DAYANANDA SAGAR UNIVERSITY

Devarakaggalahalli, Harohalli
Kanakapura Road, Ramanagara - 562112, Karnataka, India

Bachelor of Technology
in
COMPUTER SCIENCE AND ENGINEERING

Full Stack Development
Mini Project Report

CURRENCY-CONVERTER

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Designation and Department of Guide

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING,
SCHOOL OF ENGINEERING,
DAYANANDA SAGAR UNIVERSITY.

(2024-2025)

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CERTIFICATE

This is to certify that the Full Stack Development Mini Project work titled **"CURRENCY-CONVERTER"** is carried out **ManojGS (ENG23CS0105), Nandhan (ENG23CS0122), Mohammed Nawaz(ENG23CS0114),Prajwal MN(ENG23CS0114)** Bonafide students of Third semester of Bachelor of Technology in Computer Science and Engineering at the School of Engineering, Dayananda Sagar University, Bangalore in partial fulfillment for the award of degree in Bachelor of Technology in Computer Science and Engineering, during the year **2024-2025**.

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DECLARATION

We, **Manoj GS(ENG23CS0105), Nandhan (ENG23CS0122), Mohammed Nawaz (ENG23 CS0114) Prajwal MN (ENG23CS0138)** are students of Third semester B. Tech in **Computer Science and Engineering**, at School of Engineering, **Dayananda Sagar University**, hereby declare that the Mini Project titled **"CURRENCY-CONVERTER"** has been carried out by us and submitted in partial fulfilment for the award of degree in **Bachelor of Technology in Computer Science and Engineering** during the academic year **2024-2025.**

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Abstract

This currency converter is actually a software application designed for real-time currency exchange rate conversions this project aims at providing seamless, user-friendly interfaces so that users can give a value in one currency and acquire its equivalent amount in another on the basis of the latest exchange rates available.

This report serves as a comprehensive guide for understanding the development and functionality of the currency converter

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INTRODUCTION:

A currency converter is a tool that allows users to convert one currency into another, based on current exchange rates. The purpose of this project is to develop a web-based currency converter using HTML, CSS, JavaScript, and Node.js. This application will provide a user-friendly interface and fetch real-time exchange rates using a third-party API

Tools and Technologies Used

1. **Frontend:**
   - **HTML**: For creating the structure of the web page.
   - **CSS**: For styling the application to make it visually appealing.
   - **JavaScript**: For implementing client-side interactivity and form validation.
2. **Third-Party API:**
   - A currency exchange API (e.g., Exchange Rate-API or open Exchange rates) to fetch real-time exchange rates.

Project Implementation:

1. Frontend

- **HTML**:
  - Create a form with dropdowns for selecting source and target currencies.
  - Input field for the amount.
  - A button to trigger the conversion.
- **CSS**:
  - Used for styling the HTML application
  - Add responsive design for mobile and desktop views.
- **JavaScript**:
  - Validate user inputs.
  - Make a fetch call to the Node.js server to get exchange rates.
  - Display the converted amount dynamically.

Code structure:

1.Frontend code:

- **Index.html:**

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Currency Converter</title>
   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">
   <script src="https://cdn.jsdelivr.net/npm/axios/dist/axios.min.js"></script>
   <link rel="stylesheet" href="styles.css">
</head>
<body>

   <div id='content' class="container">
      <form id="form">
         <h3><svg xmlns="http://www.w3.org/2000/svg" width="30" height="30"
fill="currentColor" class="bi bi-cash-coin" viewBox="0 0 16 16">
            <path fill-rule="evenodd" d="M11 15a4 4 0 1 0 0-8 4 4 0 0 0 0 8m5-4a5 5 0 1 1-10 0
5 5 0 0 1 10 0"/>
            <path d="M9.438 11.944c.047.596.518 1.06 1.363 1.116v.44h.375v-.443c.875-.061
1.386-.529 1.386-1.207 0-.618-.39-.936-1.09-1.1l-.296-.07v-
1.2c.376.043.614.248.671.532h.658c-.047-.575-.54-1.024-1.329-1.073V8.5h-.375v.45c-
.747.073-1.255.522-1.255 1.158 0 .562.378.92 1.007 1.066l.248.061v1.272c-.384-.058-.639-
.27-.696-.563h-.668zm1.36-1.354c-.369-.085-.569-.26-.569-.522 0-.294.216-.514.572-
.578v1.1h-.003zm.432.746c.449.104.655.272.655.569 0 .339-.257.571-.709.614v-
1.195l.054.012z"/>
            <path d="M1 0a1 1 0 0 0-1 1v8a1 1 0 0 0 1 1h4.083c.058-.344.145-.678.258-1H3a2 2
0 0 0-2-2V3a2 2 0 0 0 2-2h10a2 2 0 0 0 2 2v3.528c.38.34.717.728 1 1.154V1a1 1 0 0 0-1-1z"/>
            <path d="M9.998 5.083 10 5a2 2 0 1 0-3.132 1.65 5.982 5.982 0 0 1 3.13-1.567z"/>
         </svg> Currency Converter</h3>
 <div id="amount" class="form-group">
            <label for="amount-field"></label>
            <input type="text" class="form-control" id="amount-field" placeholder="Amount">
         </div>
         <div class="form-group text-start">
```

```
            <label id="for" for="currency1">From:</label>
            <select class="form-control" id="currency1">
            </select>
          </div>
          <div class="form-group text-start">
            <label id="to" for="currency2">To:</label>
            <select class="form-control" id="currency2">
            </select>
          </div>

          <h3 id="result"></h3>
      </form>
    </div>

    <script src="script.js"></script>
</body>
</html>
```

- **style.css:**

```
body {
  background-color: rgb(47, 92, 94);
  display: flex;
  align-items: center;
  justify-content: center;
  height: 100vh;
}

form {
  background-color: white;
  padding: 1rem;
  border-radius: 10px;
  max-width: 40%;
  min-width: 20rem;
  text-align: center;
  margin: 0 auto;
}

h3 {
  margin: 1rem auto 0 auto;
  color: black;
}

#amount {
  margin: auto auto 1.5rem auto;
```

```
}

#for, #to {
  margin: 0.5rem auto 0.5rem auto;
}

#credits {
  font-size: 0.8rem;
  color: #767676;
}

#credits a {
  text-decoration: none;
  color: #167448;
}

label {
  color: #1b5817;
  font-size: 0.8rem;
}

#result {
  margin-top: 3rem;
  overflow: hidden;
  text-overflow: ellipsis;
}

h5 {
  margin: 2rem auto 1rem auto;
  color: #1b5817;
}

#disclaimer {
  font-size: 0.5rem;
  margin: 2rem auto 0 auto;
}

@media (max-width: 768px) {
  #result {
     font-size: 1.3rem;
  }
}
```

- **Script.jss:**

```
const result = document.querySelector('#result');
const currency1 = document.querySelector('#currency1');
const currency2 = document.querySelector('#currency2');
const amount = document.querySelector('#amount-field');
const form = document.querySelector('#form');

let currencyRates = [];

form.addEventListener('submit', function(event) {
   event.preventDefault();
});

// load in the curency rates
window.addEventListener('load', async function(event) {
   try {
      const res = await axios.get('https://api.exchangerate-api.com/v4/latest/euro');
      currencyRates = res.data.rates;
      let currencyArr = Object.keys(currencyRates);
      addCurrencies(currencyArr);
   } catch (e) {
      console.log('Error', e)
   }
})

// adding currencies to select
const addCurrencies = currencies => {
   for (currency of currencies) {
      const option1 = document.createElement('option');
      option1.innerHTML = `<option
value='${currency}'>${currency.toUpperCase()}</option`;
      currency1.appendChild(option1);

      const option2 = document.createElement('option');
      option2.innerHTML = `<option
value='${currency}'>${currency.toUpperCase()}</option`;
      currency2.appendChild(option2);

      // Default values
      if (currency === 'EUR') {
         option1.selected = true;
      }
      if (currency === 'USD') {
         option2.selected = true;
```

```
        }
    }
}

// give the result
amount.addEventListener('input', async function(event) {
    try {
        updateResult();
    } catch (e) {
        console.log('Error', e);
    }
})

const updateResult = () => {
    const inputValue = amount.value;
    converter(inputValue);
};

// calculations
const converter = value => {
    let rgx = /^[\d.]{1,23}$/.test(value);
    if (rgx) {
        result.classList.remove('text-danger');
        let parsedValue = parseFloat(value);

        let currency1ASD = currency1.value;
        let currency2ASD = currency2.value;

        let parsedCurrency1 = parseFloat(currencyRates[currency1ASD]);
        let parsedCurrency2 = parseFloat(currencyRates[currency2ASD]);

        console.log(parsedCurrency2)

        let resultValue = (parsedValue / parsedCurrency1) * parsedCurrency2;
        let finalResult = parseFloat(resultValue.toFixed(2));
        result.innerText = `${value} ${currency1.value} = ${finalResult} ${currency2.value}`;

    } else if (value == '') {
        result.innerText = '';
    } else {
        result.innerText = 'Enter a valid number';
        result.classList.add('text-danger')
    }
}

// logic for when currency changes
currency1.addEventListener('change', function(event) {
    updateResult();
```

```
});

currency2.addEventListener('change', function(event) {
    updateResult();
});
```

Result output:

Figure 1 output of currency-converter

Features:

1. **User-Friendly Interface**:

- A clean and intuitive interface that allows users to interact easily.
- Clear labels and simple layouts ensure usability for all age groups.

2. **Currency Selection**:

- Dropdown menus to select source and target currencies
- Includes a wide range of international currencies to cater to diverse user needs.

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3. **Amount Input**:

- A dedicated input field allows users to specify the amount they want to convert.
- Supports decimal values for precise conversions.

4. **Real-Time Exchange Rate Fetching**:

- Fetches live exchange rates using a API for accurate conversions.
- Automatically updates conversion rates as per the latest market data.

5. **Instant Conversion Result**:

Displays the converted amount immediately after the conversion.

CONCLUSION

The currency converter application effectively addresses the need for real-time currency conversions by integrating reliable technologies and ensuring ease of use. Leveraging HTML, CSS, JavaScript, and Node.js, the application provides a seamless and responsive user experience while fetching accurate exchange rates from third-party APIs. the currency converter serves as a dependable tool for users across the globe.

Overall, this project demonstrates the successful implementation of frontend and backend integration, emphasizing both functionality and user satisfaction