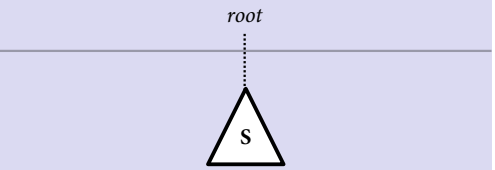
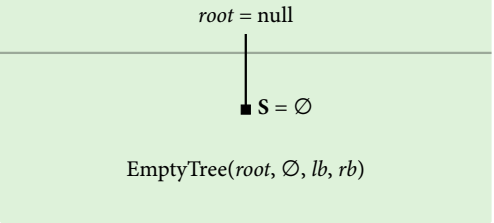
Precondition: *root* is a tree representing some set **S**. We are searching for *value*.



Is *root* null?

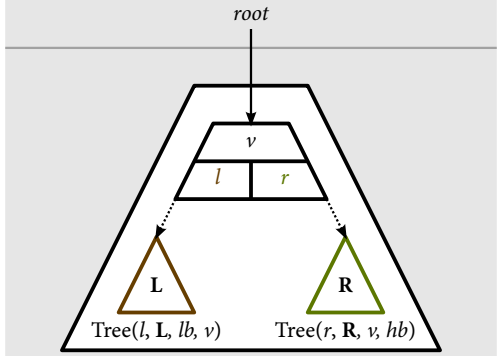
root = null

The tree at *root* is empty, and represents the set ∅. *value* ∉ ∅. Return false.



root ≠ null

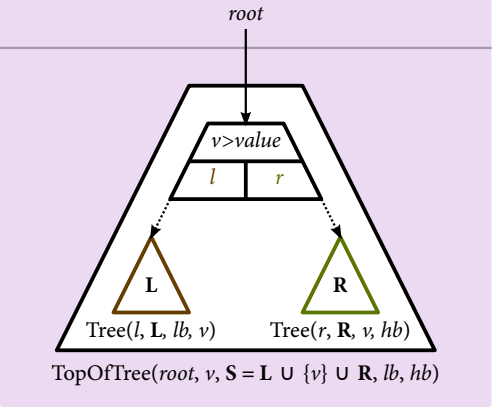
root points to a non-empty tree with some value *v* at the root and two subtrees.



compare(*value*, *v*)

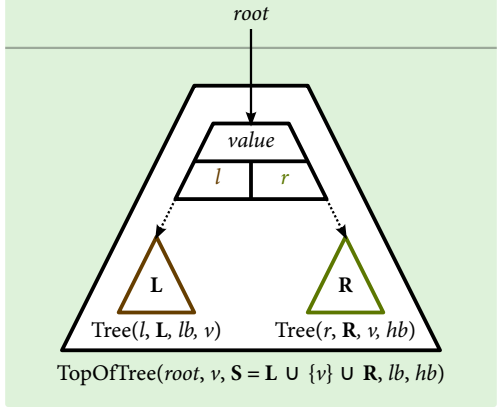
value < *v*

value ∉ {*v*}, and *value* ∉ **R** ∵ ∀*r*∈**R**. *v*<*r*, so (*value* ∈ **S**) ↔ (*value* ∈ **L**). Search *left*.



value = *v*

value ∈ {*v*}, so *value* ∈ **L** ∪ {v} ∪ **R**, so *value* ∈ **S**. Return true.



value > *v*

value ∉ {*v*}, and *value* ∉ **L** ∵ ∀*l*∈**L**. *v*>*l*, so (*value* ∈ **S**) ↔ (*value* ∈ **R**). Search *right*.