

Distributed Practice Round
2015[A. Testrun](#)[B. sandwich](#)[C. majority](#)[D. shhhh](#)**[E. load_balance](#)**[Contest Analysis](#)**Questions asked 17****Submissions**

Testrun

0pt Not attempted
0/142 users correct
(0%)

sandwich

1pt Not attempted
187/205 users correct
(91%)15pt Not attempted
141/178 users correct
(79%)

majority

1pt Not attempted
170/176 users correct
(97%)20pt Not attempted
80/167 users correct
(48%)

shhhh

1pt Not attempted
110/115 users correct
(96%)30pt Not attempted
69/102 users correct
(68%)

load_balance

2pt Not attempted
94/101 users correct
(93%)35pt Not attempted
33/88 users correct
(38%)**Top Scores**

iwi	105
simonlindholm	105
Murphy	105
stgatilov	105
Alexander86	105
microtony	105
eatmore	105
uwi	105
Marcin.Smulewicz	105
tczajka	105

Problem E. load_balance

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

small
2 points
2 minute timeout

The contest is finished.

large
35 points
10 minute timeout

The contest is finished.

Problem

At your flat, you take turns in bringing the groceries in. Each day, one person goes out and does the shopping for everybody who lives in the whole building. Today it's your turn, you did the shopping, and all these bags are heavy! You can't do much about the fact the bags are heavy — people depend on you to bring the bags home. But they will be easier to carry if you distribute the load equally between the left and the right hand. So, you look at all the bags you have, and wonder whether it's possible to split them so that the weight of the ones you'll carry in your left hand will be equal to the weight of those you will carry in your right hand.

Input

The input library will be called "load_balance", see the sample inputs below for examples in your language. It will define two methods: GetN(), which will return the number of bags you have to carry, and GetWeight(i), which will return the weight of the i th bag, for $0 \leq i < N$.

Output

Output one string: "IMPOSSIBLE" if it is impossible to split the load equally, or "POSSIBLE" if it is possible (quotes are for clarity only).

Limits

Each node will have access to 512MB of RAM, and a time limit of 4 seconds.
 $1 \leq \text{GetWeight}(i) \leq 10^{15}$ for all i with $0 \leq i < \text{GetN}()$.

Small input

Your solution will run on 10 nodes.
 $1 \leq \text{GetN}() \leq 30$.

Large input

Your solution will run on 100 nodes.
 $1 \leq \text{GetN}() \leq 52$.

Sample

Input	Output
See input files below.	For sample input 1: POSSIBLE For sample input 2: IMPOSSIBLE For sample input 3: POSSIBLE

Note: this problem might be known to a few people, since we communicated it externally when speaking about Distributed Code Jam.

Sample input libraries:

Sample input for test 1: [load_balance.h](#) [CPP] [load_balance.java](#) [Java]

Sample input for test 2: [load_balance.h](#) [CPP] [load_balance.java](#) [Java]

Sample input for test 3: [load_balance.h](#) [CPP] [load_balance.java](#) [Java]

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