**Lemonade Change :-**

Medium Accuracy: 52.02% Submissions: 23K+ Points: 4

You are an owner of lemonade island, each lemonade costs **$5**. Customers are standing in a queue to buy from you and order one at a time (in the order specified by given array **bills[]**). Each customer will only buy one lemonade and pay with either a **$5**, **$10**, or**$20**bill. You must provide the correct change to each customer so that the net transaction is that the customer pays **$5**.

**NOTE:**At first, you do not have any bill to provide changes with. You can provide changes from the bills that you get from the previous customers.

Given an integer array **bills** of size **N** where **bills [ i ]** is the bill the **ith**customer pays, return**true** if you can provide every customer with the correct change, or **false** otherwise.

**Example 1:**

**Input:**  
N = 5  
bills [ ] = {5, 5, 5, 10, 20}  
**Output:** True  
**Explanation:**   
From the first 3 customers, we collect three $5 bills in order.  
From the fourth customer, we collect a $10 bill and give back a $5.  
From the fifth customer, we give a $10 bill and a $5 bill.  
Since all customers got correct change we return true.

**Example 2:**

**Input:**  
N = 5  
bills [ ] = {5, 5, 10, 10, 20}  
**Output:** False  
**Explanation:**   
From the first two customers in order, we collect two $5 bills.  
For the next two customers in order, we collect a $10 bill and give back a $5 bill.  
For the last customer, we can not give the change of $15 back because we only have two $10 bills.  
Since not every customer received the correct change, the answer is false.

**Your Task:**  
You don't need to read input or print anything. Your task is to complete the function **lemonadeChange()** which takes the interger **N** and integer array **bills** **[ ]**as parameters and returns true if it is possible to provide change to every customer otherwise false.

**Expected Time Complexity:** O(N)  
**Expected Auxiliary Space:** O(1)

**Constraints:**  
1 ≤ N ≤ 105  
bills[i] contains only {5, 10, 20}

**Code :-**

//{ Driver Code Starts

#include <bits/stdc++.h>

using namespace std;

// } Driver Code Ends

class Solution {

public:

bool lemonadeChange(int N, vector<int> &bills) {

unordered\_map<int, int> mp;

for(auto price:bills){

if(price==5){

++mp[5];

}

else if(price==10){

if(mp[5]>0){

++mp[10]; --mp[5];

}

else

return false;

}

else if(price==20){

if(mp[5]>0 && mp[10]>0){

--mp[5]; --mp[10];

}

else if(mp[5]>=3){

--mp[5]; --mp[5]; --mp[5];

}

else

return false;

}

}

return true;

}

};

//{ Driver Code Starts.

int main() {

int t;

cin >> t;

while (t--) {

int N;

cin >> N;

vector<int> bills(N);

for (int i = 0; i < N; i++) cin >> bills[i];

Solution obj;

int ans = obj.lemonadeChange(N, bills);

if (ans)

cout << "True" << endl;

else

cout << "False" << endl;

}

return 0;

}

// } Driver Code Ends

**T.C :- O(n)**

**S.C :- O(1)**