

The class name of this program is called MorseCode. This program begins with the main method that will allow a user to select which language he would like to decode. This is done by using a scanner sequence which will then go to a if else statement were if user types in English it will then take him to the method englishToMorse. englishToMorse will ask him to start by inputting a sentence/word/characters in the English language which will then be converted to morse. In order to convert it to morse I start by changing the inputted language to lower case and then make a set of two arrays. The first array is a set of characters from the English language from a to z and 0 to 9. Then the next is in morse code which is in the same order as the English language. The space at the end allows for it to convert the spaces into a dash separating each word in the morse code. It will then go through a for loop. The for loop takes the array and equals each letter in the English characters to the given position in the array which will then be converted to the morse code which is in those positions of that array. That morse code will then be returned to the main statement stating the morse code. Last method in the code gets called on when user calls to decode the morse code which will basically do the same thing as the englishToMorse method. Except it is just converting the morse code into the English language. So takes the length of the morse code that is inputted then takes that length and compares it to the morses code. Then the if statement when they are equal to each other it will convert it to the English characters array.

```
/* program allows user to convert english to morse and morse to english */
```

```
import java.util.Scanner;
```

```
public class MorseCode
```

```
{  
    public static void main (String [] args)  
    {  
        // Choice of which language to choose  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Indicate which language you want to decode Morse or English:  
");  
        String language = sc.nextLine();  
        String english = "English";  
        String morse = "Morse";  
        // if else statement for the choice of language  
        if ("english".equalsIgnoreCase(language)){  
            System.out.println("morse code is: " + englishToMorse(english));  
        }else if (language.equalsIgnoreCase(morse)){  
            System.out.println("English: " + morseToEnglish(morse));  
        }  
    }  
}
```

```

} // end main

/** englishToMorse
 * This method will ask user to input a string of english characters
 * and then converts english to morse
 *
 * @param english which is the string of english characters they enter.
 * @return returns morse language
 *
 *
 * Pre-Conditions: user inputs a sentence in english
 *
 * Post-Conditions: english sentence changes to morse with replacing spaces with
 * a |.
 *
 * @author: Thomas Muamar
 */
public static String englishToMorse(String english)
{
    // scanner sequence tells user to input english language
    Scanner bc = new Scanner(System.in);
    System.out.println("Input a sentence/word/characters in the english language: ");
    english = bc.nextLine();
    english = english.toLowerCase();
    String convert = "";

    // Two separate arrays for english characters and morse characters
    char[] eng = {'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l',
                  'm', 'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
                  'y', 'z', '1', '2', '3', '4', '5', '6', '7', '8', '9', '0', ' '};

    String[] morses = {".-", "-...", "-.-.", "-..", ".", "-.-.", "--.", "....", "...", ".---",
                       "-.-", "-...", "--", "-.", "---, ".--.", "--.-", "-.", "...", "-",
                       "...-", "...-", "-.-", "-..-", "-.-.-", "-.-.-", "-.-.-.-", "-.-.-.-", "-.-.-.-",
                       "....-", ".....", "-....", "-...-", "-...-", "-...-", "-...-", "-...-", "-...-", "|"};

    // takes english characters and converts them to morse using the two arrays.

```

```

    for (int i = 0; i < english.length(); i++){

        for(int j = 0; j < eng.length; j++){

            if (eng [j] == english.charAt (i)){

                convert = (convert + morses[j] + " ");

            }

        }

    }

    return convert;

} // end method englishToMorse

/** morseToEnglish
 * This method will ask user to input a string of morse code
 * which will convert to english language.
 *
 * @param morse which is the morse code they input.
 * @return returns english sentence of the morse code
 *
 *
 * Pre-Conditions: user inputs a sentence in english
 *
 * Post-Conditions: morse code changes to english and replaces | with
 * a space.
 *
 * @author: Thomas Muamar
 */
public static String morseToEnglish(String morse)
{
    // scanner sequence tells user to input morse code
    Scanner dc = new Scanner(System.in);

    System.out.println("input a string of morse code separating each word by a | and
each letter with space: ");

    morse = dc.nextLine();

    morse = morse.toLowerCase();

    String con = "";

    String[] m = morse.split(" ");

```

[illegible]

```
for (int i = 0; i < m.length; i++){
    for(int j = 0; j<morses.length; j++){
        if (morses[j].equals(m[i])){
            con = con + eng[j];
        }
    }
}
```

}

}

}

```
} // end
```

Java source file	length : 4,401 lines : 116	Ln : 43 Col : 20 Pos : 1,505	Windows (CR LF)	UTF-8	INS
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Command Prompt

Microsoft Windows [Version 10.0.18363.1379]

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C:\Users\thomas>cd documents

C:\Users\thomas\Documents>java morsecode.java

Indicate which language you want to decode Morse or English:

english

Input a sentence/word/characters in the english language:

How is it going

morse code is: --- -- | | .. - | --. --- .. -. --.

C:\Users\thomas\Documents>java morsecode.java

Indicate which language you want to decode Morse or English:

morse

Input a string of morse code separating each word by a | and each letter with space:

.... --- -- | | .. - | --. --- .. -. --.

English: how is it going

C:\Users\thomas\Documents>_