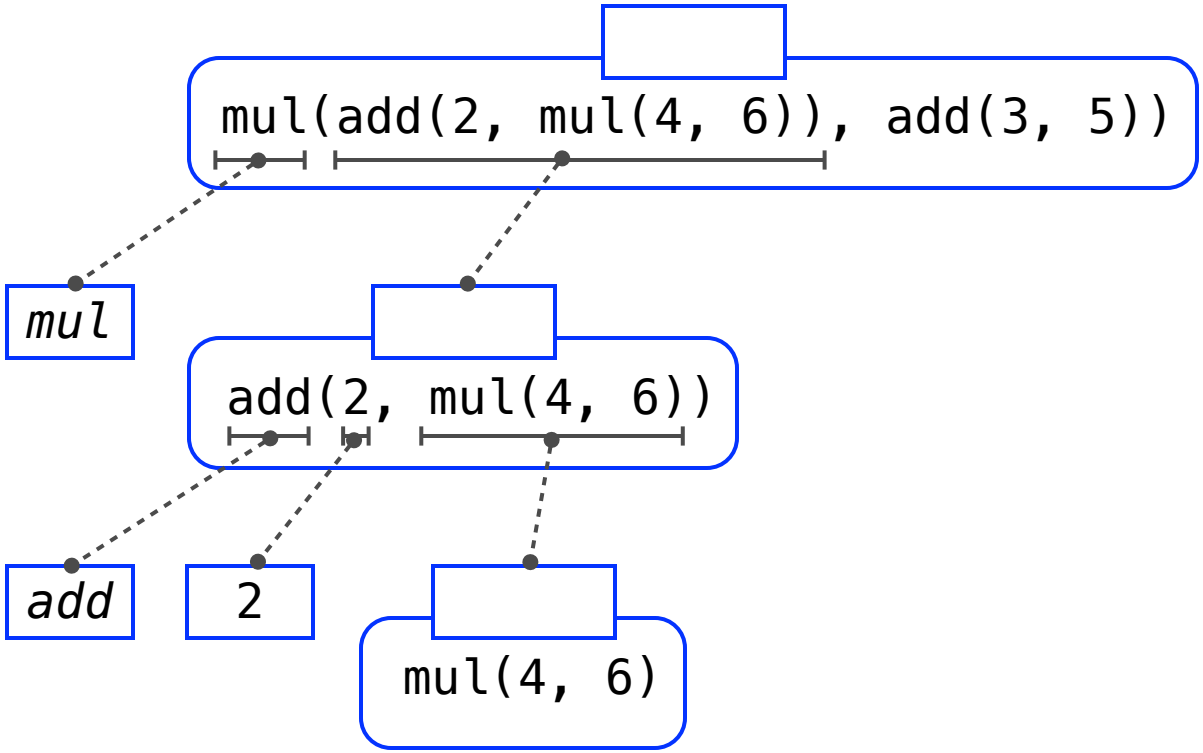

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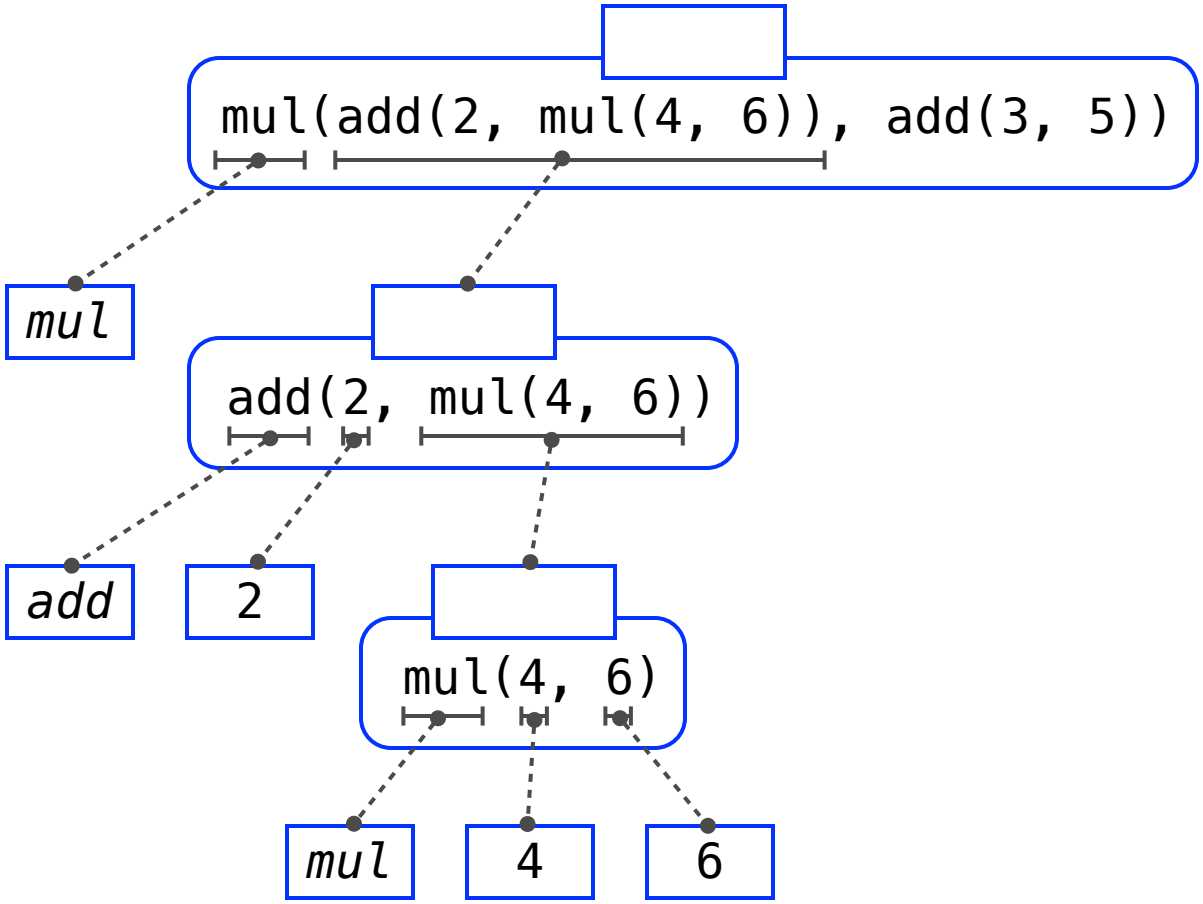

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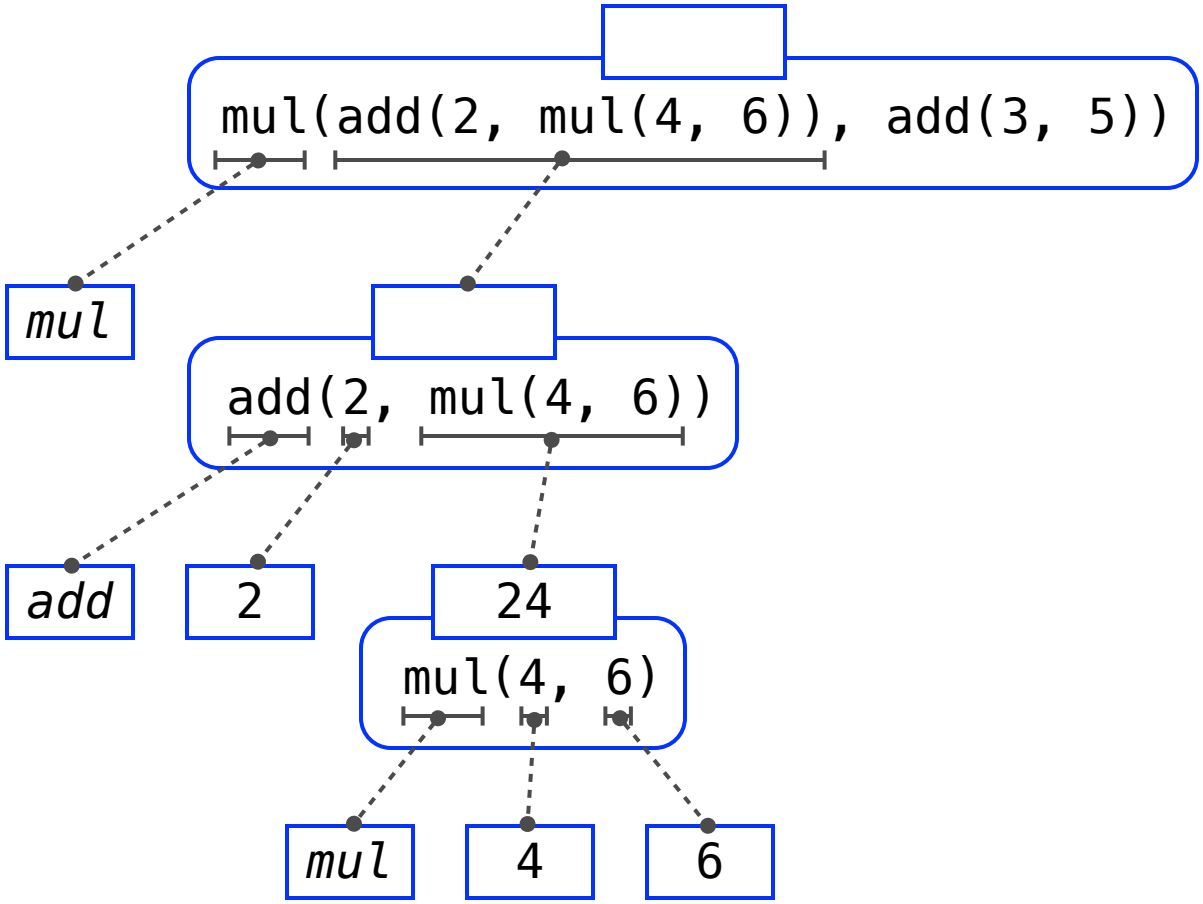

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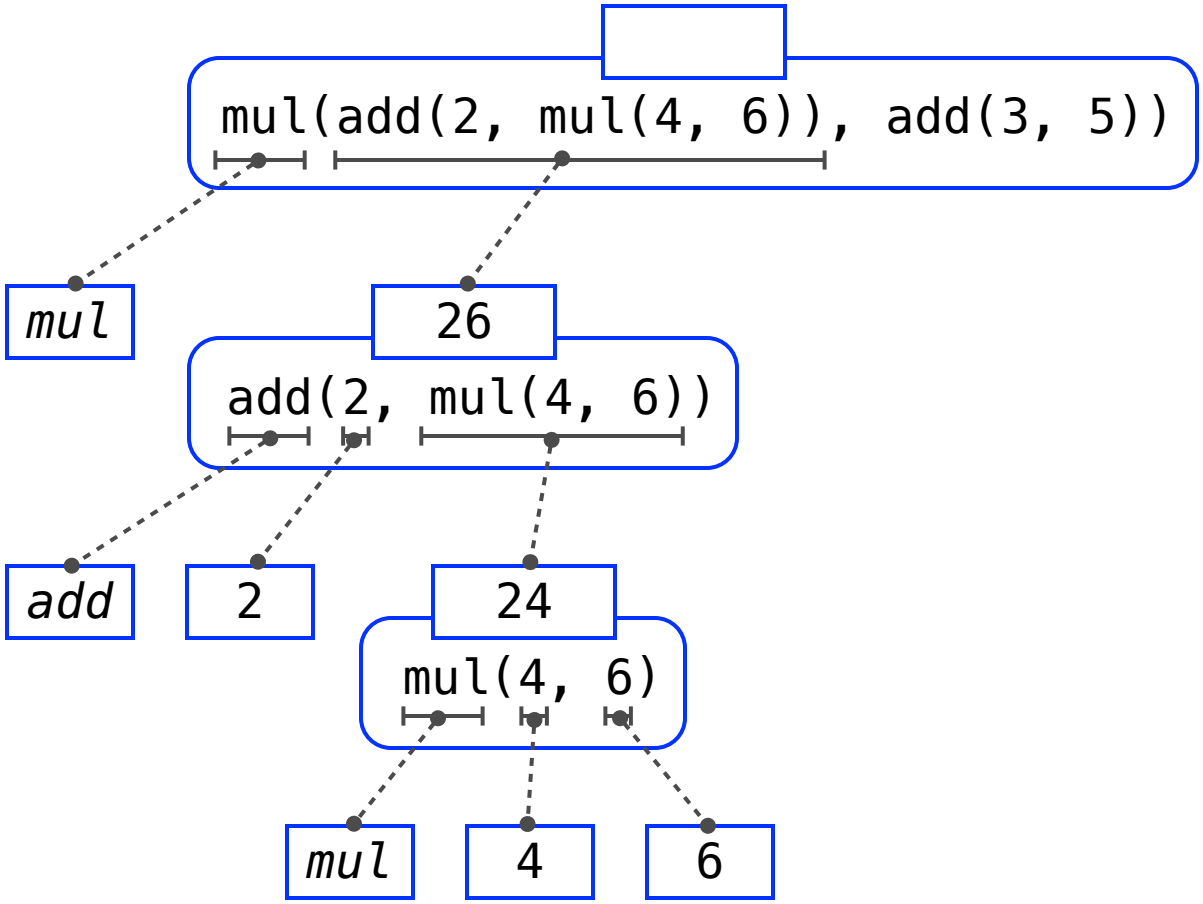

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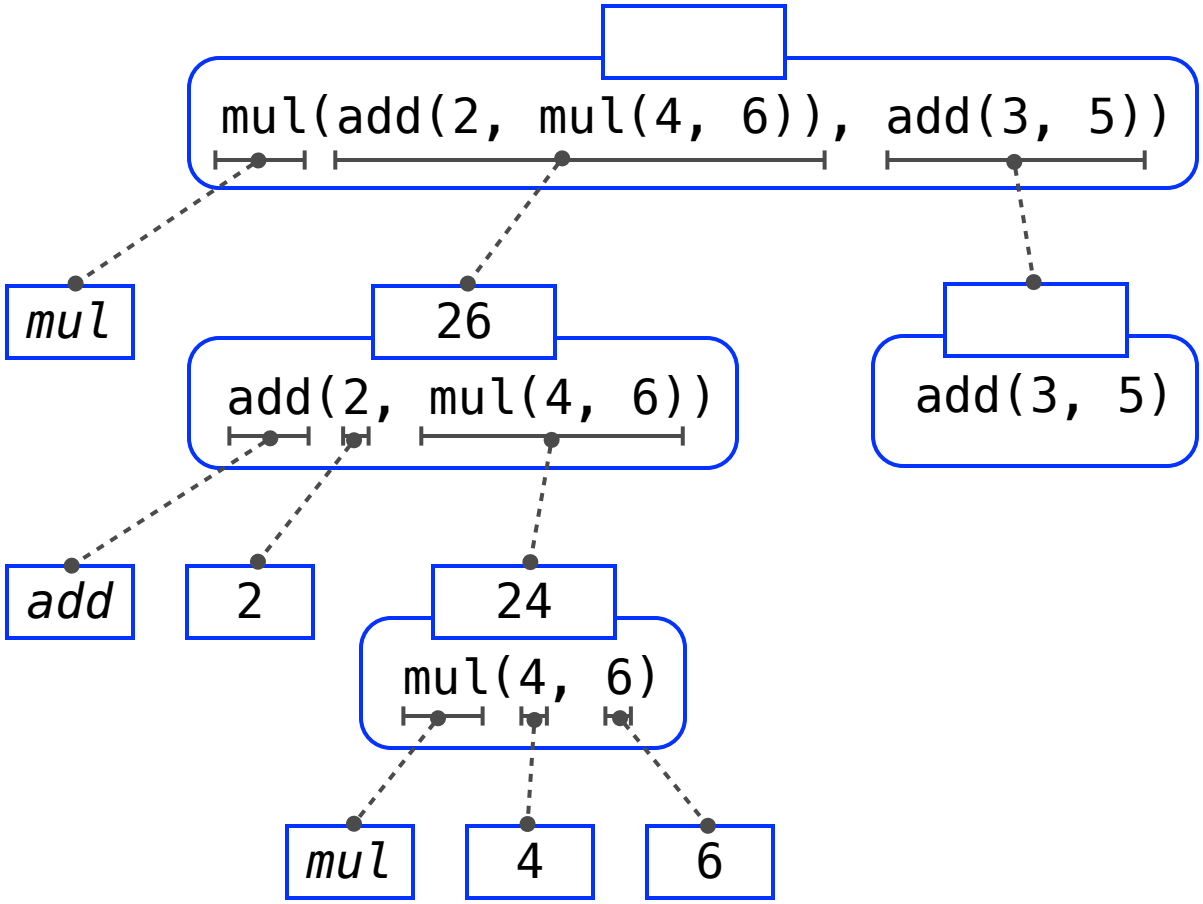

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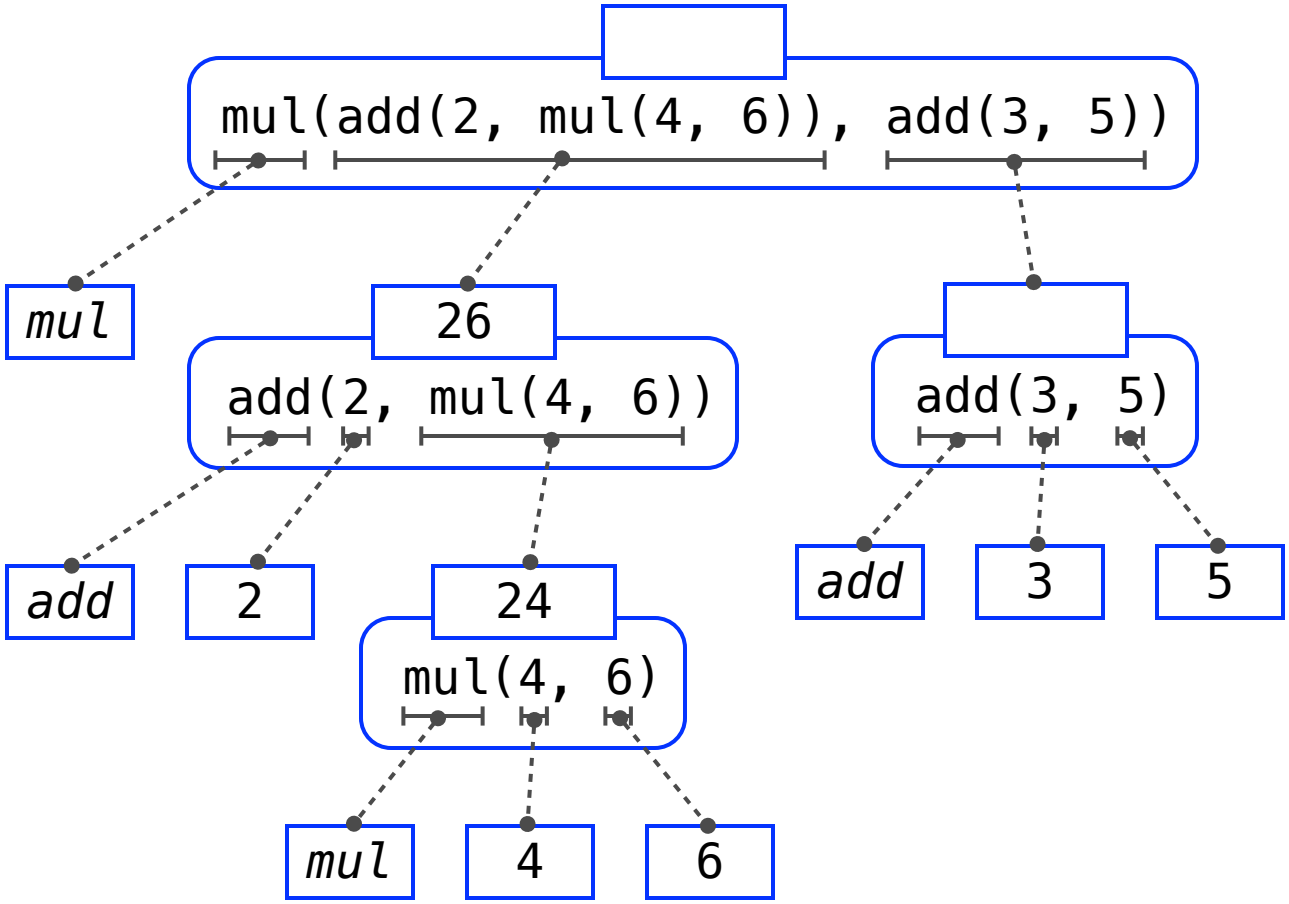
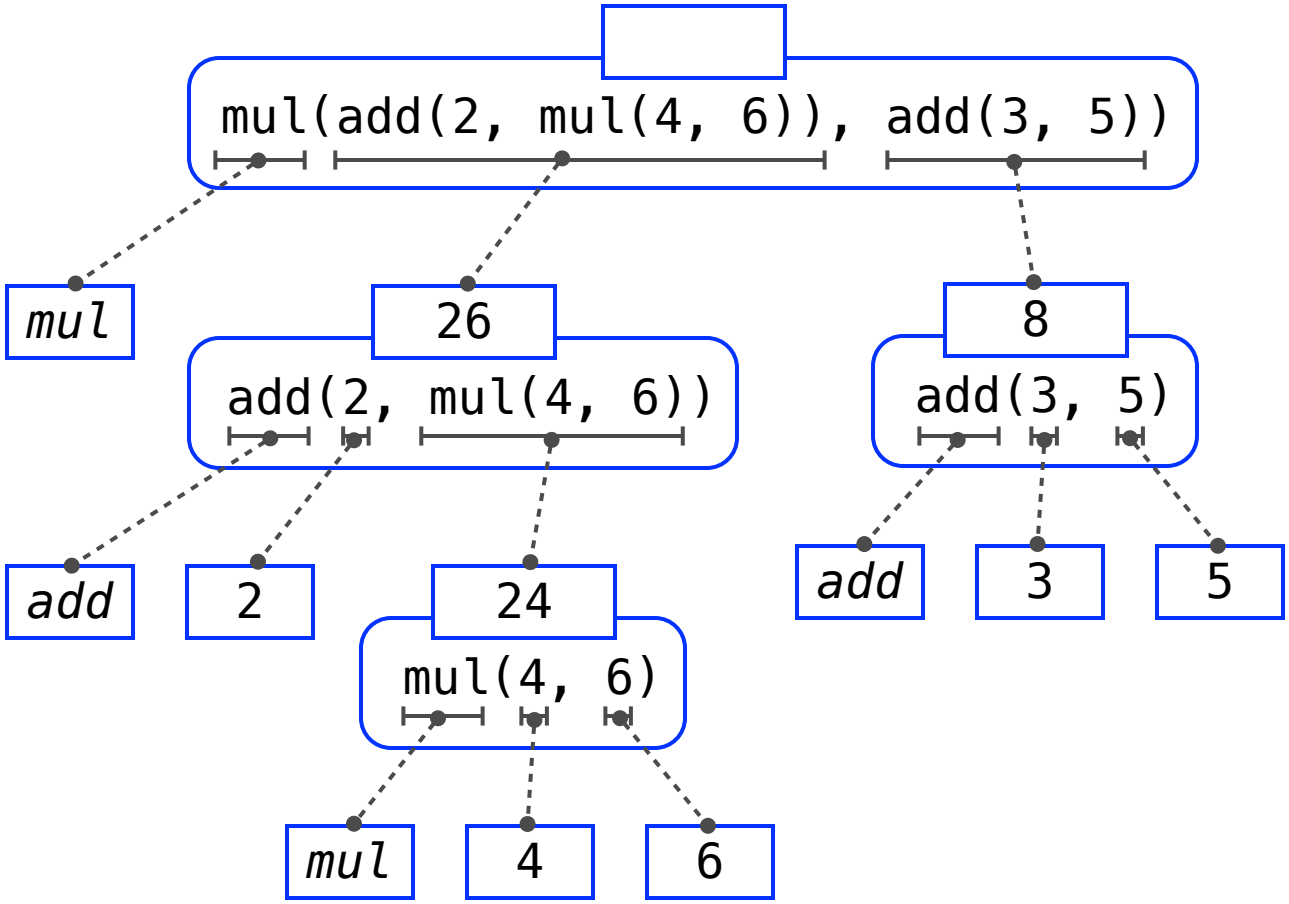


Evaluating Nested Expressions



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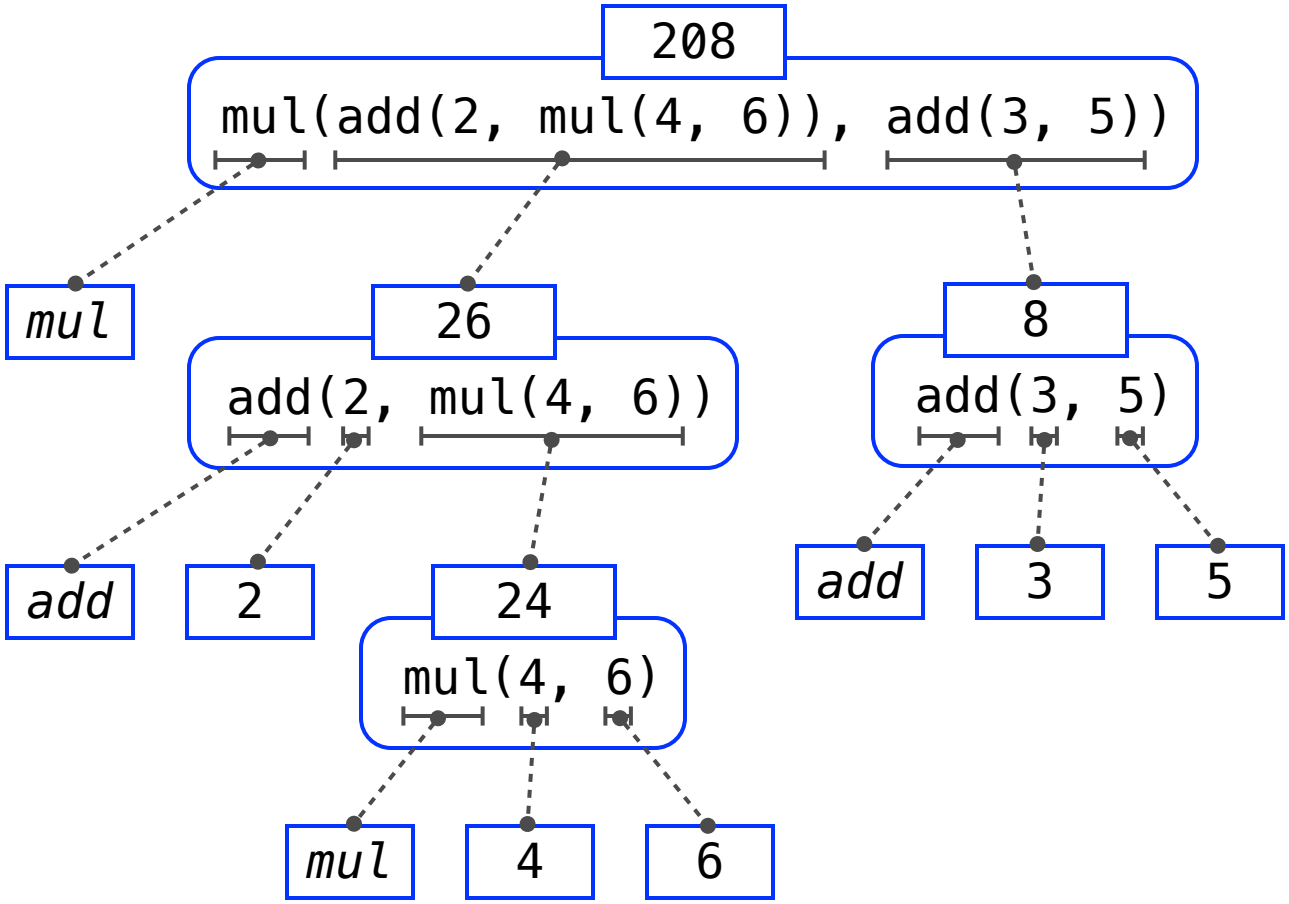

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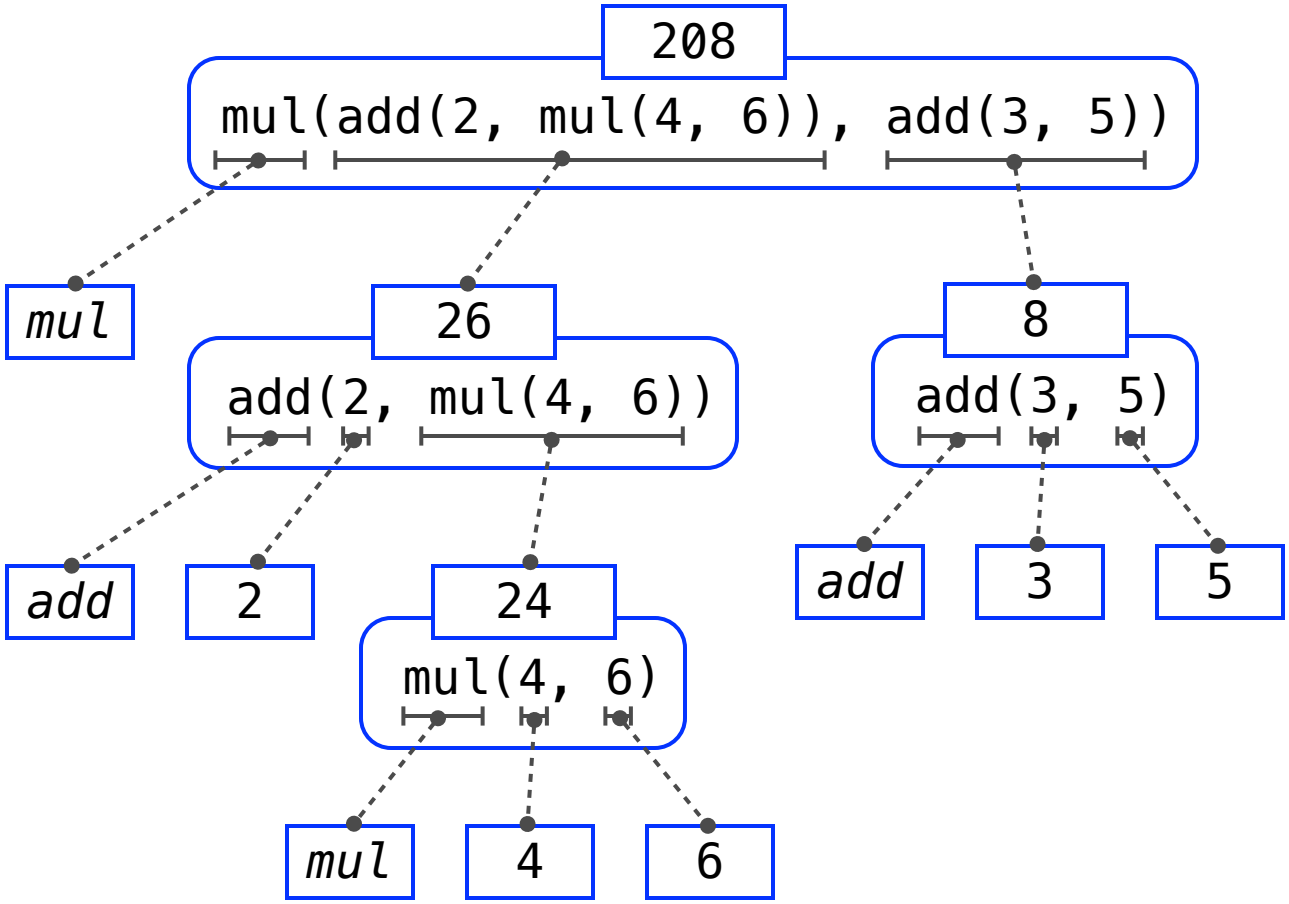

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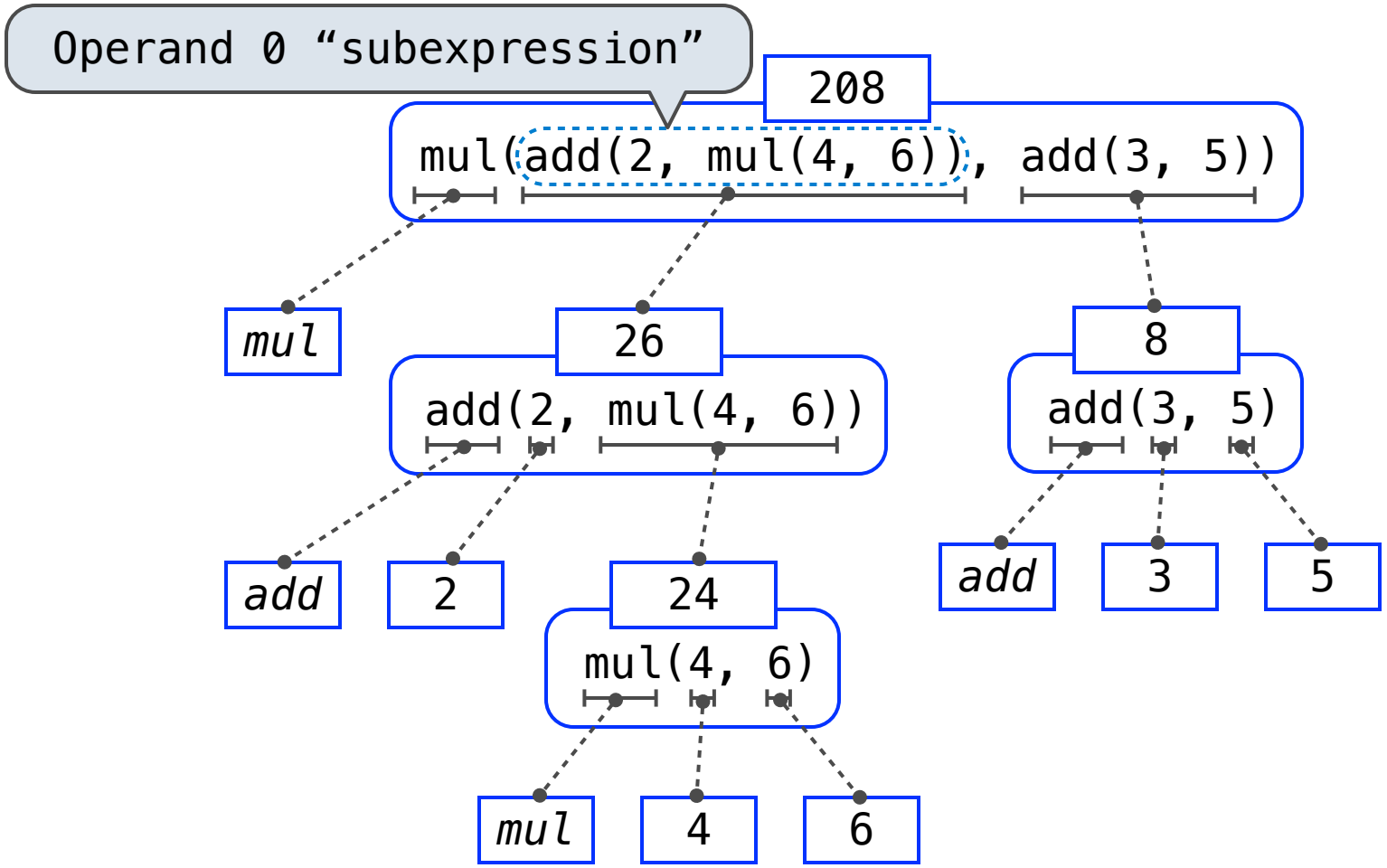

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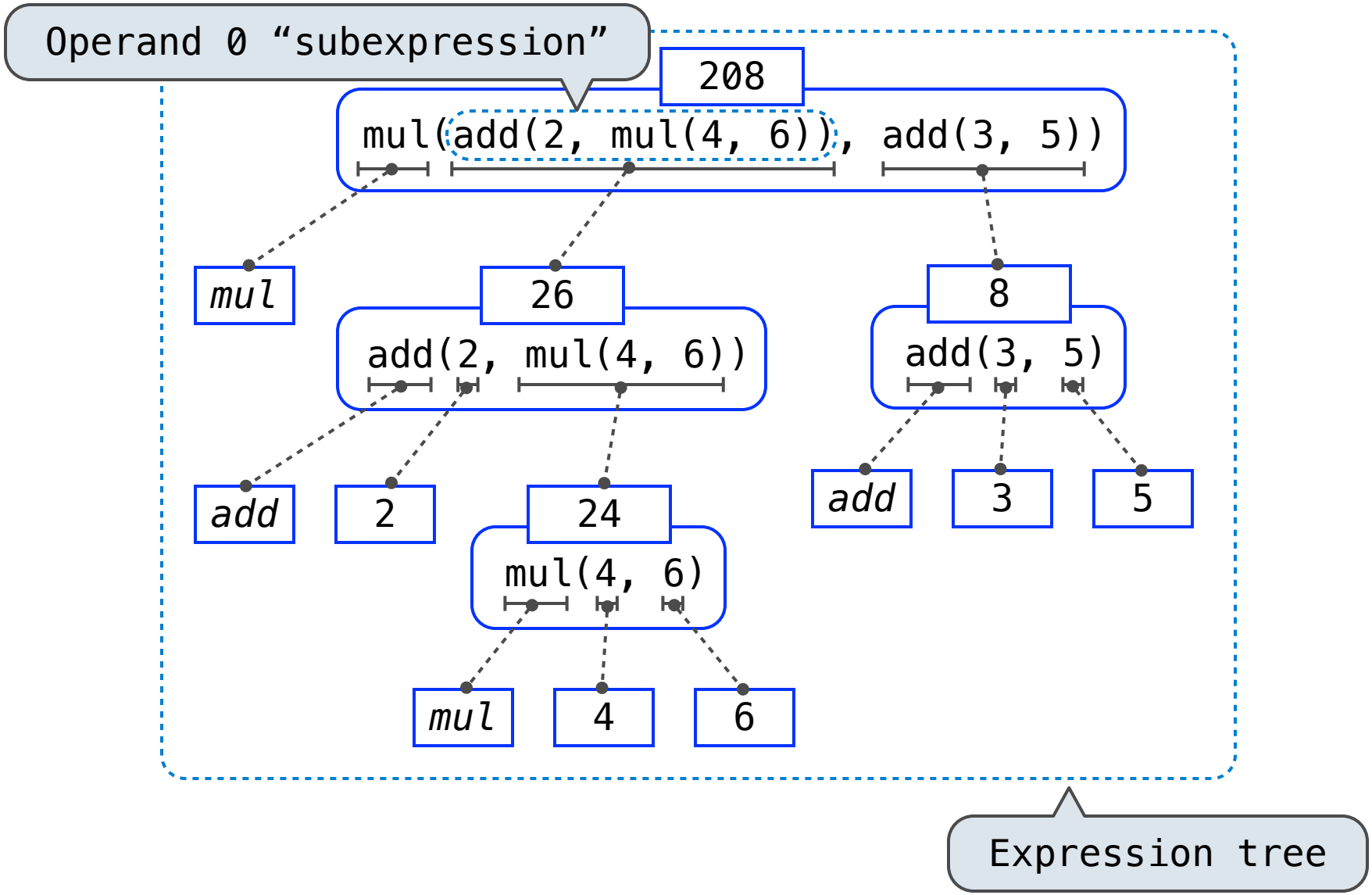

Data, Functions, and Interpreters

Data, Functions, and Interpreters

Data: The things that programs fiddle with

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2
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Data, Functions, and Interpreters

Data: The things that programs fiddle with

“The Art of Computer Programming”

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Donald Knuth

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Shakespeare’s 37 plays

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Functions: Rules for manipulating data

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Functions: Rules for manipulating data

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Interpreter: An implementation of the procedure for evaluation