**Herman Mann**

**CMSC 204**

**Assignment 5**

**MorseCode Implementation**

**GUI SCREENSHOTS OF ASSIGNMENT 5 Execution (MorseCode)**

**Test Cases:**

**A picture containing text

Description automatically generated i love cheesecake**

**A screenshot of a computer

Description automatically generated with low confidence** **lebron james the goat of basketball**

Converting file

Graphical user interface, text, application, email

Description automatically generated

**A screenshot of a computer

Description automatically generated with medium confidenceGithub Screenshot of Assignment 5 (MorseCode in directory)**

Table

Description automatically generated

Reflection Paragraphs

I really enjoyed this Assignment. One of my favorite assignments in the class I completed. All throughout the completion of the Assignment 5 which was on MorseCode, I got to learn and experience a lot of different object-oriented programming skills and even newer skills which are more advanced in Computer Science Object-Oriented programming principles such as using and utilizing generic classes, exception handling, linked trees, building a tree using different tree methods of Java and conversion of a string to English through a file or text and how to really use and utilize them in different methods of the assignment’s implementation. Using the methods of addNode, fetchNode, and the insert methods really showed me the big picture of the building of the tree(s). I really enjoyed how the assignment is getting me introduced to the new and more new and unique data structures of object-oriented programming, and I am interested to look at these different data structure algorithms as the class keeps going on. Also, I got to experience more in-depth knowledge and reasoning in the different types of uses of generic classes, using node data structure, and using the concept of testing and planning using Junit tests and using Javadoc to make the appropriate commenting on each of the assignment’s implementation methods. The learning of the utilization of more abstract and data structured static methods, exception handling, and the tree methods of this project implementation such as buildTree method, the LNR (Inorder) dependent on the different left and right traversals served as great learning experiences for this assignment and builds great knowledge for future assignments throughout the class on gaining more data structure knowledge.

In the completion of this assignment, I struggled with a couple of things towards the end of things. First, I struggled with convertToEnglish (file conversion) which it was supposed to utilize the morse code from a file and convert it into English translation and the insert method which it had to insert each individual element of in the tree (the left and right child) and the tree components to build the tree of the buildTree method. My program came to an error towards the opening of the file from my computer towards the end and it could not properly open DaisyDaisy.text file of the conversion of the morse code inside it into English translation and it kept swapping the actual file with the expected file to be opened. I solved the issue by editing and changing some stuff in my convertToEnglish (code file) and then it worked successfully. I solved the insert method problem by editing the insert method more closely. Another problem I struggled with were creating the student Junit tests, some methods towards the end of this assignment’s student tests had me thinking about how to approach it. So, my solution to the problem was looking at the other methods of the student test that I had done previously and from there I solved the issue successfully by changing things here and there to make the test work according to the certain test I was doing at the time by following the way the other tests were made and solved to be working successfully after the student test ran through.

When I had completed the entirety of this project, I found out a lot of things to be useful for me and would help me out for the completing of future assignments/projects. I learned and experienced that the use of generic classes, static methods and the numerous tree methods will serve me a big deal and help to know for the future and will be a great thing to be well-experienced in the concept of using the linked trees. Also, Javadoc will help me in the future not just for the upcoming assignments but also in my career of Computer Science, for accurate and important commenting of various programs that I will be coding for bigger and widespread company projects. Also, computer critical analysis especially learned from the completion of this project implementation will be so useful, significant, and demanding in the field for advancement to write larger scope programs with various object-oriented programming techniques. Most importantly, the importance of exception handling, unhandled exceptions, the different tree java methods, and the different linked tree conversion method requirements served such an important purpose of furthering my knowledge on Java and its object-oriented principles/techniques. This assignment implementation of MorseCode helped me in so many great ways its satisfying to know I chose a great career path majoring in Computer Science.