Morse Code Converter

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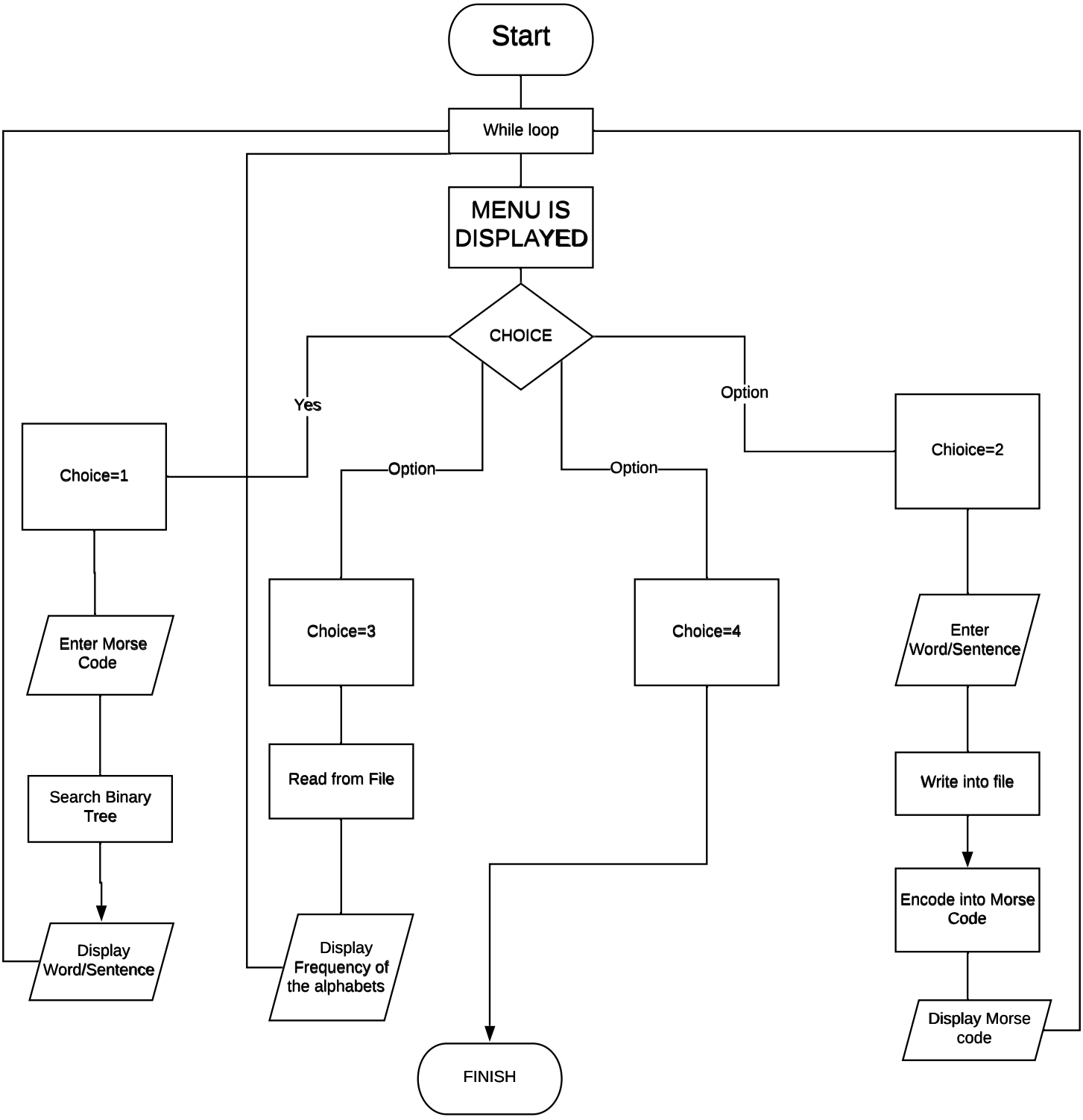
Overview

The software's main function is to be able to decode the entered Morse Code to Latin Alphabets and to encode the entered line of text into Morse Code characters using the application of Binary Trees,File Handling.

Flow Chart



Data Structures:

Data Structures used in the project include

1. Binary trees : to store the data values associated which each Morse character.
2. Dynamic Arrays : for various function like- traversing through the tree , assigning values to the tree etc.
3. Files- to find the frequency of the alphabets used in one session

Modules and Header files

Modules

1. main-contains all the executable code.
2. MORSE.c- Contains all the function definitions of functions that create the binary tree,assign values to the tree,encodes words to the Morse code, decodes Morse code to words.
3. FILE.c- contains all the functions that deal with writing the words into the file and the function that reads the file and return the frequency of the alphabets used in 1 session.
4. Sample.txt- text file used to store the words/sentences entered by the user.

Header Files

1. stdio.h- contains all the required input/output functions,file functions etc.
2. Stdlib.h- contains the definition of exit function etc.
3. string.h- contains the definition of string functions like strlen,strtok etc.
4. MORSE.h- contains the data type of the binary tree,the declaration of the functions defined in MORSE.c.
5. FILE.h- contains the declaration of the functions used to write and read from the file.

Function List

1. Tree *NODE()
2. void assignDATA(Tree *root,char morse[],char data)
3. char decode(Tree *root,char morse[])
4. void dictionary(char c)
5. void encode(char word[])
6. void FILEREAD()
7. void ENTER(int flag,char word[])
8. void CAPS(char word[]

Working of functions

1.Tree *NODE()

Creates nodes for the data to be stored in the Binary Tree. Takes no Parameters and has no return value.

2.void assignDATA(Tree *root,char morse[],char data)

Takes the node of the type Tree,the Morse value of a alphabet,and the alphabet and stores the alphabet the the node created by the NODE function according to its Morse value. There is no return value

3.char decode(Tree *root,char morse[])

Takes the Morse code entered by the user as the parameter along with the current node of type Tree and returns the alphabet associated with the entered Morse value by traversing through the binary tree.

4.void dictionary(char c)

Takes each character from the word/sentence entered by the user and prints the Morse value of the character after reading from a switch table. No return value.

5.void encode(char word[])

Takes the word entered by the user divides it into characters and sends each character to the dictionary function to print its Morse code. No return value.

6. void FILEREAD()

Reads the file for words and sentences and the segregates the characters and counts the frequency of usage of each alphabet.

7.void ENTER(int flag,char word[])

Takes a flag input to write into a new file or append an already existing file and the word/sentence entered by the user to write into the file.

8.void CAPS(char word[]

Takes the word entered by the user and converts all the lowercase characters into uppercase characters.

USER MANUAL

How to use the software?

1. On running the software the user will see a MENU of different functions that he/she can perform
2.The user should choose his/her choice by entering the number of the choice.
3.Depending on the user's choice he/she will see either of the 4 possible outputs

a) If the user chooses the first option that is "Decode Morse Code".He/She would be asked to enter the Morse Code in the form of dots (.) and dashes(-). After entering the Morse Code the user will have to enter the '.' symbol to continue with the program. The User will be get the Latin Alphabet translation of the Morse Code.

b)If the user chooses the second option,which is "Encode into Morse Code".He/She would be asked to enter a word or a sentence. After entering the input the user will have to enter the '.' symbol to continue with the program. The User will be get the Latin Alphabet translation of the Morse Code.

c)If the user chooses the third option,which is"Get the frequency of the Alphabets used".The User will get a table of all the Latin Alphabets with the number of times each alphabet was entered by the user in that session.

d)If the user chooses the fourth option,which is "Exit".The program will end the session.