Cython

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What is Cython

- Hybrid language & superset of Python

  - Supports all Python syntax

  - Adds C-ish syntax to declare types, interface with C code

- Must convert to C and compile before use in Python!

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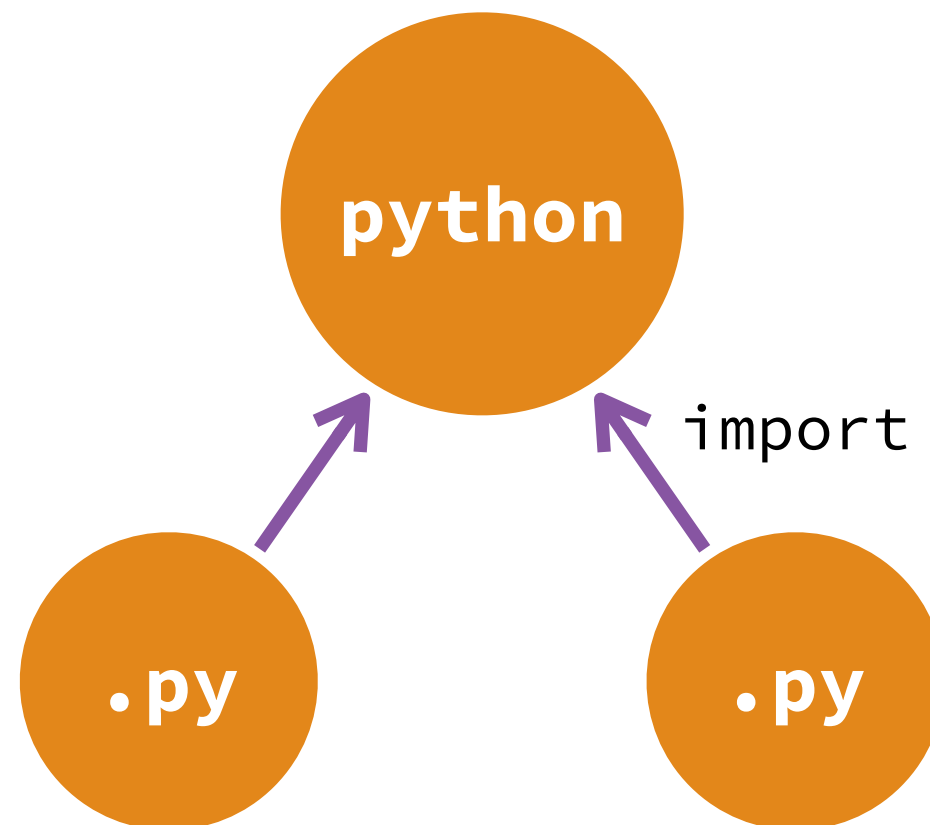
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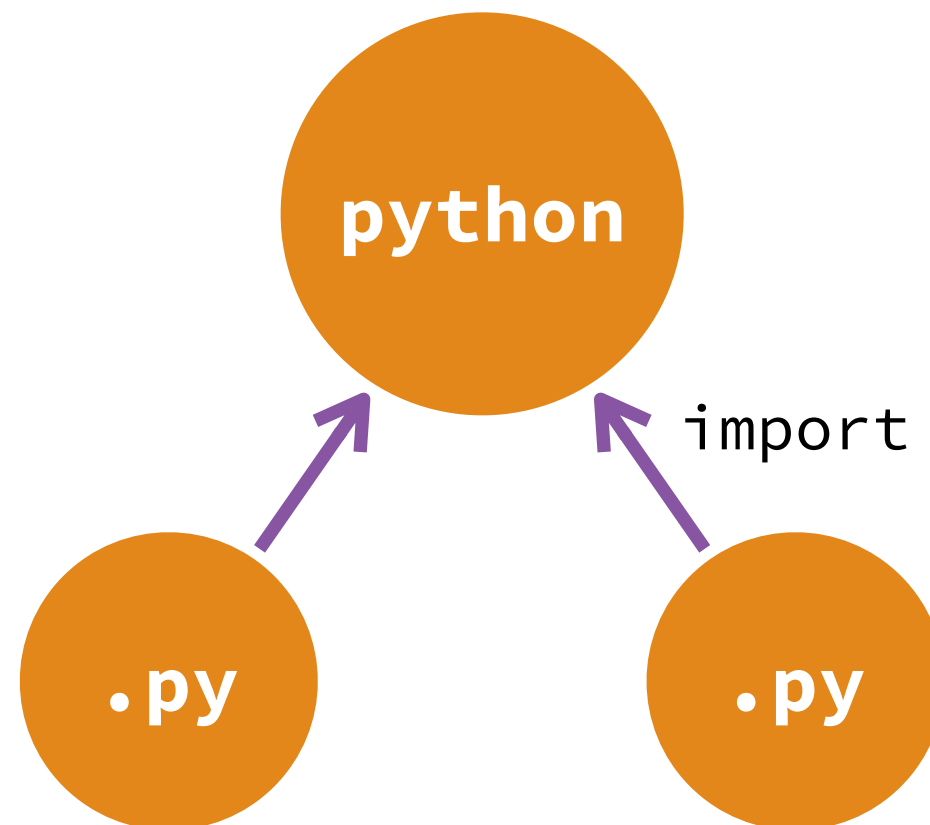Can I replace loops with Numpy array operations?

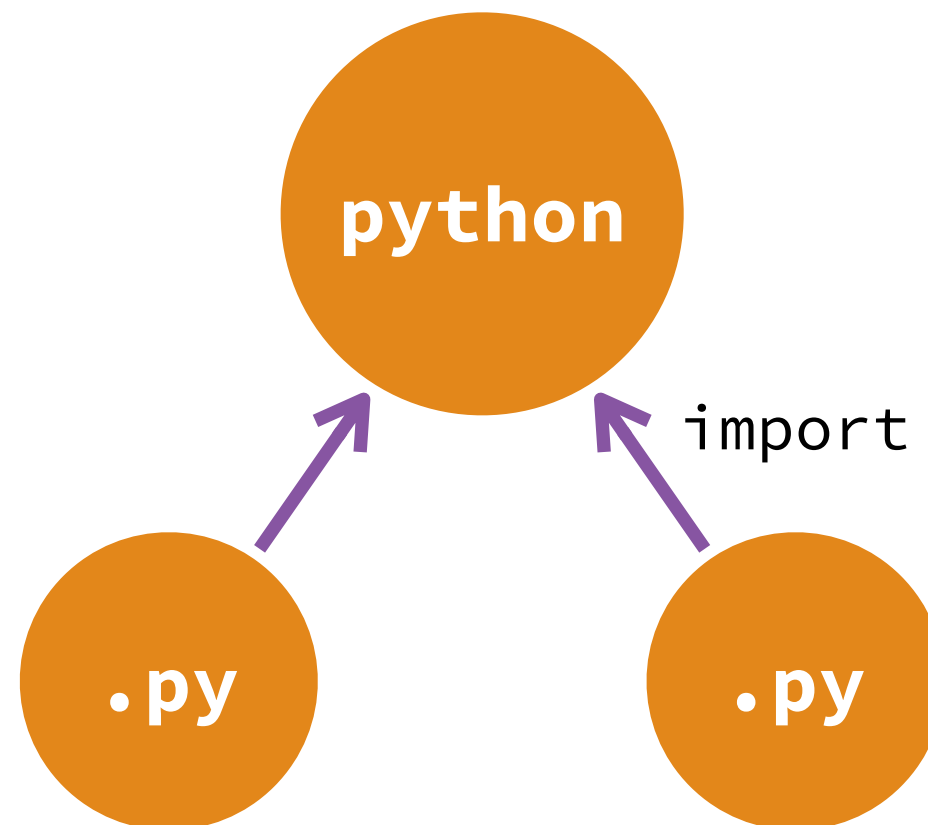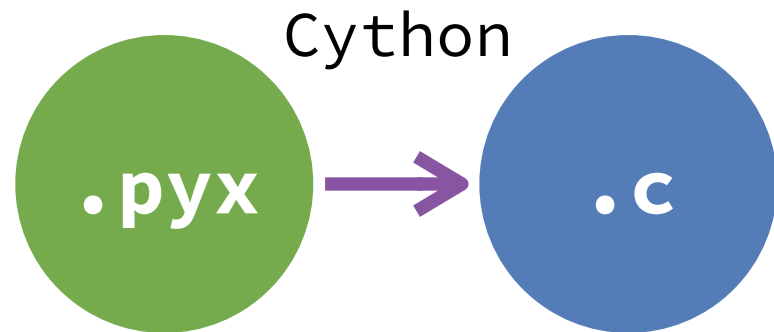Do I really need to speed this up?

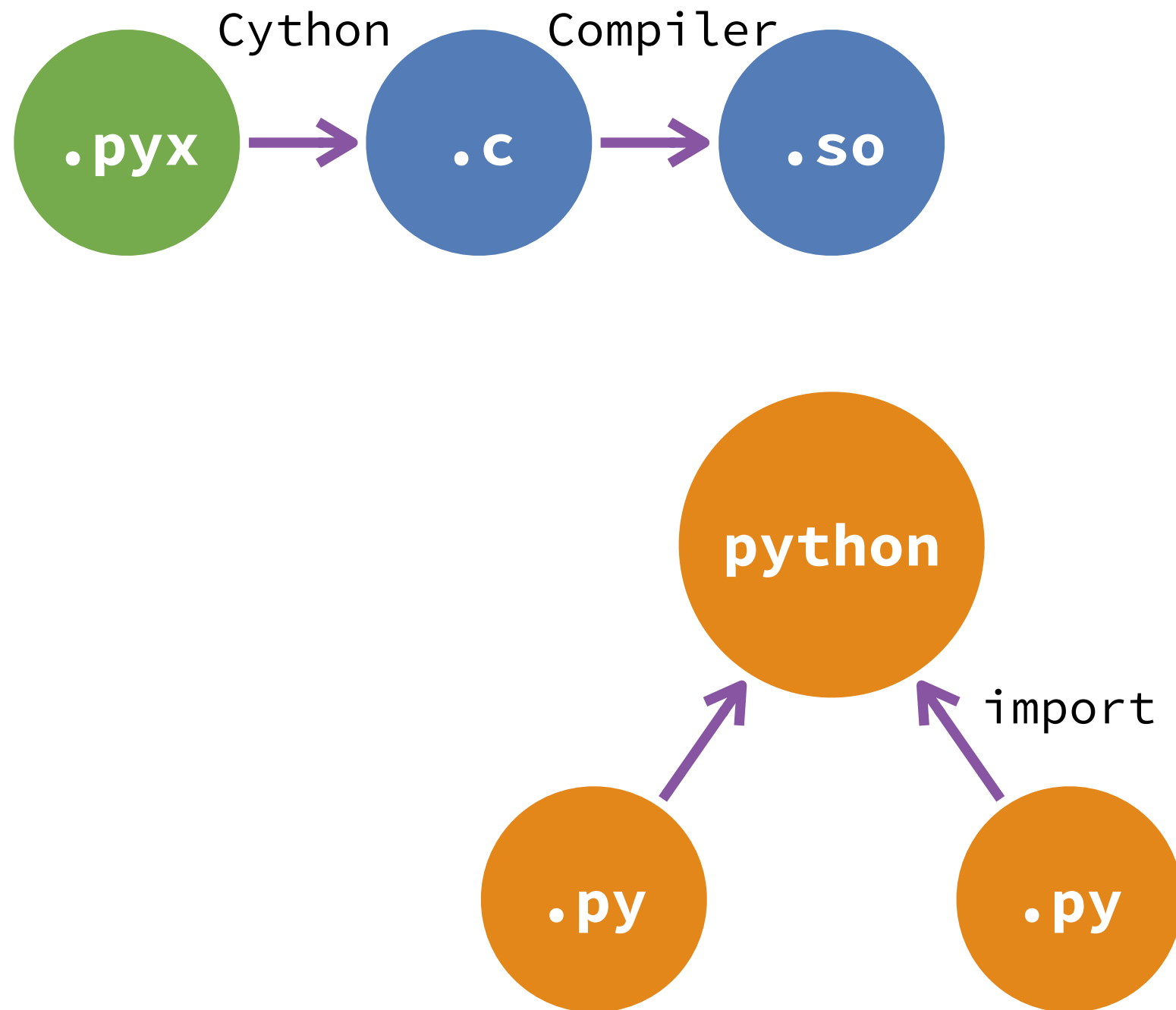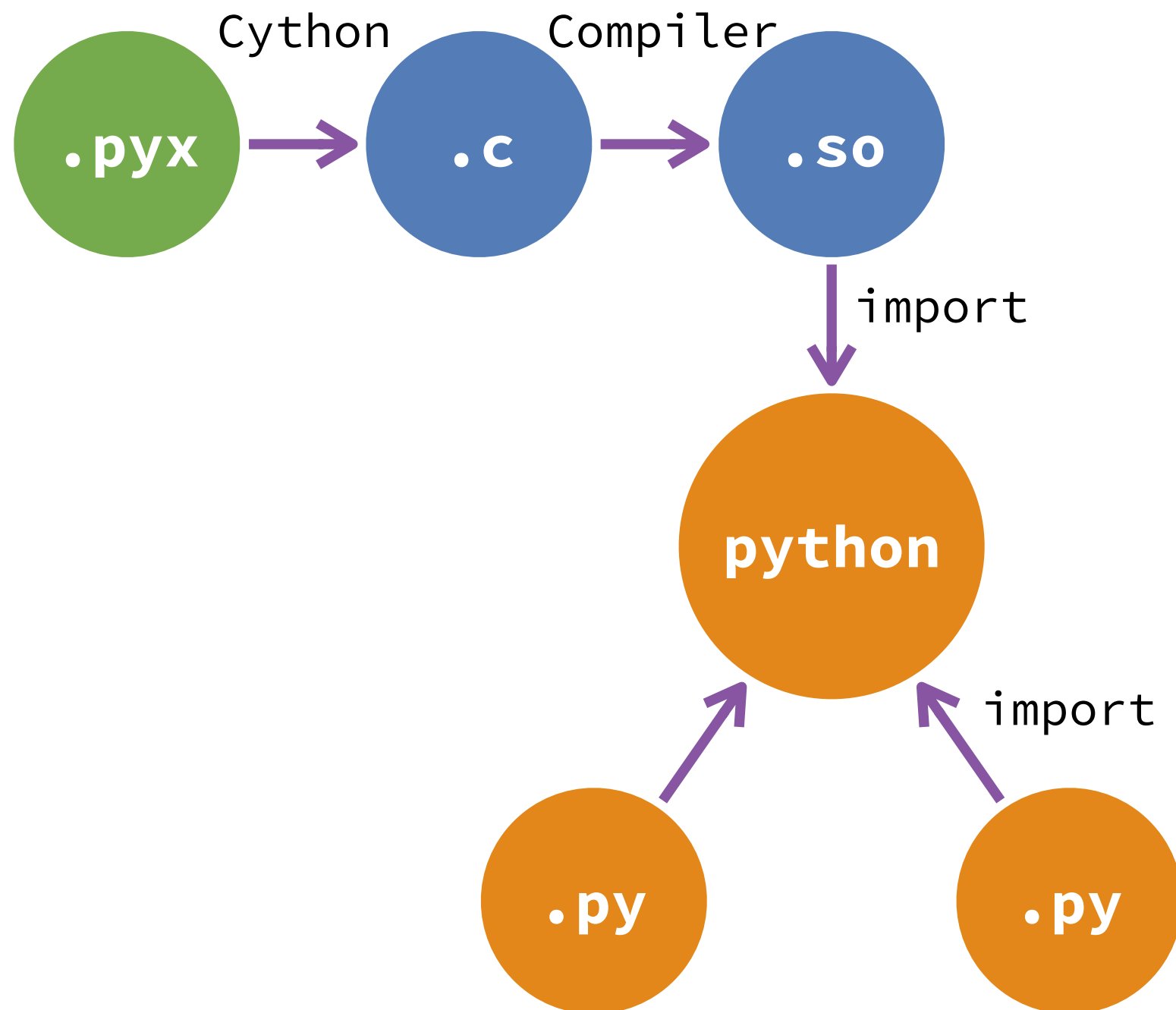::sigh:: ok use Cython / Numba

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Cython types

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pi_ish = 3.1415
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Cython

```
cdef:
    int n_cats = 5
    double pi_ish = 3.1415
```

Cython functions

Python-only   `def`

Cython-only   `cdef`

Python & Cython   `cpdef`

Using Cython

IPython magic   `%%cython`

Manual   `cython module.pyx`
                  `gcc … -o module.so module.c`

Python build process   `python setup.py build`
(i.e. with `setup.py`)