## Instructions:

## Computing 3: 2021-2022

## DSA II- Data Structures Assignment

## 1. Write an application to implement a Morse Code Translator as outlined below.

## See article: https://medium.com/swlh/how-tree-data-structures-help-us-understand-morse-code-a95f6f7f2219

## 2. The solution is to be presented in a report. This report is to contain

## a thorough description of the problem,

## a description of underlying data structures used to solve the problem (use diagrams to illustrate)

## a copy of the code (language your choice)

## a description of all the functions/routines which have been used, and

## Test files used and sample execution screenshots of outputs produced during rigorous testing.

## 3. A copy of the code and a release executable version is to be uploaded to OneDrive. Link tba

## 4. Due Date: Mon Jan 31st 2022

## Implement a convertor which will convert Morse code to a character string.

Your application should initially set up the Morse tree below as a Binary Tree

Menu driven system (clear instructions) with the following functionality:

1. Load morse code from a file. Test with each of these input files, from a possible 5 files. The contents of the files are below. A space separates the code for each character. A dash separates each word.

* **File 1**: - .... .. ... / - --- --- .-.. / .-- --- .-. -.- ...
* **File 2:** -- --- .-. ... . / -.-. --- -.. .
* **File 3:** ... --- ..-. - .-- .- .-. . / -.-- . .- .-. / - .... .-. . .
* **File 4:** .. - -.-. .- .-. .-.. --- .--
* **File 5:** convert your name to morse code and store in file

2. Play sounds effects of the inputted code

3. Convert and output the resulting character string onto the screen.

Sample Marking Scheme:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Report |  |  |  |  |  |  |  |  | Code |  |  |
| Presentation | Description problem | Data Structs Used | PseudoCode | Desc Functions | Code present | Test Data | Sample Exec | Amount Completed | Quality Code | GUI | Total |
| 5 | 1 | 8 | 12 | 4 | 1 | 1 | 6 | 3 | 7 | 2 | 50 |

Shape

Description automatically generated

Graphical user interface, text, application

Description automatically generated