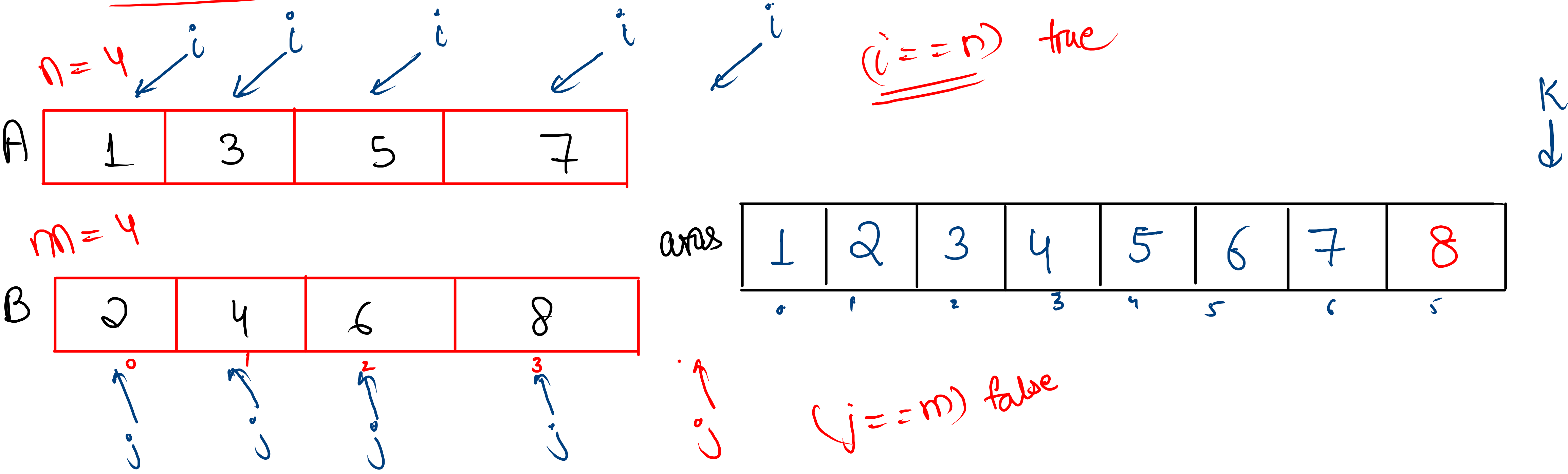
Ques Merge 2 sorted arrays



A	1	3	5	7
	0	1	2	3
B	2	4	6	8

ans	1	2	3	4	5	6	7	8
	0	1	2	3	4	5	6	5

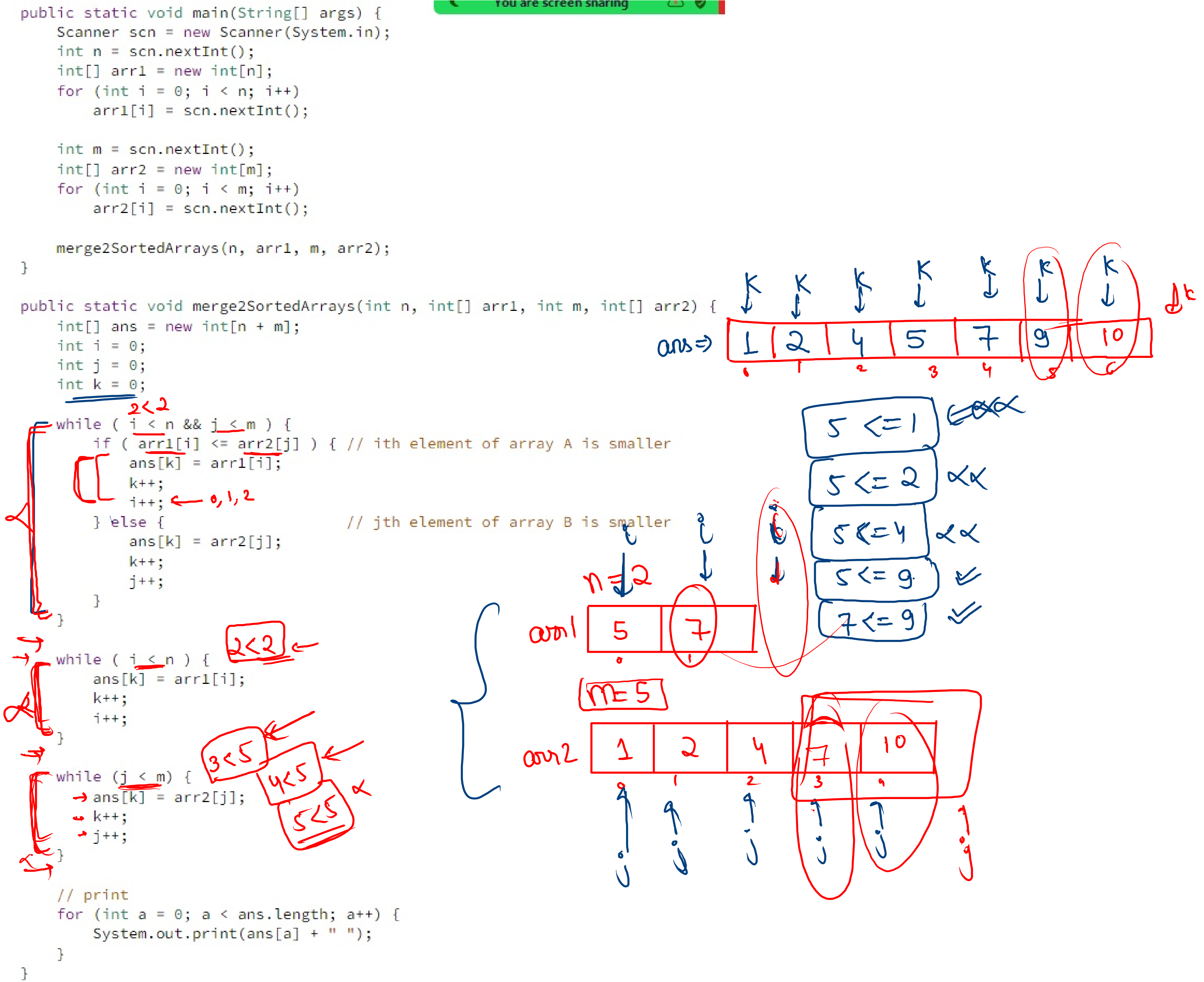
(i == n) true

(j == m) false

while(i < n && j < m)

((4 < 4) && (3 < 4))

Code



You are screen sharing

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();
    int[] arr1 = new int[n];
    for (int i = 0; i < n; i++)
        arr1[i] = scn.nextInt();

    int m = scn.nextInt();
    int[] arr2 = new int[m];
    for (int i = 0; i < m; i++)
        arr2[i] = scn.nextInt();

    merge2SortedArrays(n, arr1, m, arr2);
}

public static void merge2SortedArrays(int n, int[] arr1, int m, int[] arr2) {
    int[] ans = new int[n + m];
    int i = 0;
    int j = 0;
    int k = 0;

    while ( i < n && j < m ) {
        if ( arr1[i] <= arr2[j] ) { // ith element of array A is smaller
            ans[k] = arr1[i];
            k++;
            i++;
        } else {                    // jth element of array B is smaller
            ans[k] = arr2[j];
            k++;
            j++;
        }
    }

    while ( i < n ) {
        ans[k] = arr1[i];
        k++;
        i++;
    }

    while (j < m) {
        ans[k] = arr2[j];
        k++;
        j++;
    }

    // print
    for (int a = 0; a < ans.length; a++) {
        System.out.print(ans[a] + " ");
    }
}
```

Sort an array in wave form 1

n= 7

10 90 49 2 1 5 23

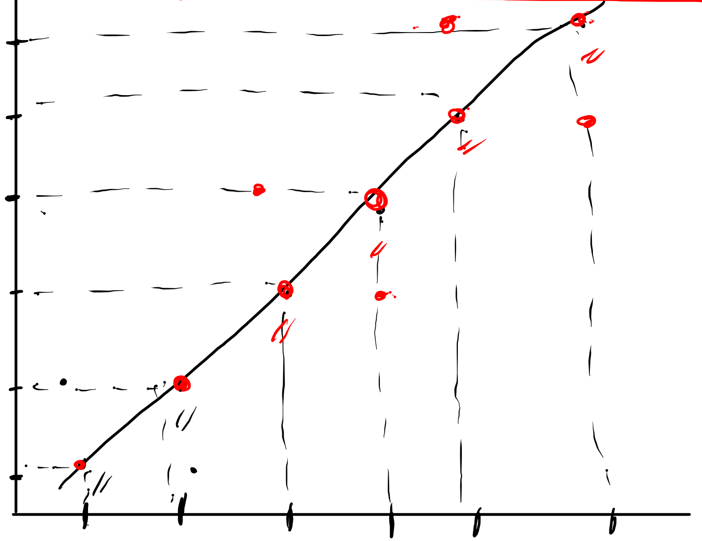
Expectation

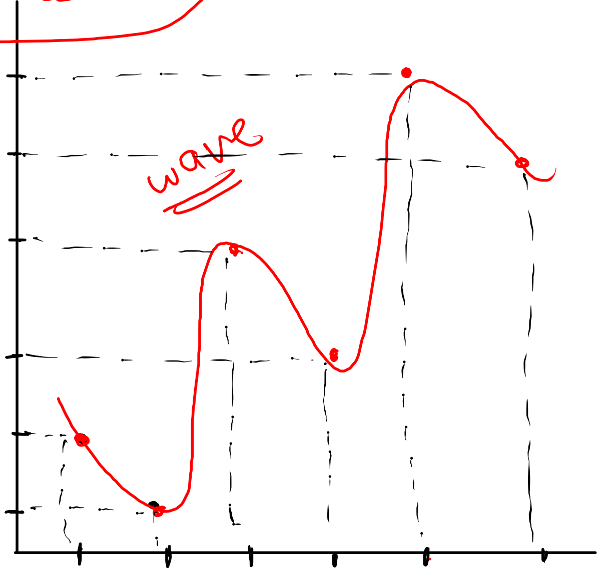
2 >= 1 <= 10 >= 5 <= 49 >= 23 <= 90

0 1 2 3 4 5 6

Sort → 1 2 5 10 23 49 90

wave 2 >= 1 <= 10 >= 5 =< 49 >= 23 <=90



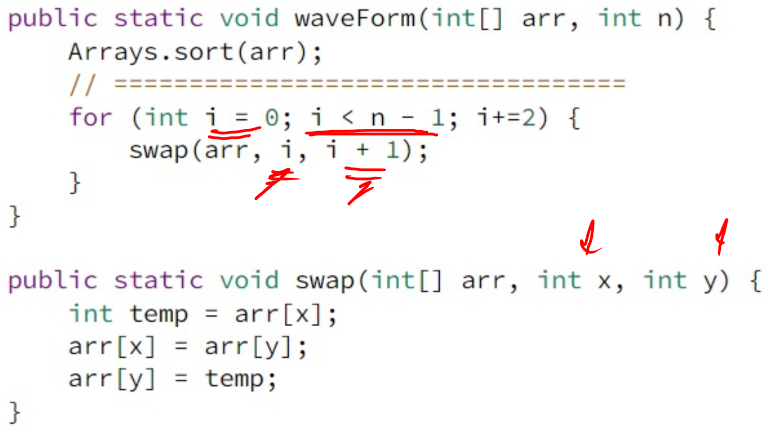


Steps

1) Sort the array

2) Swap each consiqutive element

(i, i+1)

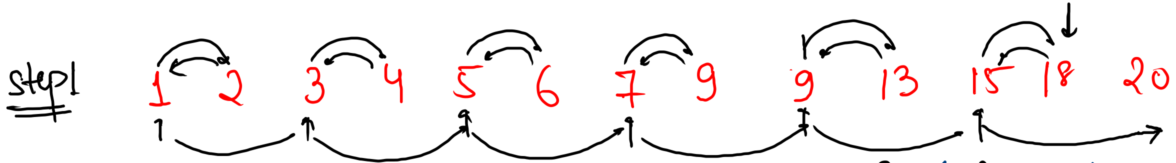


```
public static void waveForm(int[] arr, int n) {
    Arrays.sort(arr);
    // ==================================
    for (int i = 0; i < n - 1; i+=2) {
        swap(arr, i, i + 1);
    }
}

public static void swap(int[] arr, int x, int y) {
    int temp = arr[x];
    arr[x] = arr[y];
    arr[y] = temp;
}
```

i=0	(0,1)
i=2	(2,3)
i=4	(4,5)
i=6	(6,7)
i=8	(8,9)
i=10	(10,11)
i= ← break	

2	1	9	6	15	7	20	3	5	13	4	18	9
0	1	2	3	4	5	6	7	8	9	10	11	12



step2 2>= 1<= 4>= 3 <=6>= 5<= 9>= 7<=13>= 9 <=18>= 15<=20