# Bubble Sort

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Basic Idea:

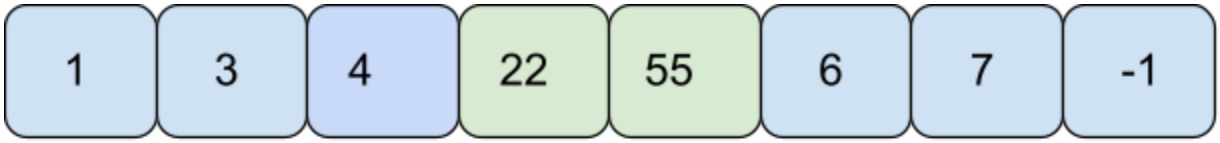
1. Compare adjacent elements and sort them by swapping
2. At end of pass 0 : largest element recheas at end of the array
3. At end of pass 1 : second largest element reaches its position
4. Repeat n-1 times

**pass 0:**


1<22

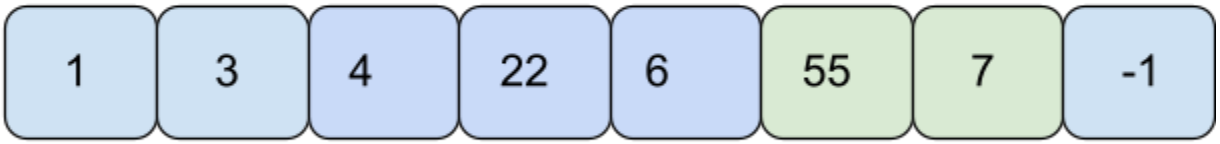

22>3


22>4




22<55


55>6

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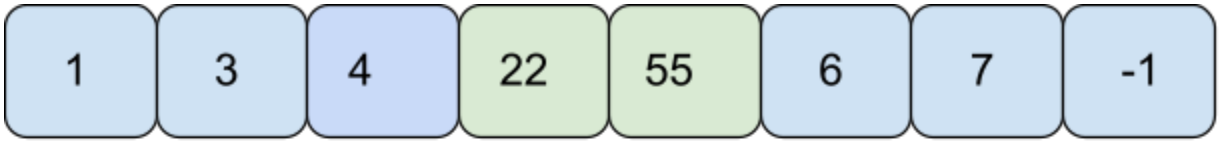
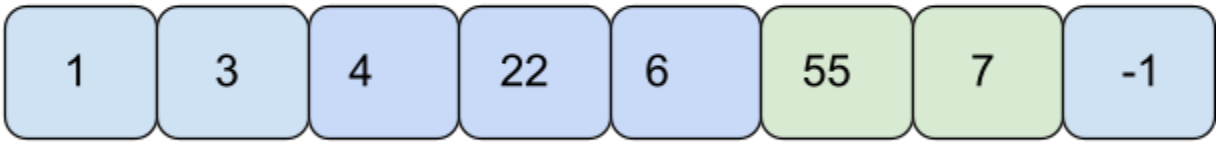



22<55


55>6

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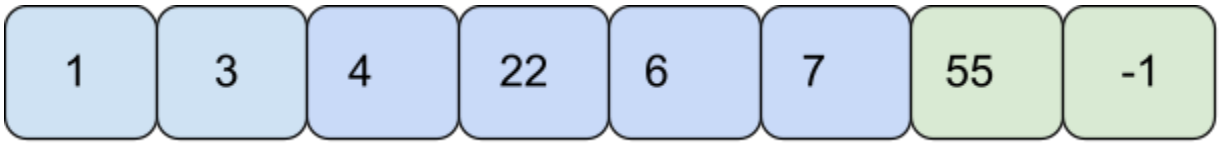
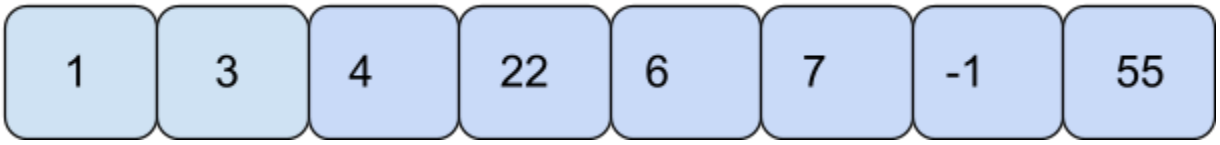



55>-1



End of pass 0:  largest element -> at n-1 index

Similarly

End of pass 1: second largest element -> at index n-2
.
.
.
End of pass n-2: smallest element -> at index 0

TOTAL N-1 PASSES REQUIRED

```
public static void bubbleSort(int[] a){
        for (int i = 0; i < a.length-1; i++) {
            for (int j = 0; j < a.length-1-i; j++) {
                if (a[j]>a[j+1]) {
                    int temp = a[j];
                    a[j] = a[j+1];
                    a[j+1] = temp;
                }
            }
        }
    }
```