

## Computer Science 134C

*Introduction to Computer Science, in Python*

Lecture #14 (Generators, the last lecture)

*October 12, 2018*

### Keywords

generators, Kaprekar operator,  
permutations, subsets

We finish with a number of interesting generators.

1. Questions?
2. Recall: Generating the digits of an integer.
3. Aside: several ways to regenerate the integer from its digits.
4. The Kaprekar operation: take a (4-digit) integer,  $n$  with digits not all the same. Call `large` the number constructed from sorting the digits of  $n$  in order (from right to left). Call `small` the number constructed from the digits of  $n$  sorted in reverse order. The Kaprekar operation on  $n$  is the difference between `large` and `small`.
5. A generator for constructing all permutations of a list.
6. A generator for constructing all subsets of a list.
7. Floyd's (difficult) problem.

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