Using ArrayLists

One last quick review of ArrayLists before we go on: let's write some quick code to find the last index of an integer (say, 15) in an ArrayList.

1. What do we need to use ArrayLists at all?
2. How do we make ArrayLists of primitives?
3. How do we loop through an ArrayList?
4. Is there a built-in method we could use?

Using arrays with reference types

From last time, use arrays if you...

1. ...know exactly how many things you have
2. ...are using primitives
3. ...are concerned with performance

But what if we *want* to use an array with reference type variables?

Code Example

Let's compare an array of Integers with an array of ints:

```
public static void main(String[] args) {
    int[] ints1 = new int[5];
    System.out.println(ints1[0]);

    Integer[] ints2 = new Integer[5];
    System.out.println(ints2[0]);
}
```

Will there be a difference in output? (`IntegerArray.java`)

Memory diagrams for arrays of objects

There's a difference between what we were seeing for arrays of `ints` and what we have for arrays of `Integers` now - recall the difference between `null` and `void`!

Since arrays don't auto-contract when you remove elements, you'll have to be careful when looping through arrays of objects. (`IntegerArray2.java`)

If we have time...

Introducing: Object-Oriented Programming.