Simple Search

ZPRAC-16-17-LabExam-2_Session-1

Simple Search [30*Marks*]

ANNOUNCEMENT: Up to 20% marks will be allotted for good programming practice. These include
- Comments for non trivial code
- Indentation: Align your code properly
- Meaningful variable names

You are given an array of n unique integers sorted in increasing order. You need to perform search operations on this arrays. Given a number to be searched for, if it exists in the array, then print its index if it does not then print the index of the element just smaller than it.
If the number to be searched is smaller than every number in the array, print -1.

Input:
The first line contains an integer n
the second line contains n integers denoting the array.
The third line has an integer q
The following q lines contain an integer each which needs to be searched for in the array.

Output:
q lines, each lines containing the desired index (or -1).

Example:
Input:
6
1 2 4 5 8 10
4
4
3
2
9

Output:
2
1
1
4

Constrains:
$1 \leq n, q \leq 10^4$
$-10^6 \leq$ each element of array, numbers to be searched $\leq 10^6$

Hint/Caution: You need to use binary search for searching inside the array. Using any iterative method to search for the number will lead to 0 marks.