1535. Build Array Where You Can Find The Maximum Exactly K Comparisons

Difficulty : Hard

https://leetcode.com/problems/build-array-where-you-can-find-the-maximum-exactly-k-comparisons

You are given three integers `n`, `m` and `k`. Consider the following algorithm to find the maximum element of an array of positive integers:

```
maximum_value = -1
maximum_index = -1
search_cost = 0
n = arr.length
for (i = 0; i < n; i++) {
    if (maximum_value < arr[i]) {
        maximum_value = arr[i]
        maximum_index = i
        search_cost = search_cost + 1
    }
}
return maximum_index
```

You should build the array arr which has the following properties:

- `arr` has exactly `n` integers.
- `1 <= arr[i] <= m` where `(0 <= i < n)`.
- After applying the mentioned algorithm to `arr`, the value `search_cost` is equal to `k`.

Return *the number of ways* to build the array `arr` under the mentioned conditions. As the answer may grow large, the answer **must be** computed modulo $10^9 + 7$.

Example 1:

Input: n = 2, m = 3, k = 1
Output: 6
Explanation: The possible arrays are [1, 1], [2, 1], [2, 2], [3, 1], [3, 2] [3, 3]

Example 2:

Input: n = 5, m = 2, k = 3
Output: 0
Explanation: There are no possible arrays that satisfy the mentioned conditions.

Example 3:

Input: n = 9, m = 1, k = 1
Output: 1
Explanation: The only possible array is [1, 1, 1, 1, 1, 1, 1, 1, 1]

Constraints:

- `1 <= n <= 50`
- `1 <= m <= 100`
- `0 <= k <= n`