Q9 // Zhehai’s Car Ride

Zhehai has just recently got his G2. He likes to drive around the city to see many different attractions. He traverses the roads by riding his car along each and every one of the roads in Windsor (and nowhere else). Zhehai does not like to see the same sights more than once. Your program must read in a description of a network of roads and output a path to traverse each road exactly once. Zhehai Zhang can, if he wishes, start and finish at any attraction in the city.

Every road connects two attractions, which are numbered inclusively from 1 through 500 (though some cases will have far fewer than 500 attractions). Any number of roads (>=1) can meet at an attraction. It is always possible to ride from any attraction to any other attraction (i.e., all attractions are "connected").

Your program must output the path that Zhehai takes that, if interpreted as a base 500 number, would have the smallest magnitude.

There will always be at least one solution for each set of input data supplied to your program for testing.

Input Specification:
The first line will contain a number $A(0<=A<=1024)$, indicating the number of attractions. The following A lines will contain two integers, $s(1<=s<=500)$ and $e(1<=e<=500)$, which indicate that attraction s is connected to attraction e via a road.

Output Specification:
The output consists of A+1 lines, each containing a single integer. Print the number of the starting attraction on the first line, the next attraction’s number on the next line, and so on, until the final attraction on the last line. There might be many possible answers to any given input set, but only one is ordered correctly.

Good Luck! :)

Sample Input:

```
9
1 2
2 3
3 4
4 2
4 5
2 5
5 6
5 7
4 6
```

Sample Output:

```
1
2
3
4
2
5
4
6
5
7
```