Method syntax

Michael Ernst
CSE 190p
University of Washington
Digression: two meanings of period (.)

• **Namespace management**: `math.sin(math.pi)`
  – Purpose: avoid polluting the global environment (the oldest “stack frame”) with too many names
  – Example:
    • `abs` is in the global namespace
    • When writing a program about bodybuilding, you might use abs (for abdominals)
    • Suddenly, all code that depends on the built-in `abs` fails!
  – Another example: `draw()` function for pictures, for cowboys, and for curtains
  – Solution: A different namespace or module

• **“Method syntax” for a function call**: `mylist.append(new_elt)`
  – `append()` takes two arguments
  – First argument may appear before a period

• These are *distinct* meanings of a single token, “.”
Method call syntax

• Ordinary function call: \texttt{fn(arg1, arg2, arg3)}
  – Any Python function can be invoked this way
• “Method syntax”: \texttt{arg1.fn(arg2, arg3)}
  – First argument may appear before a period
  – Some Python functions can be invoked this way
    • Only works for functions defined in a type’s namespace
    • Such a function is called a “method”

```python
nums = [1, 2, 3]
ums.append(4)
list.append(nums, 5)  # append is defined in the list namespace
append(nums, 6)  # NameError: name 'append' is not defined
len(nums)
ums.len()  # AttributeError: 'list' object has no attribute 'len'
```