https://course.acciojob.com/idle?question=43a06a39-622a-4331-9a4c-62ebfe7bc7ae

- EASY
- Max Score: 30 Points

Search In Bitonic Array!

Given a zero based Bitonic array `arr` of size `N`. You need to find the index of the `target` value in the array `arr`, if it is present else -1.

Note

A Bitonic Sequence is a sequence of numbers which is first strictly increasing then after a point strictly decreasing.

Input Format

The first line of input contains a single integer representing `N`.

The second line of input contains `N` space seperated integer representing array element.

The third line of input contains the `target`, element to be searched in the array.

Output Format

Return the positon of `target` value in the array if present else -1.

Example 1

Input

```
7
-3 9 18 20 17 5 1
20
```

Output:

```
3
```

Explanation:

Element 20 is found at index 3.

Example 2

Input

```
3
3 4 1
5
```

Output:

```
-1
```

Explanation:

Element 5 can not be found in the array so we output -1.

Constraints

```
1 <= N <= 10^5
```

```
-10^6 <= arr[i] <= 10^6
```

Topic Tags

- **Binary Search**
- **Arrays**

My code

// in java

```
import java.util.*;
import java.lang.*;
import java.io.*;

public class Main
{
        public static void main (String[] args) throws java.lang.Exception
        {
                //your code here
      Scanner s=new Scanner(System.in);
      int n=s.nextInt();
      int arr[]=new int[n];
      for(int i=0;i<n;i++)
        arr[i]=s.nextInt();
           int m=s.nextInt();
      int c=0;
      int start=0,end=n-1;

      while(end>=start)
        {
          int mid=(end +start)/2;

          if(arr[mid]==m) {System.out.print(mid);return;}

          if((m>arr[mid]) && (arr[mid] >arr[mid+1])  ) end=mid-1;
          if((m>arr[mid]) && (arr[mid] >arr[mid-1])  ) start=mid+1;
          if((m<arr[mid]) && (arr[mid] >arr[mid+1])  ) start=mid+1;
          if((m<arr[mid]) && (arr[mid] >arr[mid-1])  ) end=mid-1;
        }
      System.out.print(-1);
    }
}
```