Welcome Game!

Description


## Motivation

The new semester begins, and freshmen flood into ShanghaiTech. In order to welcome these new friends, a welcome game is held every year.

Last year, a material tower model was left, waiting for a lucky buddy this year. New crazy game rules are designed for it. Only one person can derive this amazing model!

*On the Design of the Tech-Tower in ShanghaiTech University*
***Bin, Liu***

## Game rule

1. "m" freshmen stand in a ring, and everyone is assigned an ID from 1 to "m" . ("m" is a positive integer) sequently. The game is round-based.
2. The first round begins at person with ID 1 in the circle. A counting proceeds around the circle following the ascending order(of ID), skipping n - 1 people, and removing the n_th player out of the game. (m <= n)
3. The i_th round begins after the person removed from the last round. A counting proceeds around the circle again following the ascending order(of ID), skipping n - i people, an d removing the (n - i + 1 )_th player out of the game.(1 <= i <= m - 1).
4. The game ends after m - 1 round, left with a winner.

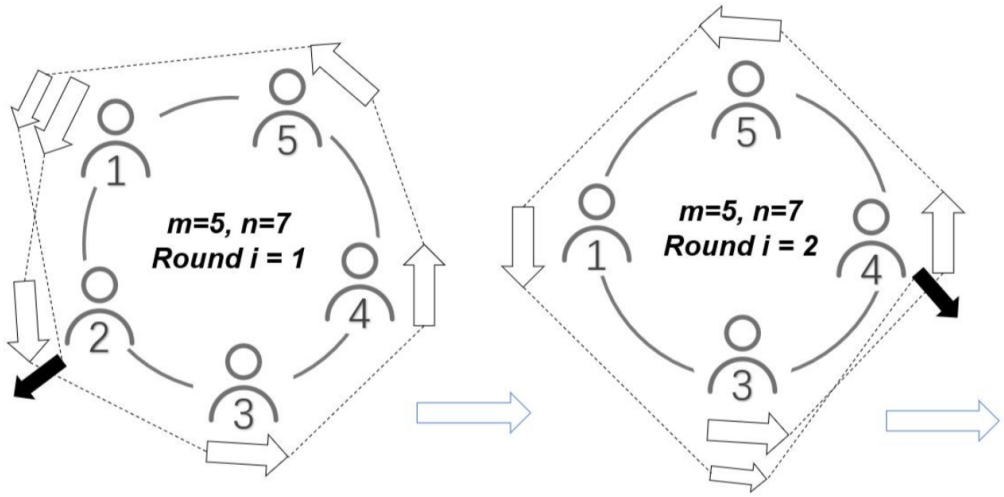



figure 1: the visualization of m = 5, n = 7

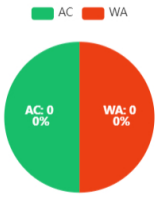
## Goal

Problems
Announcements
Submissions
Rankings
View Contest

Information

| | |
|---|---|
| ID | 1 |
| Time Limit | 1000MS |
| Memory Limit | 256MB |
| IO Mode | Standard IO |
| Created By | root |
| Level | Low |
| Score | 100 |
| Tags | Show |

Statistic Details



Your friend begs you to "hack" this game, since some position in this ring is sure to belong to the winner. You cannot wait to construct a script to figure out that position by C/C++.

## Input

Two postive integer, "m"and "n"(1 <= m <= n), separated by a space.

For 50% cases, 1<=m<=n<=6000;

For 100% cases, 1<=m<=n<=100000, m*n<=10^9.

## Output

A postive integer "p" (1 <= p <= m), denoting the ID of winner.

## Sample Input 1

```
100 200
```

## Sample Output 1

```
22
```

## Sample Input 2

```
2019 3000
```

## Sample Output 2

```
104
```

## Hint

### Criterion

1. Review the C/C++ programming. After you manipulate the usage of the built-in array, you will reach the limited level (50 % of points).
2. After you manipulate the usage of the linked list, you will get the rest of points (100 % of points).
3. More fancy algorithms are welcome, but we strongly recommand you to practise the usage of the linked list.

Language: C

Theme: Solarized Light

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Submit