

Task 1

A binary search tree is a binary tree that satisfies the following properties:

- The left subtree of a node contains only nodes with keys less than the node's key.
- The right subtree of a node contains only nodes with keys greater than the node's key.
- Both the left and right subtrees must also be binary search trees.

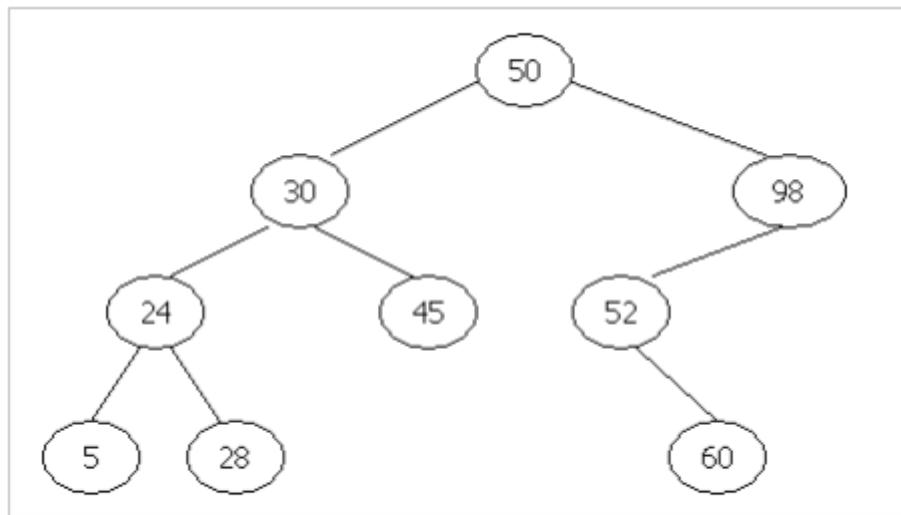


Figure 1. Example binary search tree

Pre-order traversal (Root-Left-Right) prints out the nodes key by visiting the root node then traversing the left subtree and then traversing the right subtree. Post-order traversal (Left Right-Root) prints out the left subtree first and then right subtree and finally the root node. For example, the results of pre-order traversal and post-order traversal of the binary tree shown in Figure 1 are as follows:

Pre-order: 50 30 24 5 28 45 98 52 60

Post-order: 5 28 24 45 30 60 52 98 50

Given the pre-order traversal of a binary search tree, your task is to find the post-order traversal of this tree.

Input

The keys of all nodes of the input binary search tree are given according to pre-order traversal. Each node has a key value which is a positive integer. All values are given in separate lines (one integer per line). You can assume that a binary search tree does not contain more than 10,000 nodes and there are no duplicate nodes.

Output

The output contains the result of post-order traversal of the input binary tree. Print out one key per line.

Input	Output
50	5
30	28
24	24
5	45
28	30
45	60
98	52
52	98
60	50

Input	Output
1	7
2	6
3	5
4	4
5	3
6	2
7	1

Input	Output
4	1
3	2
2	3
1	7
5	6
6	5
7	4

Task 2

Andrea, Carlos and Marcelo are close friends and spend their weekends by the swimming pool. While Andrea gets a suntan, both friends play Bubbles. Andrea, a very smart computer scientist, has already told them that she does not understand why they spend so much time playing a game so simple. Using her laptop, Carlos and Marcelo generate a random integer N and a sequence, also random, which is a permutation from 1, 2, ..., N . The game then begins. The players play by turns, and at each turn a player makes a move. Marcelo is always the first to play.

A move consists of choosing one pair of consecutive elements that are out of order in the sequence, and swapping both elements. For example, given the sequence 1, 5, 3, 4, 2, a player may swap 3 and 5 or 4 and 2, but cannot swap 3 and 4 nor 5 and 2. Continuing with the example, if the player decides to swap 5 and 3, the new sequence will be 1, 3, 5, 4, 2. Sooner or later, the sequence will be sorted. The player that cannot make a move loses. Andrea, with disdain, always says that it would be simpler to play Odd or Even, to the same effect. Your mission, in case you decide to accept it, is to determine who wins the game, given the initial permutation P .

Input

The input contains several test cases. Each test case is composed of a single line, in which all integers are separated by one space. Each line contains an integer N ($2 \leq N \leq 105$), followed by the initial sequence $P = (X_1; X_2; \dots; X_N)$ of N distinct integers, with $1 \leq X_i \leq N$ for $1 \leq i \leq N$. The end of input is indicated by a line containing only one zero.

Output

For each test case in the input, your program must print a single line, containing the name of the winner, equal to 'Carlos' or 'Marcelo'.

Sample Input

5 1 5 3 4 2

5 5 1 3 4 2

5 1 2 3 4 5

6 3 5 2 1 4 6

5 5 4 3 2 1

6 6 5 4 3 2 1

0

Sample Output

Marcelo

Carlos

Carlos

Carlos

Carlos

Marcelo