Two Pointers, Sliding Window & Binary Search

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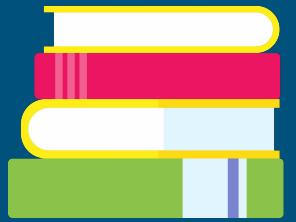
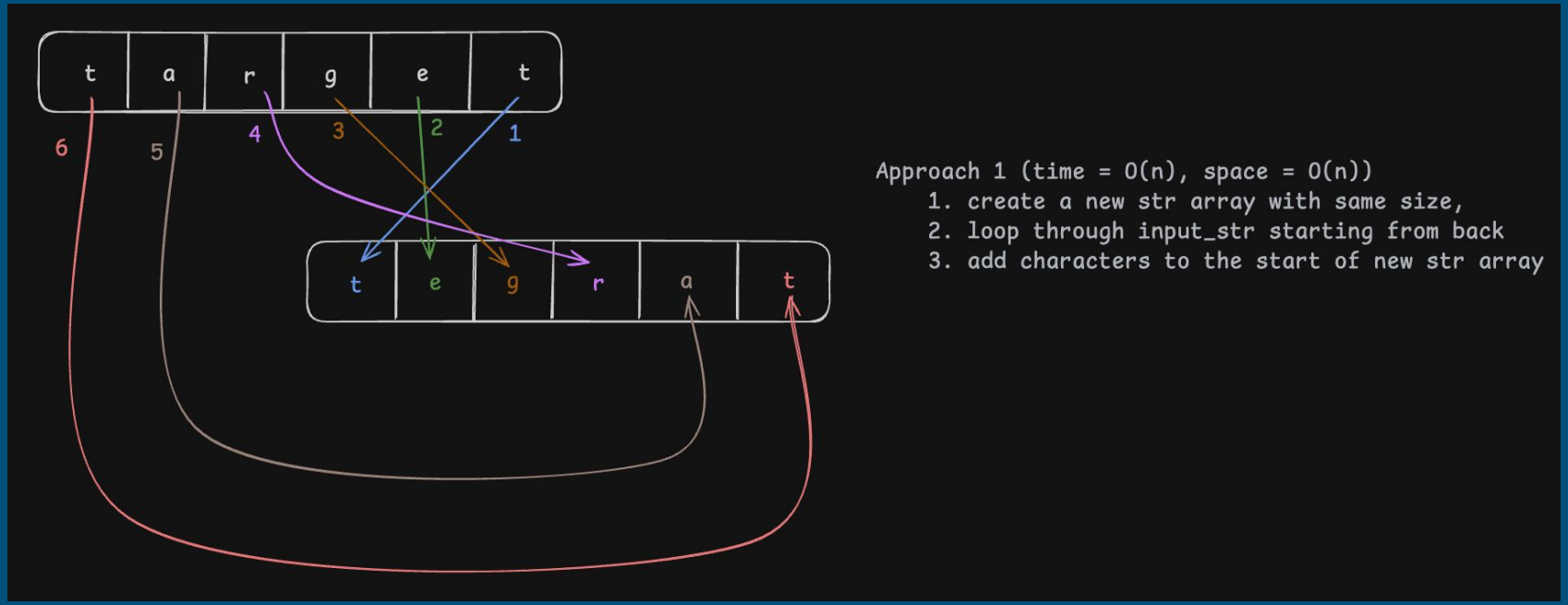
Two Pointers

Two-Pointers Technique is a strategy where you use two indices (pointers) that traverse a data structure, such as an array, list, or string.

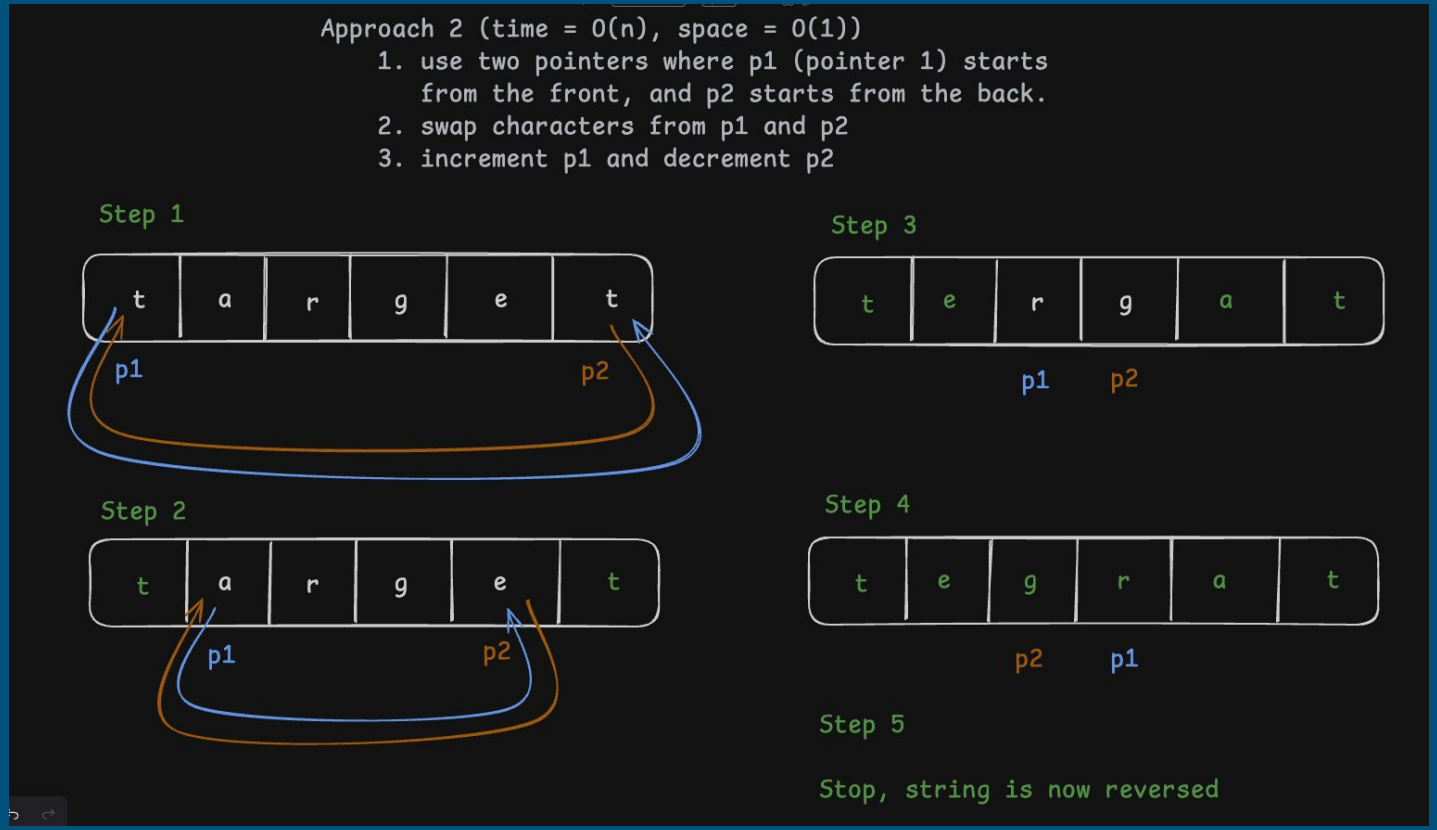


Two Pointer Example - Reverse String

https://leetcode.com/problems/reverse-string

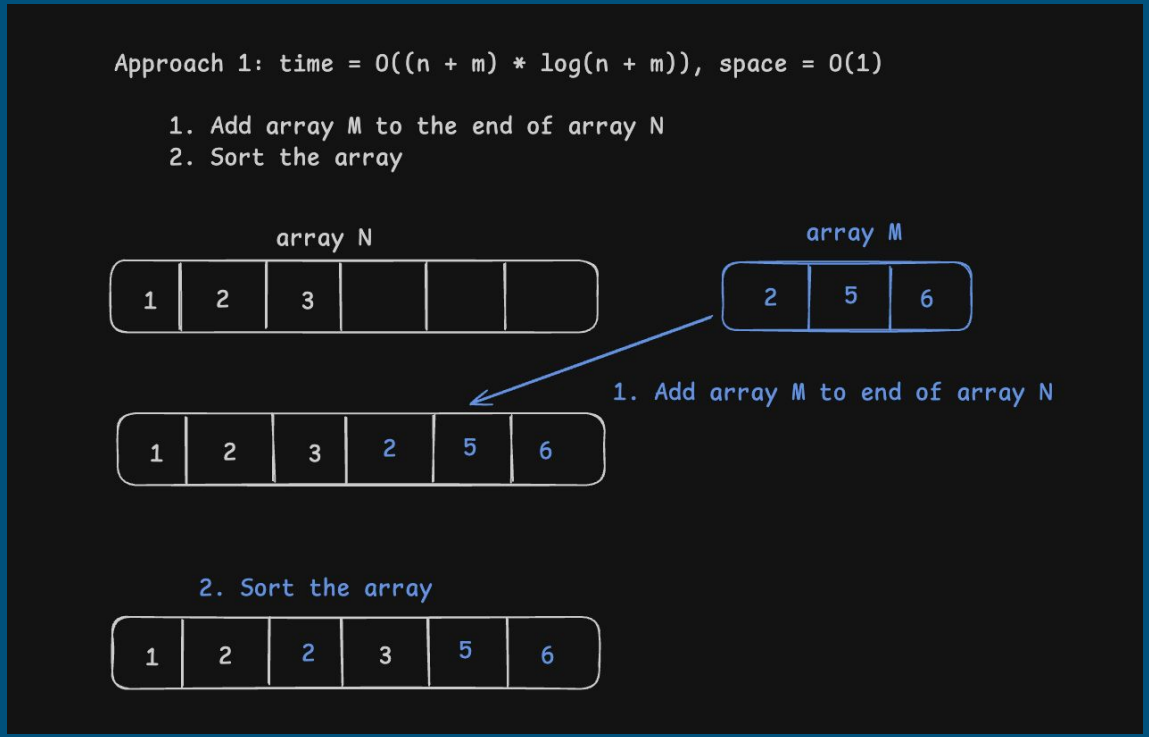


Two Pointer Example - Reverse String



Two Pointer Example - Merge Sorted Array

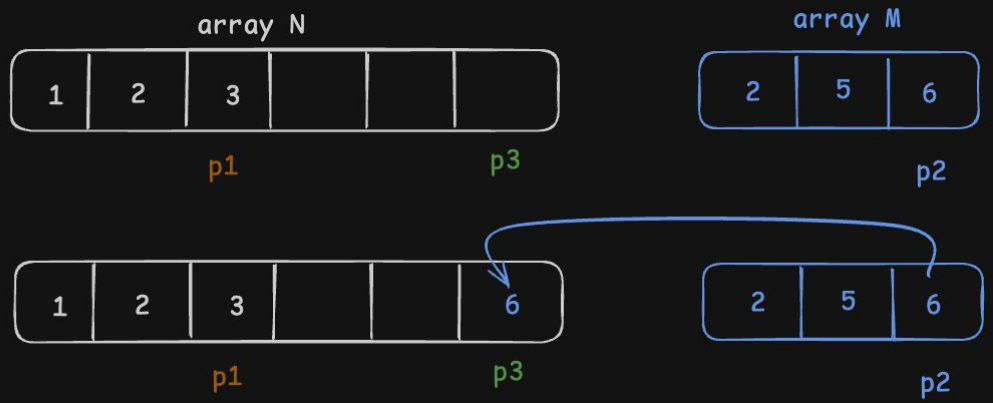
https://leetcode.com/problems/merge-sorted-array/



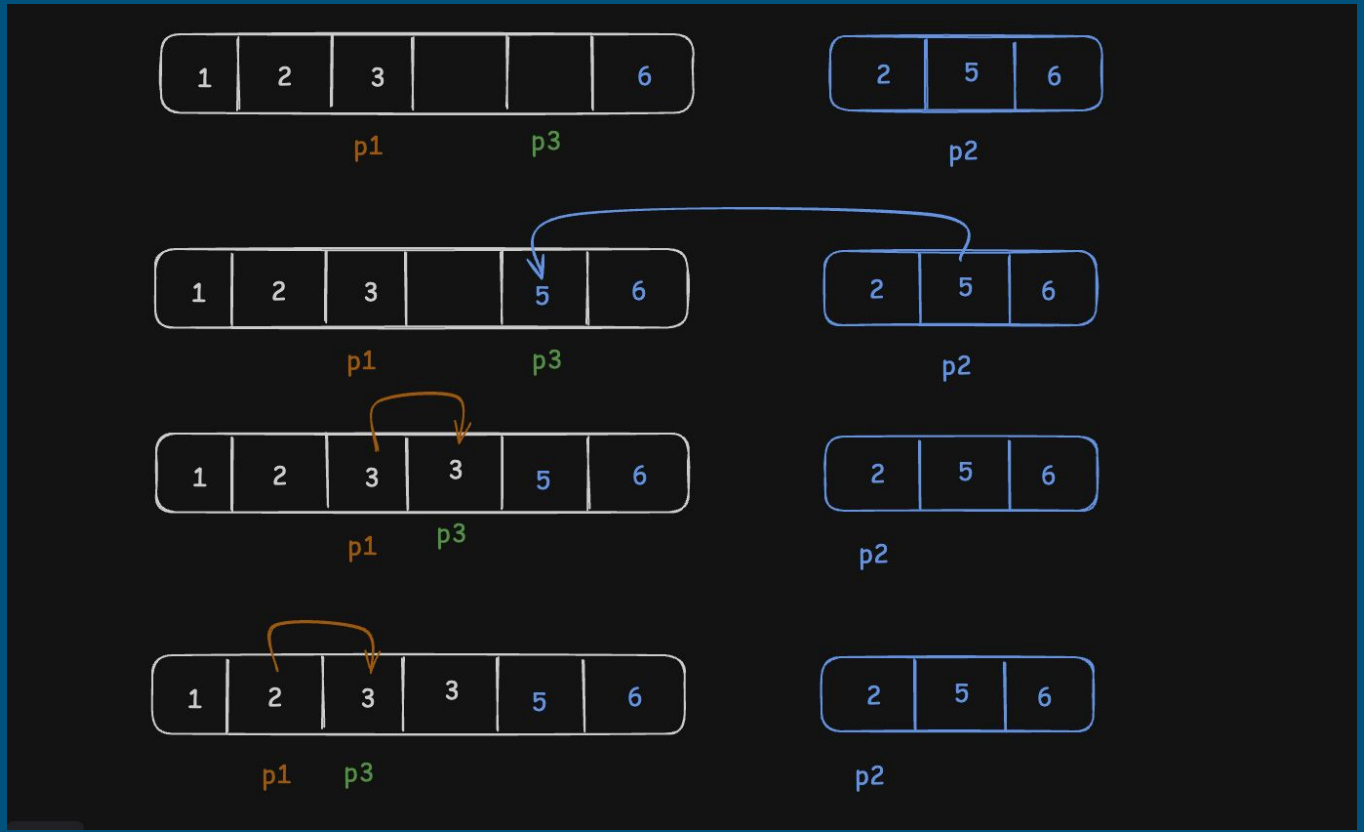
Two Pointer Example - Merge Sorted Array

Approach 2: time = O(n + m), space = O(1)

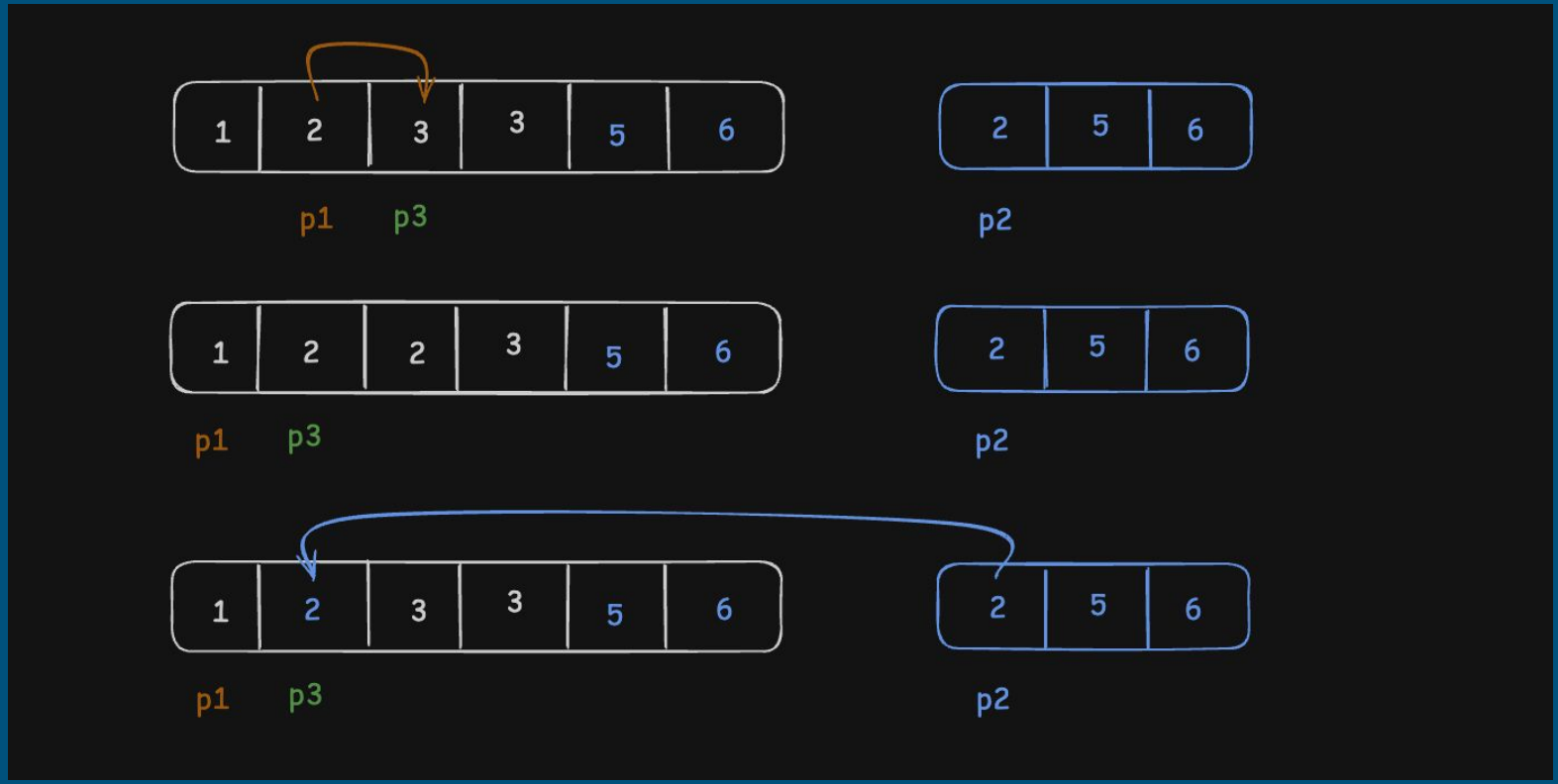
1. Use 3 pointers
   - p1 starts from end of array N
   - p2 starts from end of array M
   - p3 starts from end of array N + M
2. Get the max value among p1 and p2, set it to p3
   - Note: if p1 or p2 is less than 0, then automatically get the other pointer
3. Decrement the pointer that was the max in step 2
4. Decrement p3
5. Repeat step 2 - 4 until p1 and p2 is less than 0



Two Pointer Example - Merge Sorted Array



Two Pointer Example - Merge Sorted Array



Thank You