B. Coloring book

Difficulty: Easy **Time**: 1 s **Memory**: 1024 MB

by munir_k

Thomas has generously provided n lines in a plane! Even better, his lines are in general position. That is, no two lines are parallel and no three lines intersect at a point.

The lines divide the plane into regions. Formally, points A and B are in the same region if and only if the segment $\overline{AB}$ doesn't intersect a line. Two regions are adjacent if the intersection of their boundaries has nonzero length. Note that this length may be infinite if both regions are unbounded.

Arvind and Zhongtang are going to play a game on the regions. First, Arvind will select a region and color it red. Then turns will proceed as follows: Zhongtang will select a region adjacent to a red region and color it blue, then Arvind will select a region adjacent to a blue region and color it red. The last person who can play wins.

You want prime betting odds. Can you predict the outcome of the game with perfect play?

Input

The first line contains an integer n ($2 \le n \le 2 \cdot 10^5$), the number of lines.

The i-th of the next n lines contains 4 integers a_i, b_i, c_i, d_i ($\max(|a_i|, |b_i|, |c_i|, |d_i|) \le 10^9$), denoting that the i-th line passes through lattice points (a_i, b_i) and (c_i, d_i) and extends forever in each direction.

Output

Output one line containing either "Arvind" or "Zhongtang" (without quotes).

Sample

Input

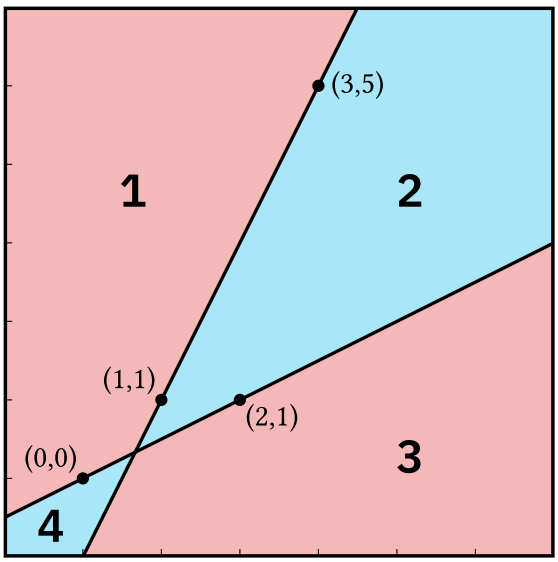
```
2
0 0 2 1
1 1 3 5
```

Output

```
Zhongtang
```

Explanation

Here's a possible game between Arvind and Zhongtang on the regions described in the sample:



Arvind selects region 1 and colors it red, then Zhongtang selects region 2, which is adjacent to region 1, colors it blue, and so on. The game ends when Zhongtang selects region 4 as all regions have been colored, so Zhongtang wins in this case.

Note that this image is cropped to fit on the page; the game is actually played on the infinite plane. (It does not make a difference here, since all regions are visible and their adjacency is the same.)