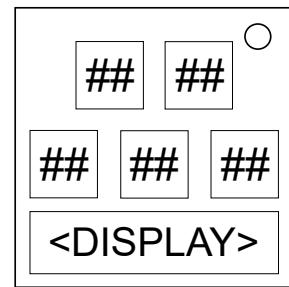


On the Subject of Sorting

What is 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 each labelled with a 2-digit number above it. Refer to the algorithm in 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
Swap them if...
1st position's label is greater than 2nd position's label.
2nd position's label is greater than 3rd position's label.
3rd position's label is greater than 4th position's label.
4th position's label is greater than 5th position's label.
Refer to Section 1.

Cocktail Shaker Sort

Section 1
Swap them if...
Do Section 1 forwards.
1st position's label is greater than 2nd position's label.
2nd position's label is greater than 3rd position's label.
3rd position's label is greater than 4th position's label.
4th position's label is greater than 5th position's label.
Do Section 1 backwards.

Odd-Even Transposition Sort

Section 1
Swap them if...
1st position's label is greater than 2nd position's label.
3rd position's label is greater than 4th position's label.
2nd position's label is greater than 3rd position's label.
4th position's label is greater than 5th position's label.
Refer to Section 1.

Insertion Sort

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

Cycle Sort

Section 1	
If...	Then...
1st position isn't smallest?	Swap 1st position with the position it will be on assuming it's sorted. Refer to Section 1.
2nd position isn't 2nd smallest?	Swap 2nd position with the position it will be on assuming it's sorted. Refer to Section 1.
3rd position isn't 3rd smallest?	Swap 3rd position with the position it will be on assuming it's sorted. Refer to Section 1.
Swap 4th position with the position it will be on assuming it's sorted.	

Heap Sort

Keep track of the amount of times Section 1 has been executed.

Section 1

If...	Then swap them if...
This is the first, or second time doing Section 1?	2nd position's label is smaller than 4th position's label.
This is the first time doing Section 1?	2nd position's label is smaller than 5th position's label.
This is the first, second, third, or fourth time doing Section 1?	1st position's label is smaller than 2nd position's label.
This is the first, second, or third time doing Section 1?	1st position's label is smaller than 3rd position's label.
This is the first, or second time doing Section 1?	2nd position's label is smaller than 4th position's label.
This is the first time doing Section 1?	2nd position's label is smaller than 5th position's label.
Swap 1st position with last unsorted position. Refer to Section 1.	

Merge Sort**Section 1****Swap them if...**

1st position's label is greater than 2nd position's label.	
4th position's label is greater than 5th position's label.	
If the first digit in the serial is odd?	Otherwise...
Swap 1st position with smallest label from positions 1-3.	Swap 5th position with biggest label from positions 3-5.
If 2nd position's label is greater than 3rd position's label.	
If 3rd position's label is greater than 4th position's label.	
Refer to Selection Sort	

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 and 5th position.

Comb Sort

Distance starts at 3. Skip instructions that refer to 6th or higher positions.
Section 1
Swap them if...
1st position's label is greater than (1st + distance) position's label.
2nd position's label is greater than (2nd + distance) position's label.
3rd position's label is greater than (3rd + distance) position's label.
4th position's label is greater than (4th + distance) position's label.
Decrease distance by 1. Refer to Section 1.

Quick Sort

When starting, pivot = 1 and current = 5.	
Section 1	
If...	Then...
Pivot's and current's positions are not sorted against each other?	Swap pivot's and current's position, including their values.
Both are the same value? Otherwise current is 1 closer to pivot.	Pivot = earliest unsorted position. Current = latest unsorted position.
Refer to Section 1.	

Radix Sort

If multiple numbers match a rule, positionally leftmost numbers are smaller.

Section 1

Swap...

The smallest rightmost digit with 1st position.

The 2nd smallest rightmost digit with 2nd position.

The 3rd smallest rightmost digit with 3rd position.

The 4th smallest rightmost digit with 4th position.

Section 2

Swap...

The smallest leftmost digit with 1st position.

The 2nd smallest leftmost digit with 2nd position.

The 3rd smallest leftmost digit with 3rd position.

The 4th smallest leftmost 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.

Five Sort

Swap the 3rd largest number with 3rd position.

Section 1

If...	Then...
1st position's label bigger than 3rd largest number?	Swap 1st position with the earliest after 3rd position that is smaller than both.
2nd position's label bigger than 3rd largest number?	Swap 2nd position with the earliest after 3rd position that is smaller than both.

Swap them if...

1st position's label bigger than 2nd position.

4th position's label bigger than 5th position.