**Populating Next Right Pointers in Each Node**

**A perfect binary tree is a binary tree in which all interior nodes have two children and all leaves have the same depth or same level.**

**Given a perfect binary tree which contains an extra next pointer in all the node, populate the next pointers of each node to its next right node.**

**In nodes with no right nodes, set next to null.**

**Example**

**A diagram of a triangle with arrows and numbers

Description automatically generated**

**Testing**

**Input Format**

**The first line contains an integer *T* denoting the number of test cases.**

**For each test case, the input has 2 lines:**

* **The first line contains an integer *n* denoting the number of nodes in the tree.**
* **The second line contains *n* space-separated integers that will form the binary tree. The integers follow level order traversal of the tree.**

**Output Format**

**For each test case, the output has two lines:**

* **The first line contains the number of nodes in the tree.**
* **The second line contains space-separated integers denoting the level order traversal of the tree done using the next pointer for each level.**

**Sample Input**

**4**

**1**

**1**

**3**

**1 3 2**

**7**

**3 5 6 1 2 7 4**

**15**

**1 2 3 4 5 6 7 8 9 10 11 12 13 14 15**

**Expected Output**

**1**

**1**

**3**

**1 3 2**

**7**

**3 5 6 1 2 7 4**

**15**

**1 2 3 4 5 6 7 8 9 10 11 12 13 14 15**