Problem E

Foreign Exchange

Input: standard input
Output: standard output
Time Limit: 1 second

Your non-profit organization (**iCORE** - **i**nternational **C**onfederation of **R**evolver **E**nthusiasts) coordinates a very successful foreign student exchange program. Over the last few years, demand has sky-rocketed and now you need assistance with your task.

The program your organization runs works as follows: All candidates are asked for their original location and the location they would like to go to. The program works out only if every student has a suitable exchange partner. In other words, if a student wants to go from A to B, there must be another student who wants to go from B to A. This was an easy task when there were only about 50 candidates, however now there are up to **500000** candidates!

Input

The input file contains multiple cases. Each test case will consist of a line containing **n** - the number of candidates **(1≤n≤500000)**, followed by **n** lines representing the exchange information for each candidate. Each of these lines will contain **2** integers, separated by a single space, representing the candidate's original location and the candidate's target location respectively. Locations will be represented by nonnegative integer numbers. You may assume that no candidate will have his or her original location being the same as his or her target location as this would fall into the domestic exchange program. The input is terminated by a case where **n = 0**; this case should not be processed.

Output

For each test case, print **"YES"** on a single line if there is a way for the exchange program to work out, otherwise print **"NO"**.

Sample Input	Output for Sample Input
10 1 2 2 1 3 4 4 3 100 200 200 100 57 2 2 57 1 2 2 1 10 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 0	YES NO

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