Search in Rotated Sorted Array

Difficulty: **Medium** Accuracy: **37.64%** Submissions: **251K+** Points: **4**

Given a **sorted** and **rotated** array **arr[]** of **distinct** elements, the task is to find the index of a target **key**. Return **-1** if the key is not found.

Examples :

Input: arr[] = [5, 6, 7, 8, 9, 10, 1, 2, 3], key = 3
Output: 8
Explanation: 3 is found at index 8.

Input: arr[] = [3, 5, 1, 2], key = 6
Output: -1
Explanation: There is no element that has value 6.

Input: arr[] = [33, 42, 72, 99], key = 42
Output: 1
Explanation: 42 is found at index 1.

Constraints:

Java (1.8) Start Timer

```java
class Solution {
    int search(int[] arr, int key) {
        int lo= 0, hi = arr.length -1;
        while (lo <= hi){
            int mid = lo + (hi - lo) / 2;
            if(arr[mid] == key)
                return mid;
            if(arr[mid] >= arr[lo]){
                if(key >= arr[lo] && key < arr[mid])
                    hi = mid - 1;
                else
                    lo = mid + 1;
            }
            else{
                if (key > arr[mid] && key <= arr[hi])
                    lo = mid + 1;
                else
                    hi = mid - 1;
            }
        }
        return -1;
    }
}
```