# Problem 3176: Find the Maximum Length of a Good Subsequence I

## Problem Information

**Difficulty:** Medium
**Acceptance Rate:** 0.00%
**Paid Only:** No

## Problem Description

You are given an integer array

nums

and a

non-negative

integer

k

. A sequence of integers

seq

is called

good

if there are

at most

k

indices

i

in the range

[0, seq.length - 2]

such that

seq[i] != seq[i + 1]

.

Return the

maximum

possible length of a

good

subsequence

of

nums

.

Example 1:

Input:

nums = [1,2,1,1,3], k = 2

Output:

4

Explanation:

The maximum length subsequence is

[

1

,

2

,

1

,

1

,3]

.

Example 2:

Input:

nums = [1,2,3,4,5,1], k = 0

Output:

2

Explanation:

The maximum length subsequence is

[

1

,2,3,4,5,

1

]

.

Constraints:

1 <= nums.length <= 500

1 <= nums[i] <= 10

9

0 <= k <= min(nums.length, 25)

## Code Snippets

**C++:**

```
class Solution {
public:
int maximumLength(vector<int>& nums, int k) {

}
};
```

**Java:**

```
class Solution {
public int maximumLength(int[] nums, int k) {

}
```

```
}
```

**Python3:**

```
class Solution:
def maximumLength(self, nums: List[int], k: int) -> int:
```

**Python:**

```
class Solution(object):
def maximumLength(self, nums, k):
"""
:type nums: List[int]
:type k: int
:rtype: int
"""
```

**JavaScript:**

```
/**
* @param {number[]} nums
* @param {number} k
* @return {number}
*/
var maximumLength = function(nums, k) {

};
```

**TypeScript:**

```
function maximumLength(nums: number[], k: number): number {

};
```

**C#:**

```
public class Solution {
public int MaximumLength(int[] nums, int k) {

}
}
```

**C:**

```
int maximumLength(int* nums, int numsSize, int k) {

}
```

**Go:**

```
func maximumLength(nums []int, k int) int {

}
```

**Kotlin:**

```
class Solution {
fun maximumLength(nums: IntArray, k: Int): Int {

}
}
```

**Swift:**

```
class Solution {
func maximumLength(_ nums: [Int], _ k: Int) -> Int {

}
}
```

**Rust:**

```
impl Solution {
pub fn maximum_length(nums: Vec<i32>, k: i32) -> i32 {

}
}
```

**Ruby:**

```
# @param {Integer[]} nums
# @param {Integer} k
# @return {Integer}
def maximum_length(nums, k)
```

```
end
```

**PHP:**

```
class Solution {

/**
* @param Integer[] $nums
* @param Integer $k
* @return Integer
*/
function maximumLength($nums, $k) {

}
}
```

**Dart:**

```
class Solution {
int maximumLength(List<int> nums, int k) {

}
}
```

**Scala:**

```
object Solution {
def maximumLength(nums: Array[Int], k: Int): Int = {

}
}
```

**Elixir:**

```
defmodule Solution do
@spec maximum_length(nums :: [integer], k :: integer) :: integer
def maximum_length(nums, k) do

end
end
```

**Erlang:**

```
-spec maximum_length(Nums :: [integer()], K :: integer()) -> integer().
maximum_length(Nums, K) ->
.
```

**Racket:**

```
(define/contract (maximum-length nums k)
(-> (listof exact-integer?) exact-integer? exact-integer?)
)
```

## Solutions

### C++ Solution:

```
/*
* Problem: Find the Maximum Length of a Good Subsequence I
* Difficulty: Medium
* Tags: array, dp, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
*/

class Solution {
public:
int maximumLength(vector<int>& nums, int k) {

}
};
```

### Java Solution:

```
/**
* Problem: Find the Maximum Length of a Good Subsequence I
* Difficulty: Medium
* Tags: array, dp, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
```

```
*/

class Solution {
public int maximumLength(int[] nums, int k) {

}
}
```

### Python3 Solution:

```
"""
Problem: Find the Maximum Length of a Good Subsequence I
Difficulty: Medium
Tags: array, dp, hash

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(n) or O(n * m) for DP table
"""

class Solution:
def maximumLength(self, nums: List[int], k: int) -> int:
# TODO: Implement optimized solution
pass
```

### Python Solution:

```
class Solution(object):
def maximumLength(self, nums, k):
"""
:type nums: List[int]
:type k: int
:rtype: int
"""
```

### JavaScript Solution:

```
/**
* Problem: Find the Maximum Length of a Good Subsequence I
* Difficulty: Medium
* Tags: array, dp, hash
```

```
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
*/

/**
* @param {number[]} nums
* @param {number} k
* @return {number}
*/
var maximumLength = function(nums, k) {

};
```

### TypeScript Solution:

```
/**
* Problem: Find the Maximum Length of a Good Subsequence I
* Difficulty: Medium
* Tags: array, dp, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
*/

function maximumLength(nums: number[], k: number): number {

};
```

### C# Solution:

```
/*
* Problem: Find the Maximum Length of a Good Subsequence I
* Difficulty: Medium
* Tags: array, dp, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
```

```
*/

public class Solution {
public int MaximumLength(int[] nums, int k) {

}
}
```

### C Solution:

```
/*
* Problem: Find the Maximum Length of a Good Subsequence I
* Difficulty: Medium
* Tags: array, dp, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
*/

int maximumLength(int* nums, int numsSize, int k) {

}
```

### Go Solution:

```
// Problem: Find the Maximum Length of a Good Subsequence I
// Difficulty: Medium
// Tags: array, dp, hash
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(n) or O(n * m) for DP table

func maximumLength(nums []int, k int) int {

}
```

### Kotlin Solution:

```
class Solution {
fun maximumLength(nums: IntArray, k: Int): Int {

}
}
```

### Swift Solution:

```
class Solution {
func maximumLength(_ nums: [Int], _ k: Int) -> Int {

}
}
```

### Rust Solution:

```
// Problem: Find the Maximum Length of a Good Subsequence I
// Difficulty: Medium
// Tags: array, dp, hash
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(n) or O(n * m) for DP table

impl Solution {
pub fn maximum_length(nums: Vec<i32>, k: i32) -> i32 {

}
}
```

### Ruby Solution:

```
# @param {Integer[]} nums
# @param {Integer} k
# @return {Integer}
def maximum_length(nums, k)

end
```

### PHP Solution:

```
class Solution {

/**
* @param Integer[] $nums
* @param Integer $k
* @return Integer
*/
function maximumLength($nums, $k) {

}
}
```

### Dart Solution:

```
class Solution {
int maximumLength(List<int> nums, int k) {

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### Scala Solution:

```
object Solution {
def maximumLength(nums: Array[Int], k: Int): Int = {

}
}
```

### Elixir Solution:

```
defmodule Solution do
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def maximum_length(nums, k) do

end
end
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### Erlang Solution:

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**Racket Solution:**

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)
```