

## 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.
- $1 \leq \text{arr}[i] \leq m$  where  $(0 \leq i < n)$ .
- 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:**

- $1 \leq n \leq 50$
- $1 \leq m \leq 100$
- $0 \leq k \leq n$