HW_Merge two sorted arrays

Case 1.

5

arr 1 → | 1 | 3 | 5 | 7 | 9 |

arr 2 → | 2 | 4 | 6 | 8 |

4

Case 2.

arr 1 | 1 | 2 | 4 | 8 |

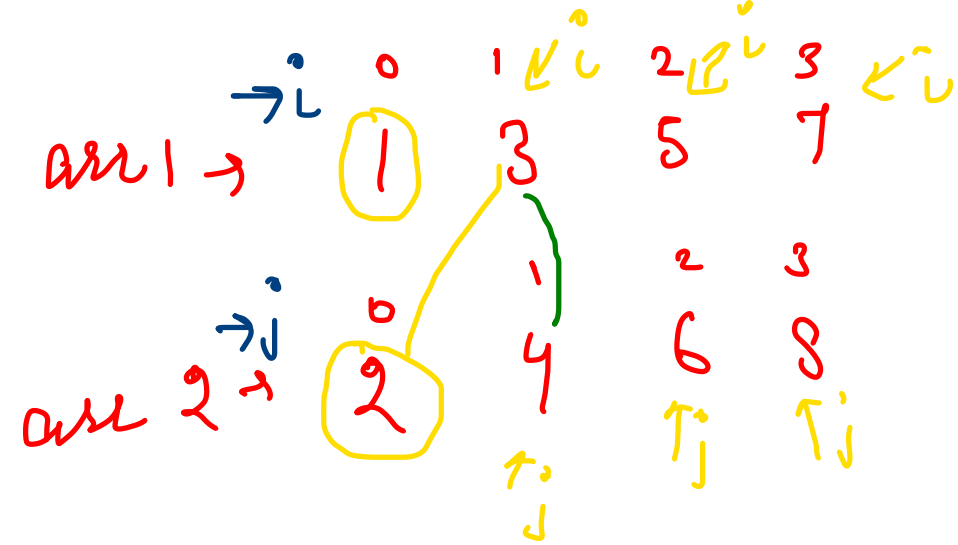
arr 2 → empty

ans = [n+m] → result arr

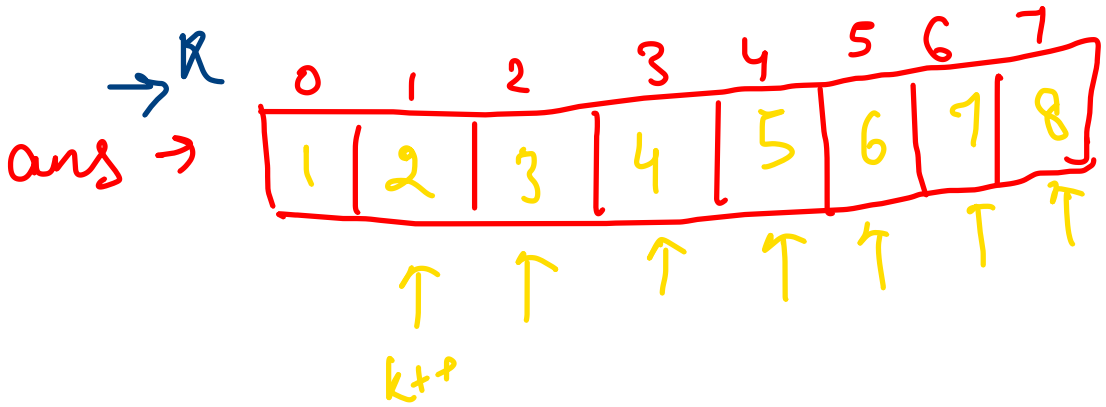
Case 3

arr 1 ⇒ empty

arr 2 → | 1 | 5 | 6 | 8 |




```
if (arr[i] < arr[j])
    ans[k] = arr[i]
```



```java
public static int[] merge(int arr1[], int n, int arr2[], int m){
    int i = 0; // for arr1
    int j = 0; // for arr2
    int k = 0; // for ans array

    // create a ans array
    int ans[] = new int[n+m];

    while(i < n && j < m){
        if(arr1[i] < arr2[j]){
            ans[k] = arr1[i];
            k++;
            i++;
        }
        else{
            ans[k] = arr2[j];
            j++;
            k++;
        }
    }
    while(i < n){
        ans[k] = arr1[i];
        k++;
        i++;
    }
    while(j < m){
        ans[k] = arr2[j];
        j++;
        k++;
    }
    return ans;
}
```

n

n

→ Arrays
→ Arraylist
→ Linked list

TC → O(n) → n+m

SC → O(n) → n+m