1. 134. Given an array arr of positive integers sorted in a strictly increasing order, and an integer k. return the kth positive integer that is missing from this array.

Example 1:

Input: arr = [2,3,4,7,11], k = 5

Output: 9

Code:

```
def find_kth_missing(arr, k):

    current = 1
    missing_count = 0
    index = 0

    while True:
        if index < len(arr) and arr[index] == current:
            index += 1
        else:
            missing_count += 1

            if missing_count == k:
                return current
        current += 1

arr = [2, 3, 4, 7, 11]
k = 5
print("The {}th missing positive integer is: {}".format(k, find_kth_missing(arr, k)))
```

output:

```
PS C:\Users\karth>
PS C:\Users\karth> & C:/Users/karth/AppData/Local/Programs/Python/Python312/python.exe c:/Users/karth/OneDrive/Documents/OriginLab/problems.py
The 5th missing positive integer is: 9
PS C:\Users\karth>
```

Time complexity:f(n)=0(nlogn)