Project Report

Jun Yang

CS 303

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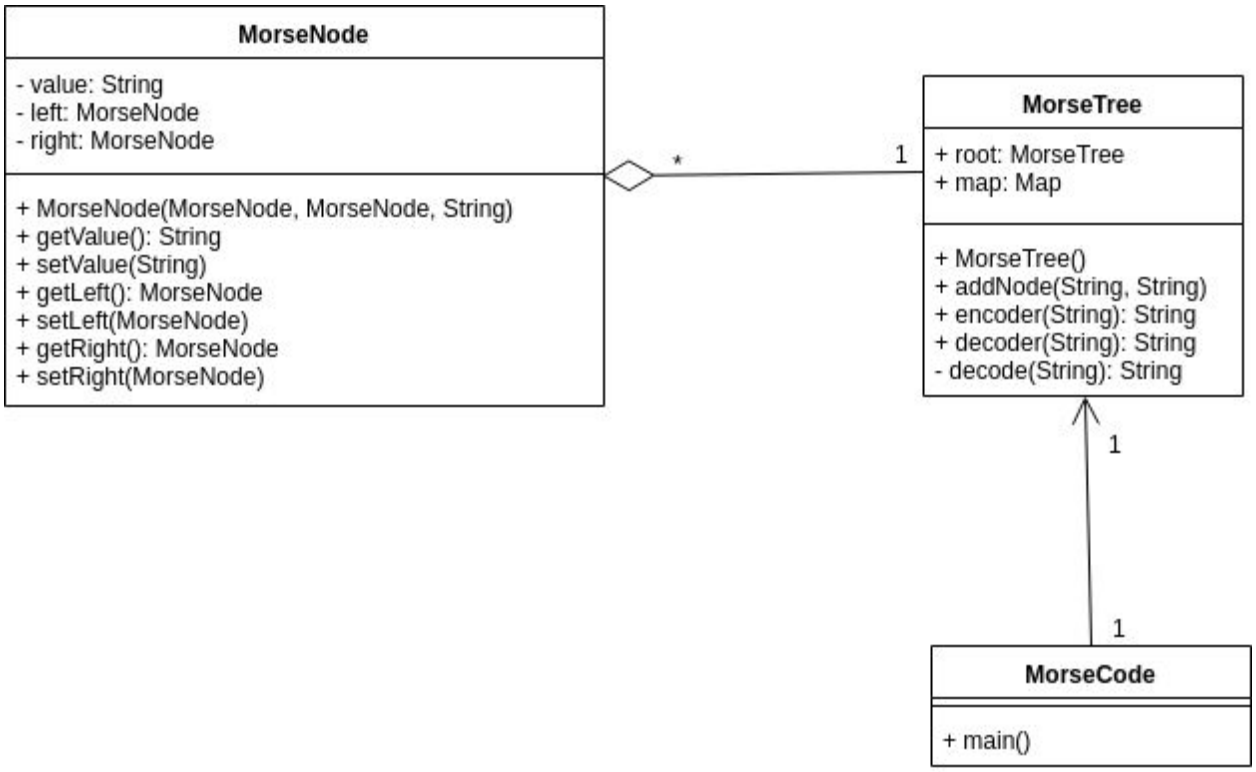
UML Class Diagram



For this UML class diagram, I have class MorseNode, MorseTree, and MorseCode(driver class). The driver class contains one instance of MorseTree.

For class MorseTree, it consists of data fields root, and map. I am using function MorseTree as the construct.I am using function addNode to add a node to the tree. I am using function encoder to encode a message. I am using function decode to decode a list of morse code messages (encoded messages). I am using private helper function decode to decode an individual morse code.

For class MorseNode, it consists of data fields value, left, and right. I am using MorseNode as the construct. I also have getter and setter (accessor and mutator) for each data file.

One instance of MorseTree can consists of many instances of MoreseNode.

Program Execution

Decoded message for [_.. __.] is [dg]

Encoded message for [ac] is [._ _._.]

Efficiency Of Algorithm

For efficiency of the algorithm, since I am building a binary tree, so it will take O(log(n)) for adding/searching a node to/from the tree. For looking up a letter to code mapping, I am using a map, therefore, it will take O(1).

Reference

None