def search(arr, n, k):

    #one half will be sorted

    s=0

    e=n-1

    while(s<=e):

        mid=(s+e)//2

        if arr[mid]==k:

            return mid

        elif arr[s]<=arr[mid]:#left half sorted

            if arr[s]<=k and k<=arr[mid]:

                e=mid-1

            else:

                s=mid+1

        else:#RIGHT HALF SORTED

            if arr[mid]<=k and k<=arr[e] :

                s=mid+1

            else:

                e=mid-1

    return -1