Arithmetic Slices in C++

```
#include <iostream>
#include <vector>
using namespace std;

int solution(const vector<int>& arr) {
    vector<int> dp(arr.size(), 0);
    //vector<int> dp;
    int ans = 0;
    for (size_t i = 2; i < arr.size(); i++) {
        if (arr[i] - arr[i - 1] == arr[i - 1] - arr[i - 2]) {
            dp[i] = dp[i - 1] + 1;
            ans += dp[i];
        }
    }
    return ans;
}

int main() {
    vector<int> arr = {2, 5, 9, 12, 15, 18, 22, 26, 30, 34,
36, 38, 40, 41};
    cout << solution(arr) << endl;
    return 0;
}
```

Dry Run:

Given arr = {2, 5, 9, 12, 15, 18, 22, 26, 30, 34, 36, 38, 40, 41}:

1. **For i = 2:**
   arr[2] - arr[1] = 9 - 5 = 4, arr[1] - arr[0] = 5 - 2 = 3
   Not equal, no update for dp[2].
2. **For i = 3:**
   arr[3] - arr[2] = 12 - 9 = 3, arr[2] - arr[1] = 9 - 5 = 4
   Not equal, no update for dp[3].
3. **For i = 4:**
   arr[4] - arr[3] = 15 - 12 = 3, arr[3] - arr[2] = 12 - 9 = 3
   Equal, so dp[4] = dp[3] + 1 = 0 + 1 = 1.
   Add dp[4] to ans: ans = 1.
4. **For i = 5:**
   arr[5] - arr[4] = 18 - 15 = 3, arr[4] - arr[3] = 15 - 12 = 3
   Equal, so dp[5] = dp[4] + 1 = 1 + 1 = 2.
   Add dp[5] to ans: ans = 1 + 2 = 3.
5. **For i = 6:**
   arr[6] - arr[5] = 22 - 18 = 4, arr[5] - arr[4] = 18 - 15 = 3
   Not equal, no update for dp[6].
6. **For i = 7:**
   arr[7] - arr[6] = 26 - 22 = 4, arr[6] - arr[5] = 22 - 18 = 4
   Equal, so dp[7] = dp[6] + 1 = 0 + 1 = 1.
   Add dp[7] to ans: ans = 3 + 1 = 4.
7. **For i = 8:**
   arr[8] - arr[7] = 30 - 26 = 4, arr[7] - arr[6] = 26 - 22 = 4
   Equal, so dp[8] = dp[7] + 1 = 1 + 1 = 2.
   Add dp[8] to ans: ans = 4 + 2 = 6.
8. **For i = 9:**
   arr[9] - arr[8] = 34 - 30 = 4, arr[8] - arr[7] = 30 - 26 = 4
   Equal, so dp[9] = dp[8] + 1 = 2 + 1 = 3.
   Add dp[9] to ans: ans = 6 + 3 = 9.
9. **For i = 10:**
   arr[10] - arr[9] = 36 - 34 = 2, arr[9] - arr[8] = 34 - 30 = 4
   Not equal, no update for dp[10].
10. **For i = 11:**
    arr[11] - arr[10] = 38 - 36 = 2, arr[10] - arr[9] = 36 - 34 = 2
    Equal, so dp[11] = dp[10] + 1 = 0 + 1 = 1.
    Add dp[11] to ans: ans = 9 + 1 = 10.
11. **For i = 12:**
    arr[12] - arr[11] = 40 - 38 = 2, arr[11] - arr[10] = 38 - 36 = 2
    Equal, so dp[12] = dp[11] + 1 = 1 + 1 = 2.
    Add dp[12] to ans: ans = 10 + 2 = 12.
12. **For i = 13:**
    arr[13] - arr[12] = 41 - 40 = 1, arr[12] - arr[11] = 40 - 38 = 2
    Not equal, no update for dp[13].

Output:- 12	