[Day 10 (09th Feb'22)- Introduction to Sorting Algorithms](https://learnifyme.ialabs.co.in/course/view.php?id=19#panel-10)

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Java batch 1

**SESSION 1**

**1.Write Algorithm of bubble sort.**

begin BubbleSort(arr)

for all array elements

if arr[i] > arr[i+1]

swap(arr[i], arr[i+1])

end if

end for

return arr

end BubbleSort

1. **Write Algorithm of merge sort .**

Find the middle index of the array.  
Middle = 1 + (last – first)/2  
Divide the array from the middle.

Call merge sort for the first half of the array  
MergeSort(array, first, middle)  
 Call merge sort for the second half of the array.  
MergeSort(array, middle+1, last)  
Merge the two sorted halves into a single sorted array.

1. **Write Algorithm of quick sort .**

QUICKSORT (array A, start, end)

{

 1 **if** (start < end)

 2 {

3 p = partition(A, start, end)

4 QUICKSORT (A, start, p - 1)

5 QUICKSORT (A, p + 1, end)

6 }

}

**Partition algorithm**

PARTITION (array A, start, end)

{

 1 pivot ? A[end]

 2 i ? start-1

 3 **for** j ? start to end -1 {

 4 **do** **if** (A[j] < pivot) {

 5 then i ? i + 1

 6 swap A[i] with A[j]

 7  }}

 8 swap A[i+1] with A[end]

 9 **return** i+1

}