Collection Methods

10-3-2011

Opening Discussion

- Do you have any questions about the quiz?
- Minute essay comments:
  - How long do you have to correct assignments?
  - There will be a study guide. The test covers everything we have done.
  - I did write the spreadsheet and the quiz average is dropping the lowest.
  - Looking back and moving forward.
  - 2-D arrays = Array[Array[???]]
  - Use zip to work on two things at once.

More

- Everything we are doing works on both Lists and Arrays.
- Examples at the end of class today.

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.
- String also has a method called split.
- BLS data
  - ftp://ftp.bls.gov/pub/time.series/la/

Minute Essay

- What questions do you have?
- Getting your head around the higher-order methods can take time. Practice is your best friend.