Next Greater Element: Given array of size N arr[N] elements, find the next greater elements to right side and replace it with the current smaller element on the left side. if No greater element found, replace it with -1.

Ex-1:

	0	1	2	3	4	5	6
array =	2	4	8	3	1,	20,	11]
answer =	4	8	20	20	20	-1	-1]

Idea-1: for every index, check for the next greater elements, once found, replace with current index.

```
n = len(array)
ans = [0] * n

for i in range(n):
    for j in range(0+i, n).

        if arr[j] > arr[i]:

            ans[i] = arr[j]
            break
```

Ex-1:

array[7] = [2 4 8 3 1 20, 11]

(i, j) = (0, 1)

ans = [0 0 0 0 0 0 0]

arr[i] > arr[j]

replace

j = j+1 = 2

ans = [4 0 0 0 0 0 0]

array[7] = [2 4 8 3 1 20, 11]

(i, j) = (1, 2)

arr[j] > arr[i]

arr[2] > arr[1]

8 > 4

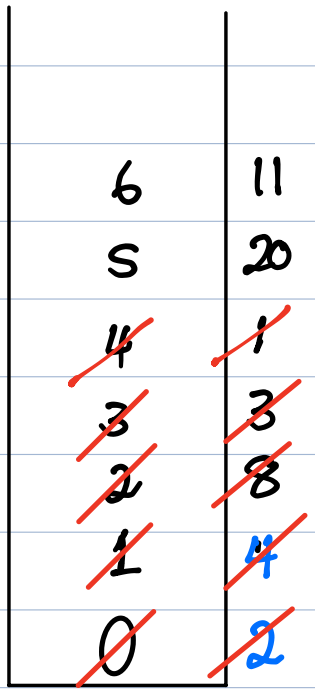
ans = [4 8 0 0 0 0 0]

Add 8 at the first index in the answer array.

Idea-2: use Stack

Last in first out

1. check if the stack is empty if empty, add the current element.
2. if not empty, check if the current element is greater than the element inside the stack,
3. If greater, replace the larger element with smaller in answer array



array = [2 4 8 3 1, 20, 11]
0 1 2 3 4 5 6

answer = [0 0 0 0 0 0 0]
0 1 2 3 4 5 6

① Stack Empty? yes

add 1st index

increment i ⇒ i = 0+1 = 1

stack empty? NO

current Element > stack Ele

yes

Go inside, replace the stack's element with current & remove the Smaller element from stack :

As we can observe, two indices are left in stack, for those element as their is no greater element on right, put (-1) instead of them