Lists and Copying

Digikey only allows the standard library, so numpy is not included.

**Create and index multi-dimensional array:**

Note that the lengths are used backwards when constructing the array.

xlen **=** 3

ylen **=** 10

zlen **=** 2

b **=** **[[[**0**]** **\*** zlen **for** \_ **in** **range(**ylen**)]** **for** \_ **in** **range(**xlen**)]**

**for** x **in** **range(**xlen**):**

**for** y **in** **range(**ylen**):**

**for** z **in** **range(**zlen**):**

b**[**x**][**y**][**z**]**

**Copy by reference, shallow copy, and deep copy:**

Copy by reference – copies only the pointer to the list.

Shallow copy – creates a new list and copies the values in the list. If the values themselves are lists, they will still be copied by reference.

Deep copy – creates an entirely new list and recursively deep copies all values in the list too (no references).

**import** copy

mylist **=** **list()**

reference **=** mylist

shallow **=** mylist**.**copy**()** # or shallow = copy.copy(mylist)

deep **=** copy**.**deepcopy**(**mylist**)**