General Assembly

STUDY GUIDE

DISTRIBUTION SORTING ALGORITHMS

Key Terms

» **Bucket Sort:** Sorts elements into buckets based on their value and then uses another method to sort the elements within those bins. Can be used for integers or strings.

» **Radix Sort:** Operates in basically the same way as bucket sort but is only used for integers.

Cheat Sheet

Rule of Thumb

If there's no one obvious way to create your buckets, use the square root of the number of items you're sorting. So, if you have an array of 100 elements, 10 buckets would be appropriate.

Bucket Sort

» Average time complexity: **O(N+K)** - K represents the number of buckets

» Worst case time complexity: **O^2**

» Space efficiency: **O(N)**

Radix Sort

» Worst case time complexity: **O(KN)**

» Starts at either the beginning of a number (the most significant digit approach) or the end of a number (the least significant digit approach).

» Works through each digit until it's reached the end and the values are sorted.