1259. Handshakes That Don't Cross

Hard 50 3 Add to List Share

You are given an **even** number of people `num_people` that stand around a circle and each person shakes hands with someone else, so that there are `num_people / 2` handshakes total.

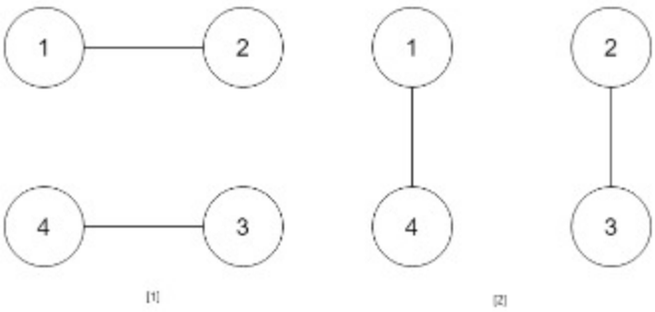
Return the number of ways these handshakes could occur such that none of the handshakes cross.

Since this number could be very big, return the answer **mod** `10^9 + 7`

Example 1:

```
Input: num_people = 2
Output: 1
```

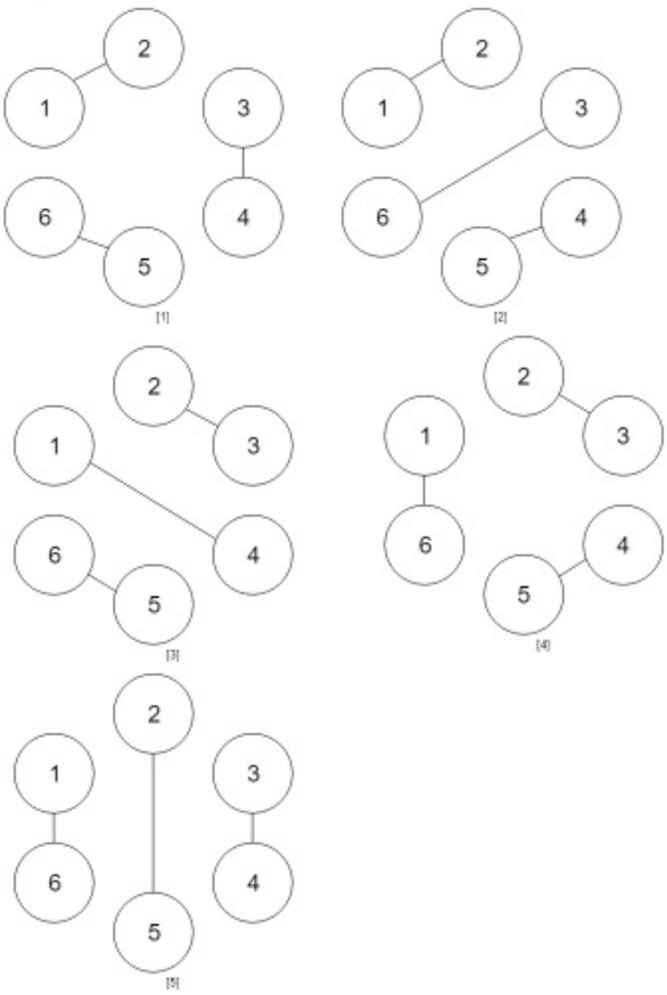
Example 2:



[1] [2]

```
Input: num_people = 4
Output: 2
Explanation: There are two ways to do it, the first way is [(1,2),(3,4)] and the second one is [(2,3),(4,1)].
```

Example 3:




```
Input: num_people = 6
Output: 5
```

Example 4:

```
Input: num_people = 8
Output: 14
```

Constraints:

- `2 <= num_people <= 1000`
- `num_people % 2 == 0`

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Seen this question in a real interview before? Yes No

Contributor

Companies

```
class Solution(object):
    def numberOfWays(self, num_people):
        """
        :type num_people: int
        :rtype: int
        """
```

Console Contribute