Practice (/) BETA

Popular Topic Tags

- **Maths (/topics/maths/)**
- **Array (/topics/array/)**
- **Dynamic-Programming (/topics/Dynamic-Programming/)**
- **Greedy-Algorithm (/topics/Greedy-Algorithm/)**
- **Hashing (/topics/hashing/)**
- **Tree (/topics/tree/)**
- **Bit-Algorithm (/topics/bit-algorithm/)**
- **Matrix (/topics/matrix/)**
- **Backtracking (/topics/backtracking/)**
- **Operating System (/topics/Operating System/)**
- **Linked-List (/topics/Linked-List/)**
- **Graph (/topics/Graph/)**

show more (/topic-tags)

All-time Popular Problems
Delete without head pointer (/problems/delete-without-head-pointer/1/?ref=self)
Level order traversal in spiral form (/problems/level-order-traversal-in-spiral-form/1/?ref=self)
Angle between hour and minute hand (/problems/angle-between-hour-and-minute-hand/0/?ref=self)
Max Sum without Adjacents (/problems/max-sum-without-adjacents/0/?ref=self)
Diameter of Binary Tree (/problems/diameter-of-binary-tree/1/?ref=self)
Longest Palindrome in a String (/problems/longest-palindrome-in-a-string/0/?ref=self)
Minimum Platforms (/problems/minimum-platforms/0/?ref=self)
0 - 1 Knapsack Problem (/problems/0-1-knapsack-problem/0/?ref=self)
Sort an array of 0s, 1s and 2s (/problems/sort-an-array-of-0s-1s-and-2s/0/?ref=self)
Check for BST (/problems/check-for-bst/1/?ref=self)

Difficulty Level: Medium (https://practice.geeksforgeeks.org/Medium/0/0/)

Submissions: 32446 (/problem_submissions.php?pid=134) Accuracy: 28.09%

Longest Increasing Subsequence

(/topics/Dynamic-Programming/) Show Topic Tags

Samsung (/company/Samsung/) Paytm (/company/Paytm/) BankBazaar (/company/BankBazaar/) Amazon (/company/Amazon/)

Given a sequence, find the length of the longest increasing subsequence from a given sequence .
The longest increasing subsequence means to find a subsequence of a given sequence in which the subsequence's elements are in sorted order, lowest
to highest, and in which the subsequence is as long as possible. This subsequence is not necessarily contiguous, or unique.

Note: Duplicate numbers are not counted as increasing subsequence.

For example:
length of LIS for
{ 10, 22, 9, 33, 21, 50, 41, 60, 80 } is 6 and LIS is {10, 22, 33, 50, 60, 80}.

Input:

The first line contains an integer T, depicting total number of test cases.
Then following T lines contains an integer N depicting the size of array and next line followed by the value of array.

Output:

Print the Max length of the subsequence in a separate line.

Constraints:

1 ≤ T ≤ 100
1 ≤ N ≤ 1000
0 ≤ A[i] ≤ 300

Example:

Input
1
16
0 8 4 12 2 10 6 14 1 9 5 13 3 11 7 15
Output
6

** For More Input/Output Examples Use 'Expected Output' option **

Author: shef5 (https://auth.geeksforgeeks.org/user/shef5/practice/)

All submissions (/problem_submissions.php?pid=134) My submissions (/problem_submissions.php?pid=134&isSolved=ALL&lang=ALL&user=Self) Editorial (/editorial.php?pid=134)

New to competitive programming? Please see How to Begin? (https://www.geeksforgeeks.org/how-to-begin-with-competitive-programming/)and How to Pick a Category? (https://practice.geeksforgeeks.org/pickACategory.php)

C (gcc 5.4) C++ (g++ 5.4) C# Java (1.8) Python 3

Theme Light Set Default Code (https://auth.geeksforgeeks.org/edit-profile.php) Reset

```
for _ in range(int(input())):
    n=int(input())
    l=list(map(int,input().split()))
    lis=[1]*n
    i=1
    j=0
    while(i<n):
        while(j<i):
            if l[j]<l[i]:
                lis[i]=max(lis[i],lis[j]+1)
            j+=1
        i+=1
        j=0
    if lis:
        print(max(lis))
    else:
        print(0)

```

It is recommended to 'Compile & Test' your code before clicking 'Submit'!

Compile & Test | Submit | Expected Output

Compilation/Execution Result:

Need help with your code? Please use ide.geeksforgeeks.org (https://ide.geeksforgeeks.org)**, generate link and share the link here.**

Share this Coding Problem !!

Leaderboard (Overall) ⏩ (/ranking.php)

Weekly	Monthly	Overall
DilipV (https://auth.geeksforgeeks.org/user/DilipV/practice/)		204
Sachin Kumar 12 (https://auth.geeksforgeeks.org/user/Sachin Kumar 12/practice/)		172
rk2014 (https://auth.geeksforgeeks.org/user/rk2014/practice/)		146