

IntList to Array

[Here is a video walkthrough of the solutions.](#)

For this problem we will implement a version of `arraycopy` that copies elements from an `IntList` into an array of `ints`. As a reminder, here is the `arraycopy` method:

```
1 System.arraycopy(Object src, int sourcePos, Object dest, int destPos, int len)
```

`System.arraycopy` copies `len` elements from array `src` (starting at index `source`) to array `destArr` (starting from index `dest`).

To simplify things, let's restrict ourselves to using only `int[]`, and assume that `srcList` and `destArr` are not null. Additionally, assume that `sourcePos`, `destPos`, and `len` will not cause an `IndexOutOfBoundsException` to be thrown.

For example, let `IntList L` be (1 -> 2 -> 3 -> 4 -> 5) and `int[] arr` be an empty array of length 3. Calling `arrayCopyFromIntList(L, 1, arr, 0, 3)` will result in `arr={2, 3, 4}`.

```
1 /** Works just like System.arraycopy, except srcList is of type IntList. */
2 public static void arrayCopyFromIntList(IntList srcList, int sourcePos,
3     int[] destArr, int destPos, int len) {
4
5     for ( _____; _____; _____ ) {
6
7         _____ = _____;
8     }
9
10    for ( _____; _____; _____ ) {
11
12        _____ = _____;
13
14        _____ = _____;
15
16    }
17 }
```

Solution:

```
1 /** Works just like System.arraycopy, except srcList is of type IntList. */
2 public static void arrayCopyFromIntList(IntList srcList, int sourcePos,
3     int[] destArr, int destPos, int len) {
4     for (int i = 0; i < sourcePos; i += 1) {
5         srcList = srcList.tail;
6     }
7
8     for (int i = destPos; i < destPos + len; i += 1) {
9         destArr[i] = srcList.head;
10        srcList = srcList.tail;
```

```
11     }  
12 }
```

Explanation: `arrayCopyFromIntList` should copy over `len` items from our source `IntList` to our destination array, starting at `sourcePos` in the source `IntList` and `destPos` in the destination array.

In the first loop, we move along the `srcList` to get the correct starting position. In the second loop, we copy over `len` items from the `srcList`, starting at `destpos` in the array.