

Balanced Split

Given an array of integers (which may include repeated integers), determine if there's a way to split the array into two subsequences **A** and **B** such that the sum of the integers in both arrays is the same, and all of the integers in **A** are strictly smaller than all of the integers in **B**.

Note: Strictly smaller denotes that every integer in **A** must be less than, and not equal to, every integer in **B**.

Signature

```
bool balancedSplitExists(int[] arr)
```

Input

All integers in array are in the range [0, 1,000,000,000].

Output

Return true if such a split is possible, and false otherwise.

Example 1

```
arr = [1, 5, 7, 1]
```

```
output = true
```

We can split the array into **A** = [1, 1, 5] and **B** = [7].

Example 2

```
arr = [12, 7, 6, 7, 6]
```

```
output = false
```

We can't split the array into **A** = [6, 6, 7] and **B** = [7, 12] since this doesn't satisfy the requirement that all integers in **A** are smaller than all integers in **B**.