# D. Road Map

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

There are $n$ cities in Berland. Each city has its index — an integer number from $1$ to $n$. The capital has index $r_1$. All the roads in Berland are two-way. The road system is such that there is exactly one path from the capital to each city, i.e. the road map looks like a tree. In Berland's chronicles the road map is kept in the following way: for each city $i$, different from the capital, there is kept number $p_i$ — index of the last city on the way from the capital to $i$.

Once the king of Berland Berl XXXIV decided to move the capital from city $r_1$ to city $r_2$. Naturally, after this the old representation of the road map in Berland's chronicles became incorrect. Please, help the king find out a new representation of the road map in the way described above.

## Input

The first line contains three space-separated integers $n, r_1, r_2$ $(2 \le n \le 5 \cdot 10^4, 1 \le r_1 \ne r_2 \le n)$ — amount of cities in Berland, index of the old capital and index of the new one, correspondingly.

The following line contains $n$ - $1$ space-separated integers — the old representation of the road map. For each city, apart from $r_1$, there is given integer $p_i$ — index of the last city on the way from the capital to city $i$. All the cities are described in order of increasing indexes.

## Output

Output $n$ - $1$ numbers — new representation of the road map in the same format.

### Examples

| input |
| --- |
| 3 2 3<br>2 2 |

| output |
| --- |
| 2 3 |

| input |
| --- |
| 6 2 4<br>6 1 2 4 2 |

| output |
| --- |
| 6 4 1 4 2 |