

Decoding Patterns in LeetCode Problems



Identify :
Two Pointers
Algorithm



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Two pointers is a popular technique which is 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.

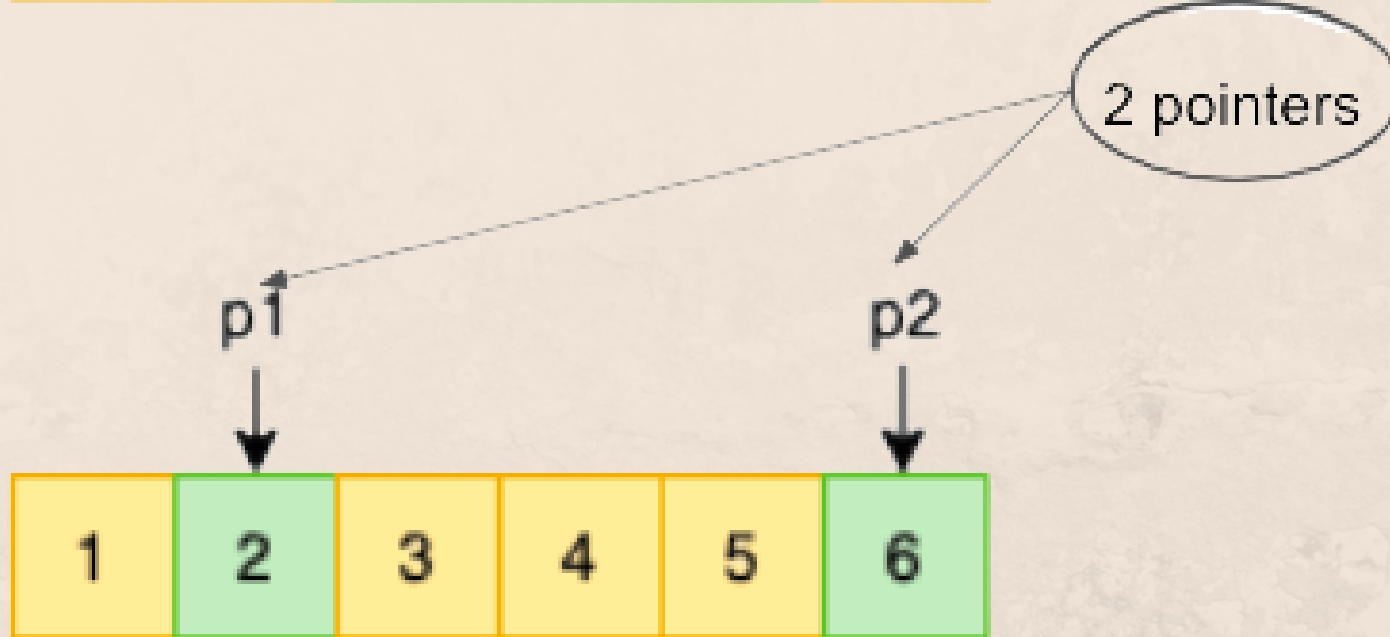
In many cases, two pointers can help you find a solution with better space or runtime complexity.



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As the name suggests, in this technique you have two pointers that are usually just variables pointing to the indices of the array.

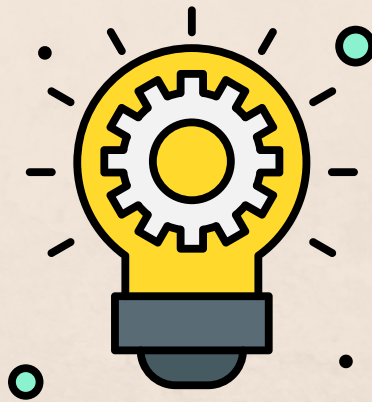
The pointers are manipulated according to some conditions (depends on the problem) until they meet.



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Following are some ways you can identify that the given problem might require two Pointers:

- **You will be dealing with sorted arrays (or Linked Lists) and need to find a set of elements that fulfill certain constraints**
- **The set of elements in the array is a pair, a triplet, or even a subarray**



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Sample Solution for Pair Sum Problem using Two Pointers

```
bool pairSumEqualX(int arr[],int sum)
{
    int left = 0;           //first pointers
    int right = arr.size() - 1; //second
    while ( left < right ) {
        if ( arr[left] + arr[right] == sum )
            return 1;
        else if ( arr[left] + arr[right] > sum )
            right--;
        else
            left++;
    }
    return 0;
}
```



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LeetCode Problems Links



Apply Two Pointers Pattern here :

(Easy)

- [Merge Two Sorted Lists](#)
- [Two Sum](#)

(Medium)

- [3 Sum Closest](#)
- [Find the Duplicate Number](#)
- [Container With Most Water](#)
- [Subarrays with Product Less than K](#)

(Hard)

- [Trapping Rain Water](#)



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Type of Problem



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