FACULTAD DE INGENIERÍA
PROGRAMA ACADÉMICO DE INGENIERÍA DE SISTEMAS
CURSO DE PROGRAMACIÓN V
PROYECTO FINAL DE CURSO – PERÍODO 2017-2

FRIENDSHIP NETWORKS[i]
For a group of N people registered at a social network, a friendship network can be constructed with the N people as the nodes and a non-directed edge between every pair of friends. For such a network, it is usual to say that a node, i.e., a person, has degree d *iff* there are d nodes connected to it. Note that the degree of a node is exactly his/her number of friends. Since nobody is friends with himself/herself, the degree of each node is less than N.

A key property of a friendship network is the number of friends for each one of its members, i.e., its members' degrees. However, given an intended number of network friends for each one of the members, such a network may or may not exist. For example, for a group of 4 people there is a friendship network in which the people have 3, 2, 2, and 3 friends. However, there is no friendship network corresponding to the enumeration 1, 3, 2, and 3 for a group of 4 people.

You are working at a company that researches friendship networks with the business idea of eventually developing applications on them. Your specific job is part of a test data validation. More precisely, you must write a program that given an enumeration of positive integers, decides if there exists a friendship network with such number of friends for each of its members.

INPUT
The input consists of several cases. Each test case is given in a single line by a blank-separated list of integers $N, d_1, d_2, \ldots, d_N$, with N ($2 \leq N \leq 1000$) the number of people in the social network and the d_i ($1 \leq i \leq N$) an enumeration of a possible friendship network. You can assume that $0 < d_i < N$ for $1 \leq i \leq N$.

OUTPUT
Output a single line for each test case. If $d_1, d_2, \ldots, d_N$ describes a friendship network with such number of friends for each of its members, then output '1'; otherwise output '0'.

SAMPLE INPUT	SAMPLE OUTPUT
4 3 2 2 3	1
4 1 3 2 3	0
8 2 5 4 5 4 3 5 2	1

CONDICIONES DE EVALUACIÓN:
- Implementar en un lenguaje de programación la solución a este problema utilizando alguna técnica de programación apropiada. (30%)
- Presentar un informe en donde explique la estrategia utilizada para solucionar dicho problema y el cálculo del costo computacional. (30%)
- Sustentación de la solución (40%)
- Fecha de presentación y sustentación: 27 de Noviembre de 2017

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[i] Tomado de https://uva.onlinejudge.org/