Problem

(Template)

Next Greater element on Right (NGR)

arr: 1 3 2 2 4 1 2 1 6

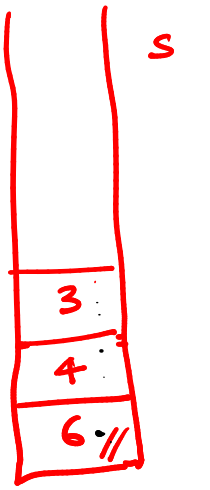
(ans) o/p : 3 4 4 4 6 2 6 6 -1

How ? → larger element

Dry run.

1. If stack is empty, push -1 in ans.
2. While s is not empty & top is less than the current ele:
   Keep removing the elements (pop)
3. If top of stack > cur ele:
   ans = top of stack
4. Push the cur element in s.

O(n)



NGR

Next greater to right

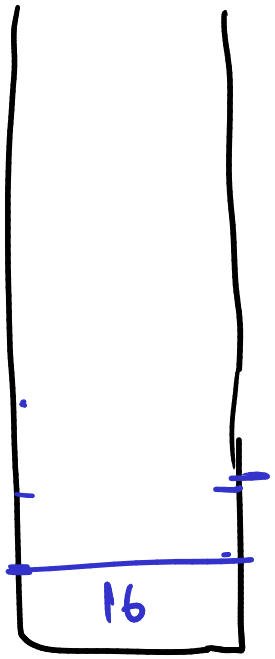
9 16 9 4 3 7 5 6 9 2

16 -1 -1 7 7 9 6 9 -1 -1

10^8

O(n) ←

→ $O(n^2)$ 10^4



Famous classic : Stock span problem.

span ⇒ how many days do I need to wait before I can sell the stock profitably.

sp =	10	12	14	12	10	8	10	12	14	11 (Sell)
span =	1	1	8	5	3	1	1	1	2	1

how many consecutive days, the purchase price of stock remains maximum ?

OR

i	0	1	2	3	4	5	6	7	8	9 (n-1)
arr:	8	10	12	16	13	11	12	14	10	15
ngr :	10	12	16	-1	14	12	14	15	15	-1
ngr_i :	1	2	3	10	7	6	7	9	9	10
ngr_i - i :	1	1	1	7	3	1	1	2	1	1 (span)

Circular Idea :

* genius

{ 2n-1 to 0 ←

0 to 2n-1 → }