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Alternate positive and negative numbers

Difficulty: **Easy** Accuracy: **33.86%** Submissions: **194K+** Points: **2**

Given an unsorted array **arr** containing both **positive** and **negative** numbers. Your task is to create an array of alternate positive and negative numbers without changing the relative order of positive and negative numbers.

Note: Array should start with a positive number and 0 (zero) should be considered a positive element.

Examples:

Input: arr[] = [9, 4, -2, -1, 5, 0, -5, -3, 2]
Output: 9 -2 4 -1 5 -5 0 -3 2
Explanation: Positive elements : [9,4,5,0,2]
Negative elements : [-2,-1,-5,-3]
As we need to maintain the relative order of postive elements and negative elements we will pick each element from the positive and negative and will store them. If any of the positive and negative numbersare completed. we will continue with the remaining signed elements.
The output is 9,-2,4,-1,5,-5,0,-3,2.

Input: arr[] = [-5, -2, 5, 2, 4, 7, 1, 8, 0, -8]
Output: 5 -5 2 -2 4 -8 7 1 8 0
Explanation : Positive elements : [5,2,4,7,1,8,0]
Negative elements : [-5,-2,-8]
The output is 5, -5, 2, -2, 4, -8, 7, 1, 8, 0.

Expected Time Complexity: O(n)
Expected Auxiliary Space: O(n)

Constraints:
$1 \leq arr.size() \leq 10^7$
$-10^6 \leq arr[i] \leq 10^7$

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Java (1.8) Average Time: 10m Start Timer

```java
//{ Driver Code Starts
// Initial Template for Java

import java.io.*;
import java.util.*;

public class Main {

    public static void main(String[] args) throws Exception {
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        int tc = Integer.parseInt(br.readLine().trim());
        while (tc-- > 0) {
            String input = br.readLine();
            String[] inputArray = input.split("\\s+");
            ArrayList<Integer> arr = new ArrayList<>();

            for (String s : inputArray) {
                arr.add(Integer.parseInt(s));
            }

            new Solution().rearrange(arr);
            for (int num : arr) {
                System.out.print(num + " ");
            }
            System.out.println();
        }
    }
}

// } Driver Code Ends

// User function Template for Java

class Solution {
    void rearrange(ArrayList<Integer> arr) {
```

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