

Name	Worst Case Runtime	Difficulty
BubbleSort	$n^2$	easiest
SelectionSort	$n^2$	easier
MergeSort	$n \cdot \log(n)$	medium

-30	0	5	10	97
-----	---	---	----	----

From  $i = 0$  to  $< \text{array length}$

From  $j = 0$  to  $(\text{array length} - i)$

If the element at  $j$  is greater than  $j+1$

Swap elements at  $j$  and  $j+1$

I = 1
J = 2
indexOfMin = 1

-30	0	5	10	97
-----	---	---	----	----

From i = 0 to < array length

Assume the element at 'i' is the least in the array,  
assign i to 'indexOfMin'

For j from i + 1 to end of array

See if there is an element with *lower* value

If there is, record its index

If the index of the current element and the index  
of the 'lowest' element is not the same, swap em

-30	0	22	97
-----	---	----	----

Results

### Splitter

5

If the incoming array *doesn't* have length 1

Divide the incoming array into two halves

Call the 'splitter' again with each half

Call the 'merger' with each half

### Merger

Create 'results' array

While there are still elements in *both* arrays

If the first element the left half is less than first in right half

'shift' the element from left into a 'result' arr

else

'shift' the element from right into a 'result' arr

Take everything from the array that still has stuff in it and put it in results

mergeSort  
function



