446. Arithmetic Slices II - Subsequence

Add to List
QuestionEditorial Solution
My Submissions

- Total Accepted: **2597**
- Total Submissions: **11310**
- Difficulty: **Hard**
- Contributors: **Samuri**

A sequence of numbers is called arithmetic if it consists of at least three elements and if the difference between any two consecutive elements is the same.

For example, these are arithmetic sequences:

For example, these are arithmetic sequences:

```
1, 3, 5, 7, 9
7, 7, 7, 7
3, -1, -5, -9
```

The following sequence is not arithmetic.

```
1, 1, 2, 5, 7
```

Example:

```
Input: [2, 4, 6, 8, 10]

Output: 7

Explanation:
All arithmetic subsequence slices are:
[2,4,6]
[4,6,8]
[6,8,10]
[2,4,6,8]
[4,6,8,10]
[2,4,6,8,10]
[2,6,10]
```

```
class Solution {
public:
    int numberOfArithmeticSlices(vector<int>& A) {
        if(A.empty()) return 0;
        vector<unordered_map<int,int>>dp(A.size());
        int ret = 0;
        for(int i=0;i<A.size();i++)
        {
            for(int j=0;j<i;j++)
            {
                if((long)A[i]-(long)A[j] < INT_MIN || (long)A[i] - (long)A[j] >
INT_MAX) continue;
                int diff = A[i] - A[j];
                dp[i][diff] +=1;
                if(dp[j].find(diff)!=dp[j].end())
                {
                    dp[i][diff] += dp[j][diff];
                    ret += dp[j][diff];
                }
            }
        }
        return ret;
    }
};
```