STUDENT REPORT

DETAILS

Name

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EXPERIMENT

Title

PEAK ELEMENT FINDER

Description

Description: You are given an N- dimensional array arr[]. A peak element in the array is defined as an element whose value is greater than or equal to its neighboring elements (if they exist). Your task is to find the index of any peak element in the given array

Note: use 0-based indexing

Input:

An integer representing the number of elements in the array. N space-separated integers, denoting the elements of the array.

N space-separated integers ,denoting the elements of the array arr[]

Sample Input:

5

1 3 20 4 1

Sample Output:

2

Source Code:

```
def find_peak(arr):
    n = len(arr)

    # Check the first element
    if n == 1 or arr[0] >= arr[1]:
        return 0

    # Check the last element
    if arr[n - 1] >= arr[n - 2]:
        return n - 1

    # Check for peaks in the middle of the array
    for i in range(1, n - 1):
        if arr[i] >= arr[i - 1] and arr[i] >= arr[i + 1]:
            return i

    # If no peak is found (though the problem states there will be one)
    return -1

# Input reading
import sys

input = sys.stdin.read
data = input().strip().splitlines()

# Read the number of elements in the array
n = int(data[0])
# Read the array elements
arr = list(map(int, data[1].split()))

# Find and print the index of a peak element
result = find_peak(arr)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %