**Algorithmic Problem Solving 2021**

**17ECSE309**

**Q-Box Assignment Set**

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**Question 01**

Title: Terrible balance

Level: Easy

Concepts Tested: Searching

**Problem Statement:**

Given a line of students along with their weights, find whether such a person exists who stands between equal weight of flesh and bones on both of his sides.

**Input Format:**

The first line contains n, the number of students

The second line contains n space separated integers denoting the weights of students

**Constraints:**

1 <= n <= 10^5

1 <= arr[i] <= 2\*10^4

0 <= i < n

**Output Format:**

For each query print a single string: if such a student exists, print YES else print NO.

**Solution:**

C++ solution: [answer](https://github.com/abhisheksaurabh812/apsQbox/blob/main/easy.cpp)

**Sample Test Cases:**

5

11411

//output: YES

4

2000

//output: YES

3

123

//output: NO

**Test Cases:**Data can be found [here](https://github.com/abhisheksaurabh812/apsQbox)

**Question 02**

Title: Wicked Party

Level: Medium

Concepts Tested: DFS

**Problem Statement:**

An even number of party members have gathered and is interested in a game that is played in pairs. Members of the party, like Abhishek, knows no-one in the party except their immediate friends(who don’t know each other and may or may not know other new people not known to their friends). Abhishek is given the task to form these pairs and in the process, count the number of friendships that would be needed to be compromised.

**Input Format:**

The first line provides two integers n & m, n denoting the total number of party members and m denoting the total no of friendships.

The next m lines provide two integers each, a & b indicating there exists a friendship between a & b

**Constraints:**

2 <= N <= 100

**Output Format:**

A single integer value denoting the number of friendships that will have to get compromised.

**Solution:**

C++ solution: [answer](https://github.com/abhisheksaurabh812/apsQbox/blob/main/medium.cpp)

**Sample Test Cases:**

4 3

1 2

1 3

3 4

//output: 1, friends 1 and 3 need to be separated.

**Test Cases:**

Data can be found [here](https://github.com/abhisheksaurabh812/apsQbox)