Project Report: Simple Calculator Using HTML, CSS, and JavaScript

Project Overview

The Simple Calculator project is a web-based application that allows users to perform basic arithmetic operations, including addition, subtraction, multiplication, and division. The primary goal is to create a responsive and user-friendly calculator interface using HTML for structure, CSS for styling, and JavaScript for functionality.

Objectives

1. **Basic Arithmetic Operations**: Implement functions for addition, subtraction, multiplication, and division.
2. **User Interface**: Develop an intuitive layout that is easy to navigate.
3. **Responsive Design**: Ensure the application works well on various devices.
4. **Input Validation**: Handle invalid inputs effectively to enhance user experience.

Technologies Used

- **HTML**: For creating the structure of the calculator.
- **CSS**: For styling the calculator and making it visually appealing.
- **JavaScript**: For implementing the calculator's functionality and interactivity.

Features

1. **Basic Operations**:
    - Addition (+)
    - Subtraction (−)
    - Multiplication (×)
    - Division (÷)
2. **User Input**:
    - Input fields for numbers.
    - Buttons for operations and controls (Clear, Equals).
3. **Error Handling**:
    - Display error messages for invalid inputs (e.g., division by zero).
    - Input validation to ensure numeric entries.
4. **Responsive Design**:
    - Mobile-friendly layout that adjusts to different screen sizes.

Development Process

1. Planning

- Defined the project scope and requirements.
- Created wireframes to visualize the layout and functionality.

2. Design

- **HTML Structure**: Created the basic layout with input fields and buttons.
- **CSS Styling**: Designed the calculator with a clean and modern look, ensuring a good user experience.

3. Implementation

- **HTML**: Built the main structure of the calculator.
- **CSS**: Applied styles for buttons, input fields, and layout.
- **JavaScript**:
    - Implemented functions for each arithmetic operation.
    - Added event listeners to handle button clicks and input validation.

4. Testing

- Conducted manual testing for all operations to ensure accuracy.
- Tested the application on multiple devices to confirm responsiveness.

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