Artificium

Budget Traveler

Runtime Limit — 3s

Problem Statement

As a traveler eager to explore fascinating destinations, you must carefully choose which countries to visit due to budget constraints. Each country on your list has a certain number of tourist attractions. Your goal is to determine the minimum number of countries you need to visit to experience at least half of the total attractions.

Format

Input

Line 1: An integer, N, representing the total number of countries.

Next N lines: Two space-separated integers: x (the country) and y (the number of tourist attractions).

Output

An integer representing the minimum number of countries to visit.

Constraints

$2 \leq N \leq 25$

$1 \leq y \leq 10$

Sample

3

1 2

2 3

3 1

1