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# Perfect Binary Tree

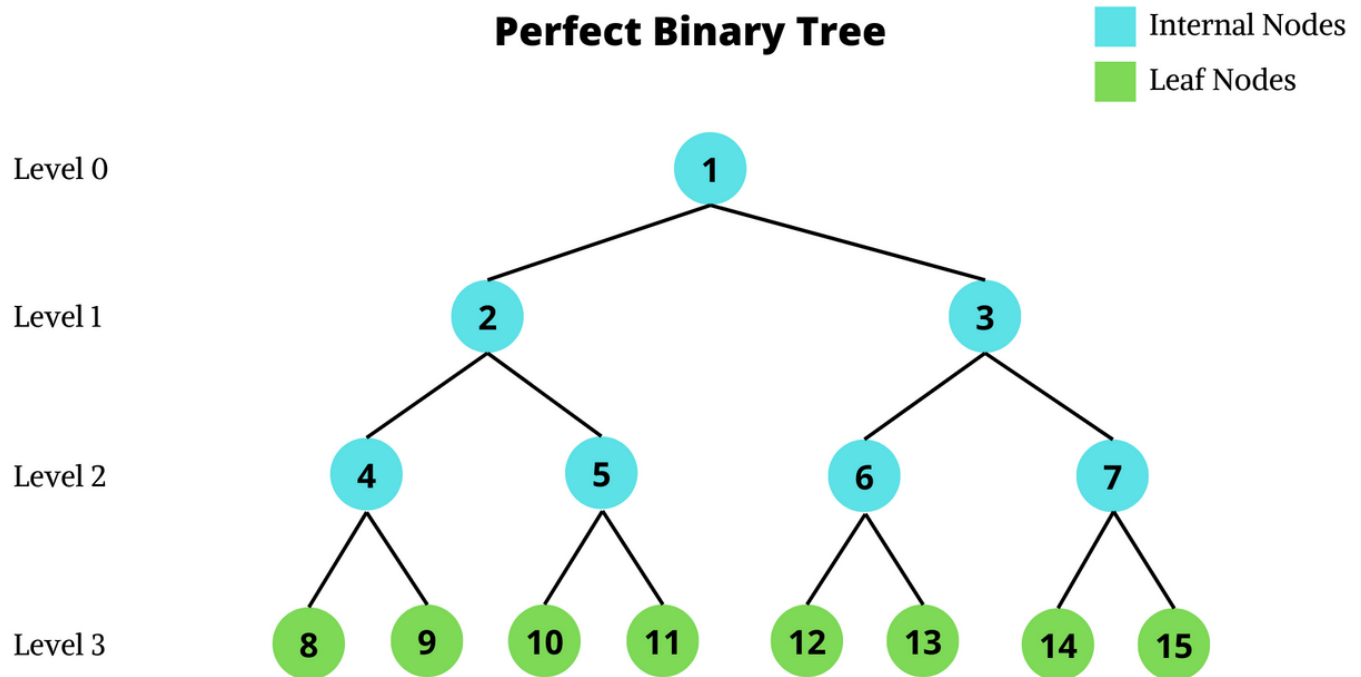| Problem | Submissions | Leaderboard | Discussions |
|---------|-------------|-------------|-------------|

## Problem Statement

You will be given a binary tree as input in level order. You need to tell if the binary tree is perfect or not. A binary tree is called perfect if all leaf nodes are at the maximum depth of the tree, and the tree is completely filled with no gaps.

Here is an example of perfect binary tree:



Also there is formula available to tell if a binary tree is perfect or not. The formula is :

- **Total number of nodes** = (2^maxHeight)-1

**Note**: Here height is counted from 1. In the above image maximum height is 4, so total number of nodes are 2^4-1=15. So there should be 15 nodes to call it a perfect binary tree.

## Input Format

- Input will contain the binary tree in level order. -1 means there is no node available.

## Constraints

1. 1 <= **Maximum number of nodes** <= 10^5

2. 1 <= **Node's value** <= 1000

## Output Format

- Output "**YES**" if the tree is perfect, "**NO**" otherwise.

## Sample Input 0

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

## Sample Output 0

```
YES
```

## Sample Input 1

```
10 20 30 40 -1 60 -1 -1 -1 -1 -1
```

## Sample Output 1

```
NO
```

## Sample Input 2

```
10 20 -1 -1 -1
```

## Sample Output 2

```
NO
```

## Sample Input 3

```
10 20 30 40 50 60 70 -1 -1 -1 -1 -1 -1 -1 -1
```

## Sample Output 3

```
YES
```

Submissions: 131
Max Score: 20
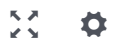Difficulty: Easy

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```cpp
1 #include <bits/stdc++.h>
2
3 using namespace std;
4
```

```
 5
 6
 7   int main()
 8  ▾{
 9        // Write your code here
10
11        return 0;
12   }
13
```

Line: 1 Col: 1

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