Faculty of Engineering I-CHEP
Ain Shams University

Submission Date:
16-2-2022

Submitted By:
Omar Ashraf Mabrouk 19P8102

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.

Approach

We need to check the sum of every column in the matrix, if any of sums is not equal to zero then the body is not in equilibrium.

Failed Test Cases

None

Test Cases Succeeded

All

Problem 4A

A. Watermelon

<div align="center">

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

</div>

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 $(1 \leq w \leq 100)$ — 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.

Approach

We need to check if the number is even and more than 2 then the watermelon can be split into even parts else the watermelon cannot be split.

Failed Test Cases

None

Test Cases Succeeded

All

Github Repo

https://github.com/SpadeQ22/Labs/tree/master/Assignment%201