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## Administrivia

- (None.)

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## Collection Methods — Overview

- Just the basics of using arrays and lists allows us to do some things we couldn't do nicely before.
- But both types of sequences also provide a wide range of interesting(?) methods. ("Methods"? Briefly, special type of functions, described a bit in chapter 3.) The textbook lists some of them and is a good starting point. For full details, however ...

## The Scala API

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- In context, API means “Application Programming Interface”. Meant as complete documentation of the language’s library functions, methods, etc. Many languages and libraries have one of these.
- The standard presentation of Scala’s API is descended from Java and is nicely organized for online browsing (link from course “Useful links” page). Worthwhile spending a bit of time learning how to find things in it (though not everything will make sense yet).

## The Scala API — Tips/Gotchas

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- Notice — some entries in left frame show two icons (“o” and “c”). “c” shows things you can do with objects of whatever type it is (e.g., `Ints`). “o” shows things you can do with `Int` itself — e.g., get minimum and maximum value.
- Some things are documented in unobvious places (e.g., `ArrayOps`, `StringOps`, `RichInt`).

### Collection Methods — Basics

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- Some methods to extract parts of a collection:  
`drop, init, last, slice, splitAt, take, takeRight`
- Some methods to test something about a collection:  
`contains, endsWith, isEmpty, nonEmpty, startsWith  
indexOf, lastIndexOf`
- Some other useful methods and variables:  
`foreach, mkString, reverse, zip, zipWithIndex, length,  
size`

### Collection Methods — Basics Continued

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- `sum` and `product` work on objects that support addition and multiplication.
- `min` and `max` work on objects that can be put in order.
- Strings have `split`.

### Collection Methods — Higher-Order Methods

- `exists`, `forall`
- `filter`, `partition`
- `map`
- `reduceLeft`, `foldLeft`

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### Examples

- Right away we have alternatives to most of the functions in our “demo” program. (But that’s okay — they were good practice.)
- A somewhat more interesting example: Find out whether a line of text is a palindrome. Simplest version is, well, simple with `reverse`. If we want to implement the usual definition, though, that looks only at letters and ignores case?

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## Minute Essay

- Can you think of other interesting things you could do with some of these methods?

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