**An Easy Problem**

In a School, there are X student sitting around a circular table for reading. Before the reading, they should be shake hands one to another exactly one. All shakes happen simultaneously. we could say, the shake is Correct, if no arm cross each other.

You are given X. return the number of Correct shakes. X must be even and X<=50.

Input:

2

4

Output:

1

2

**Problem Swap**

You are given an integer X (1<=X<=1000000). Write down X in decimal notation with no leading zeroes, and let N be the number of written digits. Perform the following operation exactly Z (1<=Z<=10) times:

Choose two different 1-based positions, i and j, such that 1 <= i < j <= N. Swap the digits at positions i and j. This swap must not cause the resulting number to have a leading zero, i.e., if the digit at position j is zero, then i must be strictly greater than 1.

Return the maximal possible number after Z operation. If Z operations is not possible, print -1.

Input:

16375

1

432

1

Output:

76315 --> The optimal way is to swap 1 and 7.

423 --> In this case the result is less than the given number.

**Problem: Count the Path**

Luxemburg is a rich country. There are M cities in this country, which follows numbered 0 to M-1. Each pair of cities is connected by a bidirectional road. Alex is a smart boy. so he plans to travel through the country using the following rules:

1. He must start in one city and end in another city after travelling exactly M-1 roads.

2. He must visit each city exactly once.

3. We are given a vector <string> roads. If the j-th character of the i-th element of roads is 'Y', he must travel the road that connects city i and city j.

NYN

YNN

NNN

For example, if there are three cities, and he wants to travel the road between city 0 and city 1, there are 4 possible paths: 0->1->2, 1->0->2, 2->0->1, 2->1->0. Paths 0->2->1 and 1->2->0 are not allowed because they do not allow him to travel the road between city 0 and city 1. Return the number of paths he can choose, modulo 1,000,000,007.