Definition: Binary Tree

A binary tree $T$ is:

$T = \{ d, T_L, T_R \}$ or $T = \{\}$

The height of a tree $T$ is:
If $T = \{\}$, height($T$) = -1
Otherwise:
height($T$) = $1 + \max(\text{height}(T_L), \text{height}(T_R))$

Tree Property: Full

Tree Property: Perfect

Tree Class

```cpp
#ifndef BINARYTREE_H_
#define BINARYTREE_H

template <typename T>
class BinaryTree {

public:
/* ... */

private:
};
#endif
```

Trees are nothing new – they’re fancy linked lists:
**Theorem:** If there are \( n \) data items in our representation of a binary tree, then there are _________ NULL pointers.

**Traversals:**

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**CS 225 – Things To Be Doing:**

1. Programming Exam A is on-going (final day is today!)
2. MP3 extra credit deadline is Monday!
3. lab_quacks due Sunday
4. Daily POTDs