



United International University (UIU)
Dept. of Computer Science & Engineering (CSE)
CSE 2218: Data Structure and Algorithms II Lab
Assignment 2

Section: J

Marks: 10

Mr. Alam has plenty of land in his village and he wants to distribute them to his two sons in such a way that each brother gets the same amount of lands. Your task is to determine using a **dynamic programming approach** whether he can divide and hand over his lands *equally* or not. Note that, it is not possible to divide one land in a proportion and give that to his sons (for example 30%-70%), rather one land must be given to exactly one son only.

Input: First line contains an integer n ($1 \leq n \leq 10^5$) — the number of lands Mr. Alam owns. Second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$) — the area of each land.

Output: Print “YES” if they are equally divisible, otherwise print “NO”.

Input	Output
4 1 2 3 8	NO
5 4 7 3 1 1	YES
5 4 7 3 1 2	NO

***Explanations:** In the second example, it is possible to divide into {4, 3, 1} and {7, 1}. But for other examples, there is no such way to divide equally into two parts.

Instructions

- Keep your code file(s) in a folder named **<YourID>**
- **Zip** the folder and submit it.
- If you are found guilty of copying from **ChatGPT** or your **friend(s)**, then you will get a **-100%** mark as a penalty.

Deadline: 21st November (Tuesday), 11:55 pm.