Two Pointer

Linked List

Linked List Cycle I `龟兔赛跑`
Linked List Cycle II
Remove Nth Node From End of List
Partition List
Rotate List
Palindrome Linked List

Meeting Pointers (2-Sum, water): 排除法

2Sum (unsorted) `Hash`
2Sum (sorted) `meeting`
3Sum (sorted) `meeting, 2Sum, 去重`
4Sum (sorted) `meeting, 3Sum`
3Sum closest to target `meeting`
3Sum smaller than target count
3Sum With Multiplicity `去重`
Trapping Rain Water `bfs` `pop shorter bin`
Container With Most Water `move shorter bin`
Find the Celebrity `排除法` `double check`
Search a 2D Matrix II `topright start`
Reverse String `easy`
Reverse Vowels of a String `easy`

Tail （洗牌问题: ABABA -> AAABB）

Move Zeros to End `AB`
Remove Element `AB`
Sort Colors `ABC`
Sort Letters by Case `AB`
Sort Array By Parity I `AB`
Sort Array By Parity II (interleaved)
Remove Duplicates from Sorted Array I (allow once) `fastforward B to last duplicate`

Remove Duplicates from Sorted Array II (allow twice) `fastforward B to last duplicate`

Sliding Window (path in matrix of windows)

longest window: 越短越正确，找最长

Longest Substring with At Most K Distinct Characters `len(counter) <= k`
Longest Substring with At Most Two Distinct Characters `len(counter) <= 2`
Fruit Into Baskets `len(counter) <= 2`
Longest Substring Without Repeating Characters `no repeat, use set`
Count Subarray Product $< K$ `draw the matrix`
Max Consecutive Ones I `dp`
Max Consecutive Ones II (flip once) `zeros <= 1`
Longest Mountain in Array `difference: +, 0, -` `longest ++--`
Longest Repeating Character Replacement `w - count(major)<=k`

shortest window: 越长越正确，找最短

Minimum Size Subarray Sum $\geq k$ `window_sum`
Minimum Window Substring covering T `Counter(T)`

Two Array

Swap Adjacent in LR String `L/R: people facing left/right`
Intersection of Two Arrays I
Intersection of Two Arrays II
Implement strStr()
Merge Sorted Array
The smallest difference

to do

Substring with Concatenation of All Words
Maximum Size Subarray Sum Equals k `hash`
Find the Duplicate Number
Partition Labels
Smallest Range
K-diff Pairs in an Array
Candy Crush

Permutation in String

Backspace String Compare

Longest Word in Dictionary through Deleting

Sort Transformed Array

Push Dominoes

Unique Letter String

Boats to Save People

Most Profit Assigning Work

Binary Subarrays With Sum

Long Pressed Name

```
【排除法搜索】
【搜索一个元素: binary search (最左, 最右)】
【搜索两个元素: meeting 2pointer】
【搜索一个区间: sliding window (最长, 最短)】

越左越正确, 找"最右"元素
算法: binary search rightmost, double check

 + + + + - - -
 |       +       |
         |   - |
         | -|
      |+|

越右越正确, 找"最左"元素
算法: binary search leftmost, double check

- - - + + + +
|       +       |
| -     |
    |- |
       |+|


越短越正确, 找"最长"窗口 (at most k distinct values, no repeat)
算法: 从正确, 走到正确的边缘

0 +.+.+.-
   0   +.-
      0 +.+.-
```

```
        O +.+.-
          O +.-
            O.+.
              O
```

```python
while True:
    while right+1<L: if OK_Add(right+1): right += 1
    res = max(res, right-left+1)
    if right == L-1: return res
    left += 1  # or, move left until right can move
```

越长越正确，找"最短"窗口 (covering T, sum>k)
算法：从错误，走进正确的边缘

```
O -.-.-.+.
  O     +.
    O  -.+.
      O  +.
        O -.-.
          O
            O
```

```python
while True:
    while right+1<L: right += 1; if OK: break
    if not OK: return res
    while True: left += 1; if not OK: break
    res = min(res, right-left+2)
    if right == L-1: return res
```

找"最佳"配对 (2sum, 3sum (closest/smaller), most water)
算法：Meeting 线路

```
O        L.R.R.
  O      L.
    O   L.
      O L.
        O
          O
            O
```