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Question

Given an integer array `nums` and an integer `k`, return *the `k` most frequent elements*. You may return the answer in **any order**.

Example

Input: nums = [1,1,1,2,2,3], k = 2
Output: [1,2]

Example

Input: nums = [1], k = 1
Output: [1]

Definition

- K most frequent elements → was ambiguous when I first saw it.
- K most frequent elements means, [1,1,2,2,2,3,3,3,4,4,4,4]
- → 1 Most frequent = 4
- → 2 Most frequent = 3,4
- → 3 Most frequent = 2,3,4
- → 4 Most frequent = 1,2,3,4

First Code : 15 min

```
class Solution(object):
    def topKFrequent(self, nums, k):
        frequent = { }
        for num in nums:
            if num in frequent:
                frequent[num] += 1
            else:
                frequent[num] = 1
        sorted_frequent = sorted(frequent.items(), key=lambda x:
x[1],reverse=True)
        arr = []
        for num in sorted_frequent:
            if len(arr) == k:
                return arr
            else:
                arr.append(num[0])
        return arr
# O(NLogN) / O(n)
```

Solution Code:

```
class Solution:
    def topKFrequent(self, nums: List[int], k: int) -> List[int]:
        freq_table = Counter(nums)
        heap = []
        for i in freq_table.keys():
            heappush(heap, (-freq_table[i], i))
        ans = []
        while k > 0:
            k -= 1
            ans.append(heappop(heap)[1])
        return ans
# O(NLogN) / O(n)
```