Note 2.

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Topic:

2: Two Pointers or Iterators

Two pointers is a pattern where two iterate through the data structure in tandem (song song) until one or both of the pointers hit a certain condition. Two pointers is often useful when searching pairs in a ***sorted array*** or ***linked list****;*

for example, when you have to compare each element of an array to its other elements.

Two pointers are needed because with just pointer, you would have to continually loop back through the array to find the answer. This back and forth with a single iterator is inefficient for time and space complexity – a concept referred to as asymptotic analysis. While the brute force or naïve solution with 1 pointer would work, it will produce something along the lines of O(n^2). In many cases, 2 pointers can help you find a solution with better space or runtime complexity.

Diagram

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A picture containing text, clock

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Diagram

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