Suppose you have n integers labeled 1 through n. A permutation of those n integers perm (**1-indexed**) is considered a **beautiful arrangement** if for every i (1 <= i <= n), **either** of the following is true:

* perm[i] is divisible by i.
* i is divisible by perm[i].

Given an integer n, return *the****number****of the****beautiful arrangements****that you can construct*.

**Example 1:**

**Input:** n = 2

**Output:** 2

**Explanation:**

The first beautiful arrangement is [1,2]:

- perm[1] = 1 is divisible by i = 1

- perm[2] = 2 is divisible by i = 2

The second beautiful arrangement is [2,1]:

- perm[1] = 2 is divisible by i = 1

- i = 2 is divisible by perm[2] = 1

**Example 2:**

**Input:** n = 1

**Output:** 1

**Constraints:**

* 1 <= n <= 15