

— Software Engineering Vertiefung —

Exercise 1

Handout:

Handin:

1 Design Pattern

Punkte: 20

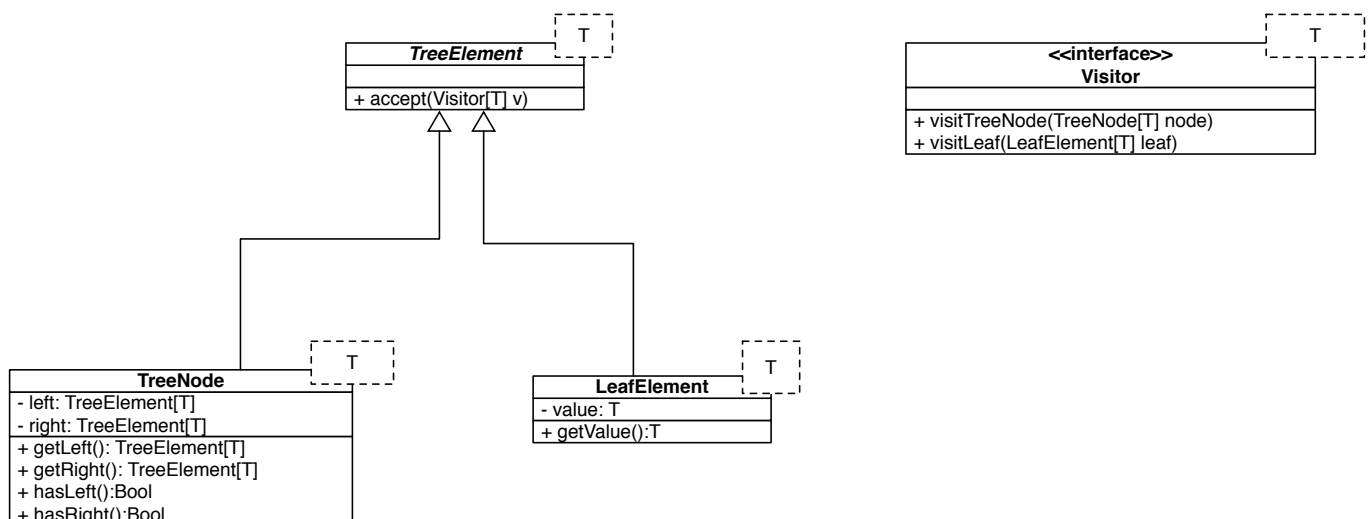


Abbildung 1: Example generic tree classes

Hint: The `accept` method delegates the control-flow to a Visitor method.

- (5 Pt) Consider the classes from Figure 1 implementing a tree. Provide implementations for `TreeNode.accept()` and `LeafElement.accept()`. You can use as programming languages C++, C#, Java or Pseudocode as in our exercises. Also note that you have to respect visibilities.
- (15 Pt) Implement a `SummingIntegerVisitor` which implements the Visitor interface. The method `Visitor.visitNode()` should visit first the left then the right subtree. The `Visitor.visitLeaf()` method has to compute the sum of all the leaf nodes and provide it via a `getSum()` method. Make sure that the visitor works for trees storing integers only. Before implementing the visitor, add it to Figure 1. Reuse the programming languages and visibility rules of a).