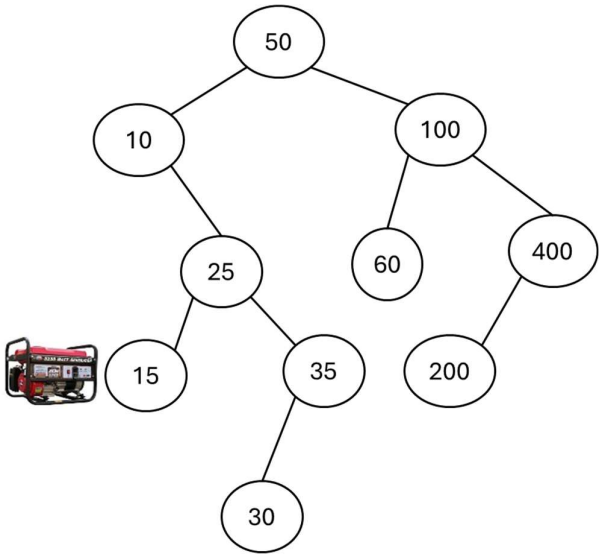
Problem 6: Lighting Up City by Cheema & Joyia Power Plant

Time limit: 3 seconds

Cheema & Joyia Power plant is interested in installing an electricity generator in Faisalabad city. The electricity network in the city follows a binary search tree structure. The company must decide where to place the generator so that the lighting of different points in the city starts in a certain pattern at nighttime. The scenarios are explained in the figure given.



Input

There are ***N*** points where city light points where **0<*N*<100**. The light points are input as Binary Search Tree where each light input number is unique. In the example given, the first line will show how many city points are available in the city. The next line shows the installation site where the generator is installed. The subsequent line shows the ***N*** light points separated with a single space.

Output

The output will display the sequence of city point numbers indicating the order in which lights will be turned on. The first line will show the installation site, and subsequent lines will indicate the next points that will be illuminated. For example, if the installation site is 15, the first point to light up will be point 15, followed by point 25. Since two points are connected to point 25, points 35 and 10 will illuminate simultaneously.

Note:

- If the node being illuminated has both a parent and a child node to be illuminated next, the name of the child node will be displayed first, followed by the parent node.
- If the node being illuminated has two child nodes, the name of the left child node will be displayed first, followed by the right child node.

Sample input	Sample Output
10 15 50 10 100 400 25 35 30 15 60 200	15 25 35 10 30 50 100 60 400 200