



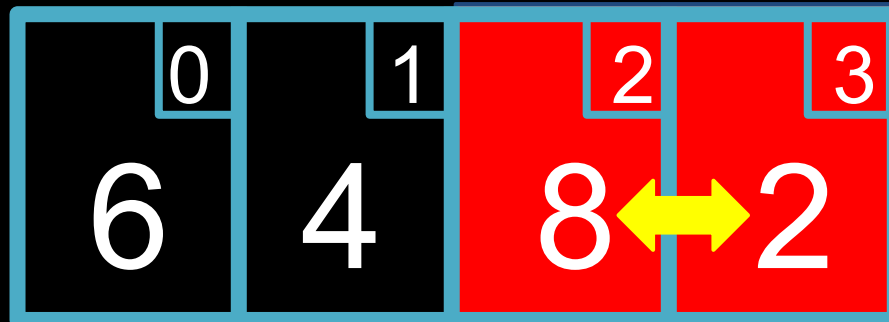
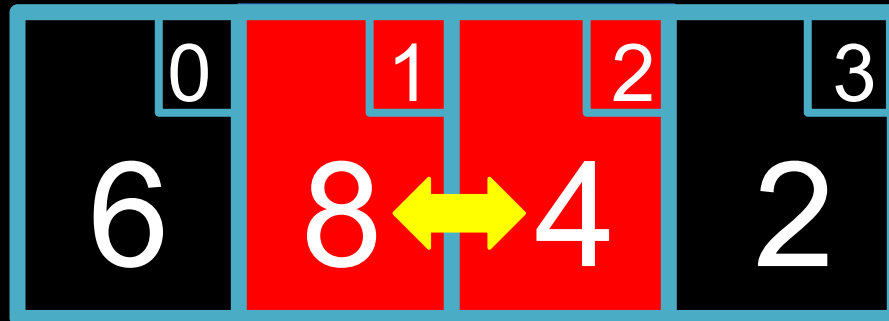
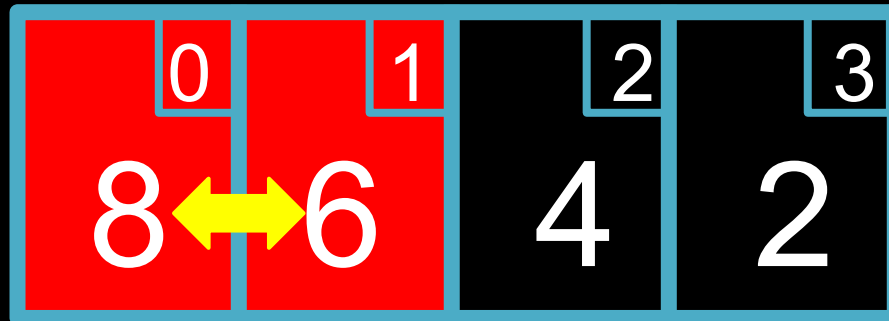
Bubble Sort

Algorithm

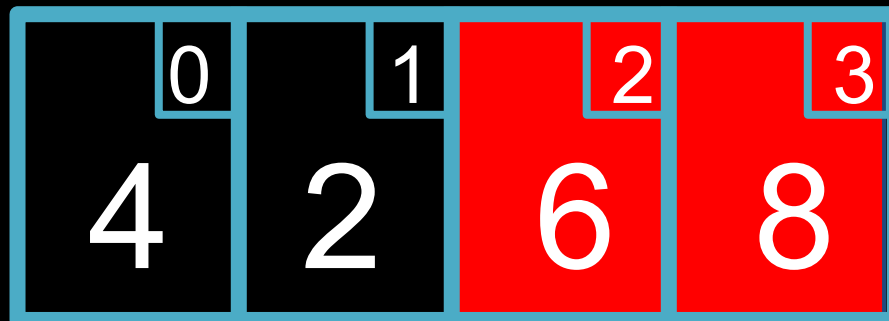
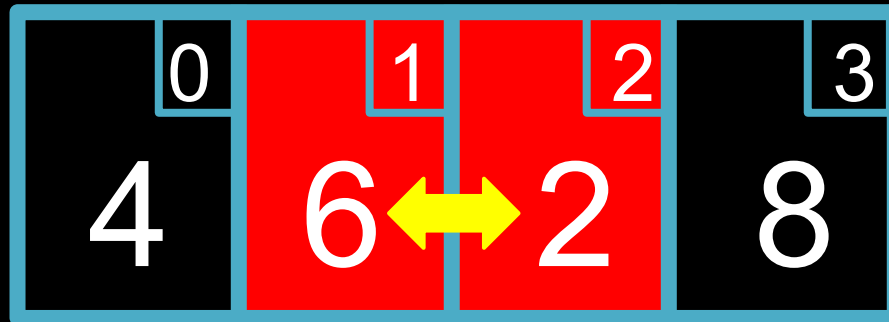
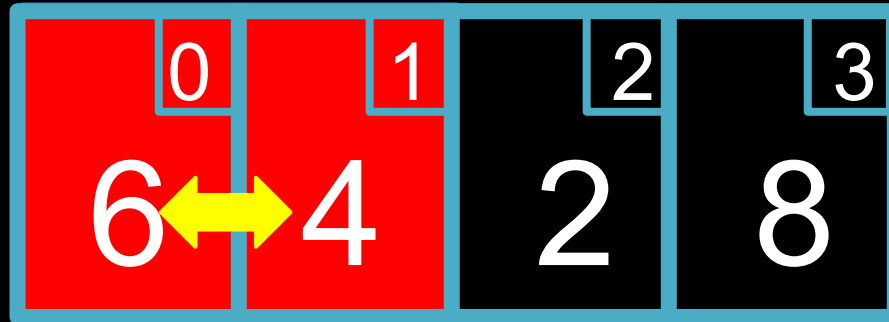
- 1. Step through entire list, swapping adjacent values if not in order**
- 2. Repeat from step 1 if any swaps have been made**

0	1	2	3
8	6	4	2

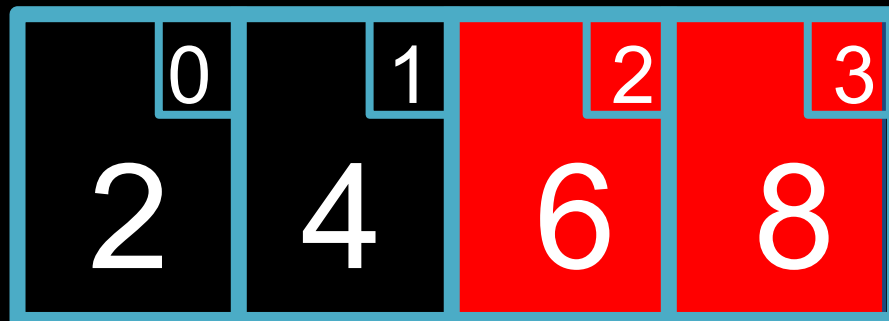
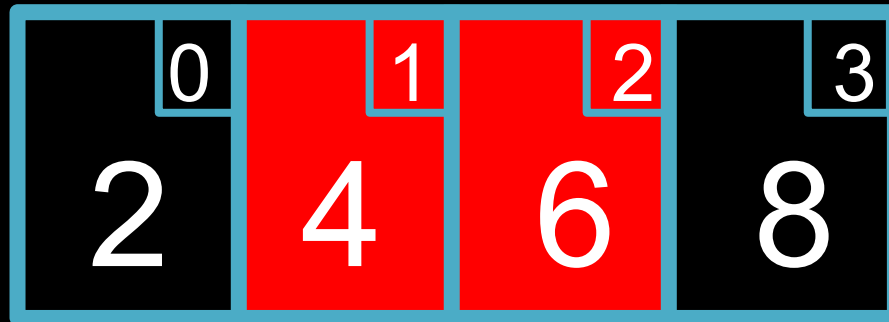
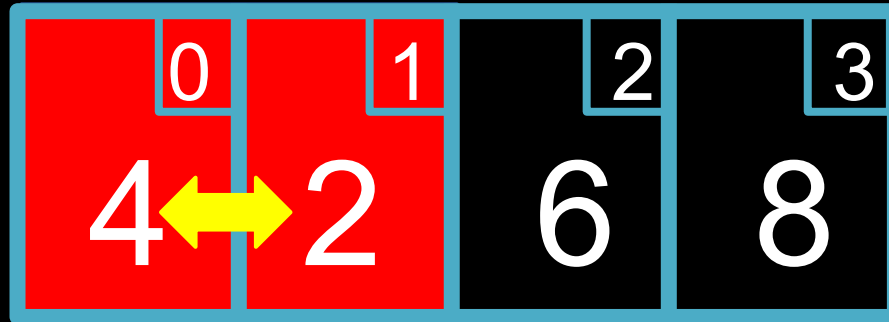
First pass: 3 swaps



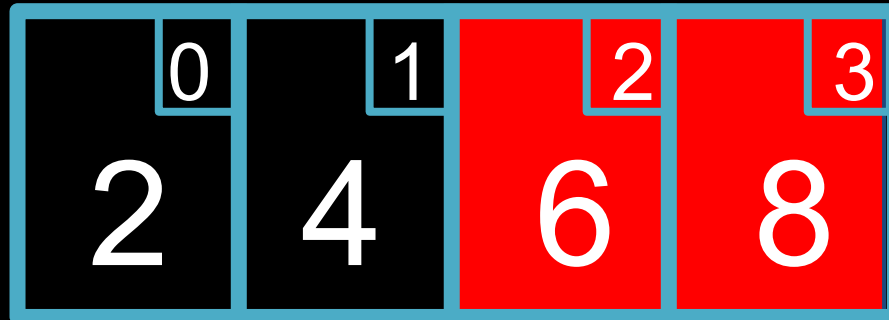
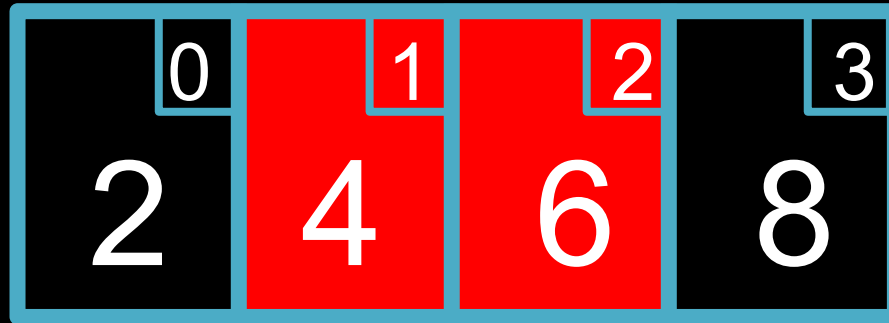
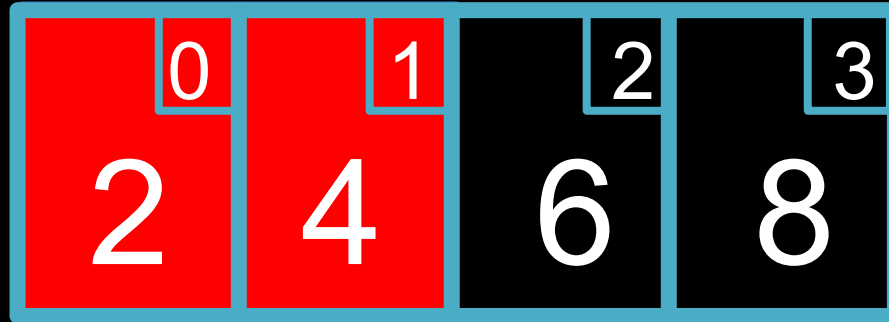
Second pass: 2 swaps



Third pass: 1 swap



Fourth pass: 0 swaps

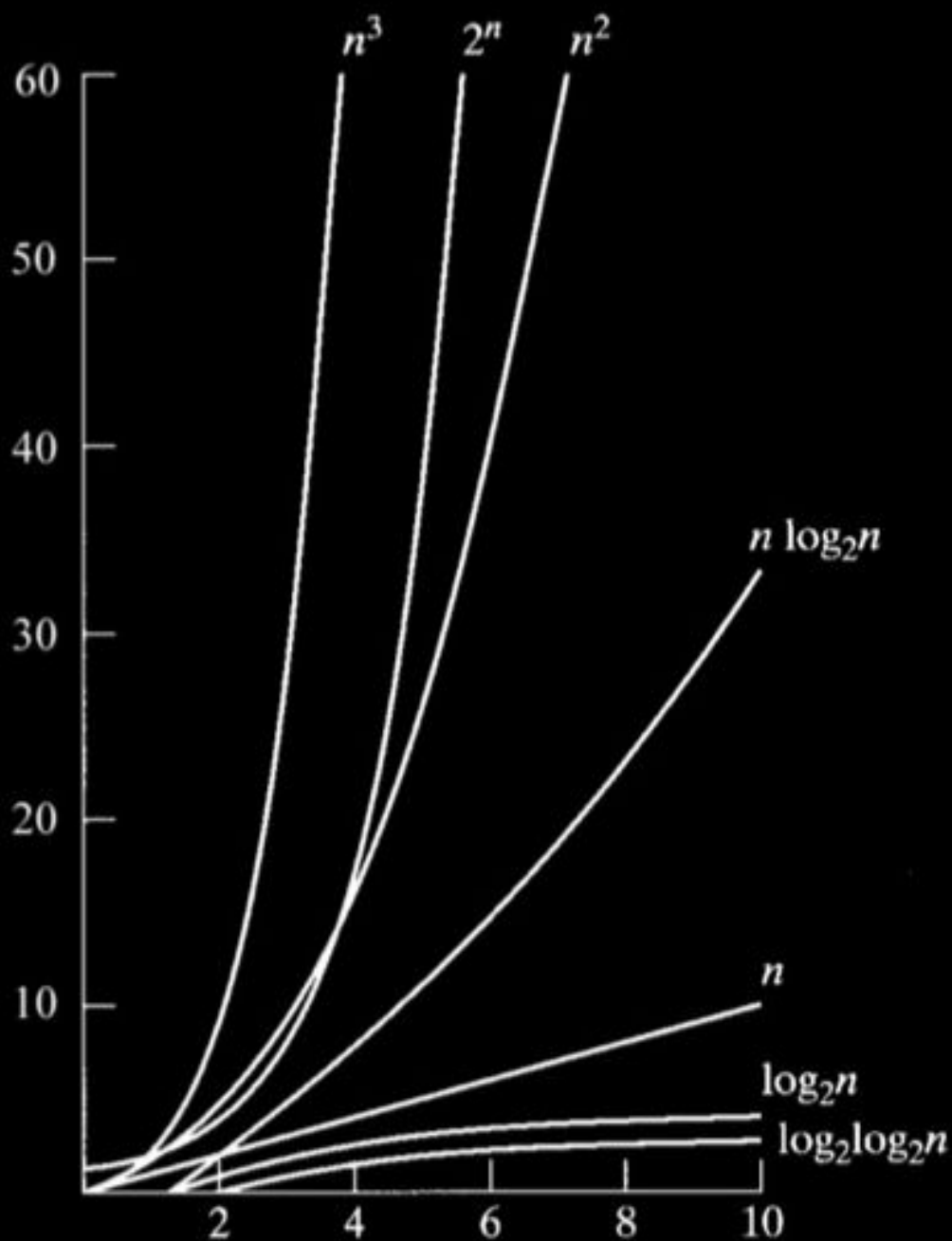


```
initialize counter
do
{
    set counter to 0

    iterate through entire array
        if array[n] > array[n+1]
            swap them
            increment counter
}
while (counter > 0)
```


What's the worst case runtime of bubble sort?

What's the best case runtime of bubble sort?



	Bubble Sort	Selection Sort	Insertion Sort	Merge Sort
O	n^2	n^2	n^2	$n \log n$
Ω	n	n^2	n	$n \log n$
Θ		n^2		$n \log n$