

# Maximum sum increasing subsequence

Given an array of  $n$  positive integers. Find the sum of the maximum sum subsequence of the given array such that the integers in the subsequence are sorted in strictly increasing order i.e. a strictly increasing subsequence.

## Example 1:

**Input:**  $N = 5$ ,  $arr[] = \{1, 101, 2, 3, 100\}$

**Output:** 106

**Explanation:** The maximum sum of a increasing sequence is obtained from  $\{1, 2, 3, 100\}$

## Example 2:

**Input:**  $N = 3$ ,  $arr[] = \{1, 2, 3\}$

**Output:** 6

**Explanation:** The maximum sum of a increasing sequence is obtained from  $\{1, 2, 3\}$

## Your Task:

You don't need to read input or print anything. Complete the function `maxSumIS()` which takes  $N$  and array **arr** as input parameters and returns the maximum value.

**Expected Time Complexity:**  $O(N^2)$

**Expected Auxiliary Space:**  $O(N)$

## Constraints:

$$1 \leq N \leq 10^3$$

$$1 \leq arr[i] \leq 10^5$$