Front End Engineering-II

Project Report

Semester-IV (Batch-2022)

Character Counter

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Submitted By:

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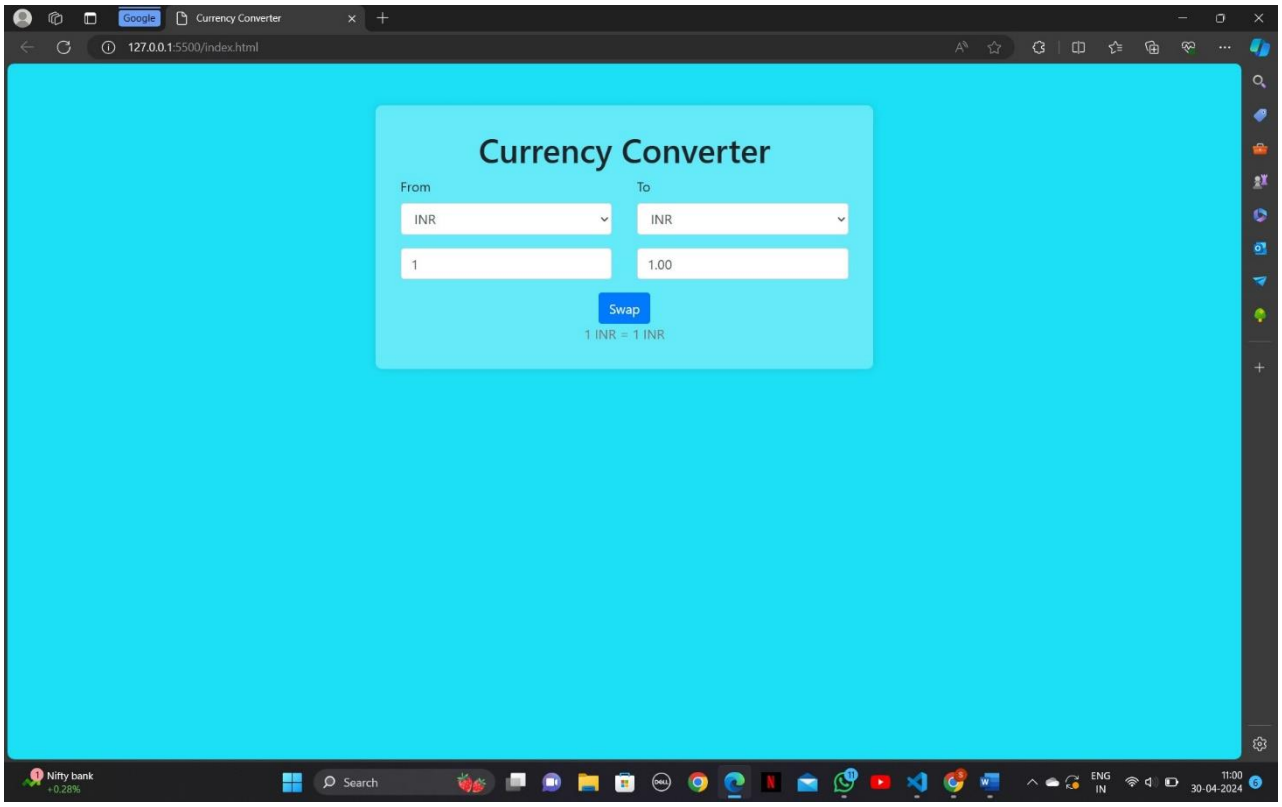
Abstract

This project aims to create a user-friendly and visually appealing currency converter web application using Bootstrap framework. The application allows users to convert between different currencies with real-time exchange rates. The user interface is designed to be intuitive, featuring dropdown menus for selecting currencies, input fields for entering amounts, and a button for swapping the selected currencies. The application leverages Bootstrap's responsive design to ensure compatibility across various devices and screen sizes. Additionally, it utilizes JavaScript to handle currency conversion logic and dynamically update exchange rates. Overall, this project provides a practical and engaging tool for users to perform currency conversions effortlessly.



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1.
Introduction

Welcome to the Currency Converter project! In this project, we aim to build a simple yet powerful tool that allows users to quickly convert between different currencies.

What is a Currency Converter?

A currency converter is a tool that helps users convert the value of one currency into another. With the global nature of today's economy, it's essential for businesses, travelers, and individuals to be able to easily convert currencies to understand their financial transactions better.

With our project goals set and the technology stack defined, let's dive into building our Currency Converter project using Bootstrap! Whether you're a beginner looking to learn web development or an experienced developer wanting to create a useful tool, this project will provide valuable insights and hands-on experience.

1.1 Background:

A currency converter with Bootstrap is a web project aimed at providing users with a tool to quickly and easily convert between different currencies. Bootstrap, a popular front-end framework, is utilized for its responsive design and pre-styled components, enabling developers to create visually appealing and mobile-friendly user interfaces.

1.2 Objectives:

- Design the Layout: Utilize Bootstrap's grid system to create a responsive layout for the currency converter interface.
- Implement Currency Selection: Use Bootstrap's form controls to create dropdown menus for selecting the source and target currencies.
- Input Handling: Employ Bootstrap form inputs for entering the amount to convert and ensure proper input validation.
- Calculate Conversion: Write JavaScript logic to calculate the converted amount based on the selected currencies and exchange rates.
- Display Conversion Result: Show the converted amount dynamically on the page.

- Testing and Debugging: Thoroughly test the functionality across different scenarios and debug any issues encountered.

1.3 Significance:

1. Responsive Design: Bootstrap ensures that your currency converter web page looks great and functions well across various devices and screen sizes, enhancing user experience.

2. Pre-Styled Components: Bootstrap provides a wide range of pre-styled components like buttons, forms, and dropdowns, allowing you to quickly implement interactive elements without writing extensive CSS.

3. Grid System: Bootstrap's grid system enables you to create a responsive layout with ease, organizing content into rows and columns for optimal display on different screen sizes.

4. Customizable Themes: Bootstrap offers customizable themes and utilities to modify the appearance of your currency converter, ensuring it aligns with your branding or design preferences.

5. Efficient Development: By leveraging Bootstrap's ready-made components and responsive design features, you can streamline the development process, saving time and effort while maintaining a professional look and feel.

2. Problem Statement

The problem statement for the digital and Currency converter project is to design a visually appealing and user-friendly timekeeping solution that can be easily integrated into a website or web application. Traditional Currency converters, while aesthetically pleasing, can be less intuitive for some users, while digital clocks, while precise, may lack the charm and familiarity of their analog counterparts. The challenge is to create a hybrid clock that combines the best of both worlds, offering a seamless and customizable timekeeping experience that caters to the diverse needs and preferences of modern web users.

3. Software Requirements

i. Integrated Development Environment (IDE):

• The main code editor and project management tool will be Visual Studio Code (VS Code), because to its many capabilities, large ecosystem of extensions, and effective workflow.

ii. Technology Requirements:

- The web application will be structured using HTML5 (Hypertext Markup Language), and the components for the clock and user interface will be created using HTML5.
- The application will be styled using Cascading Style Sheets (CSS3), which will provide a visually pleasing and consistent design across various components and screen sizes.
- The preferred programming language for developing interactive features, handling user interactions inside the application, handling time calculations, and dynamic updates will be JavaScript (ES6+).

iii. Utility-first CSS Framework:

- Bootstrap provides a responsive and visually appealing framework to style and layout the clock components, ensuring a consistent and polished appearance across different devices and screen sizes.

iv. Version Control and Collaboration:

- To track changes in the project codebase, enable effective collaboration, and facilitate code reviews and merges, Git, a distributed version control system, will be used.
- GitHub is a well-known platform for problem tracking, collaboration, and code hosting. The project repository will be housed on it.

v. Browser Compatibility and Performance:

- The application will be developed with a focus on cross-browser compatibility, ensuring it functions correctly and consistently across the latest versions of popular web browsers.
- Performance optimization techniques will be implemented to ensure smooth and efficient rendering, minimizing resource consumption and providing an optimal user experience.

4. Proposed Design

User Interface:

The application will feature a responsive and visually appealing layout using Bootstrap 5, ensuring a consistent experience across various devices and screen sizes.

Development Technologies:

- To ensure proper semantics and accessibility, the application will be structured using HTML5 semantic elements.
- CSS is in charge of styling the application, producing a cohesive and aesthetically pleasing look.
- The clock logic and time computations, user interactions, and dynamic UI updates will all be handled by JavaScript.

User Experience:

- To develop a dynamic and responsive user interface, real-time feedback and interactive components like seamless animations and transitions will be used.
- Maintaining compatibility between the program and the most recent iterations of widely-used web browsers will be of utmost importance.
- A major emphasis will be on responsiveness, with the program made to easily adjust to various screen sizes and devices, offering the best possible user experience on desktop and mobile platforms.

Testing and Quality Assurance:

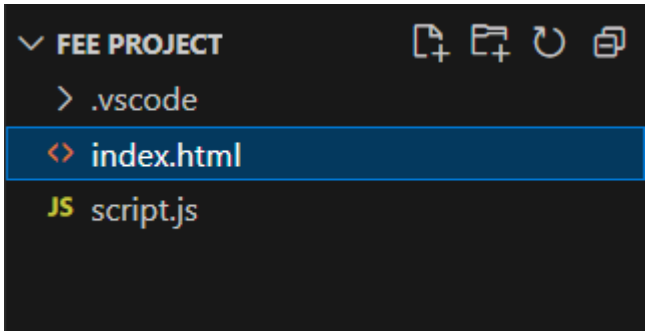
- Comprehensive testing, including manual and unit tests, will be conducted to ensure the application's functionality and user interface consistency.

Documentation and Deployment:

- Comprehensive documentation will be supplied, comprising usage guidelines, installation instructions, and pertinent data for developers and users.
- To guarantee end users' accessibility and convenience of use, the application will be installed on a web server with a domain.

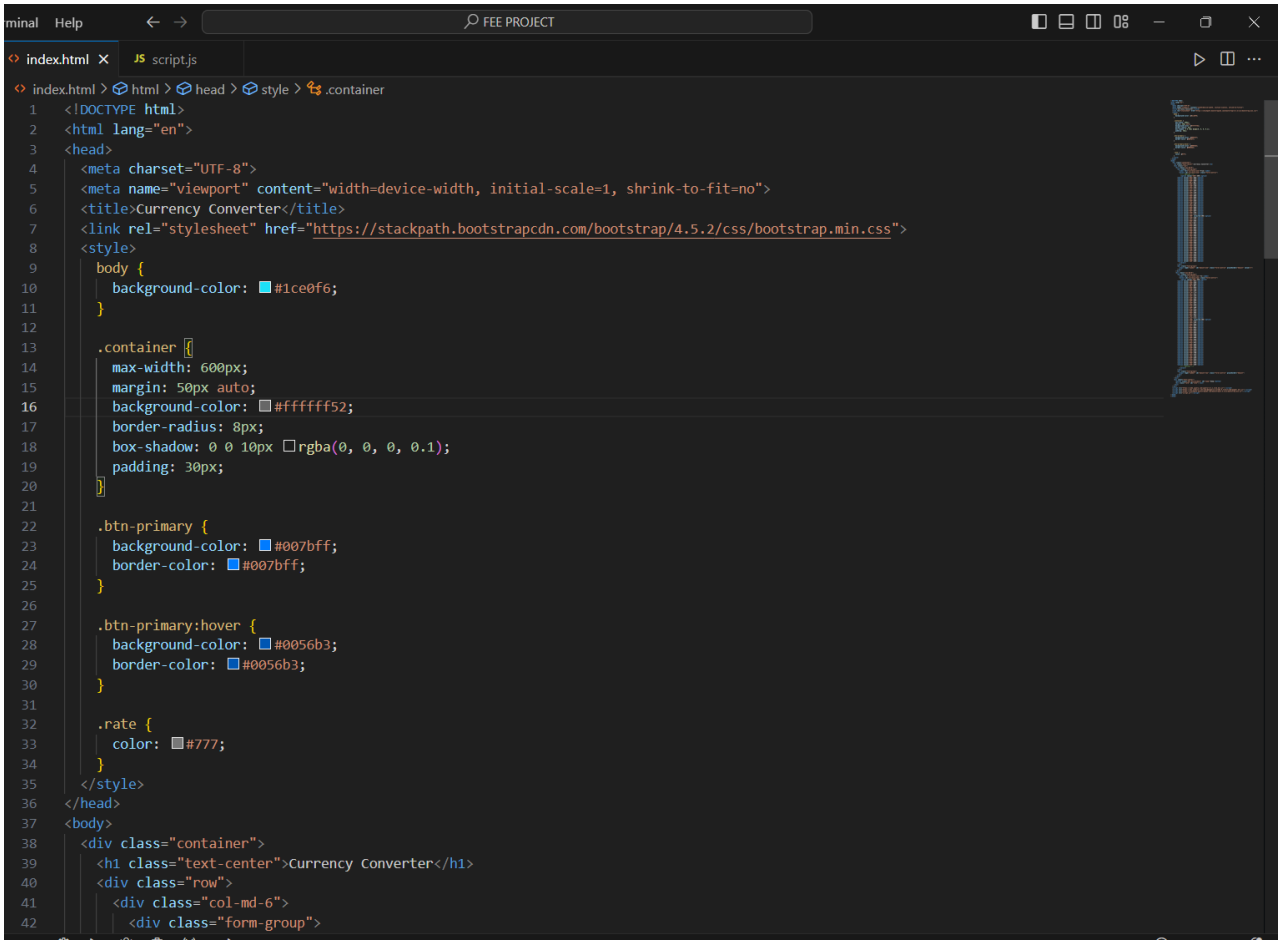
4.1 File Structure

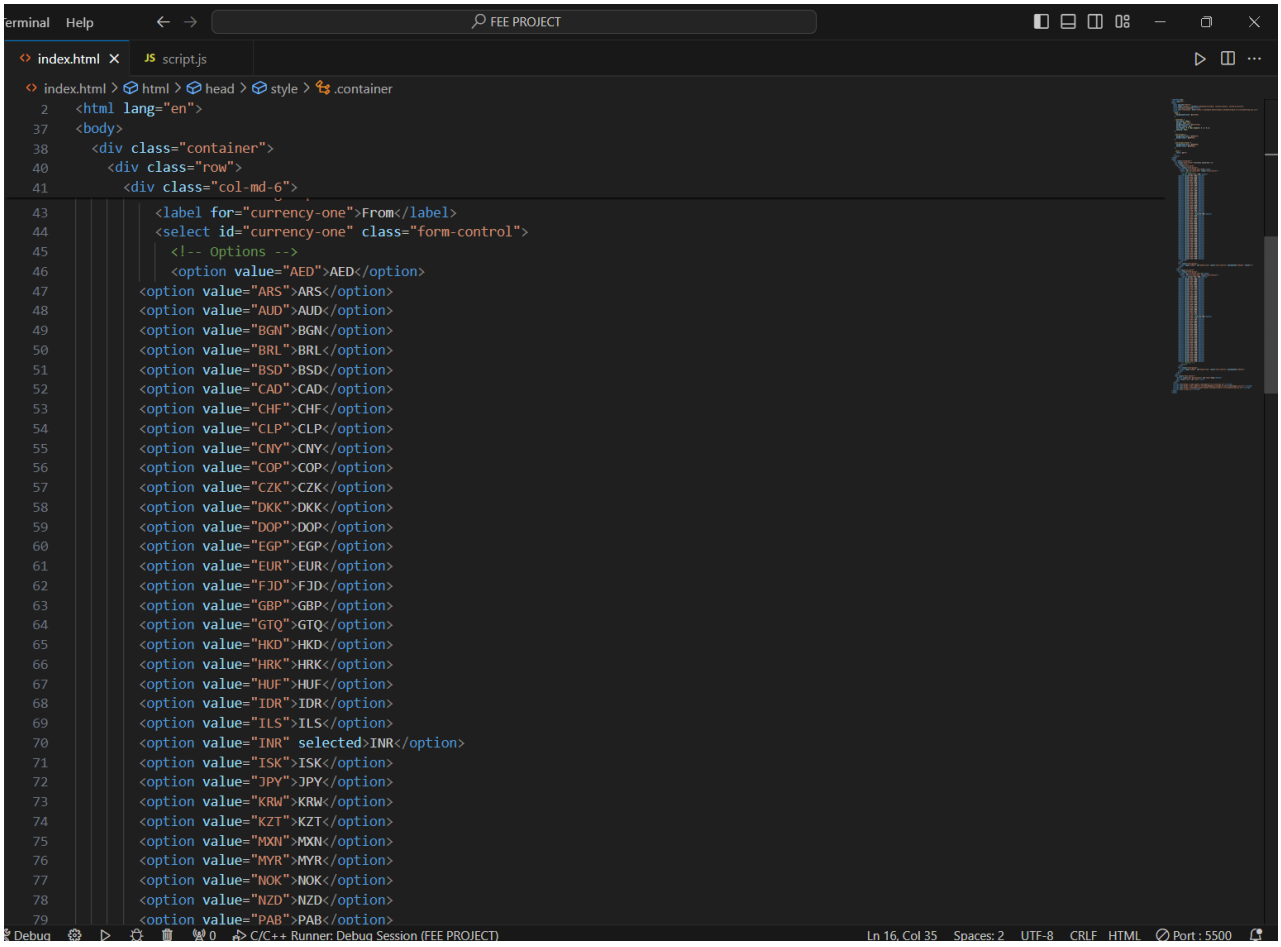
- Creating a methodical file and folder structure to maintain consistent file paths and a tidy setup.



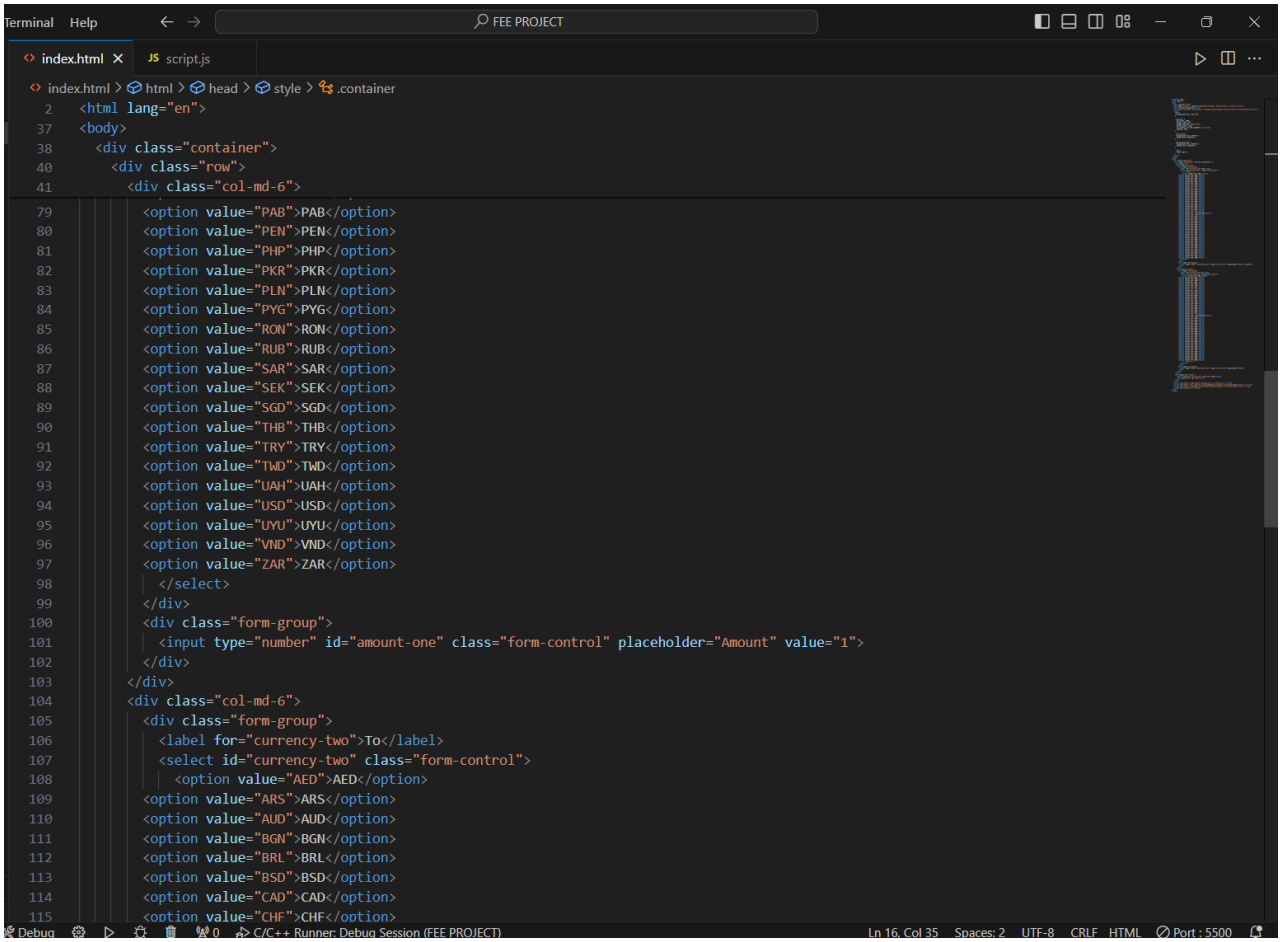
4.2 HTML Code Structure

The above screenshots demonstrate our Currency converter project's HTML code, which represents the structure and content of our web pages in code.




Terminal Help
FEE PROJECT
index.html
script.js
index.html > html > head > style > .container
<html lang="en">
<body>

<label for="currency-one">From</label>
<select id="currency-one" class="form-control">
<!-- Options -->
<option value="AED">AED</option>
<option value="ARS">ARS</option>
<option value="AUD">AUD</option>
<option value="BGN">BGN</option>
<option value="BRL">BRL</option>
<option value="BSD">BSD</option>
<option value="CAD">CAD</option>
<option value="CHF">CHF</option>
<option value="CLP">CLP</option>
<option value="CNY">CNY</option>
<option value="COP">COP</option>
<option value="CZK">CZK</option>
<option value="DKK">DKK</option>
<option value="DOP">DOP</option>
<option value="EGP">EGP</option>
<option value="EUR">EUR</option>
<option value="FJD">FJD</option>
<option value="GBP">GBP</option>
<option value="GTQ">GTQ</option>
<option value="HKD">HKD</option>
<option value="HRK">HRK</option>
<option value="HUF">HUF</option>
<option value="IDR">IDR</option>
<option value="ILS">ILS</option>
<option value="INR" selected>INR</option>
<option value="ISK">ISK</option>
<option value="JPY">JPY</option>
<option value="KRW">KRW</option>
<option value="KZT">KZT</option>
<option value="MXN">MXN</option>
<option value="MYR">MYR</option>
<option value="NOK">NOK</option>
<option value="NZD">NZD</option>
<option value="PAB">PAB</option>
Debug
C/C++ Runner: Debug Session (FEE PROJECT)
Ln 16, Col 35
Spaces: 2
UTF-8
CRLF
HTML
Port : 5500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index.html
script.js
index.html > html > head > style > .container
<html lang="en">
<body>

<option value="PAB">PAB</option>
<option value="PEN">PEN</option>
<option value="PHP">PHP</option>
<option value="PKR">PKR</option>
<option value="PLN">PLN</option>
<option value="PYG">PYG</option>
<option value="RON">RON</option>
<option value="RUB">RUB</option>
<option value="SAR">SAR</option>
<option value="SEK">SEK</option>
<option value="SGD">SGD</option>
<option value="THB">THB</option>
<option value="TRY">TRY</option>
<option value="TWD">TWD</option>
<option value="UAH">UAH</option>
<option value="USD">USD</option>
<option value="UYU">UYU</option>
<option value="VND">VND</option>
<option value="ZAR">ZAR</option>
</select>

<input type="number" id="amount-one" class="form-control" placeholder="Amount" value="1">

<label for="currency-two">To</label>
<select id="currency-two" class="form-control">
<option value="AED">AED</option>
<option value="ARS">ARS</option>
<option value="AUD">AUD</option>
<option value="BGN">BGN</option>
<option value="BRL">BRL</option>
<option value="BSD">BSD</option>
<option value="CAD">CAD</option>
<option value="CHF">CHF</option>
Debug
C/C++ Runner: Debug Session (FEE PROJECT)
Ln 16, Col 35
Spaces: 2
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CRLF
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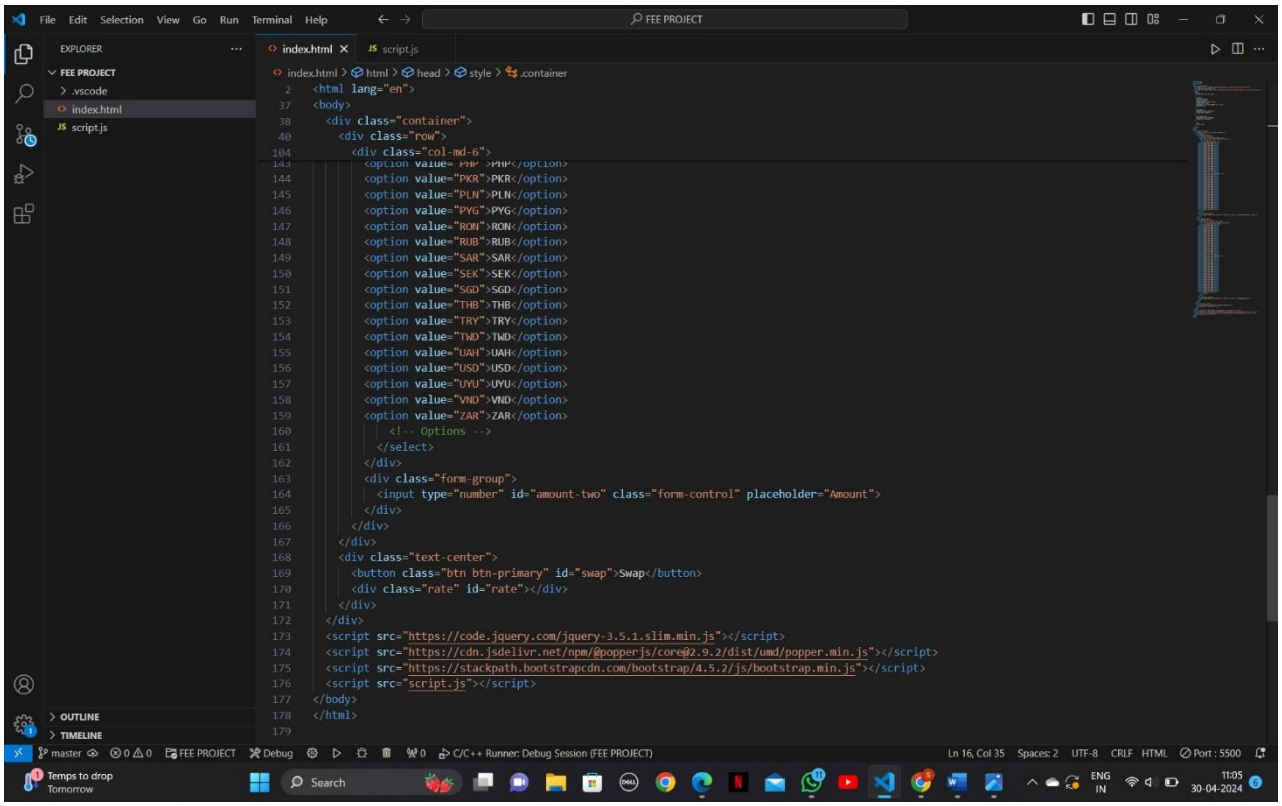
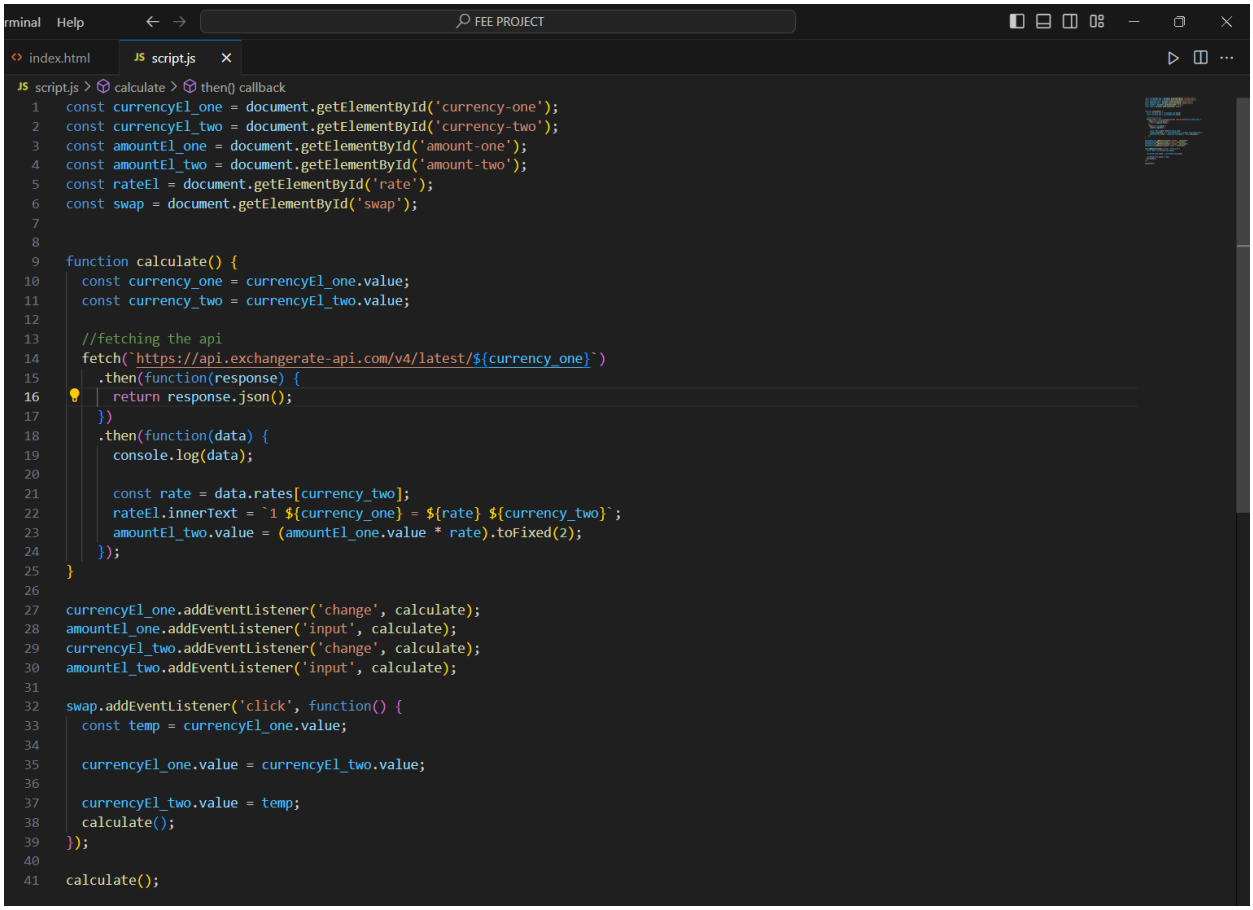
Port : 5500


File Edit Selection View Go Run Terminal Help
FEE PROJECT
EXPLORER
index.html
script.js
.vscode
index.html
script.js
OUTLINE
TIMELINE
<option value="PKR">PKR</option>
<option value="PLN">PLN</option>
<option value="PYG">PYG</option>
<option value="RON">RON</option>
<option value="RUB">RUB</option>
<option value="SAR">SAR</option>
<option value="SEK">SEK</option>
<option value="SGD">SGD</option>
<option value="THB">THB</option>
<option value="TRY">TRY</option>
<option value="TWD">TWD</option>
<option value="UAH">UAH</option>
<option value="USD">USD</option>
<option value="UYU">UYU</option>
<option value="VND">VND</option>
<option value="ZAR">ZAR</option>
<!-- Options -->
</select>
<input type="number" id="amount-two" class="form-control" placeholder="Amount">
<button class="btn btn-primary" id="swap">Swap</button>

<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
<script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/popper.min.js"></script>
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></script>
<script src="script.js"></script>
Ln 16, Col 35 Spaces: 2 UTF-8 CRLF HTML Port : 5500
Temps to drop
Tomorrow
Search
ENG
IN
11:05
30-04-2024

Javascript Code Structure

- The JavaScript code for our Currency converter project is shown in the pictures, which highlight the dynamic features and interactive elements of our webpages.



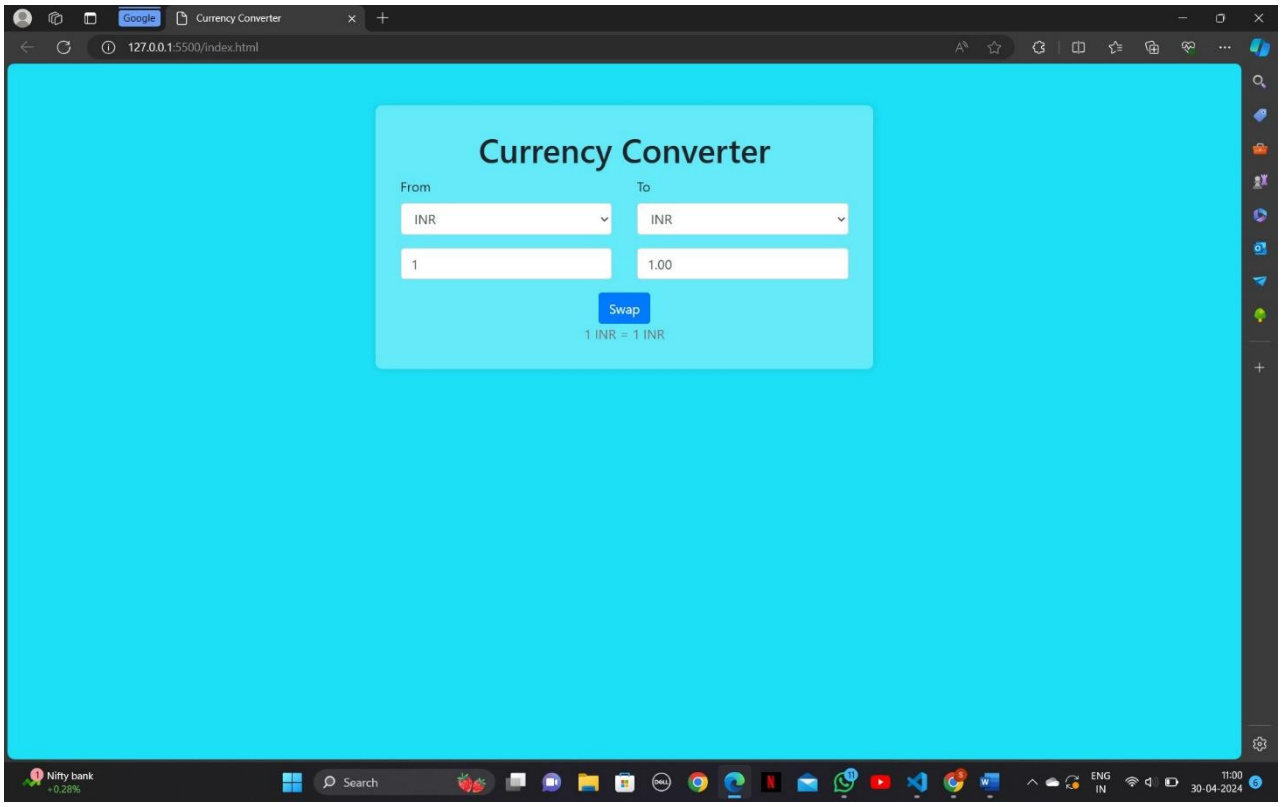
5. Results

The Currency converters, as well as dynamically changing backdrop graphics and greetings dependent on the current time, are all displayed in the results. The following significant results have been attained as a result of thorough testing and user feedback:

Git Hub Repository Link: https://github.com/sakshamkatyal/Currency-Convertor

Git Hub Pages Link: https://sakshamkatyal.github.io/Currency-Convertor/

These screenshots capture different instances of my project, showcasing the clocks using toggle button including light and dark theme.



Currency converter

- Display: Implement Currency converter displays using HTML, CSS, and JavaScript, allowing users to toggle between the two modes with a simple click.
- Toggle Functionality: Incorporate a toggle feature that enables users to switch between Currency converter modes seamlessly, enhancing user experience and accommodating individual preferences.
- Theme Switcher: Integrate a theme switcher button using Bootstrap and JavaScript, empowering users to change the visual appearance of the clock interface according to their preferences.
- Responsive Design: Utilize Bootstrap framework to ensure the project's responsiveness across various devices and screen sizes, offering a consistent and user-friendly experience.

6. References

- **Mozilla Developer Network (MDN) - HTML, CSS, JavaScript Documentation:**
  Website: https://developer.mozilla.org/
  Description: MDN offers comprehensive documentation on HTML, CSS, and JavaScript, covering everything from basic syntax to advanced concepts and APIs.

- **Bootstrap Documentation:**
  Website: https://getbootstrap.com/docs/5.3/getting-started/introduction/
  Description: Bootstrap is a powerful, extensible, and feature-packed frontend toolkit for building fast and responsive sites

- **CSS-Tricks:**
  Website: https://css-tricks.com/
  Description: CSS-Tricks is a web design community that offers articles, tutorials, and resources related to CSS, HTML, and frontend development. It covers a wide range of topics, including layout techniques, CSS animations, and frontend frameworks.