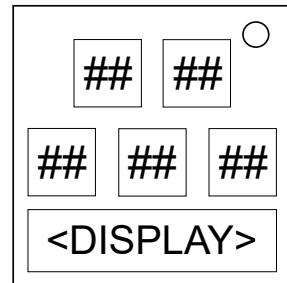


On the Subject of Sorting

What's the point of implementing a sorting algorithm if you are going to do it manually anyway?

The module has a screen at the bottom, among 5 buttons above it, each with a 2-digit label laid out in an offset layout. To defuse this module, refer to the algorithm specified by the bottom panel and follow its instructions.



The defuser must be aware that positions refer to appearances from left to right, ignoring vertical offset. For example, 1st position classifies as bottom left.

Bubble Sort

Section 1	
If...	Then...
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.
4th position's label is greater than 5th position's label?	Swap 4th position and 5th position.
Refer to Section 1 unless sorted.	

Odd-Even Transposition Sort

Section 1	
If...	Then...
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.
4th position's label is greater than 5th position's label?	Swap 4th position and 5th position.
Refer to Section 1 unless sorted.	

Insertion Sort

Section 1		
If...	Then...	Otherwise...
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.	Refer to Section 2
Section 2		
If...	Then...	Otherwise...
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.	Refer to Section 3
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.	
Section 3		
If...	Then...	Otherwise...
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.	Refer to Section 4
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.	
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.	
Section 4		
If...	Then...	
4th position's label is greater than 5th position's label?	Swap 4th position and 5th position.	
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.	
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.	
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.	

Selection Sort

Section 1

Swap lowest label and 1st position.

Swap 2nd lowest label and 2nd position.

Swap 3rd lowest label and 3rd position.

Swap 4th lowest label and 4th position.

Radix Sort

If multiple numbers match a rule, the leftmost number is considered smallest.

Section 1

Swap...

The smallest least-significant* digit with 1st position.

The 2nd smallest least-significant* digit with 2nd position.

The 3rd smallest least-significant* digit with 3rd position.

The 4th smallest least-significant* digit with 4th position.

Section 2

Swap...

The smallest most-significant** digit with 1st position.

The 2nd smallest most-significant** digit with 2nd position.

The 3rd smallest most-significant** digit with 3rd position.

The 4th smallest most-significant** digit with 4th position.

Section 3

Since this Radix Sort isn't meant exclusively for swapping, if the labels still aren't sorted, you are free to do any remaining swaps to sort the labels. We are sorry that Radix Sort was unable to fully help you in this situation. It will strike if 250 swaps have been performed in a row without a solve/strike.

*Least-significant digit is the lowest digit in a label, located at the far right of a number. For example, in the number 16, the "6" is the least significant digit.

**Most-significant digit is the highest digit in a label, located at the far left of a number. For example, in the number 16, the "1" is the most significant digit.

Comb Sort

Section 1	
If...	Then...
1st position's label is greater than 4th position's label?	Swap 1st position and 4th position.
2nd position's label is greater than 5th position's label?	Swap 2nd position and 5th position.
Section 2	
If...	Then...
1st position's label is greater than 3rd position's label?	Swap 1st position and 3rd position.
2nd position's label is greater than 4th position's label?	Swap 2nd position and 4th position.
3rd position's label is greater than 5th position's label?	Swap 3rd position and 5th position.
Section 3	
Refer to Bubble Sort	

Merge Sort

Section 1		
If...	Then...	Otherwise...
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.	Nothing.
4th position's label is greater than 5th position's label?	Swap 4th position and 5th position.	Nothing.
The first digit in the serial number is odd?	Swap 1st position with smallest label from positions 1-3 Swap 2nd position with 2nd smallest label from positions 1-3	Swap 5th position with biggest label from positions 3-5 Swap 5th position with 2nd biggest label from positions 3-5
Refer to Selection Sort		

Heap Sort

Section 1	
If...	Then...
2nd position's label is smaller than 4th position's label?	Swap 2nd position and 4th position.
2nd position's label is smaller than 5th position's label?	Swap 2nd position and 5th position.
1st position's label is smaller than 2nd position's label?	Swap 1st position and 2nd position.
1st position's label is smaller than 3rd position's label?	Swap 1st position and 3rd position.
2nd position's label is smaller than 4th position's label?	Swap 2nd position and 4th position.
2nd position's label is smaller than 5th position's label?	Swap 2nd position and 5th position.
Swap 1st position and 5th position.	
Section 2	
If...	Then...
1st position's label is smaller than 2nd position's label?	Swap 1st position and 2nd position.
1st position's label is smaller than 3rd position's label?	Swap 1st position and 3rd position.
2nd position's label is smaller than 4th position's label?	Swap 2nd position and 4th position.
Swap 1st position and 4th position.	
Section 3	
If...	Then...
1st position's label is smaller than 2nd position's label?	Swap 1st position and 2nd position.
1st position's label is smaller than 3rd position's label?	Swap 1st position and 3rd position.
Swap 1st position and 3rd position.	
Swap 1st position and 2nd position.	

Cycle Sort

Section 1	
If...	Then...
1st position isn't smallest?	Refer to Section 2 with S = 1.
2nd position isn't 2nd smallest?	Refer to Section 2 with S = 2.
3rd position isn't 3rd smallest?	Refer to Section 2 with S = 3.
	Refer to Section 2 with S = 4.
Section 2	
Swap (S)th position with the (amount of labels higher than S) + 1 position.	
Refer to Section 1 unless sorted.	

Five Sort

Section 1	
If...	Then...
Swap the median* with 3rd position.	
1st position's label bigger than median*?	Swap 1st position with the earliest position after the median that's also smaller than it.
2nd position's label bigger than median*?	Swap 2nd position with the earliest position after the median that's also smaller than it.
Section 2	
If...	Then...
1st position's label bigger than 2nd position?	Swap 1st position and 2nd position.
4th position's label bigger than 5th position?	Swap 4th position and 5th position.

*Median is the 3rd biggest number.

Cocktail Shaker Sort

Section 1	
If...	Then...
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.
4th position's label is greater than 5th position's label?	Swap 4th position and 5th position.
Section 2	
If...	Then...
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.
1st position's label is greater than 2nd position's label?	Swap 1st position and 2nd position.
Section 3	
If...	Then...
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.
3rd position's label is greater than 4th position's label?	Swap 3rd position and 4th position.
Section 4	
If...	Then...
2nd position's label is greater than 3rd position's label?	Swap 2nd position and 3rd position.

Quick Sort

You will have to keep track of two numbers.

Section 1

If...	Then...
This is the first time running Section 1?	Pivot = 1 and Current = 5.
Pivot is greater than current?	Refer to Section 2.
Pivot's label is greater than the current's label?*	Swap pivot's label and current's label. The values of pivot and current have also been swapped with each other.**

Refer to Section 3.

Section 2

If...	Then...
Pivot's label is smaller than the current's label?*	Swap pivot's label and current's label. The values of pivot and current have also been swapped with each other.**

Section 3

If...	Then...	Otherwise...
Pivot is smaller than the current?	Subtract 1 from current.	Add 1 to current.
Pivot is the same as current?	Pivot = earliest unsorted position. Current = latest unsorted position.	Nothing.

Refer to Section 1 unless sorted.

*Pivot's label and current's label refer to the label present on its position.

For example, if pivot = 2 and current = 4, then the pivot's label is the 2nd position's label and the current's label is the 4th position's label.

**When any swap occurs, the pivot and current have their values switched.

For example, if pivot = 2 and current = 4, then the next swap will switch those two numbers with each other, therefore pivot = 4 and current = 2.