**Montgomery College**

**CMSC 204**

**Assignment 4 Design**

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| --- | --- | --- | --- | --- | --- |
| **Test Case #** | **Input** | **Actual Input** | **Expected Output** | **Actual Output** | **Did the test pass?** |
| 1 | Hello World | Hello World | …. . .-.. .-.. --- / .-- --- .-. .-.. -.. | …. . .-.. .-.. --- / .-- --- .-. .-.. -.. | Yes |
| 2 | How do I love thee let me count the ways | How do I love thee let me count the ways | …. --- .-- / -.. ---/ .. .-.. --- …- . / - …. . . / .-.. . / -.-. --- ..- -. - / - …. . / .-- .- -.-- … | …. --- .-- / -.. ---/ .. .-.. --- …- . / - …. . . / .-.. . / -.-. --- ..- -. - / - …. . / .-- .- -.-- … | Yes |
| 3 | Hi my name is aelina | Hi my name is aelina | .... .. / -- -.-- / -. .- -- . / .. ... / .- . .-.. .. -. .- | .... .. / -- -.-- / -. .- -- . / .. ... / .- . .-.. .. -. .- | Yes |

**Pseudocode**

**Data Element-** TreeNode class

* This generic class is used in the MorseCodeTree classes.
  + Use the Javadoc
  + The Javadoc only lists those public methods that are required to pass the Junit tests
* The class consists of a reference to the data and a reference to the left and right child.
* The Javadoc only lists those public methods that are required to pass the Junit tests.
* You may add any private methods you need for your design.

**Data Structure-** MorseCodeTree class

* A generic linked binary tree which inherits from the LinkedConverterTreeInterface.
  + Use the Javadoc
* The class uses an external generic TreeNode class parameterized as a String: TreeNode<String>.
* This class uses the private member of root.
* Nodes are added based on their morse code value.
  + A ‘.’ (dot) means to traverse left
  + ‘-‘ (dash) means to traverse right.
* The constructor will call the method to “build the tree”.

**Utility Class -** MorseCodeConverter

* The MorseCodeConverter contains a static MorseCodeTree object and constructs (calls the constructor for) the MorseCodeTree.
  + Use the Javadoc
* This class has two static methods
  + Each method returns a string object of English characters.
  + convertToEnglish to convert from morse code to English. One method is passed a string object (“.-.. --- ...- . / .-.. --- --- -.- ...”).
  + These static methods use the MorseCodeTree to convert from morse code to English characters.
    - The other method is passed a file to be converted.
* There is also a static printTree method that is used for testing purposes

**Testing –** Junit Test Classes

* must add
  + at least 1 test for MorseCodeConverter.convertToEnglish(String)
  + at least 1 test for MorseCodeConverter.convertToEnglish(File) to the MorseCodeConverterTest class.
  + You must create a JUnit test for your MorseCodeTree class. Include your test files with your code files.