Sorting

Programming Language ISL+

Purpose To use generative recursion to write a sorting algorithm.

Setup Remember that when a function doesn't follow structural recursion (i.e. the template) special care must be taken to ensure the function terminates.

Exercises

> **Exercise 1** Design a function called `mergesort` that given a list of numbers splits the list in half, recursively sorts each list, and then takes advantage of the fact they are both sorted to easily merge them in a helper function. Think carefully about the base cases, and how to split the list in two.
>
> **Hint:** When it comes to to taking or dropping the first `n` elements of a list, natural number recursion may come in handy.