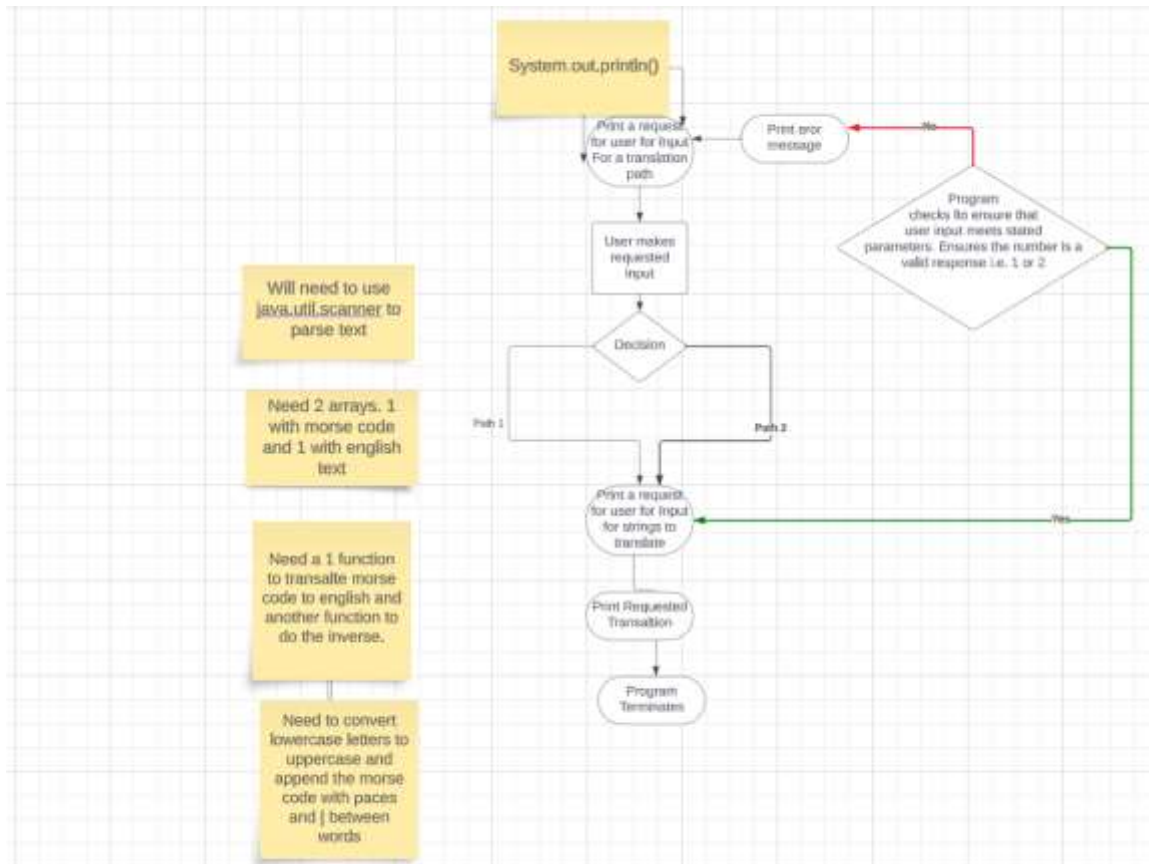


// Design



//Code

```
import java.util.Scanner;

public class MorseCodeTranslator {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.println("Choose the translation direction:");

        System.out.println("1. Morse code to English");

        System.out.println("2. English to Morse code");

        int choice = scanner.nextInt();

        scanner.nextLine(); // Consume the newline character
```

```

if (choice == 1) {

    System.out.println("Enter Morse code separated by spaces and | for words:");

    String morseCode = scanner.nextLine();

    String englishTranslation = morseToEnglish(morseCode);

    System.out.println("English Translation: " + englishTranslation);

} else if (choice == 2) {

    System.out.println("Enter English text separated by spaces:");

    String englishText = scanner.nextLine();

    String morseTranslation = englishToMorse(englishText);

    System.out.println("Morse Code Translation: " + morseTranslation);

} else {

    System.out.println("Invalid choice.");

}

}

```

// Define Morse code and English letter arrays

```

private static final String[] morseCode = {

    ".-", "-...", "-.-.", "-..", ".", "...", "-.-", "....", "..", ".---",

    "-.-", ".-..", "--", "-.", "---", ".--.", "--.", "...", "-",

    ".-", "...", "-.", "-.-", "-.-", "-..", "----", "-----", ".---",

    "-.-", "-...", "....", "-....", "-....", "-....", "-----"

};

```

```

private static final String[] englishLetters = {

```

```

    "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",
    "0", "1", "2", "3", "4", "5", "6", "7", "8", "9"
};

/**
 * Translates Morse code to English.
 *
 * @param morseCodeStr The input Morse code to be translated.
 * @return The translated English text.
 */
private static String morseToEnglish(String morseCodeStr) {
    StringBuilder englishTranslation = new StringBuilder();
    String[] words = morseCodeStr.split(" \\| ");

    for (String word : words) {
        String[] morseChars = word.split(" ");
        for (String morseChar : morseChars) {
            int index = -1;
            for (int i = 0; i < morseCode.length; i++) {
                if (morseCode[i].equals(morseChar)) {
                    index = i;
                    break;
                }
            }
        }
    }
}

```

```

        if (index != -1) {

            englishTranslation.append(englishLetters[index]);

        }

    }

    englishTranslation.append(" ");

}

return englishTranslation.toString().trim();

}

/**
 * Translates English text to Morse code.
 *
 * @param englishText The input English text to be translated.
 * @return The translated Morse code.
 */
private static String englishToMorse(String englishText) {

    StringBuilder morseTranslation = new StringBuilder();

    String[] words = englishText.split(" ");

    for (String word : words) {

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

            char ch = word.charAt(i);

            if (Character.isLetter(ch)) {

                int index = Character.toUpperCase(ch) - 'A';

                morseTranslation.append(morseCode[index]).append(" ");

            }

        }

    }

}

```

```

    } else if (Character.isDigit(ch)) {

        int index = ch - '0' + 26;

        morseTranslation.append(morseCode[index]).append(" ");

    }

}

morseTranslation.append("| ");

}

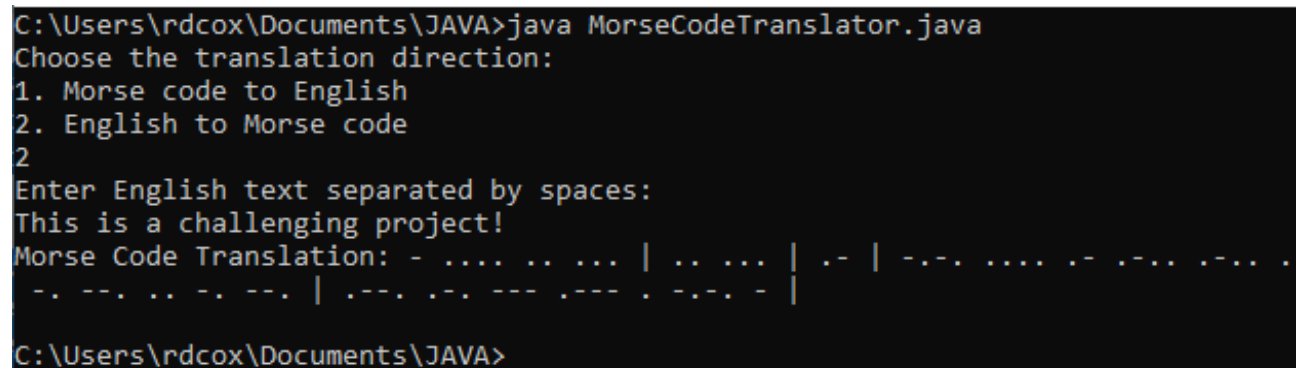
return morseTranslation.toString().trim();

} //end class

} //end main

```

//Output



```

C:\Users\rdcx\Documents\JAVA>java MorseCodeTranslator.java
Choose the translation direction:
1. Morse code to English
2. English to Morse code
2
Enter English text separated by spaces:
This is a challenging project!
Morse Code Translation: - .... .. | .. ... | .- | -.-. .... .- .-.. .... .
-.-. .. -.-. | .-.. .- -.-. .-.-. - |
C:\Users\rdcx\Documents\JAVA>

```