61A Lecture 25

Monday, November 4

Announcements

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- Example for today: http://composingprograms.com/examples/scalc/scalc.html

Parsing

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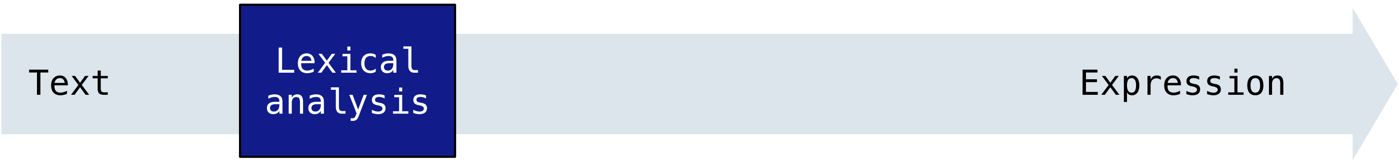

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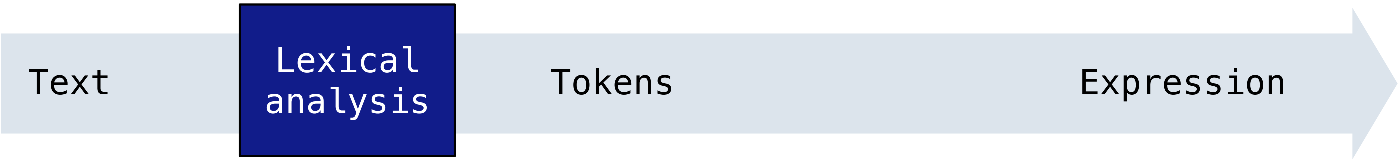

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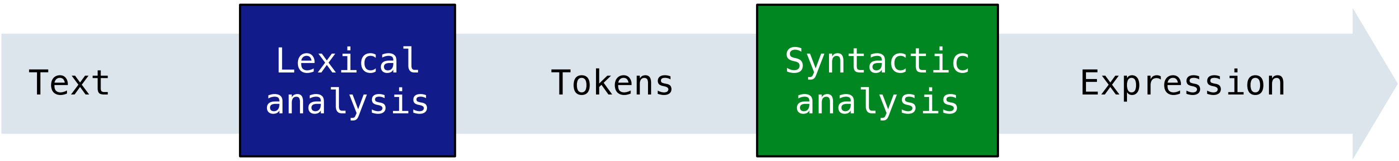

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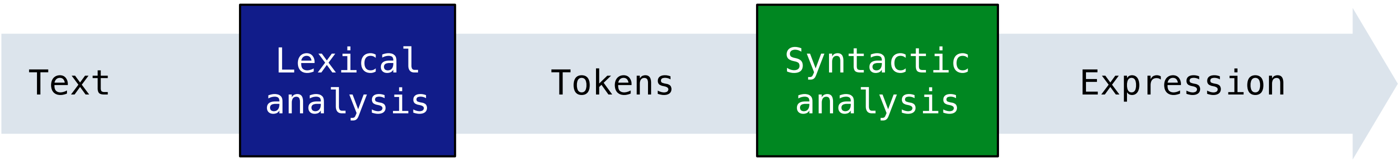

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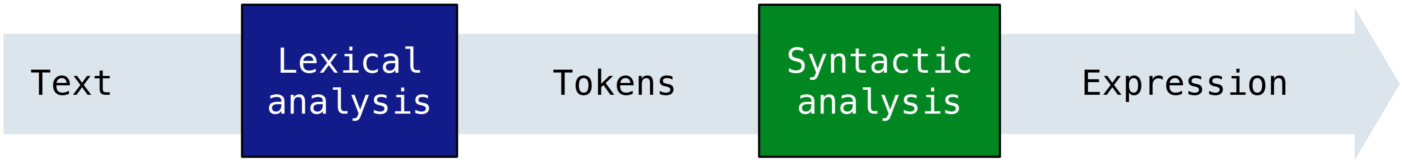

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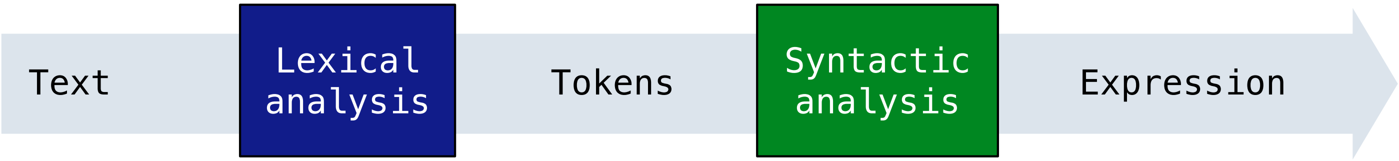

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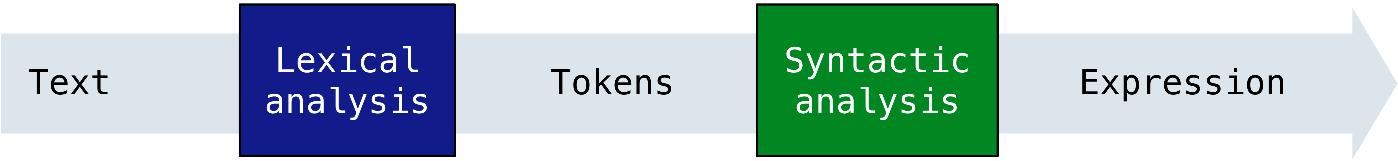

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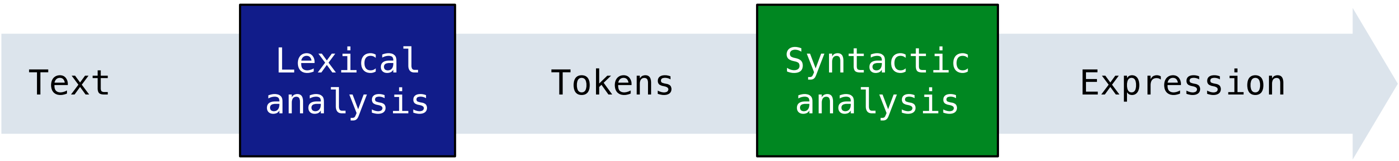

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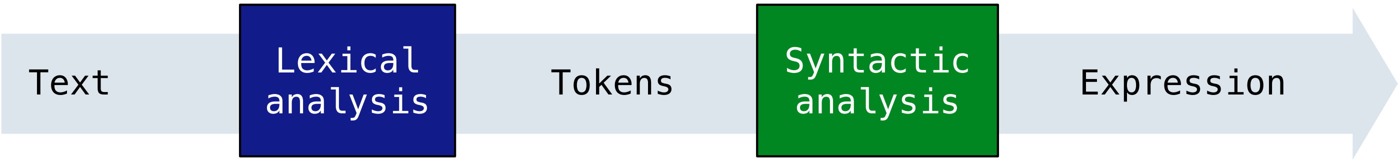

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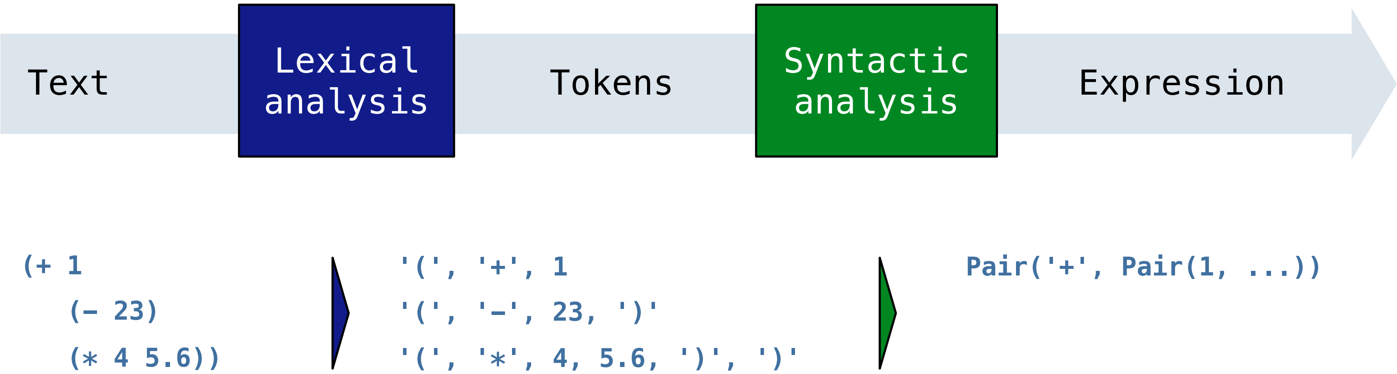

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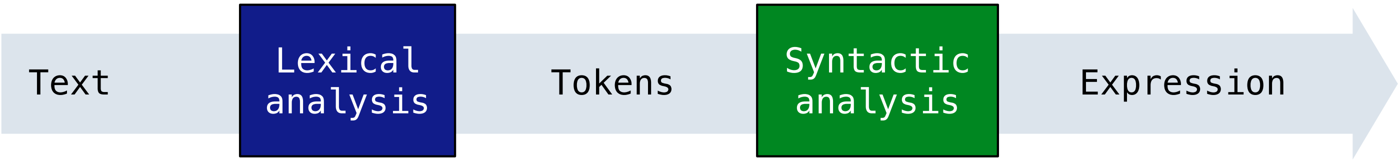

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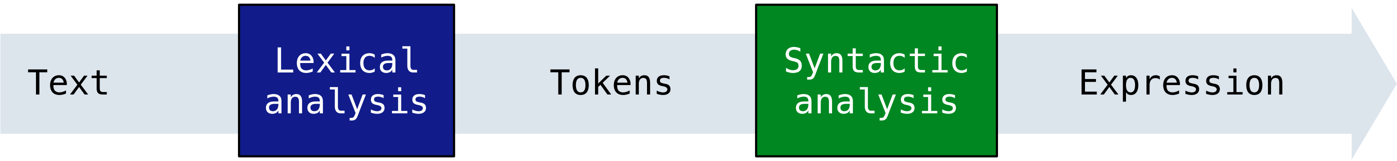

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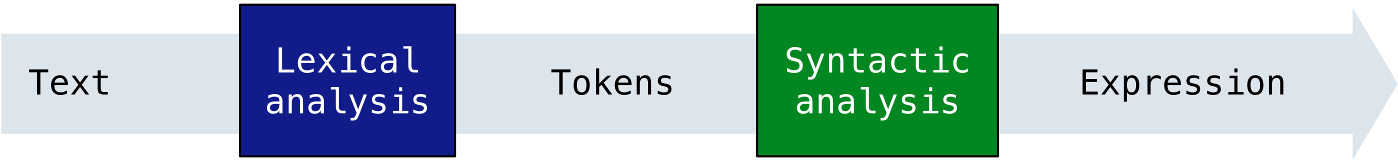

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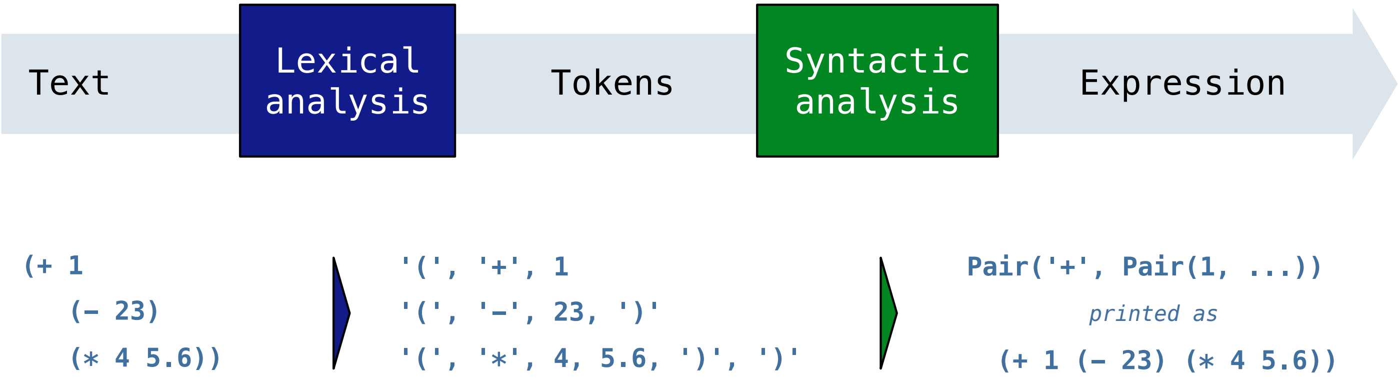

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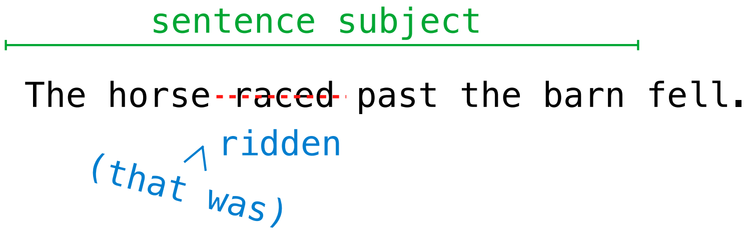

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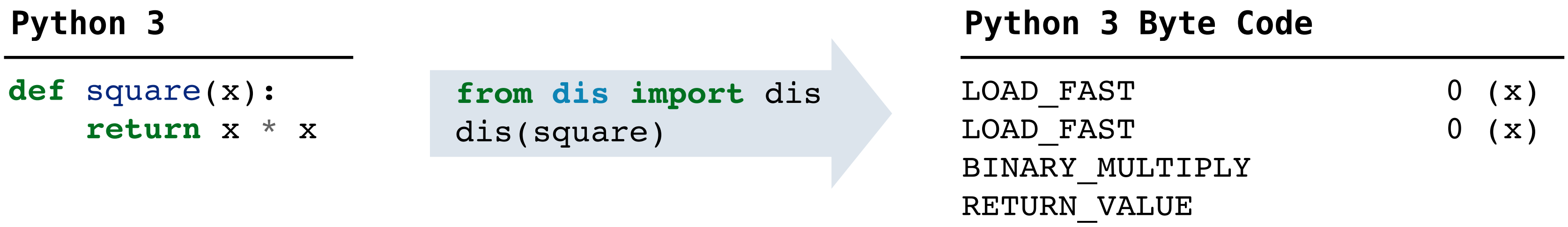

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- **Specification:** A document describe the precise syntax and semantics of the language.
- **Canonical Implementation:** An interpreter or compiler for the language.

Calculator

(Demo)

The Pair Class

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```
class Pair:
    """A Pair has two instance attributes:
    first and second.

    For a Pair to be a well-formed list,
    second is either a well-formed list or nil.
    Some methods only apply to well-formed lists.
    """
    def __init__(self, first, second):
        self.first = first
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Scheme expressions are represented as Scheme lists! *Homoiconic* means source code is data.

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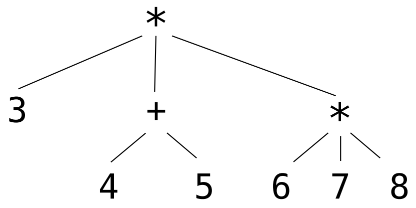

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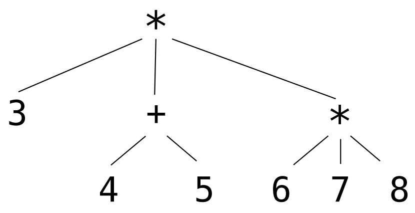
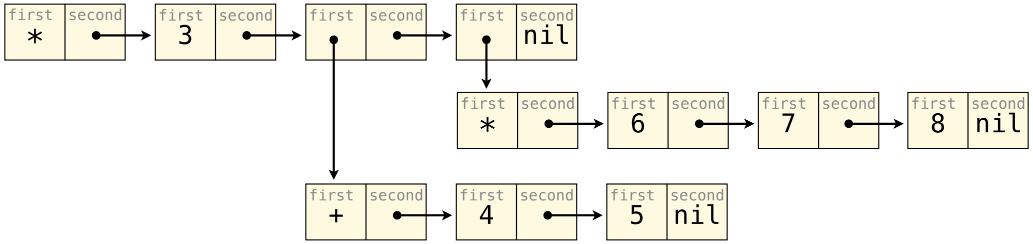


Representation as Pairs



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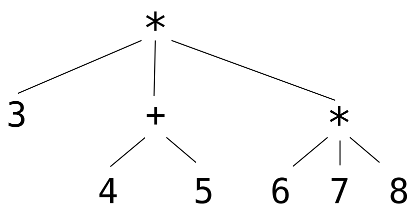

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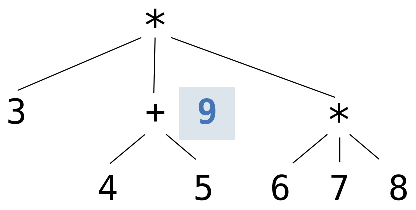

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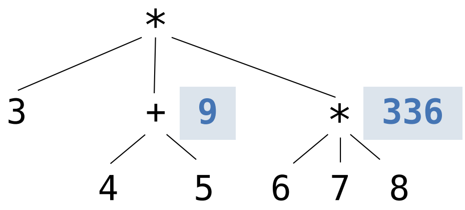

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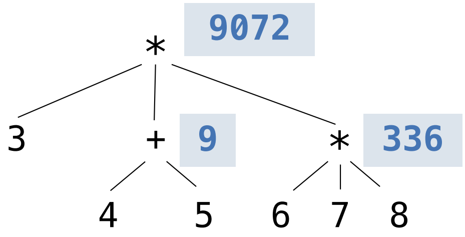

Evaluation

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(Demo)

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Interactive Interpreters

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