Notes

Chapter 1: Arrays and Strings

- Array questions and String questions are often interchangeable.

- Hash Table: A data structure that maps keys to values for highly efficient look up.

- ArrayList: an array like data structure that offers dynamic resizing.

  - Typical implementation is that when the array is full, the array doubles in size. Each doubling takes $O(n)$ time, but happens so rarely that its amortized insertion time is still $O(1)$

- Amortized run time: "average case"

- StringBuilder creates a resizeable array of all the strings, copying them back to a string only when necessary.