

TITLE: Online Language Translator

As a Project Work for Course

INTERNET PROGRAMMING LABORATORY (CSE326)

By

Sr. No.	Registration No.	Name	Roll No.
1.	12306262	ASHISH KUMAR	RK23APA30
2.	12300523	MD SAAD KAMAL	RK23APA31
3.	12302330	VANSH SHARMA	RK23APA32



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Submitted To: Mr. Muhammad Rafeeq War

Lovely Professional University Jalandhar, Punjab, India

INDEX

Sr. No.	CONTENTS
1.	Introduction
2.	Technologies Used
3.	Modules
4.	Website Snapshots
5.	Code Screenshot
6.	References

INTRODUCTION

The Online Language Translator is a purpose-built web application designed to transcend language barriers and foster seamless communication across global audiences. This innovative project is dedicated to simplifying the complex task of linguistic translation, empowering users to effortlessly exchange ideas, information, and dialogue in diverse languages.

Communication knows no boundaries, yet language differences often pose significant obstacles. This application aims to break down these barriers by offering a user-centric platform that facilitates real-time translation of text, speech, and ideas across multiple languages. It serves as a comprehensive solution for individuals, businesses, and communities seeking to connect in an increasingly diverse and interconnected world.

Language barriers can impede collaboration, understanding, and the exchange of cultures. The Online Language Translator acknowledges this challenge and steps forward to provide a streamlined, efficient, and accessible tool. With an intuitive interface, users can input text, documents, or speech, obtaining accurate and reliable translations in their desired languages.

Technologies Used

The project is implemented using HTML, CSS, and JavaScript. The core functionality is built upon JavaScript, allowing for dynamic interactions and data manipulation on the client side. Local storage is utilized to store user data, ensuring that the selected meal plans persist across page reloads. The application's user interface is designed with HTML and styled using CSS to create an aesthetically pleasing and intuitive experience.

HTML: HTML is used to create the overlay or structure of the webpage later used attributes from different tags to trigger JavaScript functions to load all the details to the webpage.

CSS: CSS is not only used for styling of the page but also improved the webpage with responsive design which in other words makes the webpage compatible with many devices not only desktop.

JavaScript: This whole webpage is mostly functions by JavaScript which reduces the lines of code in the HTML file.

APIs: APIs (Application Programming Interfaces) play a fundamental role in an Online Language Translator project by enabling communication and interaction with external services or systems. APIs provide access to established translation services such as Google Translate. Language detection APIs can determine the language of the input text, which is essential when users don't specify the source language. This functionality helps ensure accurate translations.

Modules

DOM Manipulation:

- **document.querySelector:** Finds the first element matching the specified CSS selector.
- **document.querySelectorAll:** Retrieves a list of elements that match the specified CSS selector.

Event Handling:

- **addEventListener:** Listens for events on HTML elements and executes a callback function when the event occurs.

Fetch API:

- **fetch:** Performs asynchronous HTTP requests to fetch resources or data from an API endpoint.

Clipboard API:

- **navigator.clipboard.writeText:** Writes text to the clipboard for copy functionality.

Speech Synthesis API:

- **SpeechSynthesisUtterance:** Represents a speech request and manages the synthesis process.
- **speechSynthesis.speak:** Initiates the speech synthesis process.

Website Snapshots

Main Overview of Website:



Website Link:

<https://github.com/sharmavansh99/Online-Language-Translator.git>

Code Screenshots

/index.html

```
<> index.html X
<> index.html > ...
1  |<!DOCTYPE html>
2  |<html lang="en" dir="ltr">
3  |  <head>
4  |    <meta charset="utf-8">
5  |    <title>Language Translator | CodingNepal</title>
6  |    <link rel="stylesheet" href="style.css">
7  |    <meta name="viewport" content="width=device-width, initial-scale=1.0">
8  |    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/css/all.min.css"/>
9  |  </head>
10 |  <body>
11 |    <section>
12 |      <div class="name">
13 |        <section>
14 |          <p>LANGUAGE TRANSLATOR</p>
15 |          
16 |        </div>
17 |        <div class="container">
18 |          <div class="wrapper">
19 |            <div class="text-input">
20 |              <textarea spellcheck="false" class="from-text" placeholder="Enter text"></textarea>
21 |              <textarea spellcheck="false" readonly disabled class="to-text" placeholder="Translation"></textarea>
22 |            </div>
23 |            <ul class="controls">
24 |              <li class="row from">
25 |                <div class="icons">
26 |                  <i id="from" class="fas fa-volume-up"></i>
27 |                  <i id="from" class="fas fa-copy"></i>
28 |                </div>
29 |                <select></select>
30 |              </li>
31 |              <li class="exchange"><i class="fas fa-exchange-alt"></i></li>
32 |              <li class="row to">
33 |                <select></select>
34 |                <div class="icons">
35 |                  <i id="to" class="fas fa-volume-up"></i>
36 |                  <i id="to" class="fas fa-copy"></i>
37 |                </div>
38 |              </li>
39 |            </ul>
40 |          </div>
41 |          <button>Translate Text</button>
42 |        </div>
43 |      </section>
44 |
45 |      <script src="js/countries.js"></script>
46 |      <script src="js/script.js"></script>
47 |
48 |    </body>
49 |  </html>
```

/styles.css

```
# style.css > ...
1  /* Import Google Font - Poppins */
2  @import url('https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&display=swap');
3  *{
4      margin: 0;
5      padding: 0;
6      box-sizing: border-box;
7      font-family: 'Poppins', sans-serif;
8  }
9  body{
10     display: flex;
11     align-items: center;
12     justify-content: center;
13     padding: 0 10px;
14     min-height: 100vh;
15     background-image: url(bg.jpg);
16 }
17 .name{
18     color: ■ #fff;
19     background-color: ■ #019D81;
20     padding: 10px 10px 10px 10px;
21     margin: 10px;
22     border-radius: 7px;
23     text-align: center;
24     font-weight: 600;
25     align-items: justify;
26     overflow: hidden;
27     width: auto;
28 }
29 .name p{
30     text-align: left;
31     font-size: 2rem;
32     padding-top: 10px;
33     float: left;
34 }
35 .name img {
36     height: 70px;
37     width: 95px;
38     float: right;
39 }
40
41 .container{
42     max-width: 690px;
43     width: 100%;
44     padding: 30px;
45     background: ■ #fff;
46     border-radius: 7px;
47     box-shadow: 0 10px 20px ■ rgba(0,0,0,0.01);
48 }
49 .wrapper{
50     border-radius: 5px;
51     border: 1px solid ■ #ccc;
52 }
53 .wrapper .text-input{
54     display: flex;
55     border-bottom: 1px solid ■ #ccc;
56 }
```



```
57 .text-input .to-text{
58   border-radius: 0px;
59   border-left: 1px solid #ccc;
60 }
61 .text-input textarea{
62   height: 250px;
63   width: 100%;
64   border: none;
65   outline: none;
66   resize: none;
67   background: none;
68   font-size: 18px;
69   padding: 10px 15px;
70   border-radius: 5px;
71 }
72 .text-input textarea::placeholder{
73   color: #b7b6b6;
74 }
75 .controls, li, .icons, .icons i{
76   display: flex;
77   align-items: center;
78   justify-content: space-between;
79 }
80 .controls{
81   list-style: none;
82   padding: 12px 15px;
83 }
84 .controls .row .icons{
85   width: 38%;
86 }
87 }
```

```
88 .controls .row .icons i{
89   width: 50px;
90   color: #adadad;
91   font-size: 14px;
92   cursor: pointer;
93   transform: scale(1.1);
94   justify-content: center;
95 }
96
97
98 .controls .row.from .icons{
99   padding-right: 15px;
100  border-right: 1px solid #ccc;
101 }
102 .controls .row.to .icons{
103   padding-left: 15px;
104   border-left: 1px solid #ccc;
105 }
106
107 .controls .row select{
108   color: #333;
109   border: none;
110   outline: none;
```

```
111     font-size: 18px;
112     background: none;
113     padding-left: 5px;
114     cursor: pointer;
115 }
116 .text-input textarea::-webkit-scrollbar{
117     width: 4px;
118 }
119 .controls .row select::-webkit-scrollbar{
120     width: 8px;
121 }
122 .text-input textarea::-webkit-scrollbar-track,
123 .controls .row select::-webkit-scrollbar-track{
124     background: #fff;
125 }
126 .text-input textarea::-webkit-scrollbar-thumb{
127     background: #ddd;
128     border-radius: 8px;
129 }
130 .controls .row select::-webkit-scrollbar-thumb{
131     background: #999;
132     border-radius: 8px;
133     border-right: 2px solid #ffffff;
134 }
135 .controls .exchange{
136     color: #adadad;
137     cursor: pointer;
138     font-size: 16px;
139     transition: transform 0.2s ease;
140     padding: 0 30px;
141 }
142 .controls i:active{
143     transform: scale(0.9);
144 }
```

```
145 .container button{
146     width: 100%;
147     padding: 14px;
148     outline: none;
149     border: none;
150     color: #fff;
151     cursor: pointer;
152     margin-top: 20px;
153     font-size: 17px;
154     border-radius: 5px;
155     background: #FEAD62;
156 }
157
158 @media (max-width: 660px){
159     .container{
160         padding: 20px;
161     }
162     .wrapper .text-input{
163         flex-direction: column;
164     }
165     .text-input .to-text{
166         border-left: 0px;
167         border-top: 1px solid #ccc;
168     }
```

```

169     .text-input textarea{
170       height: 200px;
171     }
172     .controls .row .icons{
173       display: none;
174     }
175     .container button{
176       padding: 13px;
177       font-size: 16px;
178     }
179     .controls .row select{
180       font-size: 16px;
181     }
182     .controls .exchange{
183       font-size: 14px;
184     }
185   }

```

/js/script.js

JS script.js

```

js > JS script.js > translateBtn.addEventListener("click") callback > then() callback
1  const fromText = document.querySelector(".from-text"),
2  toText = document.querySelector(".to-text"),
3  exchangeIcon = document.querySelector(".exchange"),
4  selectTag = document.querySelectorAll("select"),
5  icons = document.querySelectorAll(".row i");
6  translateBtn = document.querySelector("button"),
7
8  selectTag.forEach((tag, id) => {
9    for (let country_code in countries) {
10      let selected = id == 0 ? country_code == "en-GB" ? "selected" : "" :
11      country_code == "hi-IN" ? "selected" : "";
12      let option = `<option ${selected}
13      value="${country_code}">${countries[country_code]}</option>`;
14      tag.insertAdjacentHTML("beforeend", option);
15    }
16  });
17
18  exchangeIcon.addEventListener("click", () => {
19    let tempText = fromText.value,
20    tempLang = selectTag[0].value;
21    fromText.value = toText.value;
22    toText.value = tempText;
23    selectTag[0].value = selectTag[1].value;
24    selectTag[1].value = tempLang;
25  });
26
27  fromText.addEventListener("keyup", () => {
28    if(!fromText.value) {
29      toText.value = "";
30    }
31  });
32

```

```

33 translateBtn.addEventListener("click", () => {
34     let text = fromText.value.trim(),
35     translateFrom = selectTag[0].value,
36     translateTo = selectTag[1].value;
37     if(!text) return;
38     toText.setAttribute("placeholder", "Translating...");
39     let apiUrl = `https://api.mymemory.translated.net/get?q=${text}
40     &langpair=${translateFrom}|${translateTo}`;
41     fetch(apiUrl).then(res => res.json()).then(data => {
42         toText.value = data.responseData.translatedText;
43         data.matches.forEach(data => {
44             if(data.id === 0) {
45                 toText.value = data.translation;
46             }
47         });
48         toText.setAttribute("placeholder", "Translation");
49     });
50 });
51
52 icons.forEach(icon => {
53     icon.addEventListener("click", ({target}) => {
54         if(!fromText.value || !toText.value) return;
55         if(target.classList.contains("fa-copy")) {
56             if(target.id == "from") {
57                 navigator.clipboard.writeText(fromText.value);
58             } else {
59                 navigator.clipboard.writeText(toText.value);
60             }
61         } else {
62             let utterance;
63             if(target.id == "from") {
64                 utterance = new SpeechSynthesisUtterance(fromText.value);
65                 utterance.lang = selectTag[0].value;
66             } else {
67                 utterance = new SpeechSynthesisUtterance(toText.value);
68                 utterance.lang = selectTag[1].value;
69             }
70             speechSynthesis.speak(utterance);
71         }
72     });
73 });

```

/js/countries.js

JS countries.js X

```

js > JS countries.js > [🔍] countries
1  const countries = [
2      "am-ET": "Amharic",
3      "ar-SA": "Arabic",
4      "be-BY": "Biellarus",
5      "bem-ZM": "Bemba",
6      "bi-VU": "Bislama",
7      "bjs-BB": "Bajan",
8      "bn-IN": "Bengali",
9      "bo-CN": "Tibetan",
10     "br-FR": "Breton",
11     "bs-BA": "Bosnian",

```

12 "ca-ES": "Catalan",
13 "cop-EG": "Coptic",
14 "cs-CZ": "Czech",
15 "cy-GB": "Welsh",
16 "da-DK": "Danish",
17 "dz-BT": "Dzongkha",
18 "de-DE": "German",
19 "dv-MV": "Maldivian",
20 "el-GR": "Greek",
21 "en-GB": "English",
22 "es-ES": "Spanish",
23 "et-EE": "Estonian",
24 "eu-ES": "Basque",
25 "fa-IR": "Persian",
26 "fi-FI": "Finnish",
27 "fn-FNG": "Fanagalo",
28 "fo-FO": "Faroese",
29 "fr-FR": "French",
30 "gl-ES": "Galician",
31 "gu-IN": "Gujarati",
32 "ha-NE": "Hausa",
33 "he-IL": "Hebrew",
34 "hi-IN": "Hindi",
35 "hr-HR": "Croatian",
36 "hu-HU": "Hungarian",
37 "id-ID": "Indonesian",
38 "is-IS": "Icelandic",
39 "it-IT": "Italian",
40 "ja-JP": "Japanese",
41 "kk-KZ": "Kazakh",
42 "km-KM": "Khmer",
43 "kn-IN": "Kannada",
44 "ko-KR": "Korean",
45 "ku-TR": "Kurdish",
46 "ky-KG": "Kyrgyz",
47 "la-VA": "Latin",

48 "lo-LA": "Lao",
49 "lv-LV": "Latvian",
50 "men-SL": "Mende",
51 "mg-MG": "Malagasy",
52 "mi-NZ": "Maori",
53 "ms-MY": "Malay",
54 "mt-MT": "Maltese",
55 "my-MM": "Burmese",
56 "ne-NP": "Nepali",
57 "niu-NU": "Niuean",
58 "nl-NL": "Dutch",
59 "no-NO": "Norwegian",
60 "ny-MW": "Nyanja",
61 "ur-PK": "Pakistani",
62 "pau-PW": "Palauan",
63 "pa-IN": "Panjabi",
64 "ps-PK": "Pashto",
65 "pis-SB": "Pijin",
66 "pl-PL": "Polish",
67 "pt-PT": "Portuguese",
68 "rn-BI": "Kirundi",

```
69     "ro-RO": "Romanian",
70     "ru-RU": "Russian",
71     "sg-CF": "Sango",
72     "si-LK": "Sinhala",
73     "sk-SK": "Slovak",
74     "sm-WS": "Samoan",
75     "sn-ZW": "Shona",
76     "so-SO": "Somali",
77     "sq-AL": "Albanian",
78     "sr-RS": "Serbian",
79     "sv-SE": "Swedish",
80     "sw-SZ": "Swahili",
81     "ta-LK": "Tamil",
82     "te-IN": "Telugu",
83     "tet-TL": "Tetum",
84     "tg-TJ": "Tajik",
85     "th-TH": "Thai",
86     "ti-TI": "Tigrinya",
87     "tk-TM": "Turkmen",
88     "tl-PH": "Tagalog",
89     "tn-BW": "Tswana",
90     "to-TO": "Tongan",
91     "tr-TR": "Turkish",
92     "uk-UA": "Ukrainian",
93     "uz-UZ": "Uzbek",
94     "vi-VN": "Vietnamese",
95     "wo-SN": "Wolof",
96     "xh-ZA": "Xhosa",
97     "yi-YD": "Yiddish",
98     "zu-ZA": "Zulu"
```

```
99 }
```


References

The following links or websites have been used as a reference for making of this project:

- <https://cloud.google.com/translate/docs/reference/rest#service:-translate.googleapis.com>
- <https://www.w3schools.com/>
- <https://stackoverflow.com/>
- <https://chat.openai.com/>
- <https://www.youtube.com/>
- <https://github.com/>

CONCLUSION

The Online Language Translator stands as a testament to innovation, breaking down barriers and enabling seamless communication across languages. Its user-centric design and technological prowess have forged a bridge, connecting diverse cultures and fostering global understanding.

As this project concludes, its impact extends beyond words, ushering in a world where language diversity unites rather than divides. With a commitment to continual evolution, this application remains dedicated to redefining connectivity through the power of language.