Collection Methods

2-16-2011

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.

Standard Methods

- 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

Other Methods

- 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.