

# Python's Attributes

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# Reminder

a message send consists of two steps:

- ▶ lookup the message implementation
- ▶ activate (i.e. call) the method that was found in this way

those are done in one step, not visible to the programmer

# Attributes

in Python, those steps are separated in the language:

```
obj.method(argument_1, ..., argument_n)
```

is identical to:

```
m = obj.method  
m(argument_1, ..., argument_n)
```

# Bound methods

- ▶ The object `m` is called a *bound method*
- ▶ it can be called like a function
- ▶ it is bound to the object out of which it was read
- ▶ the bound method thus takes one less argument than the original method
- ▶ thus reading methods out of objects behave like object-attributes