# 61A Lecture 26

Monday, October 29

# Today's Topic: Handling Errors

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Grace Hopper's Notebook, 1947, Moth found in a Mark II Computer

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They enable *non-local* continuations of control:

If **f** calls **g** and **g** calls **h**, exceptions can shift control from **h** to **f** without waiting for **g** to return.

However, exception handling tends to be slow.

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RuntimeError -- Catch-all for troubles during interpretation

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The <except suite> is executed, with <name> bound to the exception

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Demo (http://inst.eecs.berkeley.edu/~cs61a/fa12/projects/scalc/scheme_reader.py.html)

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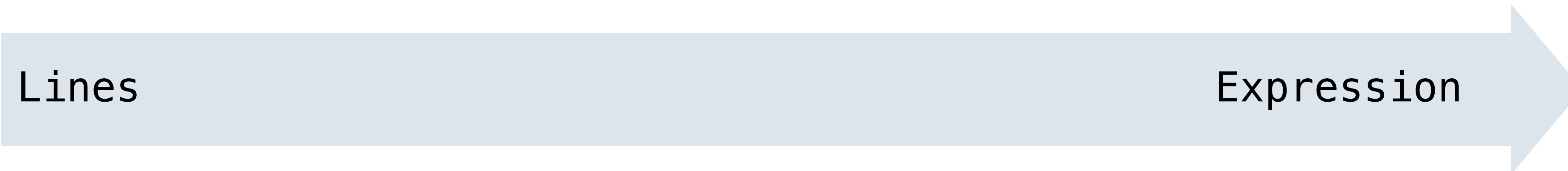

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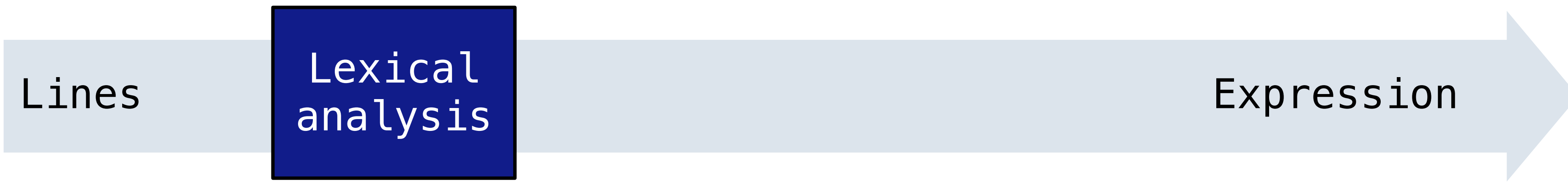

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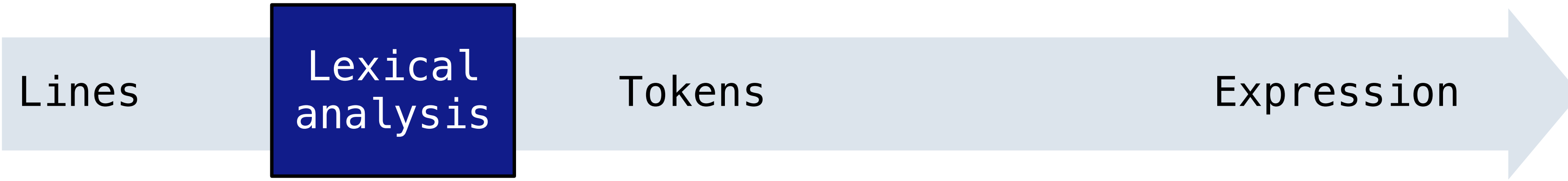

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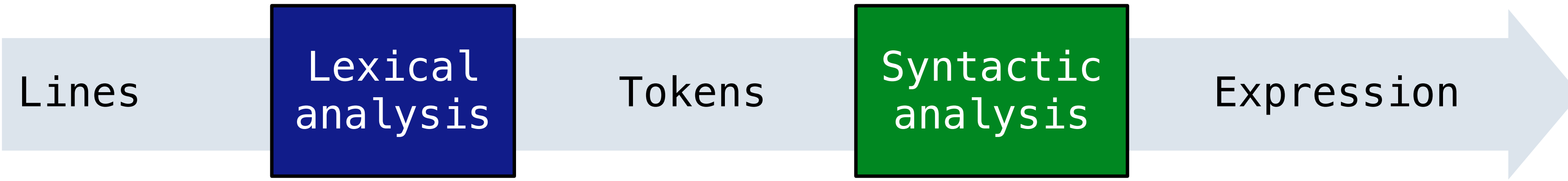

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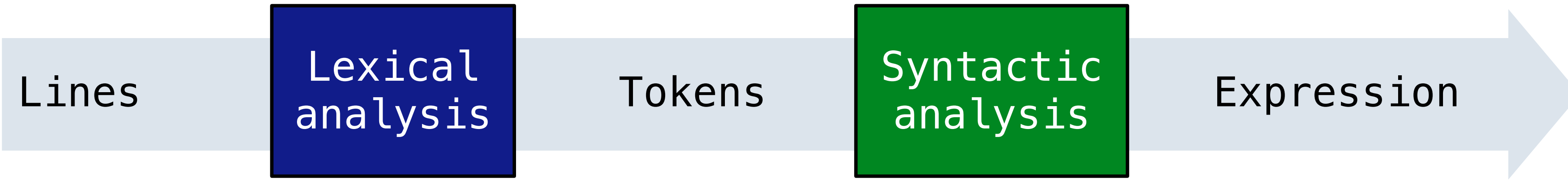


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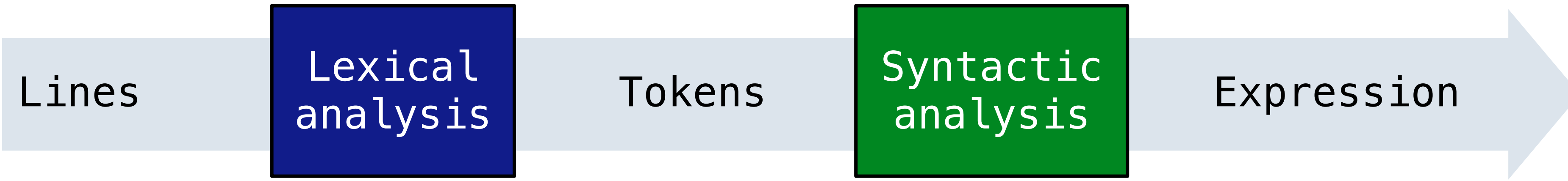


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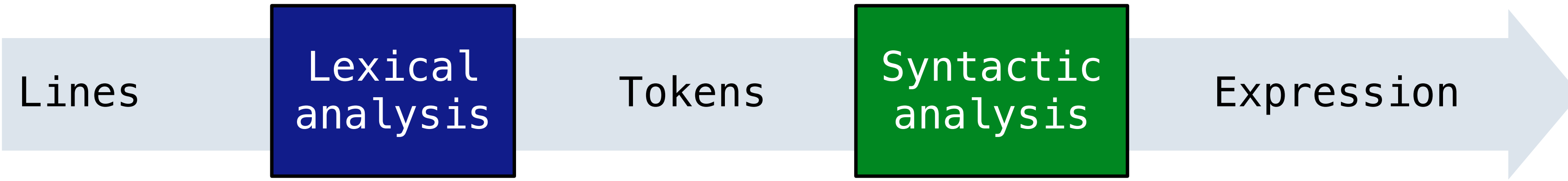


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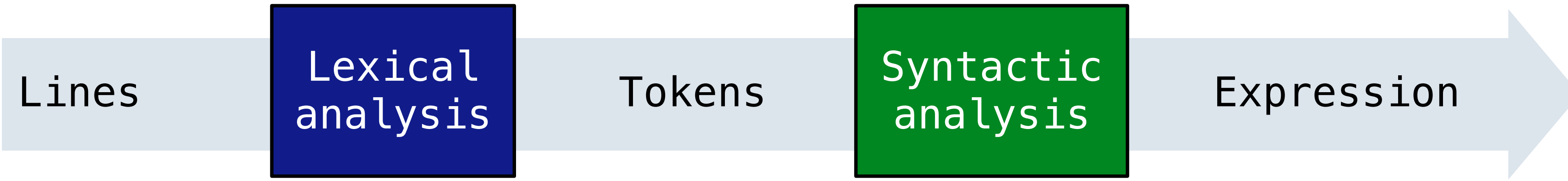


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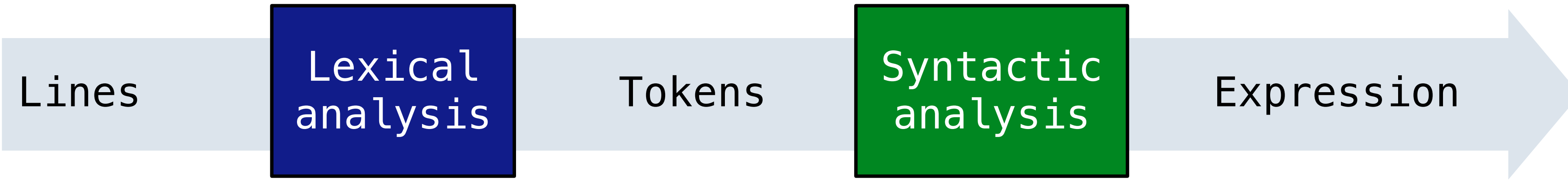


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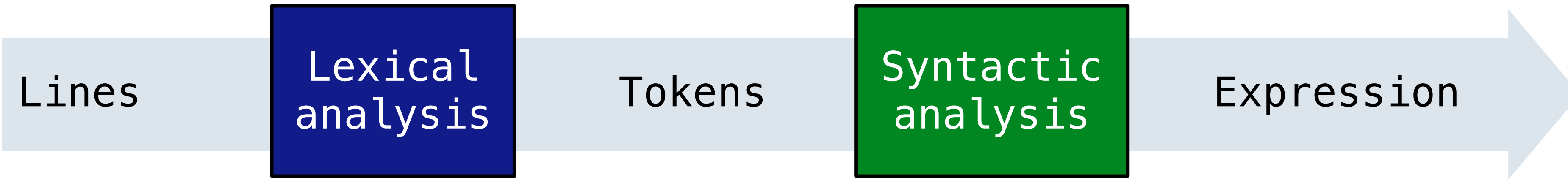


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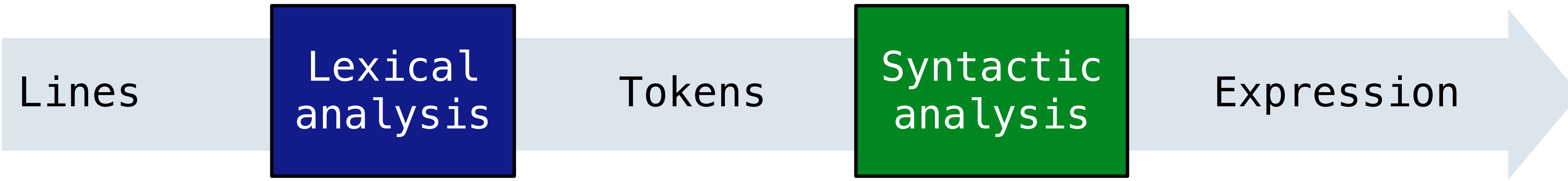


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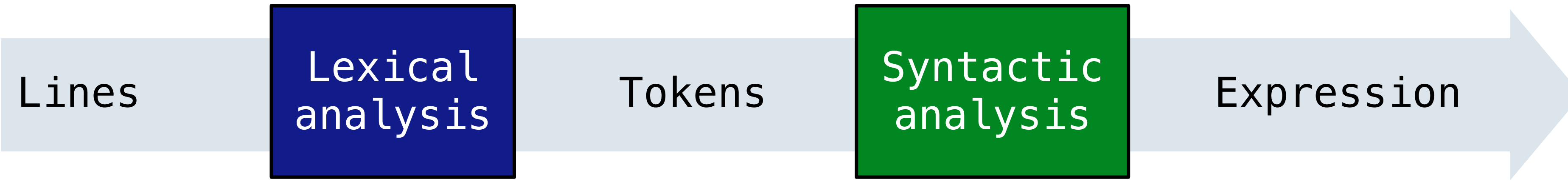


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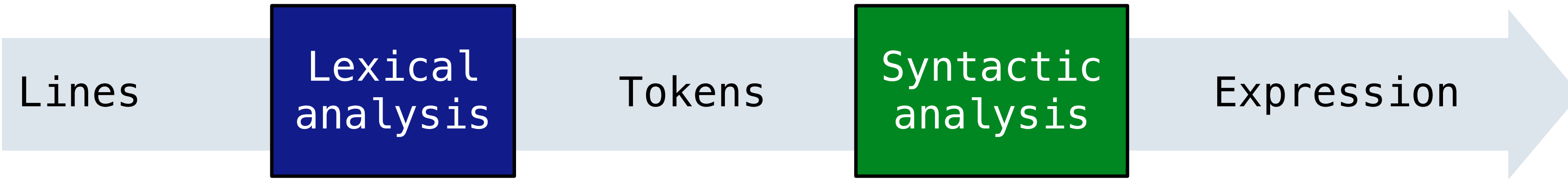


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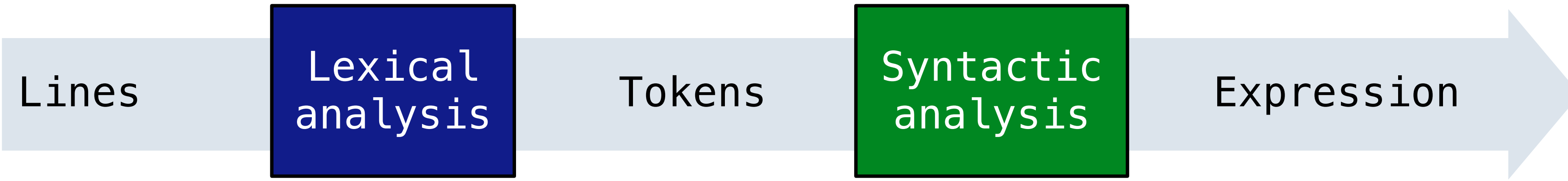


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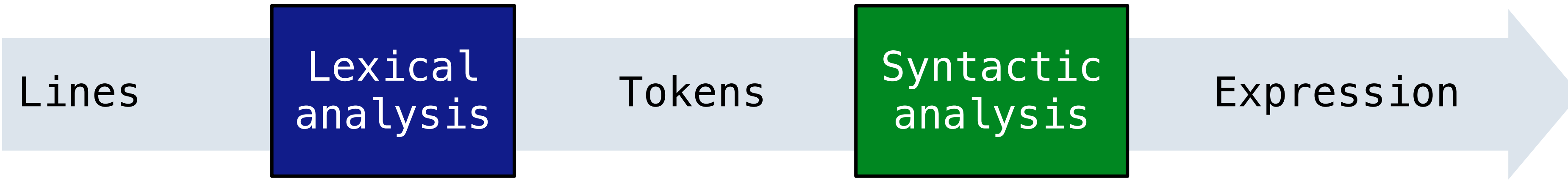


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- Tree-recursive process
- Balances parentheses

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Lines → **Lexical analysis** → Tokens → **Syntactic analysis** → Expression

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['(+ 1',
  '   (- 23)',
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*printed as*

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(+ 1 (- 23) (* 4 5.6))
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- Iterative process
- Checks for malformed tokens
- Determines types of tokens
- Processes one line at a time

- Tree-recursive process
- Balances parentheses
- Returns tree structure

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Demo (http://inst.eecs.berkeley.edu/~cs61a/fa12/projects/scalc/scheme_reader.py.html)