REPORT1

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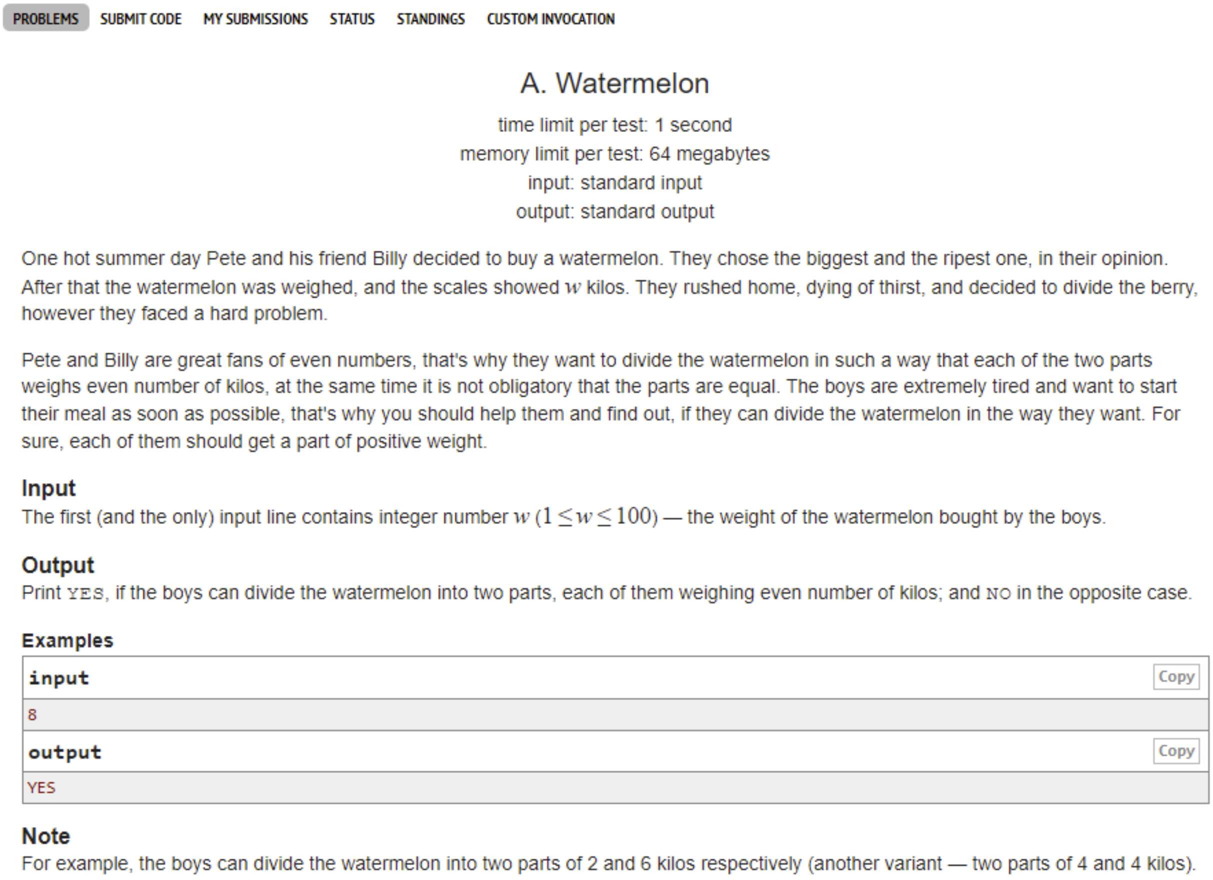
TESTING CSE338

1. Problem description:



A. Watermelon

time limit per test: 1 second
memory limit per test: 64 megabytes
input: standard input
output: standard output

One hot summer day Pete and his friend Billy decided to buy a watermelon. They chose the biggest and the ripest one, in their opinion. After that the watermelon was weighed, and the scales showed w kilos. They rushed home, dying of thirst, and decided to divide the berry, however they faced a hard problem.

Pete and Billy are great fans of even numbers, that's why they want to divide the watermelon in such a way that each of the two parts weighs even number of kilos, at the same time it is not obligatory that the parts are equal. The boys are extremely tired and want to start their meal as soon as possible, that's why you should help them and find out, if they can divide the watermelon in the way they want. For sure, each of them should get a part of positive weight.

Input

The first (and the only) input line contains integer number w $(1 \le w \le 100)$ — the weight of the watermelon bought by the boys.

Output

Print `YES`, if the boys can divide the watermelon into two parts, each of them weighing even number of kilos; and `NO` in the opposite case.

Examples

input Copy

```
8
```

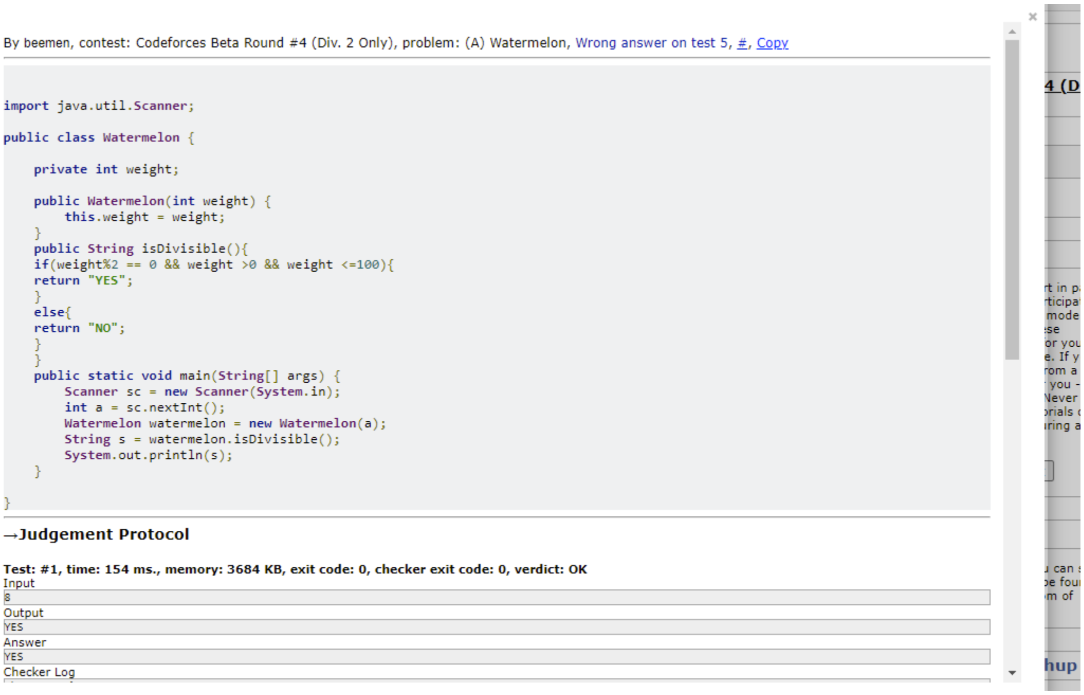
output Copy

```
YES
```

Note

For example, the boys can divide the watermelon into two parts of 2 and 6 kilos respectively (another variant — two parts of 4 and 4 kilos).

2. The initial code:



By beemen, contest: Codeforces Beta Round #4 (Div. 2 Only), problem: (A) Watermelon, Wrong answer on test 5, #, Copy

```
import java.util.Scanner;

public class Watermelon {

    private int weight;

    public Watermelon(int weight) {
        this.weight = weight;
    }
    public String isDivisible(){
    if(weight%2 == 0 && weight >0 && weight <=100){
    return "YES";
    }
    else{
    return "NO";
    }
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        Watermelon watermelon = new Watermelon(a);
        String s = watermelon.isDivisible();
        System.out.println(s);
    }

}
```

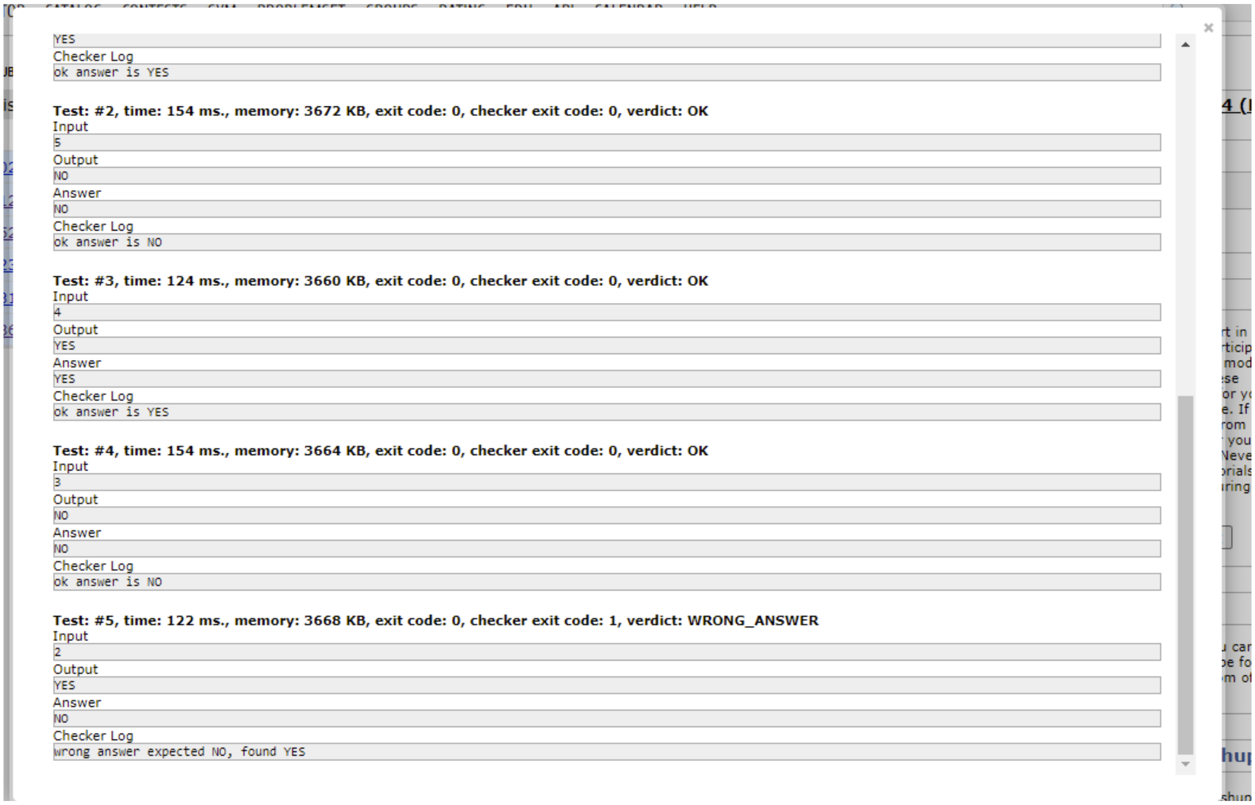
→Judgement Protocol

Test: #1, time: 154 ms., memory: 3684 KB, exit code: 0, checker exit code: 0, verdict: OK

```
Input
8
Output
YES
Answer
YES
Checker Log
```

Submission number: 148684502

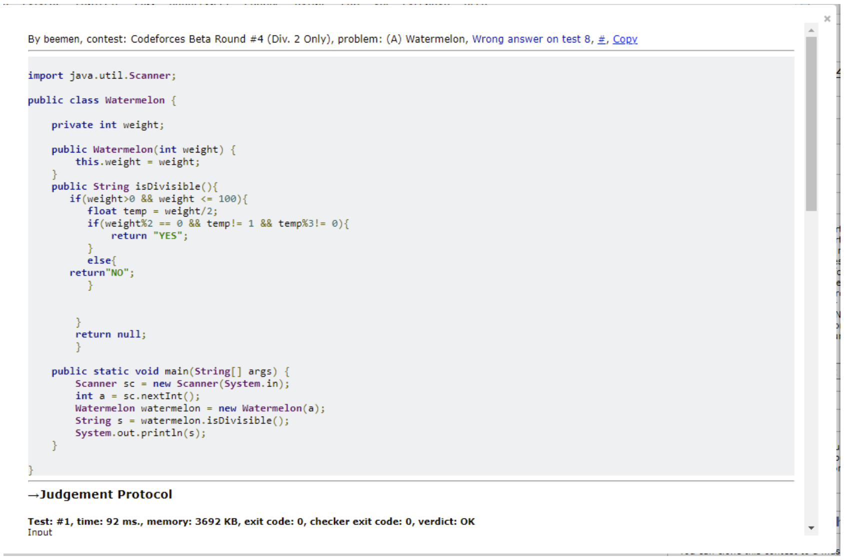
3. The failed test



```
YES
Checker Log
ok answer is YES

Test: #2, time: 154 ms., memory: 3672 KB, exit code: 0, checker exit code: 0, verdict: OK
Input
5
Output
NO
Answer
NO
Checker Log
ok answer is NO

Test: #3, time: 124 ms., memory: 3660 KB, exit code: 0, checker exit code: 0, verdict: OK
Input
4
Output
YES
Answer
YES
Checker Log
ok answer is YES

Test: #4, time: 154 ms., memory: 3664 KB, exit code: 0, checker exit code: 0, verdict: OK
Input
3
Output
NO
Answer
NO
Checker Log
ok answer is NO

Test: #5, time: 122 ms., memory: 3668 KB, exit code: 0, checker exit code: 1, verdict: WRONG_ANSWER
Input
2
Output
YES
Answer
NO
Checker Log
wrong answer expected NO, found YES
```

4. The reason it failed:
   The output should be divisible by 2 and an even number so if the input is 2 the answer should be NO instead of yes

5. Code changes:
   The code is adjusted to check for answers that can't be divided into 2 even numbers



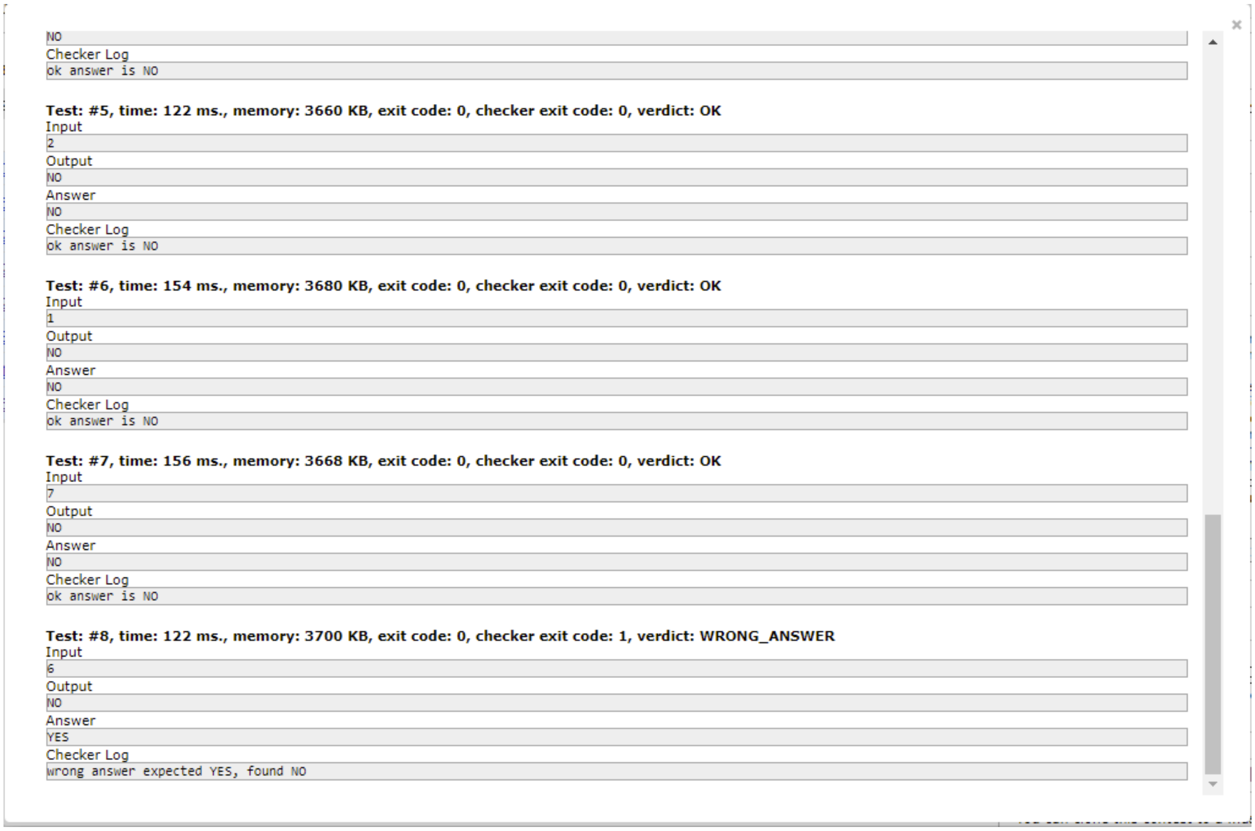
By beemen, contest: Codeforces Beta Round #4 (Div. 2 Only), problem: (A) Watermelon, Wrong answer on test 8, #, Copy

```java
import java.util.Scanner;

public class Watermelon {

    private int weight;

    public Watermelon(int weight) {
        this.weight = weight;
    }
    public String isDivisible(){
       if(weight>0 && weight <= 100){
          float temp = weight/2;
          if(weight%2 == 0 && temp!= 1 && temp%3!= 0){
              return "YES";
          }
          else{
       return"NO";
          }


        }
        return null;
        }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        Watermelon watermelon = new Watermelon(a);
        String s = watermelon.isDivisible();
        System.out.println(s);
    }

}
```

→Judgement Protocol

Test: #1, time: 92 ms., memory: 3692 KB, exit code: 0, checker exit code: 0, verdict: OK
Input

6. The code failed at test 8:

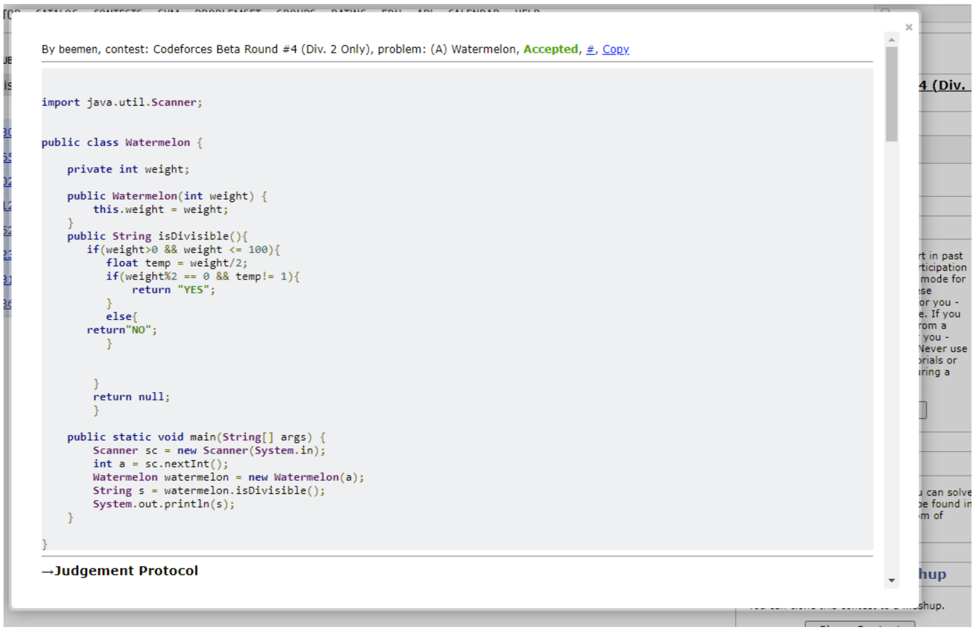


```
NO
Checker Log
ok answer is NO

Test: #5, time: 122 ms., memory: 3660 KB, exit code: 0, checker exit code: 0, verdict: OK
Input
2
Output
NO
Answer
NO
Checker Log
ok answer is NO

Test: #6, time: 154 ms., memory: 3680 KB, exit code: 0, checker exit code: 0, verdict: OK
Input
1
Output
NO
Answer
NO
Checker Log
ok answer is NO

Test: #7, time: 156 ms., memory: 3668 KB, exit code: 0, checker exit code: 0, verdict: OK
Input
7
Output
NO
Answer
NO
Checker Log
ok answer is NO

Test: #8, time: 122 ms., memory: 3700 KB, exit code: 0, checker exit code: 1, verdict: WRONG_ANSWER
Input
6
Output
NO
Answer
YES
Checker Log
wrong answer expected YES, found NO
```

The code failed at test 8 as 6 could be divided into 2 different even numbers which are 4 and 2

Submission number: 148696565

7. Second code change:



By beemen, contest: Codeforces Beta Round #4 (Div. 2 Only), problem: (A) Watermelon, Accepted, #, Copy

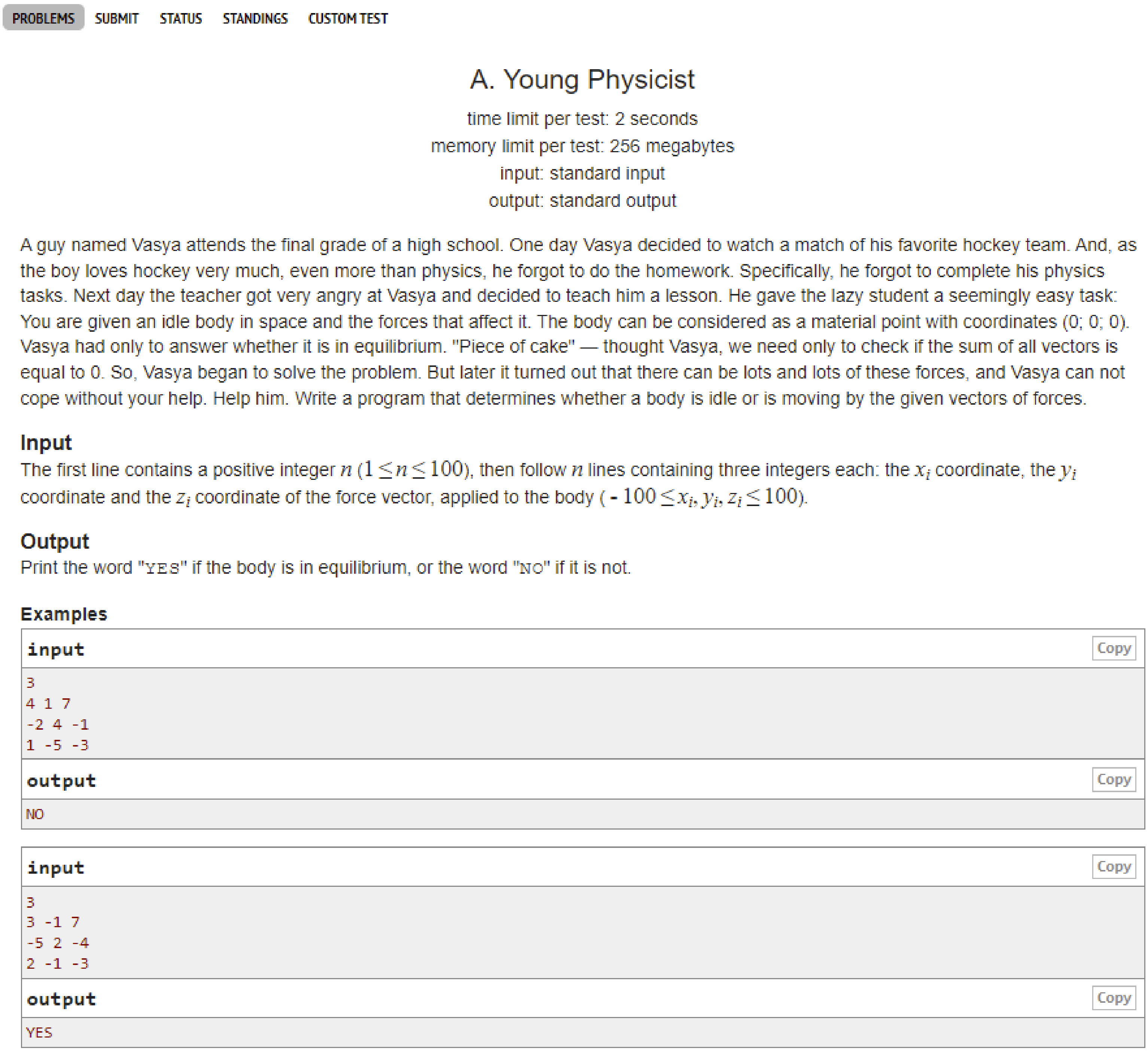
```
import java.util.Scanner;

public class Watermelon {

    private int weight;

    public Watermelon(int weight) {
        this.weight = weight;
    }
    public String isDivisible(){
       if(weight>0 && weight <= 100){
          float temp = weight/2;
          if(weight%2 == 0 && temp!= 1){
              return "YES";
          }
          else{
       return"NO";
          }


        }
        return null;
        }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        Watermelon watermelon = new Watermelon(a);
        String s = watermelon.isDivisible();
        System.out.println(s);
    }

}
```

→Judgement Protocol

The code is adapted to only exclude 2 kilos as they cant be divided into 2 even numbered halves and the code passed all the test cases

Submission code: 148697130

2. The young physicist problem description:



A. Young Physicist

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

A guy named Vasya attends the final grade of a high school. One day Vasya decided to watch a match of his favorite hockey team. And, as the boy loves hockey very much, even more than physics, he forgot to do the homework. Specifically, he forgot to complete his physics tasks. Next day the teacher got very angry at Vasya and decided to teach him a lesson. He gave the lazy student a seemingly easy task: You are given an idle body in space and the forces that affect it. The body can be considered as a material point with coordinates (0; 0; 0). Vasya had only to answer whether it is in equilibrium. "Piece of cake" — thought Vasya, we need only to check if the sum of all vectors is equal to 0. So, Vasya began to solve the problem. But later it turned out that there can be lots and lots of these forces, and Vasya can not cope without your help. Help him. Write a program that determines whether a body is idle or is moving by the given vectors of forces.

Input

The first line contains a positive integer n ($1 \le n \le 100$), then follow n lines containing three integers each: the x_i coordinate, the y_i coordinate and the z_i coordinate of the force vector, applied to the body ($-100 \le x_i, y_i, z_i \le 100$).

Output

Print the word "`YES`" if the body is in equilibrium, or the word "`NO`" if it is not.

Examples

input

```
3
4 1 7
-2 4 -1
1 -5 -3
```

output

```
NO
```

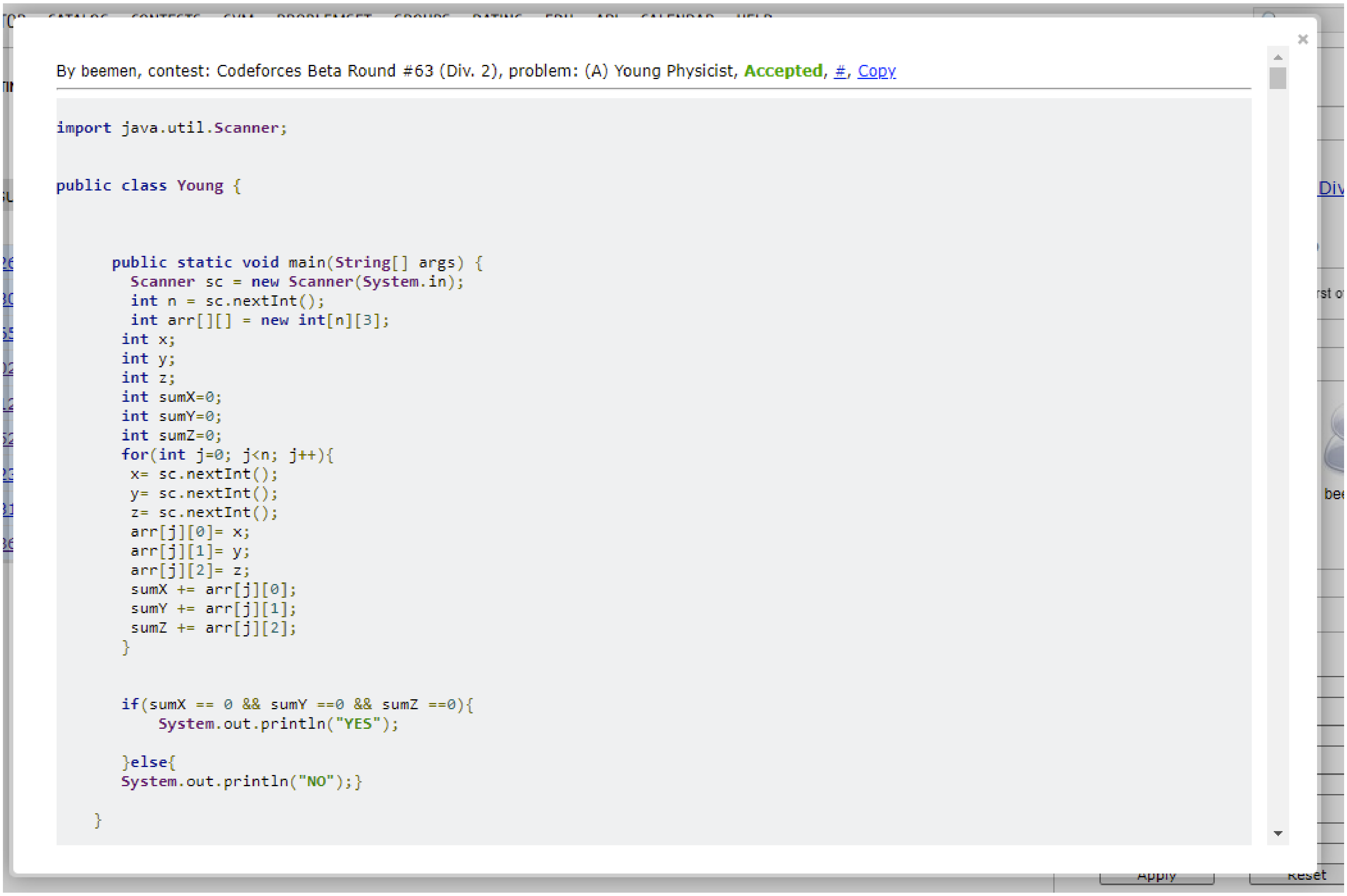
input

```
3
3 -1 7
-5 2 -4
2 -1 -3
```

output

```
YES
```

2.1. the submitted code:

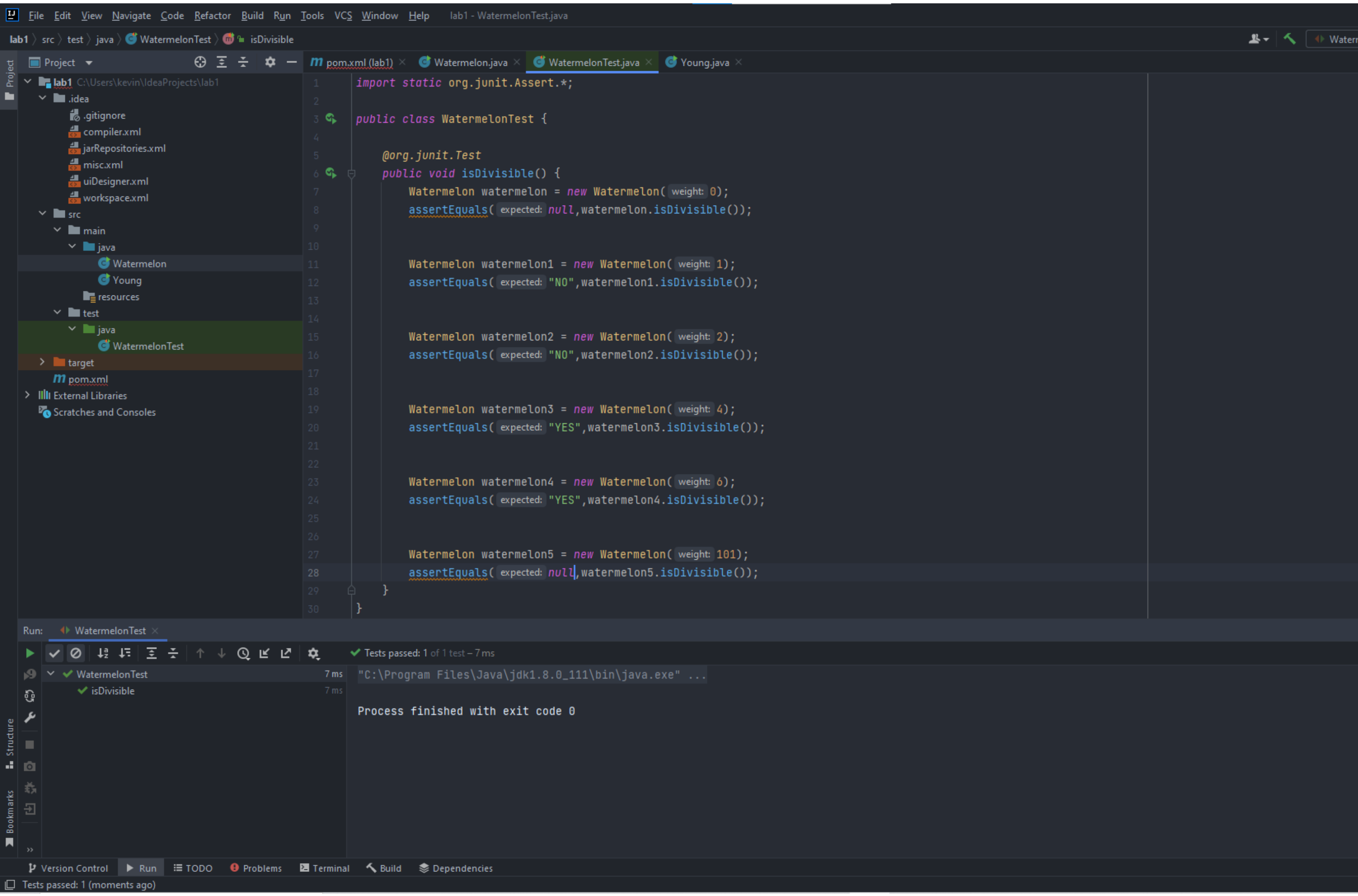


By beemen, contest: Codeforces Beta Round #63 (Div. 2), problem: (A) Young Physicist, **Accepted**, #, Copy

```
import java.util.Scanner;


public class Young {



      public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int arr[][] = new int[n][3];
       int x;
       int y;
       int z;
       int sumX=0;
       int sumY=0;
       int sumZ=0;
       for(int j=0; j<n; j++){
        x= sc.nextInt();
        y= sc.nextInt();
        z= sc.nextInt();
        arr[j][0]= x;
        arr[j][1]= y;
        arr[j][2]= z;
        sumX += arr[j][0];
        sumY += arr[j][1];
        sumZ += arr[j][2];
       }


       if(sumX == 0 && sumY ==0 && sumZ ==0){
           System.out.println("YES");

       }else{
       System.out.println("NO");}

    }
```

The code passed every single test the first time and its submission number is : 149169526

Junit4 test suite for Watermelon.java:



```java
import static org.junit.Assert.*;

public class WatermelonTest {

    @org.junit.Test
    public void isDivisible() {
        Watermelon watermelon = new Watermelon( weight: 0);
        assertEquals( expected: null,watermelon.isDivisible());


        Watermelon watermelon1 = new Watermelon( weight: 1);
        assertEquals( expected: "NO",watermelon1.isDivisible());


        Watermelon watermelon2 = new Watermelon( weight: 2);
        assertEquals( expected: "NO",watermelon2.isDivisible());


        Watermelon watermelon3 = new Watermelon( weight: 4);
        assertEquals( expected: "YES",watermelon3.isDivisible());


        Watermelon watermelon4 = new Watermelon( weight: 6);
        assertEquals( expected: "YES",watermelon4.isDivisible());


        Watermelon watermelon5 = new Watermelon( weight: 101);
        assertEquals( expected: null,watermelon5.isDivisible());
    }
}
```

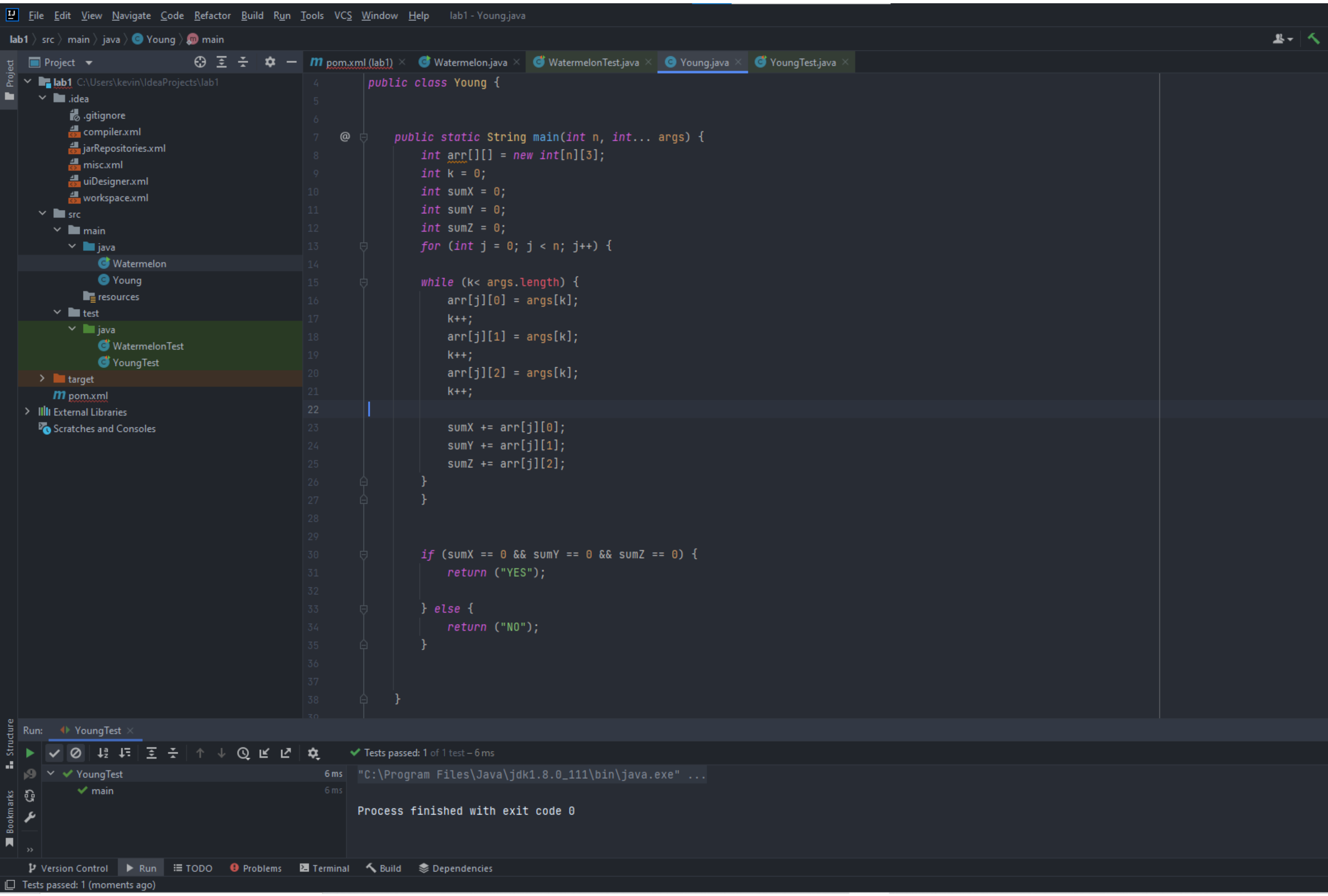
```
Tests passed: 1 of 1 test – 7 ms

"C:\Program Files\Java\jdk1.8.0_111\bin\java.exe" ...

Process finished with exit code 0
```

```
Tests passed: 1 (moments ago)
```

All the Test cases are successful

Test suite for the young physicist:

I had to make some changes to the code to be able to make the test suite for it



```java
public class Young {


    public static String main(int n, int... args) {
        int arr[][] = new int[n][3];
        int k = 0;
        int sumX = 0;
        int sumY = 0;
        int sumZ = 0;
        for (int j = 0; j < n; j++) {

            while (k< args.length) {
                arr[j][0] = args[k];
                k++;
                arr[j][1] = args[k];
                k++;
                arr[j][2] = args[k];
                k++;

                sumX += arr[j][0];
                sumY += arr[j][1];
                sumZ += arr[j][2];
            }
        }


        if (sumX == 0 && sumY == 0 && sumZ == 0) {
            return ("YES");

        } else {
            return ("NO");
        }


    }
```

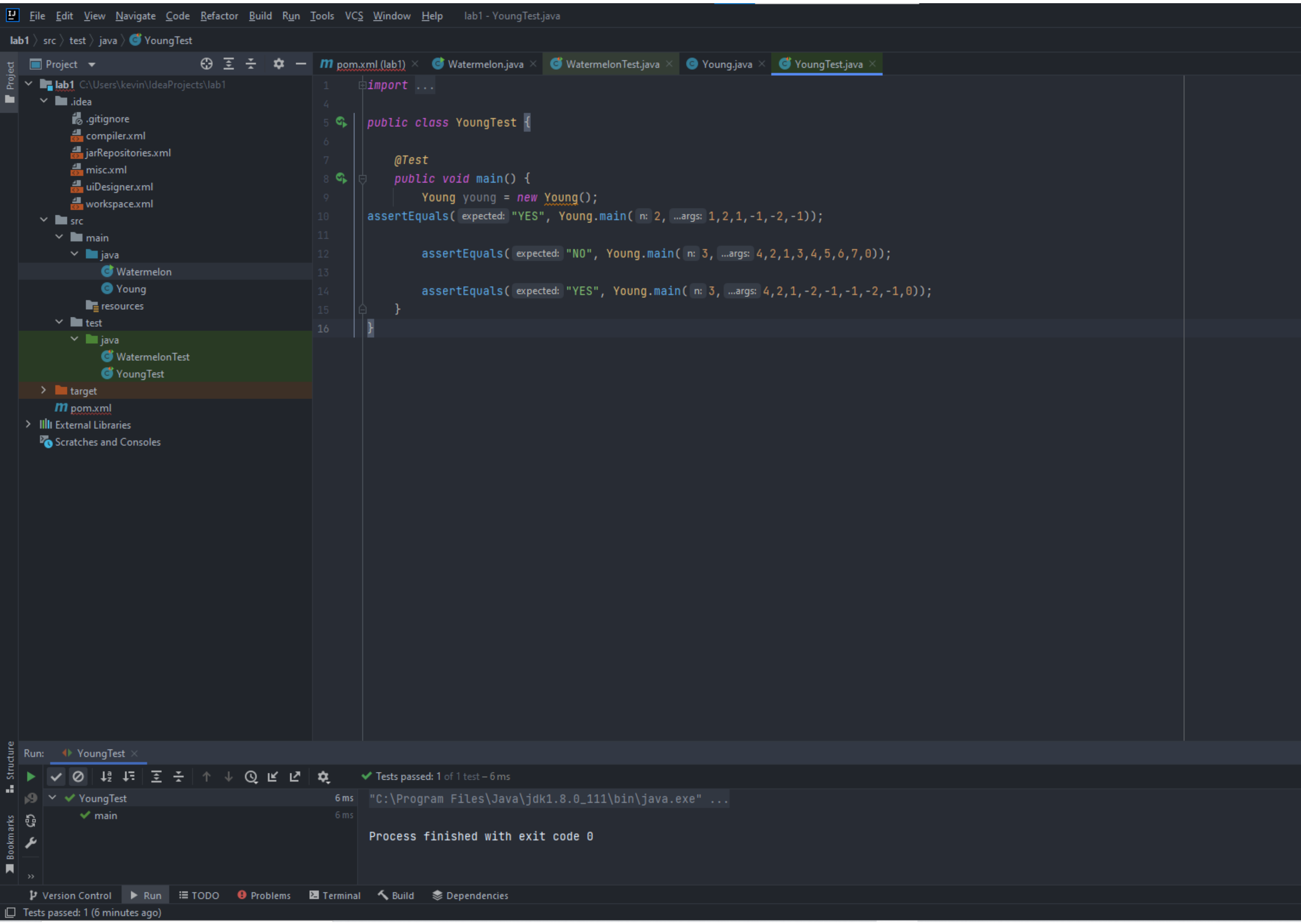
Tests passed: 1 of 1 test – 6 ms

```
"C:\Program Files\Java\jdk1.8.0_111\bin\java.exe" ...

Process finished with exit code 0
```

Tests passed: 1 (moments ago)

The changes consist of changing the main to a method that returns a String and this method now has indefinite parameters that I could add according to n so for example if n = 2 I could add 6 arguments to test whether the system is in equilibrium or not.

The test cases



```java
import ...

public class YoungTest {

    @Test
    public void main() {
        Young young = new Young();
assertEquals( expected: "YES", Young.main( n: 2, ...args: 1,2,1,-1,-2,-1));

        assertEquals( expected: "NO", Young.main( n: 3, ...args: 4,2,1,3,4,5,6,7,0));

        assertEquals( expected: "YES", Young.main( n: 3, ...args: 4,2,1,-2,-1,-1,-2,-1,0));
    }
}
```

Tests passed: 1 of 1 test – 6 ms

```
"C:\Program Files\Java\jdk1.8.0_111\bin\java.exe" ...

Process finished with exit code 0
```

Tests passed: 1 (6 minutes ago)

3. the git repository:

https://github.com/beemenAmir/testing-lab1