376. Wiggle Subsequence

QuestionEditorial Solution
My Submissions

- Total Accepted: **10876**
- Total Submissions: **31545**
- Difficulty: **Medium**

A sequence of numbers is called a **wiggle sequence** if the differences between successive numbers strictly alternate between positive and negative. The first difference (if one exists) may be either positive or negative. A sequence with fewer than two elements is trivially a wiggle sequence.

For example, [1,7,4,9,2,5] is a wiggle sequence because the differences (6,-3,5,-7,3) are alternately positive and negative. In contrast,[1,4,7,2,5] and [1,7,4,5,5] are not wiggle sequences, the first because its first two differences are positive and the second because its last difference is zero.

Given a sequence of integers, return the length of the longest subsequence that is a wiggle sequence. A subsequence is obtained by deleting some number of elements (eventually, also zero) from the original sequence, leaving the remaining elements in their original order.

[1,7,4,9,2,5]
Output: 6
The entire sequence is a wiggle sequence.
input:[1,17,5,10,13,15,10,5,16,8]
Output: 7
There are several subsequences that achieve this length. One is [1,17,10,13,10,16,8].
Input: [1,2,3,4,5,6,7,8,9]
Output: 2

```
class Solution {
public:
    int wiggleMaxLength(vector<int>& nums) {
        int size = nums.size();
        if(size==0) return 0;
        vector<int> f(size,1);
        vector<int> d(size,1);
        for(int i=1;i<size;i++)
        {
            for(int j=0;j<i;j++)
            {
                if(nums[i]>nums[j])
                {
                    f[i] = max(f[i],d[j]+1);
                }
                else if(nums[i]<nums[j])
                {
                    d[i] = max(d[i],f[j]+1);
```

```
                }
            }
        }
        return max(f[size-1],d[size-1]);
    }
};
```