

## Pseudocode Problem 1

M = unique elements

def topMostKFrequent(nums, k):

```
    Initialize map                                ----> O(1)
    Store the frequency of each element          ----> O(logk)
    For number in nums:                          ----> O(n)
        Increment the frequency if the number is in the map --> O(1)
    Initialize heap                                ----> O(1)
    Add elements to the heap with for loop (for each key, value in map): ----> O(m)
        Push the (value, key) into the heap in any order (did frequency first)----> O(logk)
        If the heap size is greater than given k: ----> O(1)
            Remove smallest element from heap ----> O(logk)
    Get the keys from the heap ----> O(k)
    Return the list of the keys ----> O(1)
```

Overall Time Complexity:  $O(n + m \cdot \log k)$  but in some cases the worst time complexity could be  $O(n + n \cdot \log k)$  since that would mean all of the elements in the given list are unique.