

### Getting started

```
import numpy as np
```

Import Numpy using `np` as alias

```
np.__version__
```

Numpy version

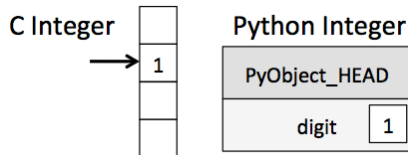
```
np.<Tab>
```

Display all contents of the numpy namespace

```
np?
```

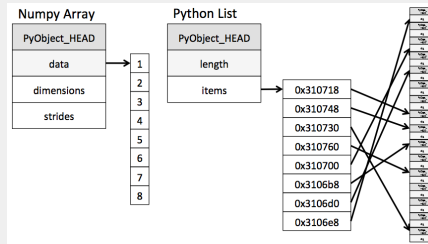
Display Numpy built-in documentation

### A Python integer is more than just an integer



When we define an integer in Python, such as `x = 1`, `x` is not just a "raw" integer. It's actually a pointer to a compound C structure, which contains several values: `ob_refcnt` (a reference count that helps Python handle memory allocation), `ob_type` (the type of the variable), `ob_size` (the size of the following data members), `ob_digit` (the actual integer value the Python variable to represent). Here `PyObject_HEAD` is the part of the structure containing the info mentioned above.

### A Python list more than just a list



`L = list(range(10))` to create a list of integers.

`L2 = [True, "2", 3.0, 4]` to create a heterogeneous lists

But to allow these flexible types, each item in the list must contain its own type info, reference count, and other information—that is, each item is a complete Python object. In the special case that all variables are of the same type, much of this information is redundant: it can be much more efficient to store data in a fixed-type array (**Numpy**)

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