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Array Slicing

Array slicing involves taking a subset from an array and **allocating a new array with those elements**.

Some languages, like Javascript or Python, make this really easy:

```
myArray.slice(startIndex, endIndex);
```

JavaScript

```
my_list[start_index:end_index]
```

Python 2.7

In C, we'd need to allocate a new array and copy over the elements by hand. We'd probably wrap this in a helper function, like this:

```
int * sliceIntArray(int *array, size_t startIndex, size_t endIndex)
{
    // Slice takes startIndex (inclusive) to endIndex (exclusive)
    assert(endIndex >= startIndex);
    size_t newArrayLength = endIndex - startIndex;
    int *slice = malloc(newArrayLength * sizeof(int));
    assert(slice);
    if (newArrayLength > 0) {
        memcpy(slice, array + startIndex, newArrayLength * sizeof(int));
    }
    return slice;
}
```

C

Slicing takes $O(n)$ time and $O(n)$ space, where n is the number of elements in the *resulting* array.

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