The problem of this
(instance) method: a function associated with an object
(instance) *method*: a function associated with an object

method code should be able to refer to the associated object!
Approach 1: this as an explicit parameter (e.g., Python, Rust)
**Approach 2:** *this* as a keyword (obeying lexical scope)

(e.g., Java, C++, Ruby)
**Approach 3**: *this* as a keyword (obeying dynamic scope)

JavaScript!
Demos
Implementing approach 1 (easiest for us)
Implementation!
Look at Python’s __dict__ attributes
Chaining lookups in dictionaries is central to inheritance in “dynamic” object-oriented languages
Manipulating control flow
Functions delay evaluation
**thunk**: a nullary function used to delay evaluation of a value

```latex
(lambda () <expr>)
```
Lazy function arguments
The problem of bulk data in a pipeline
**stream**: an abstract model of a sequence of values over time