Opening Discussion

- Do you have any questions about the quiz?
- Minute essay comments:
  - Examples of Array/Lists: Sudoku, matrices, Excel files.
  - How often is the book updated?
- Quick review of last class.
There are lots of methods on collections. The API can help us see all of them.

Part of collections:
- drop, init, last, slice, splitAt, take, takeRight

Boolean tests:
- contains, endsWith, isEmpty, nonEmpty, startsWith

Searching:
- indexOf, lastIndexOf

Other:
- mkString, reverse, zip, zipWithIndex
If the elements in a list support addition or multiplication, you can use the sum and product methods.

If they are ordered you can do min and max.

Having sum and length makes averages really easy.

With min you can even drop a grade easily.
Higher Order Methods

- The most powerful methods are ones you can pass functions into.
  - exists, forall – Boolean checks like for math.
  - filter, partition – separate collection based on Boolean.
  - map – apply function to all the elements.
  - reduceLeft – apply function moving through collection
  - foldLeft – apply function moving through, but allows initial value so it can return a different type. This is curried.
Let's Put These Into Action

- I want to spend the rest of the class time playing with these methods and seeing what we can do with them.
- A String is a collection so you can do these things with a String as well.
Minute Essay

- Assume you have an array called numbers. Write code to take the average of all the numbers less than 100 in the array.