61A Lecture 24

Announcements

Scheme

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- "The greatest single programming language ever designed."

  –Alan Kay, co-inventor of Smalltalk and OOP (from the user interface video)

Scheme Values

Scheme values include (among others):

ATOMS

- Numbers (in our dialect, integers and floating-point values).
- Booleans
- Symbols (much like strings, but with equal strings being the same object).
- The value nil (like Python None).
- Functions.

COMPOSITE VALUES

- Pairs (like two-element Python lists).
- Scheme lists formed from pairs and nil, as for our linked lists.

Big Idea: Scheme Programs Are Scheme Values

Numbers and nil represent literals.

Symbols represent variables.

Lists (formed from pairs) represent everything else.

Since Scheme programs compute Scheme values, they can construct Scheme programs as well.

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Scheme Interpreters

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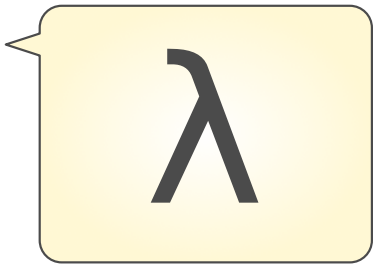

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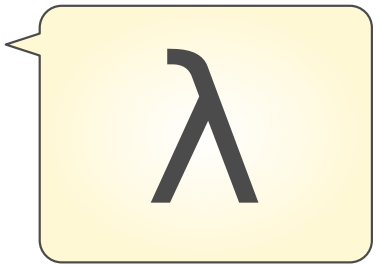

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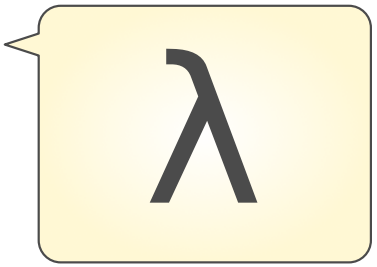

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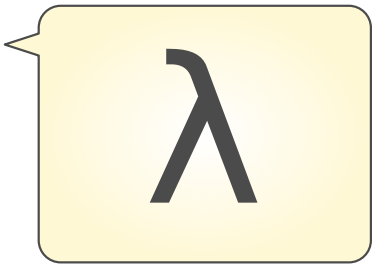

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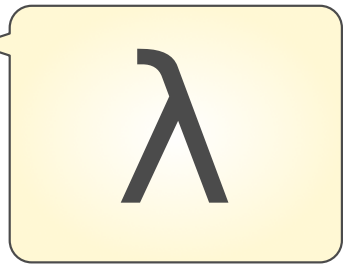

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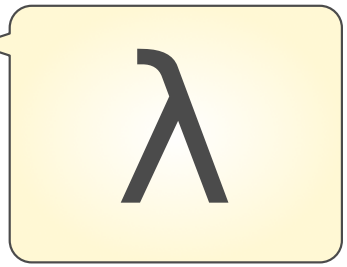

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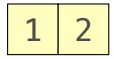

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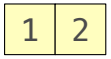

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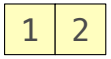

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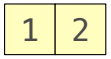

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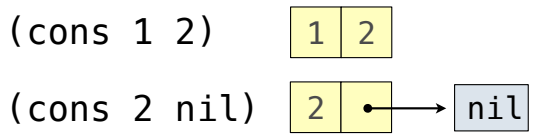

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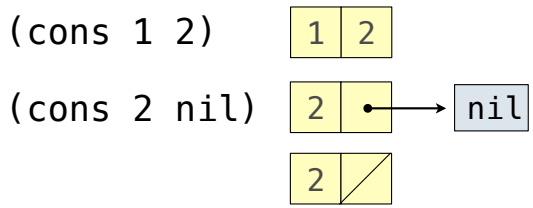

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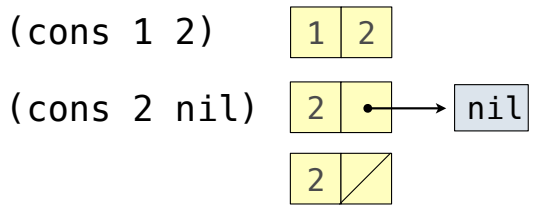

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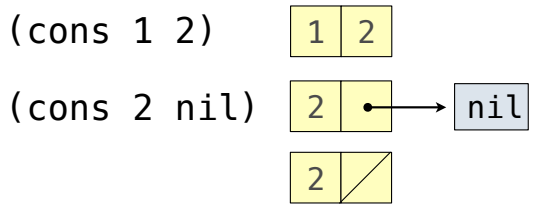

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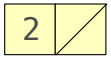

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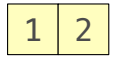

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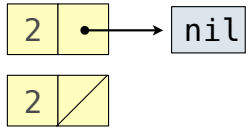

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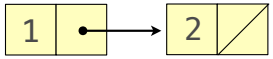

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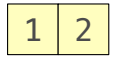

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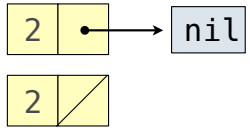

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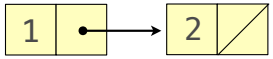

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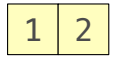

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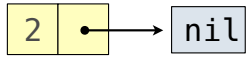

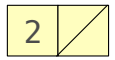

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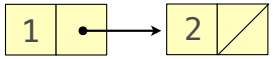

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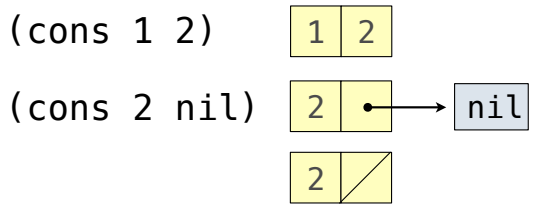

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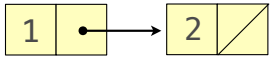

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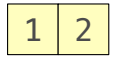

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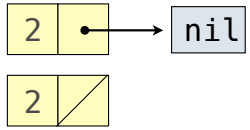

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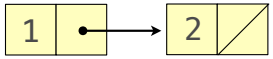

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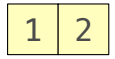

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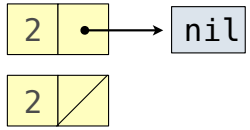

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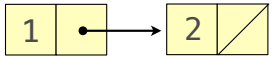

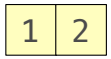

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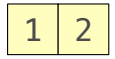

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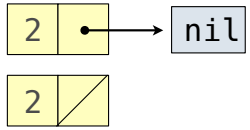

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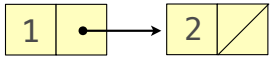

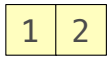

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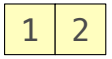

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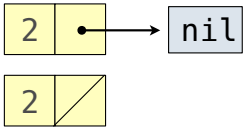

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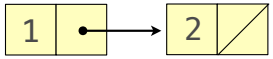

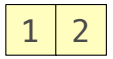

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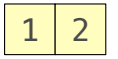

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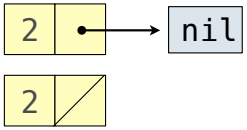

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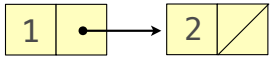

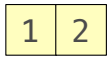

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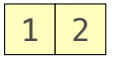

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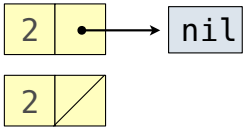

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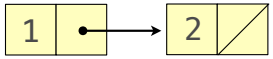

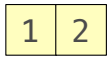

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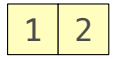

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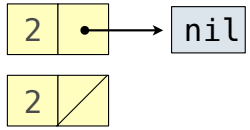

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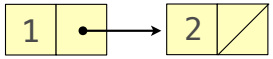

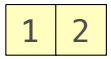

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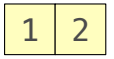

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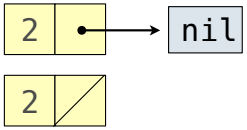

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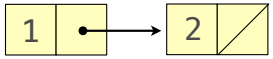

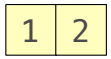

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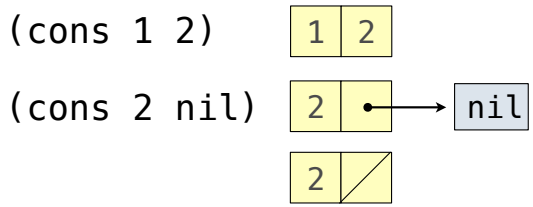

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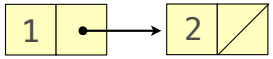

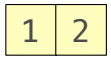

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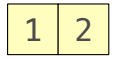

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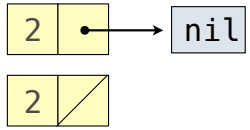

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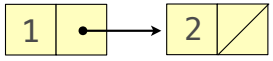

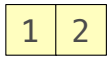

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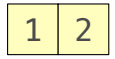

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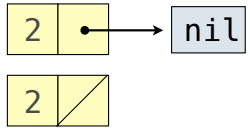

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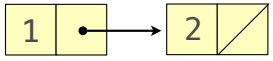

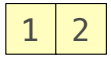

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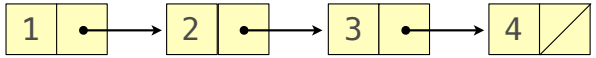

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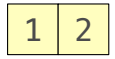

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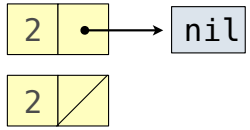

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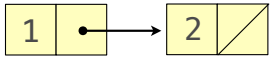

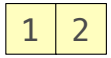

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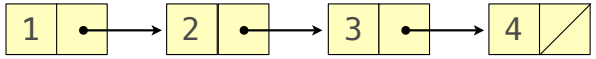

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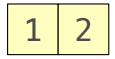

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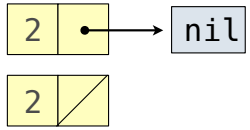

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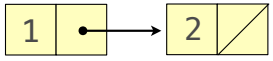

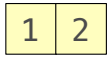

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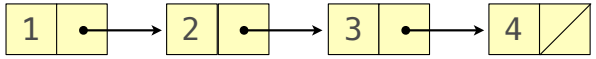

(Demo)

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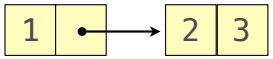

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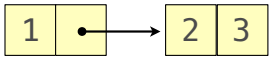

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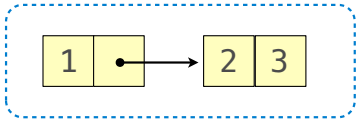

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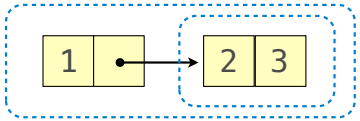

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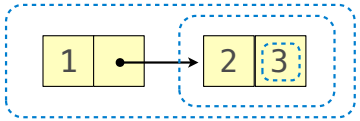

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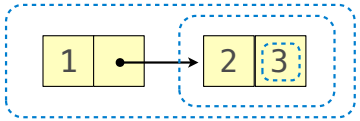

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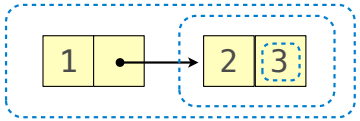

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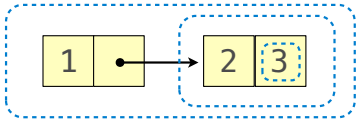

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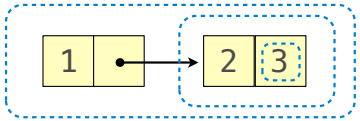

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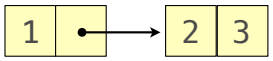

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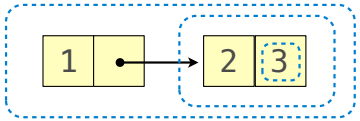

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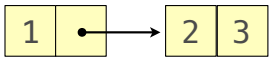

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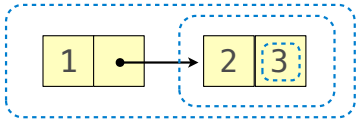

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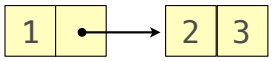

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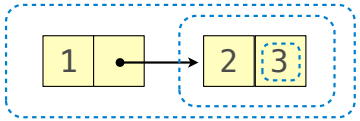

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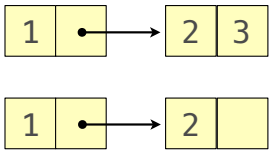

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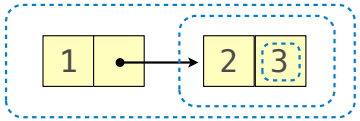

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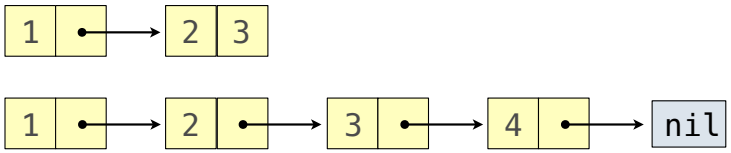

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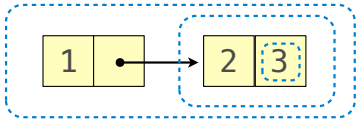

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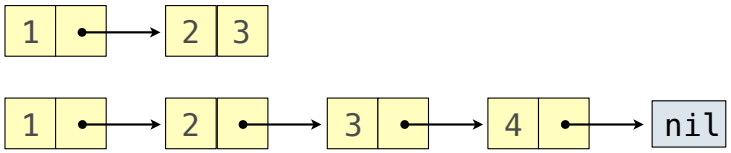

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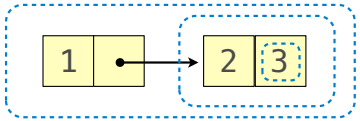

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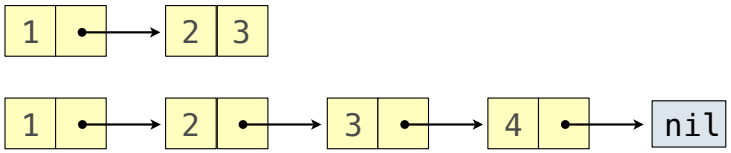

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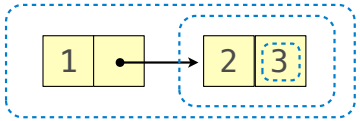

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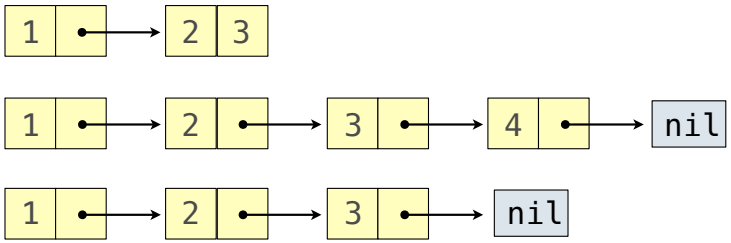

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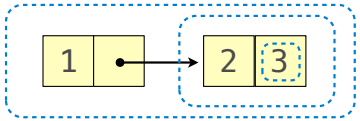

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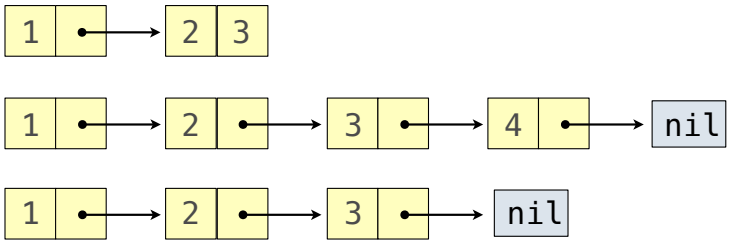

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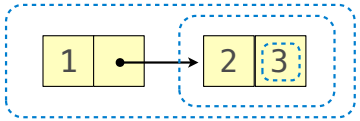

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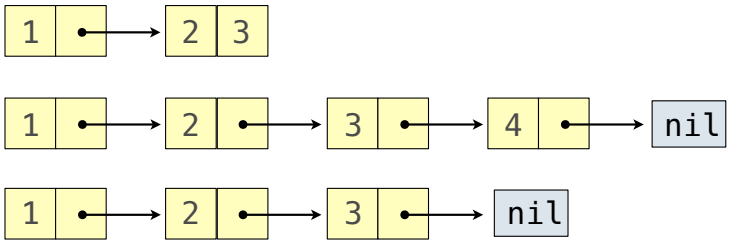

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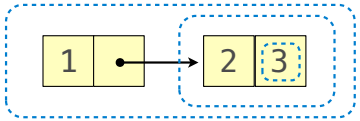

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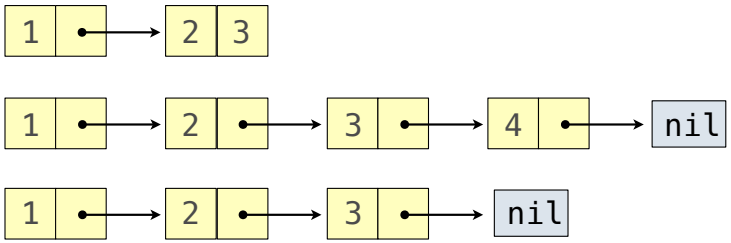

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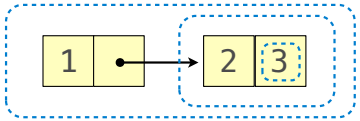

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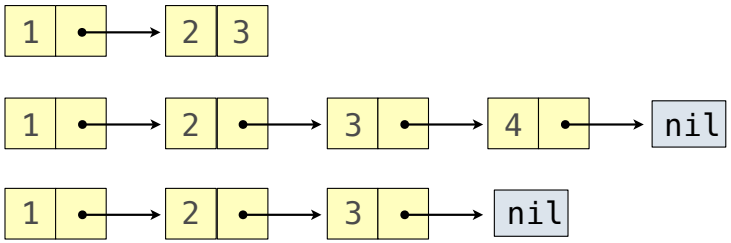

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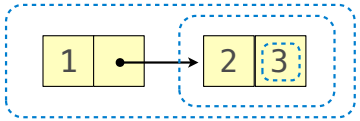

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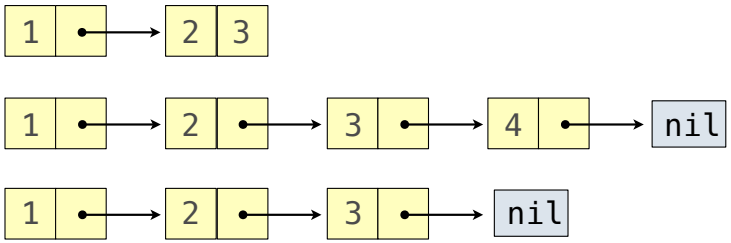

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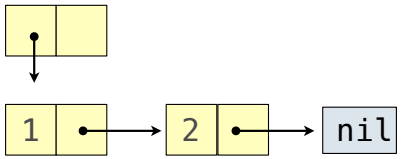

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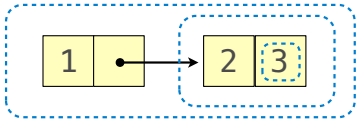

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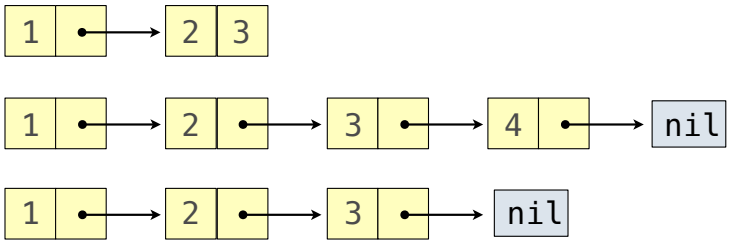

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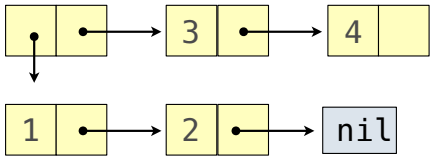

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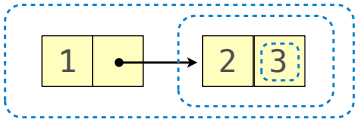

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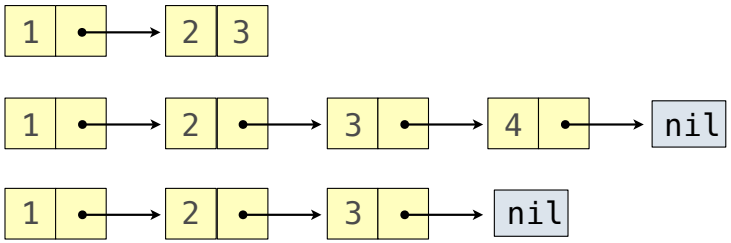

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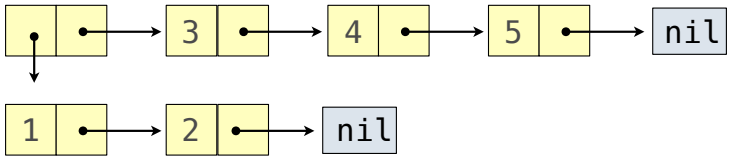

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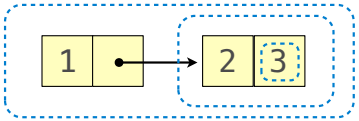

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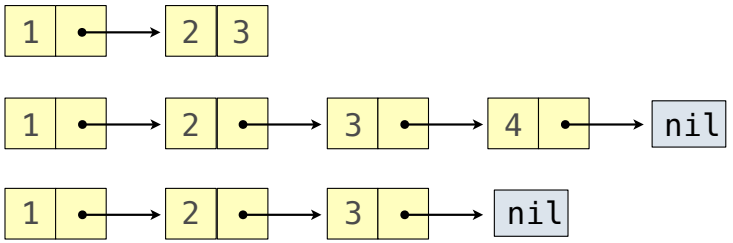

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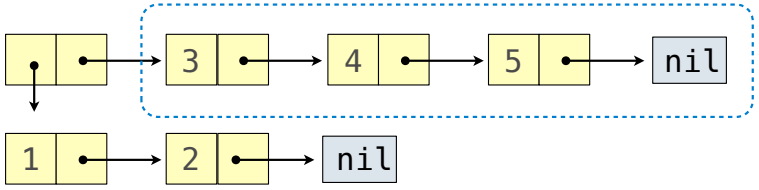
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