Longest Increasing Subsequence (LIS)

Given an array "A". Find the length of its longest increasing subsequence (LIS). LIS is a sub-array of the given integer array where the elements are sorted in a monotonic/strict increasing order.

You need to fill in a function that takes two inputs – integer "n" and an integer array "A" containing "n" integers and returns the length of its LIS.

Input Specifications:

Input1: Integer input "n" (1 <= input1 <= 1000)

Input2: Integer array "A" input, containing "n" integers

Output Specifications:

Return the length of its LIS.

Example1:

Input:

3

1 3 2

Output:

2

Explanation:

{1, 2} and {1, 3} are the longest increasing subsequence of {1, 3, 2}. The length of both sub-array is 2. So, the output is 2.