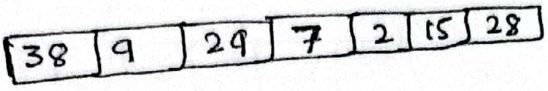
② **Bubble Sort** :

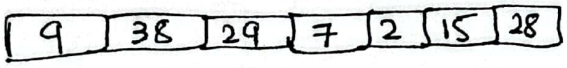
↳ sorting algorithm

consider a list of elements :



→ If we want to sort this list,

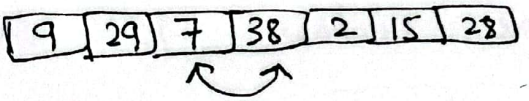
① Start with comparing I^st two numbers 38 , 9 as 38 > 9 we will swap the numbers.



② Repeat same process for 2nd and 3rd element . 38 > 29 ⇒ swap

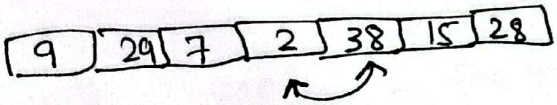
↓

Similarly

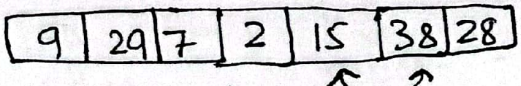


→ comparing 3rd & 4th

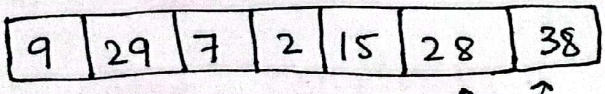
↓



↓



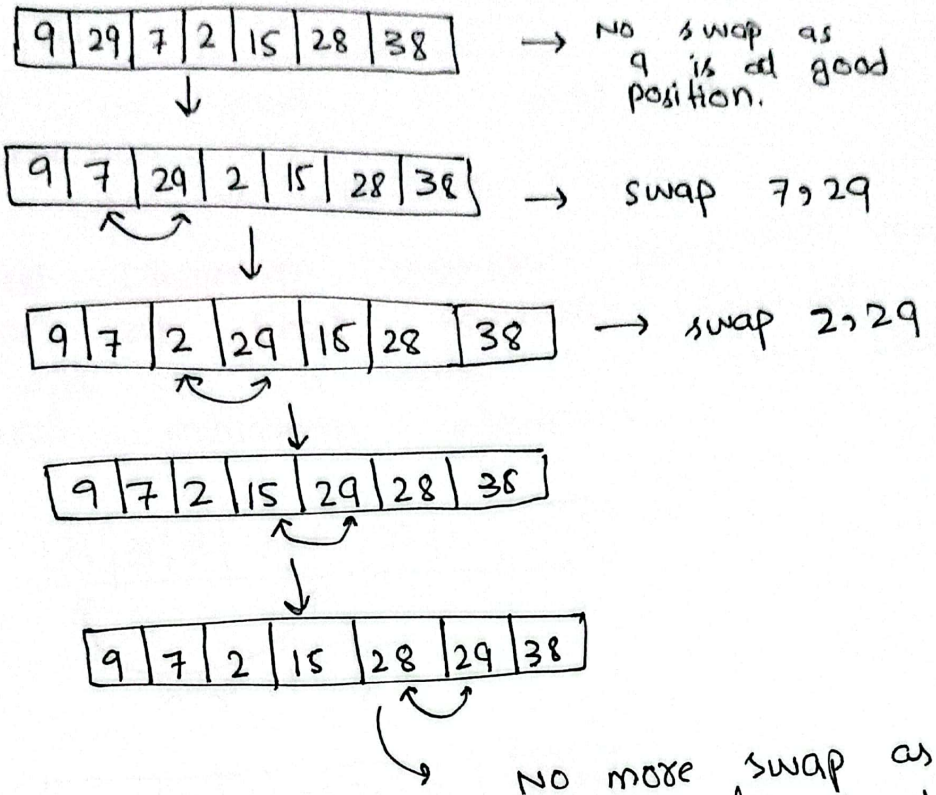
↓



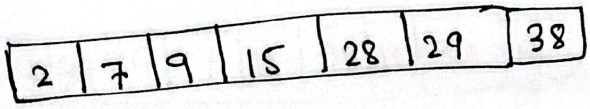
→ so highest number goes to end.

That's why it is known as bubble sort as bubble pops up from bottom.

Now we have 38 in right position we will repeat same process.



⇒ We will keep on doing this for every element of list until we get.



⇒ So we will use 2 for loops → one for getting each number to end and one for every other number comparing that number with

↳ so Time Complexity: $O(n^2)$

Space Complexity: $O(1)$

↳ Because we are not using extra space we are just swapping in same array.