A Project report on

MORSE CODE TRANSLATOR

A Dissertation submitted in partial fulfillment of the academic requirements for the award of thedegree.

Bachelor of Technology

In

Computer Science and Engineering

Submitted by

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Mini Project-1 report entitled **" MORSE CODE TRANSLATOR "** being submitted by **Rahul Sai Ranganathan (20H51A05J4), Galla Nitin (20H51A05N6), Chitra Bhanu Reddy Gopu (20H51A05C4)** in partial fulfillment for the award of **Bachelor of Technology in Computer Science and Engineering** is a record of Bonafede work carried out his/her under my guidance and supervision.

The results embodied in this project report have not been submitted to any other University or Institute for the award of any Degree.

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ACKNOWLEDGEMENT

With great pleasure We want to take this opportunity to express my heartfelt gratitude to all the people who helped in making this project work a grand success.

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Chitra Bhanu Reddy Gopu-(20H51A05C4)

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DECLARATION

We hereby declare that results embodied in this Report of Project on **"MORSE CODE TRANSLATOR"** are from work carried out by using partial fulfillment of the requirements for the award of B. Tech degree. We have not submitted this report to any other university/institute for the award of any other degree.

NAME	ROLL NO	SIGNATURE
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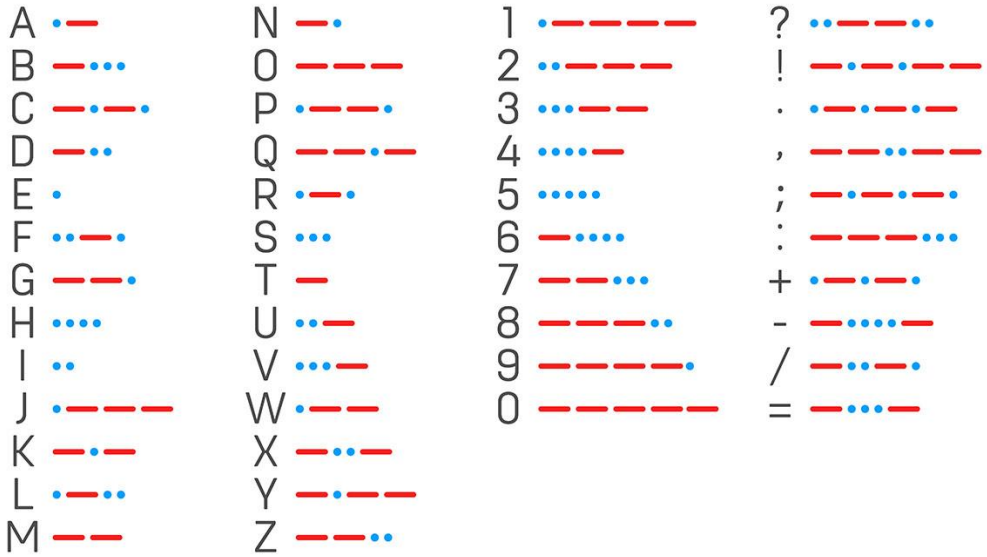
TABLE OF CONTENTS

ABSTRACT

Morse code is a process of transmitting text information as a series of on-off tones and lights or clicks. If they use a tapping device recipient can understand the message without additional decoding equipment. Morse code is represented by the form of dits and dahs. Morse code can be transmitted by using electric telegraph wire, light, and sound, through a different medium in different ways. Morse code is used for long-distance communication. International Morse code was devised by European nations in 1851. It is the base for the morse code to transmit or receive. Morse code is a character encoding and decoding scheme.



The web application is created in a way that it acts as an encoder and decoder of morse code i.e., it converts morse code to English and vice versa. Following are the features provided by the web application: -

- Converts coded data (dits and dahs) to readable data (English)
- Converts readable data (English) to coded data (dits and dahs)
- Reduces the time taken in converting the data both ways (manual method is comparatively slow) We'll be Implementing this project using programming languages such as html, CSS and JavaScript. And this application is open to everyone.

CHAPTER 1

INTRODUCTION

- Communication through internet brings teams together. Three main parts of communication are sender, medium and receiver.
- Now days, transmission of data over internet is not safe without any encryption method.
- All corporate sectors, banking sectors, government sectors and many other sectors are sharing their data through internet.
- Hackers always try to attack on the transmitted data and try to recover the data. Various techniques are developed for providing the data security.
- A Morse Code Translator is a translator that is used to convert normal text messages to Morse code and decode the Morse code to text. one can easily convert the sentences, texts, distress messages, etc. to Morse Code and vice-versa.

1.1 OBJECTIVE:

- The objective of this project is to create an application that converts English text into Morse code and Morse code into English Text.
- This project let the user create his/her own cipher for the message/data/records/etc... he/she wants to save in their devices.

CHAPTER 2

EXISTING SOLUTIONS

Morse Code Trainer:

This is an app helping users to learn Morse Code. One can choose either transmitting or receiving mode to practice corresponding skill and receive the performing feedback immediately. It includes the functions of letter training (both transmitting and receiving), word training (only transmitting), free mode, speed adjusting (WPM), sound effects adjusting and electronic handbook.

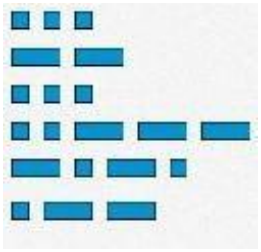
Morse Code Translator:

This is an app allowing users to send short flashlight text messagesusing the International Morse Code. The apps include the features that the flashlight can transmits short messages of lights (Morse Code); there are some templates stored in the database for emergencies. For example, SOS; allowing users to save new messages; changing frequency of the transmitted signal

Simple Morse Code Translator:

This app allows users to input any text by keyboard or voice or select a commonly transmitted word or phrase. The app translates the received message and broadcast the translated text via camera flash.

SMS2CW - Convert to Morse Code:



This is an app to convert incoming SMS or TXT messages into audible Morse Code. Once the user enables it and set the options, it will intercept incoming text messages and beep them out in Morse Code.

And other such online translators: -

https://morsecode.world/international/translator.html

https://www.boxentriq.com/code-breaking/morse-code

https://grammica.com/morse-code-translator

The above few are the existing solution of the morse code translator, which translate text to morse and morse and to text.

Drawbacks in existing system

The major limitations of existing schemes are as follows: -

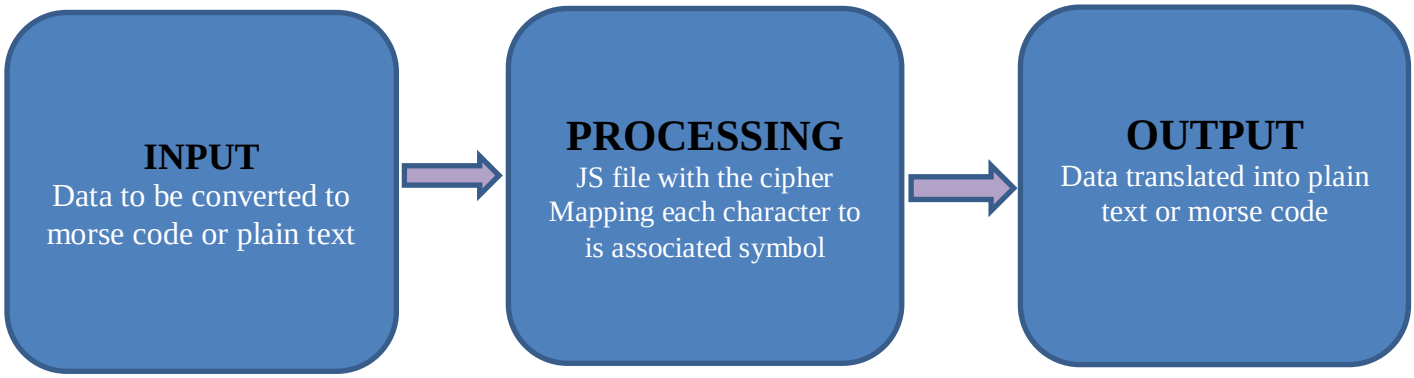
Considering the modern technological advancements, the morse code is no longer a trustworthy solution since it is simple to decipher.

CHAPTER 3

PROPOSED SYSTEM

3.1 PROPOSED METHODS:

- The design process of our project is to take data from the user and run it to the cipher (map it to the characters that are allotted in the cipher)
- Once the mapping is done the coded data is translated into plain readable text,
- Or the plain text is converted into coded data.



3.2 DESCRIPTION:

We know brief description of Morse code. We find out that every letter in the English alphabet has a Morse code Representation. This tells us it is highly likely we are going to have to be doing some sort of conversion of character into their Morse code and vice-versa. We use the cross-reference characters in a given string and convert it into a string of Morse code. A very piece of information here is that a concatenated string that is converted into its Morse code counterpart is defined as transformation. We might have two phrases that when converted and concatenated, yield the same Morse code representation. Finally, we are giving information on what we need our function to return

3.3 ADVANTAGES OF PROPOSED SYSTEM

- Morse code generator helps you to encode and decode your text message for telecommunication. It helps you to transmit text messages for long-distance communication.

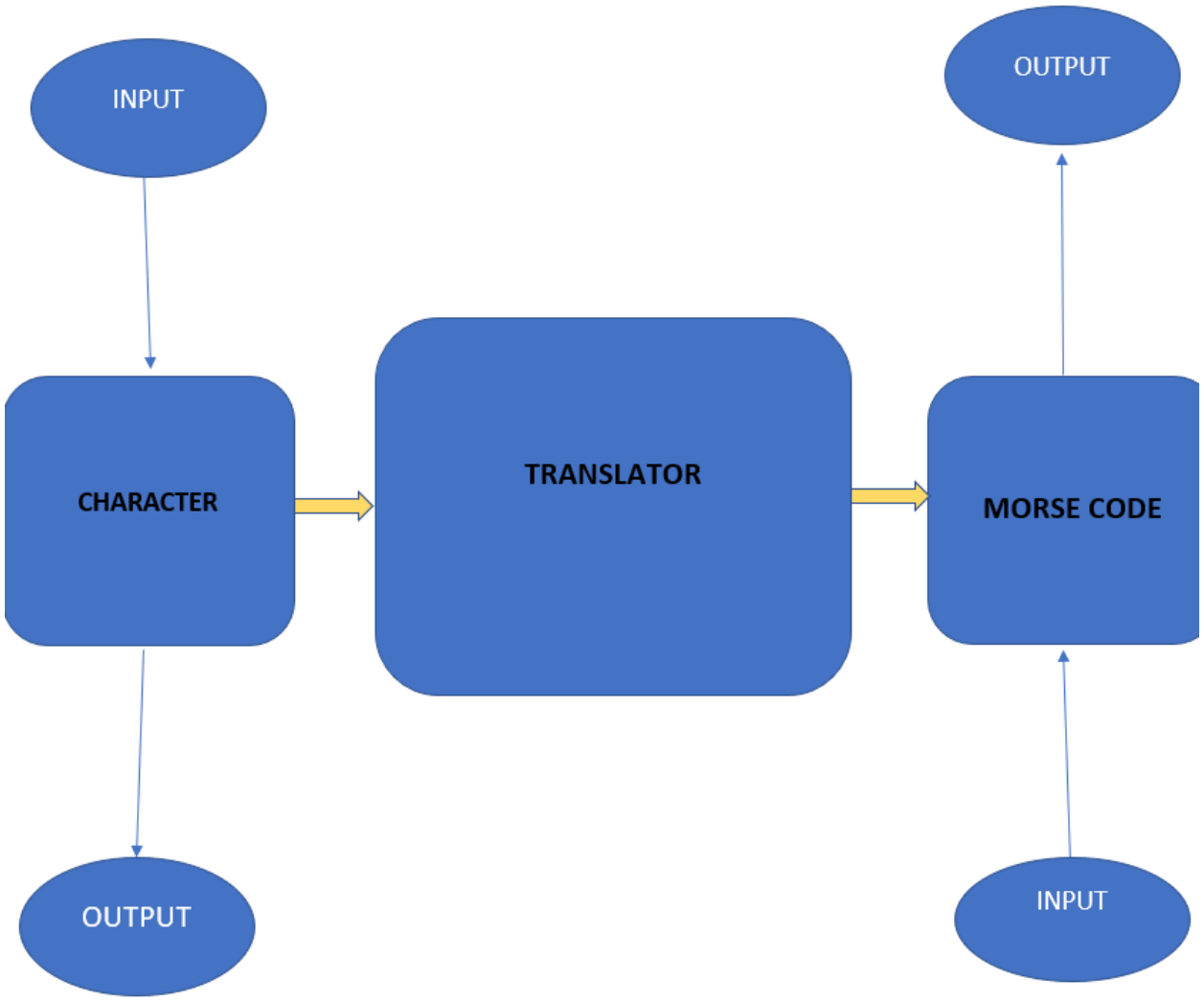
- We use Morse code converters in aerospace, amateur radio operators, military, and army forces for communication.

- Our Morse code converter is free and unlimited conversion allowed. Once you enter the text and click on encode, then it converts text to the Morse alphabet. If you want to convert Morse code to text, then click on decode. You can transmit text information for long-distance easily and securely.

3.4 SYSTEM REQUIREMENTS:

Operating System: Windows 10, 8.1, 8, 7, Vista (32, 64 bit), Android, IOS
Processor : Dual Core 2 GHz
Website : Chrome, Firefox or any useful web application
Connectivity: Strong and Powerful Network Connection
Search Area : Google or any search engine
Security : High Security to prevent the loss of browsing data

3.5 PROPOSED SYSTEM ARCHITECTURE:



CHAPTER 4

Source code

HTML:

- HTML is an acronym which stands for Hyper Text Markup Language which is used for creating web pages and web applications.HTML is a markup language which is used for creating attractive web pages with the help of styling, and which looks in a nice format on a web browser. An HTML document is made of many HTML tags and each HTML tag contains different content.

- Hyper Text: Hypertext simply means “Text within Text.” A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. Hypertext is a way to link two or more web pages (HTML documents) with each other.

- Markup language: A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

- Web Page: A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type.

```
<!Doctype html>
<html>

    <head>
        <title> MORSE CODE CONVERTER </title>
        //Heading
        <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css
/bootstrap.min.css" integrity="sha384-
Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwiGgFAW/d
AiS6JXm" crossorigin="anonymous">
        // CSS file for styling
        <link rel="stylesheet" href="style1.css">
        // CSS file for the background
    </head>

    <body style="background-color: #000BF3; ">
    // Backgroundcolor


        <div class="row">
            <h1 class="col-12" style="text-align: center;
font-size:60px;">Text to Morse Code Translator</h1>
            // Title


            <div class="container d-flex justify-content-
center align-items-center">
                <button id="toggle" style="background-
color: red; border-color: black; color: white" class="btn
btn-outline-primary" onclick="toggle ()">Decrypt
Message</button>
                // Decrypt Message button

            </div>
        </div>
```

```
        <hr>

        <div class="container d-flex justify-content-
around align-items-center">

            <div>
                <b class="container d-flex justify-
content-center align-items-center" style="font-
size:30px;">INPUT</b><br>
                <textures id="input" cols="50" rows="20"
style="background-color: #C1C3FC; border-color: black;
color: black" placeholder="                    Type
Message to Be Translated"></textarea>
                // Input text box
            </div>

            <button id="convert" style="background-color:
red; border-color: black; color: white” class="btn btn-md
px-3 btn-outline-dark" onclick="text2morse ()">Convert to
Morse Code</button>
            // Button to convert the data

            <div>
                <b class="container d-flex justify-
content-center align-items-center" style="font-
size:30px;">OUTPUT</b><br>
                <textarea id="output" cols="50" rows="20"
style="background-color: #C1C3FC; border-color: black;
color: black"
placeholder="                          Translation of The
Code "></textarea>
                // Output text box
            </div>

        </div>

        <script src="main.js"></script>
```

```
        // JS file for the rear end (for the mapping of
char to symb)

    </body>

</html>
```

CSS:

- CSS stands for Cascading Style Sheet.
- CSS is used to design HTML tags.
- CSS is a widely used language on the web.
- HTML, CSS and JavaScript are used for web designing. It helps the web designers to apply style on HTML tags.

```
body
{
    background-image: url("military.jpg");
    background-size: cover;
}
```

JavaScript:

- JavaScript is an object-based scripting language which is lightweight and cross-platform.
- All popular web browsers support JavaScript as they provide built-in execution environments.
- JavaScript follows the syntax and structure of the C programming language. Thus, it is a structured programming language.
- JavaScript is a weakly typed language, where certain types are implicitly cast (depending on the operation).
- JavaScript is an object-oriented programming language that uses prototypes rather than using classes for inheritance.
- It is a light-weighted and interpreted language.
- It is a case-sensitive language.
- JavaScript is supportable in several operating systems including, Windows, macOS, etc.
- It provides good control to the users over the web browsers.

```
const mapping = {
    "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": "----.",

    "?" : "..--..", "!" : "-.-.--", "." : ".-.-.-",
    "," : "--..--", ";" : "-.-.-.", ":" : "---...",
    "+" : ".-.-.", "-" : "-....-",  "/" : "-..-.",
    "=" : "-...-"
}
// Function for toggle functionality
function toggle ()
{
const decrypt = "Decrypt Message";
const encrypt = "Encrypt Message";
let curr = document. getElementById("toggle"). innerHTML;

if (curr == decrypt)
{
document. getElementById("toggle"). innerHTML = encrypt;
document. getElementById("input").value = "";
document. getElementById("output").value = "";
document. getElementById("input"). placeholder =
"                        Type Message to Be Translated";
document. getElementById("convert"). innerHTML = "Convert to
Plain Text"
document. getElementById("convert"). setAttribute
('onclick','morse2text ()');
}
else {
document. getElementById("toggle"). innerHTML = decrypt;
document. getElementById("input").value = "";
document. getElementById("output").value = "";
```

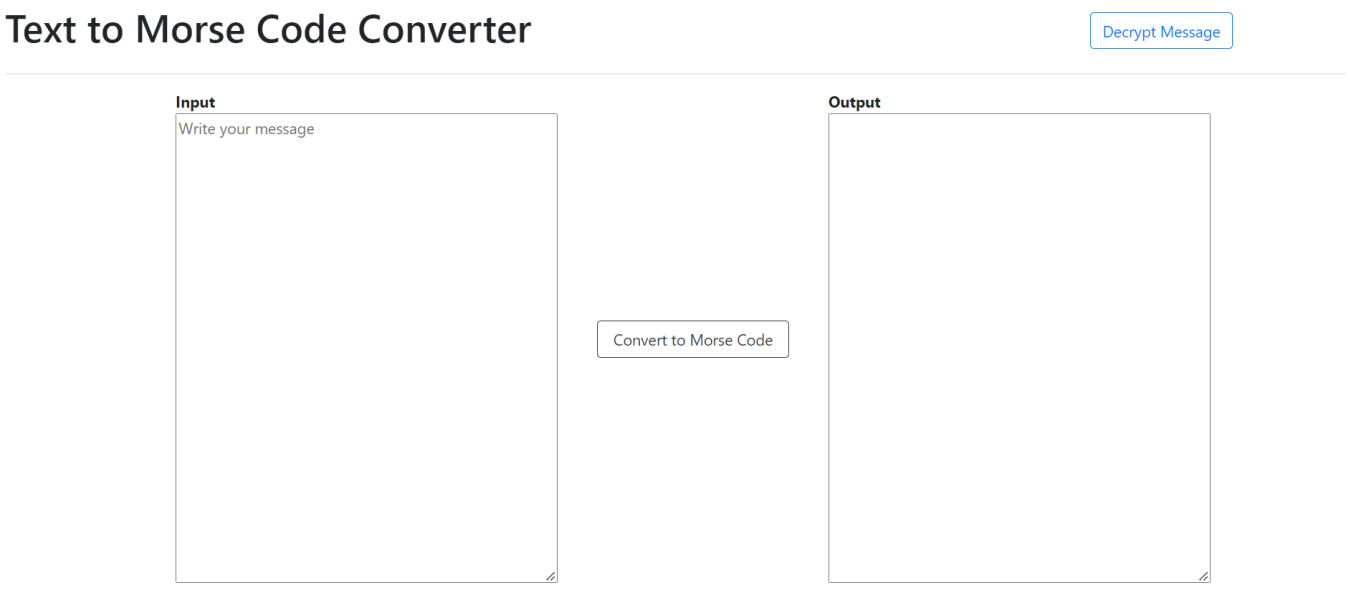
```
document. getElementById("input"). placeholder =
"                        Type Message to Be Translated";
document. getElementById("convert"). innerHTML = "Convert to
Morse Code"
document. getElementById("convert"). setAttribute
('onclick','text2morse ()');
}
}



// Function for encrypting the message
function text2morse ()
{
let input = document. getElementById("input").value;

input = input. toUpperCase ();

let arr1 = input. split ("");

let arr2 = arr1.map (x => {
if(mapping[x])
{
// character found in the map
return mapping[x];
}
// character not found in the map;
else {
return x;
}
});

let code = arr2.join(" ");

document. getElementById("output").value = code;
}

// Function to search value in an object
function getKey (obj, val) {
return Object.keys(obj). find (key => obj[key] === val);
}

// Function for decrypting the message
```

```
function morse2text ()
{
let code = document. getElementById("input").value;
let arr1 = code. split (" ");

let arr2 = arr1.map(x=> {
if (getKey (mapping, x))
{
return getKey (mapping, x);
}
else if(x==""“) {
return " ";
}
else {
return x;
}
});

let text = arr2.join(""). replace (/\s\s+/g, ' ');
document. getElementById("output").value = text;
}
```

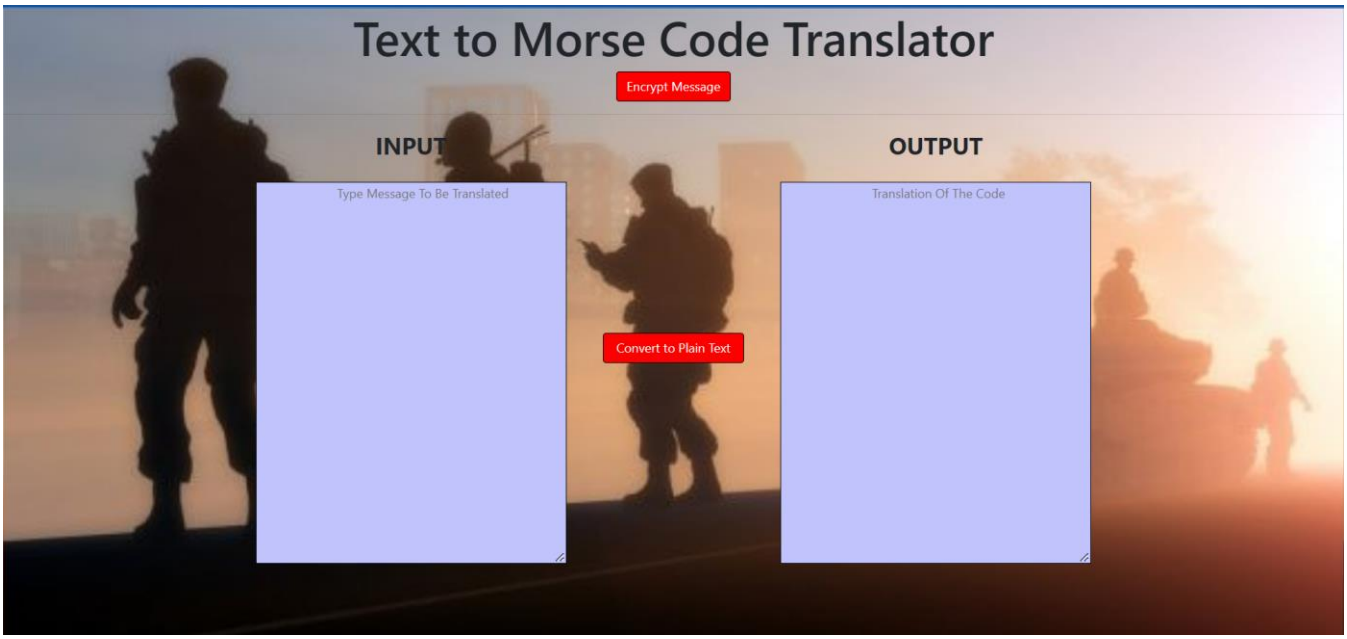
CHAPTER 5

RESULTS AND DISCUSSIONS

5.1 WORKING PROTOTYPE IMAGE

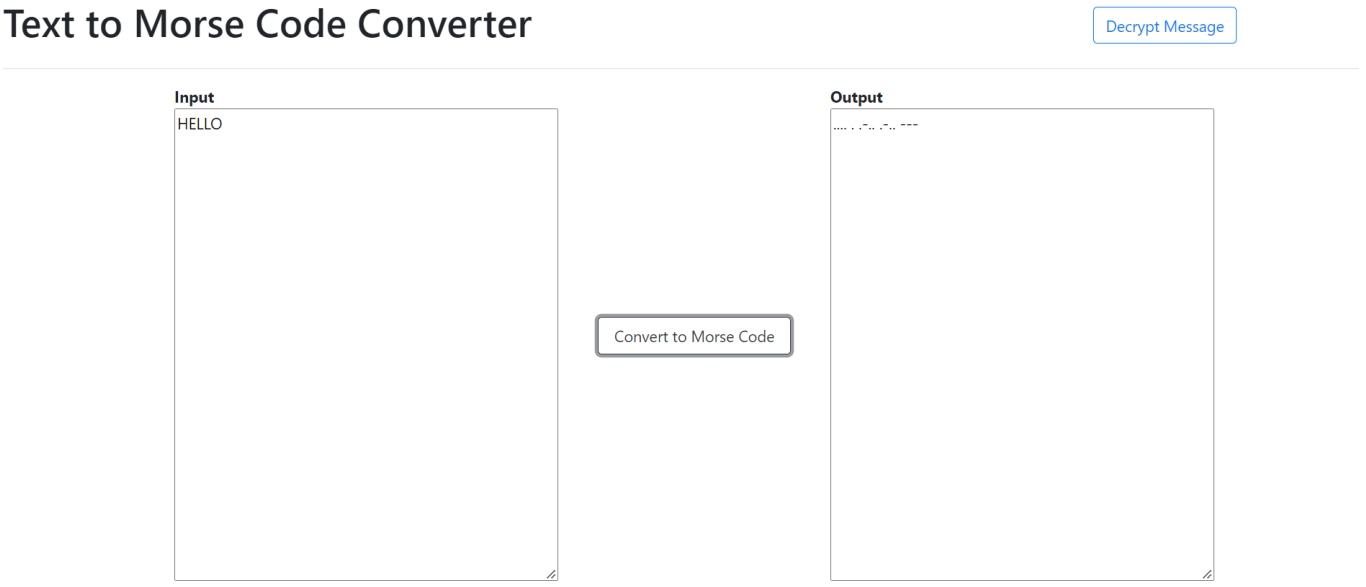


(i) Outlook of the webpage (without background)

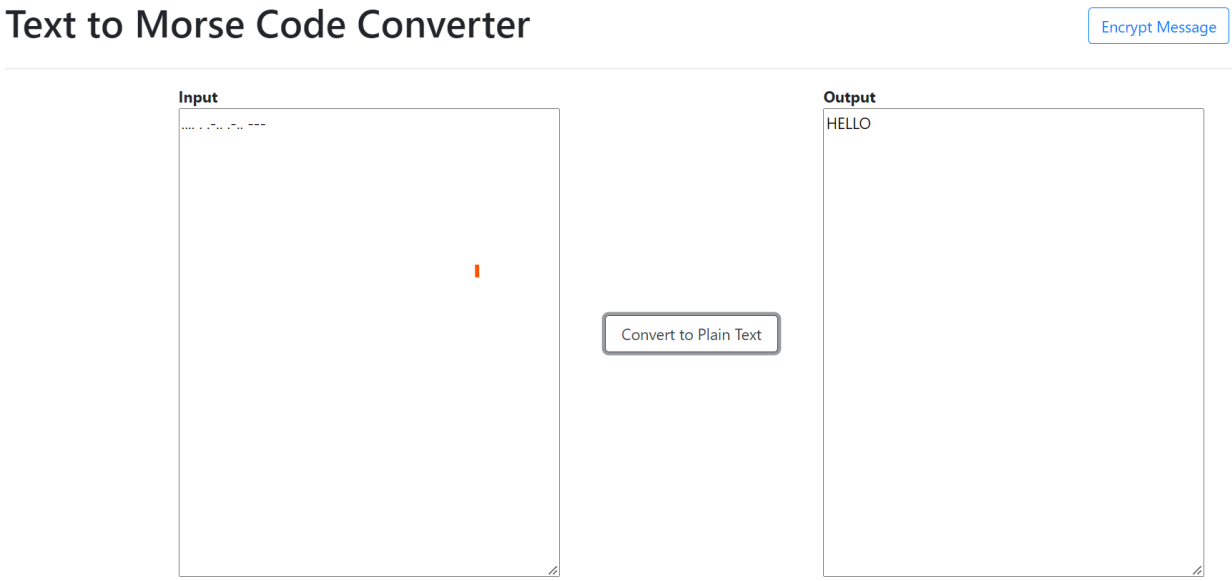


(i) Outlook of the webpage (with background)

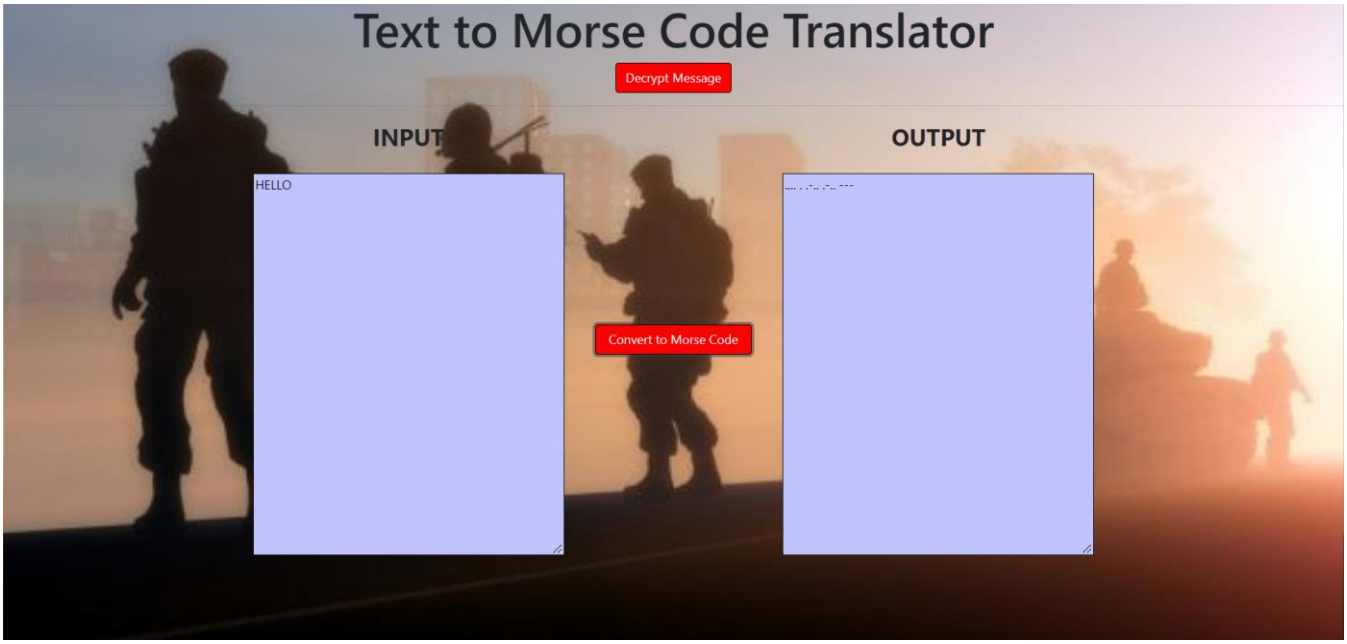
5.2 SCREENSHOTS OF EXECUTION:



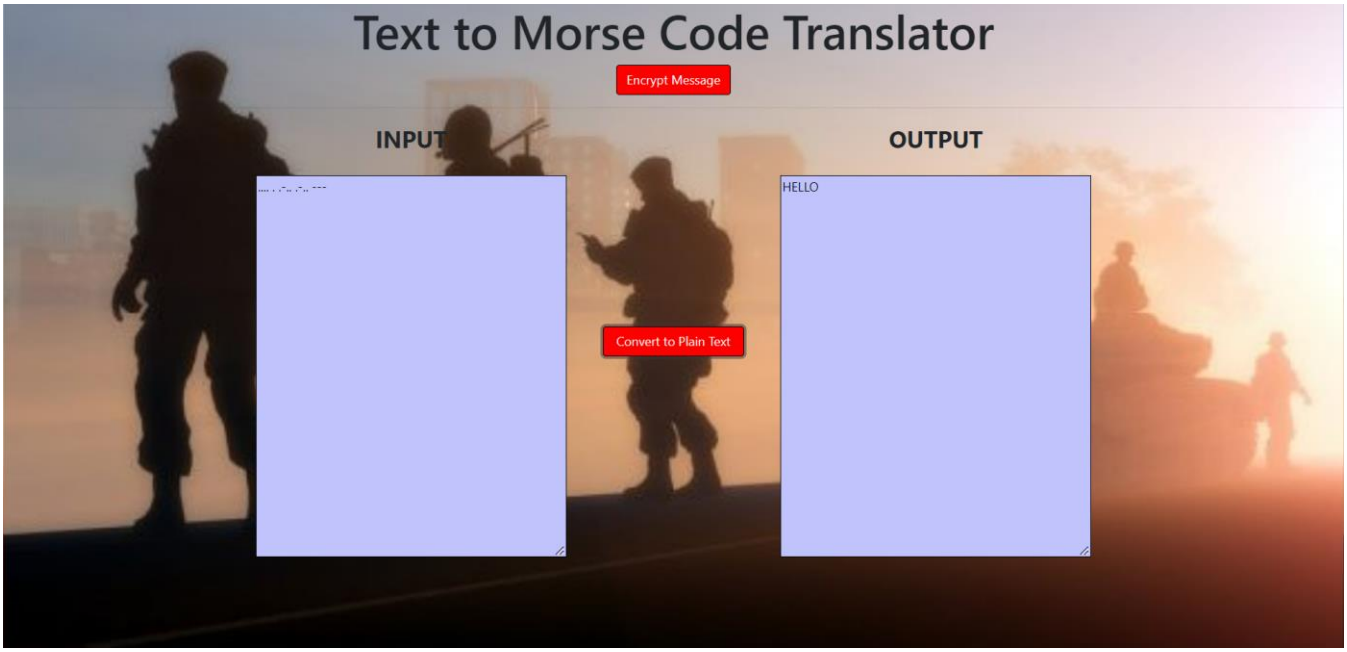
(a) Plain text to morse code (without background)



(b)Morse code to Plain text (without background)



(c)Plain text to morse code (with background)



(d) Morse code to Plain text (with background)

5.3 PERFORMANCE MEASURE:

• Morse code generator helps you to encode and decode your text message for telecommunication. It helps you to transmit text messages for long-distance communication.
• We use Morse code converters in aerospace, amateur radio operators, military, and army forces for communication.
• Our Morse code converter is free and unlimited conversion allowed. Once you enter the text and click on encode, then it converts text to the Morse alphabet. If you want to convert Morse code to text, then click on decode. You can transmit text information for long-distance easily and securely.

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 CONCLUSION:

- This is the implementation of MORSE CODE translator using HTML, CSS and JS.
- This system was designed to transmit message securely to long distance. This design can be used in different areas like long communication, military, external affairs etc.
- By using this system there is no need of tapping device for transmission .so this overcomes the security problems.

6.2 FUTURE WORK:

The future work is as follows: -

- Morse code has high security as only skilled and learned persons can decode the information.
- Morse code no longer remains only the language of dots and dashes used in telegraph but it has also found a great scope in the fields of aviation to communicate with the base station, in navy to communicate with different ships, radio communication like the Amateur Radio, and recently has proved to be a great boon and an important communication tool for the people with various disabilities to communicate.

CHAPTER 7

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REFERENCES:

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- https://www.youtube.com/watch?v=R-petiNdCIY
- https://www.nonstopsystems.com/radio/pdf-hell/article-hell-codw-sowp.pdf