



Hello, 2024101067.

Right View Binary Tree

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Given a binary tree, print the nodes from top to bottom that are visible when the tree is viewed from the right-hand side. The tree is represented by a **parent array**, where the index represents a node and the value at that index represents its parent's index. The root node is indicated by a parent value of `-1`.

Input Format

- The **first line** contains a single integer `n`, the number of nodes in the tree.
- The **second line** contains `n` space-separated integers representing the parent array. For each node `i`:
 - If the value is `-1`, then `i` is the root.
 - Otherwise, the value represents the index of node `i`'s parent.

Output Format

Print the nodes visible from the right-hand side of the tree in a single line, space-separated.

Example

Input

```
7
-1 0 0 1 1 2 2
```

[Copy](#)

Output



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Input

```
3
-1 0 0
```

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Output

```
0 2
```

Copy

Input

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

Copy

Output

```
0 1 2 3 4
```

Copy

Note: the left child is assigned first, then the right child

? Clarifications[Request clarification](#)

No clarifications have been made at this time.