REARRANGE ARRAY ELEMENTS BY SIGN

☆ In this problem, we are given an array with both positive / negative elements and our task is to rearrange them such that the sign alternates.

Brute force solution is to divide main array into two half arrays for positives and negatives. Then we just put them back one by one time complexity is O(N) for array separation and O(N/2) to put them back, along with space complexity is O(N) for two half arrays.

Optimal solution is to run two pointers for a possible positive position and one for negative position. After this, we iterate through the array, if we stumble across a positive element we put it on pointer for positives & increment it. Similar is done for negatives but this only works when both positives and negatives are equal in number. Its possible for positives to not be equal to

negatives, in which we fall back to the brute force soln.

Pseudocode :

```
rearrangeArrayBySign(arr, N) {
    posi = 0
    neg = 1
    int temp[N]
    for(int i = 0 → N) {
        if(arr[i] >= 0) {
            temp[posi] = arr[i]
            posi += 2
        } else {
            temp[neg] = arr[i]
            neg += 2
        }
    }
}
```