

Web Lab Manual-1: Task 3

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Task 3: Creating Dynamic Web Applications with JavaScript

Task Objective

The objective of this task is to create dynamic web applications using HTML, CSS, and JavaScript. These applications will be served by the Apache2 web server through different virtual hosts. The specific goals are:

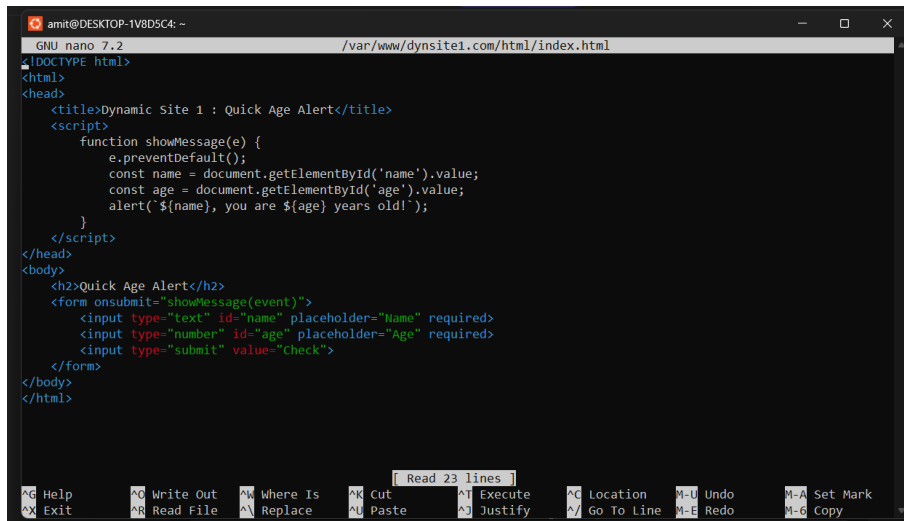
- Create interactive HTML forms with input fields
- Implement JavaScript functions for calculations and data processing
- Build a Simple Calculator application
- Build a Temperature Converter application
- Deploy applications to virtual hosts
- Test applications through browser access

Implementation Steps

Step 1: Create Simple Alert Message Application

The Simple Calculator application allows users to add two numbers using a web interface.

HTML and JavaScript code for Quick Age Alert (dynsite1.com/html/index.html):



```
GNU nano 7.2 /var/www/dynsite1.com/html/index.html
<!DOCTYPE html>
<html>
<head>
  <title>Dynamic Site 1 : Quick Age Alert</title>
  <script>
    function showMessage(e) {
      e.preventDefault();
      const name = document.getElementById('name').value;
      const age = document.getElementById('age').value;
      alert(`${name}, you are ${age} years old!`);
    }
  </script>
</head>
<body>
  <h2>Quick Age Alert</h2>
  <form onsubmit="showMessage(event)">
    <input type="text" id="name" placeholder="Name" required>
    <input type="number" id="age" placeholder="Age" required>
    <input type="submit" value="Check">
  </form>
</body>
</html>
```

Features:

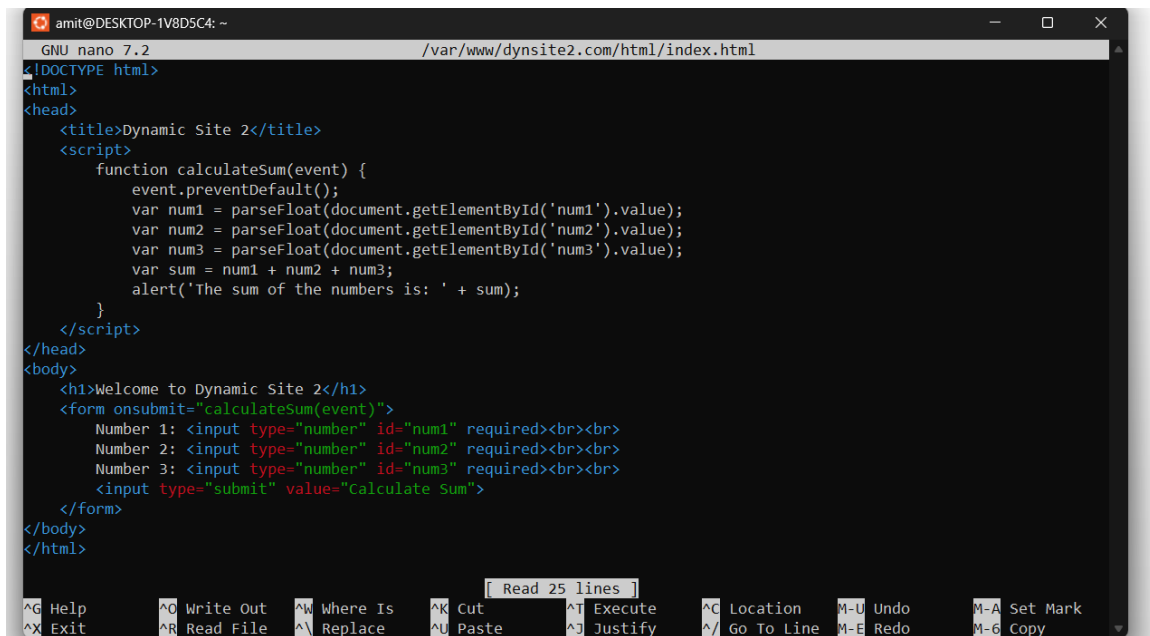
- Two input fields for name & age entry
- Result display name with age through alert
- JavaScript showMessage() function that:
 - Retrieves input values from form fields
 - Displays result in the alert section

Step 2: Simple Calculator Application

The simple calculator application calculate the summation using the formula:

Sum = num1+num2+num3

HTML and JavaScript code for Calculate sum (dynsite1.com/html/index.html):



```
amit@DESKTOP-1V8D5C4: ~
GNU nano 7.2 /var/www/dynsite2.com/html/index.html
<!DOCTYPE html>
<html>
<head>
  <title>Dynamic Site 2</title>
  <script>
    function calculateSum(event) {
      event.preventDefault();
      var num1 = parseFloat(document.getElementById('num1').value);
      var num2 = parseFloat(document.getElementById('num2').value);
      var num3 = parseFloat(document.getElementById('num3').value);
      var sum = num1 + num2 + num3;
      alert('The sum of the numbers is: ' + sum);
    }
  </script>
</head>
<body>
  <h1>Welcome to Dynamic Site 2</h1>
  <form onsubmit="calculateSum(event)">
    Number 1: <input type="number" id="num1" required><br><br>
    Number 2: <input type="number" id="num2" required><br><br>
    Number 3: <input type="number" id="num3" required><br><br>
    <input type="submit" value="Calculate Sum">
  </form>
</body>
</html>
```

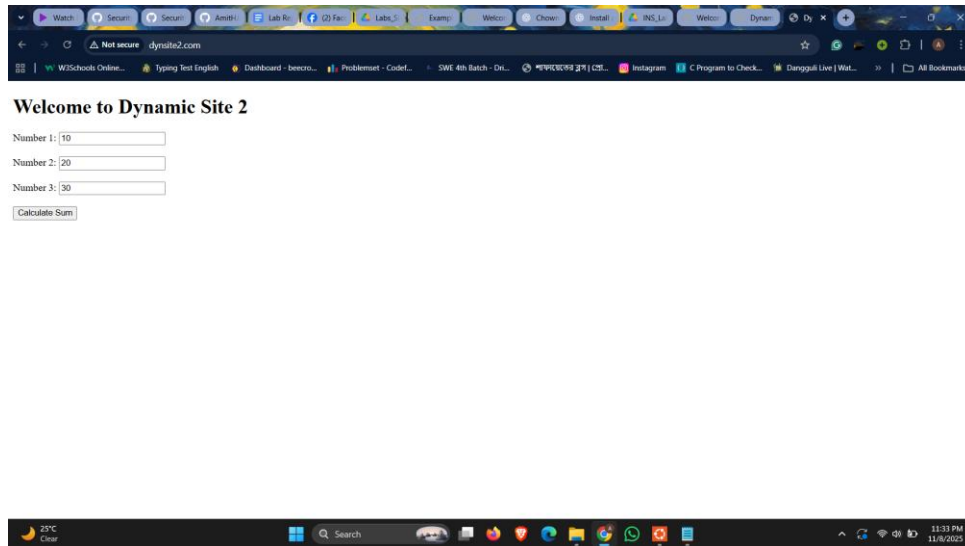
Features:

- Three input field for numbers
- Calculate The summation
- Output display showing sum through alert
- JavaScript calculateSum() function that:
 - Retrieves three value from input field
 - Applies conversion formula: $\text{Sum} = \text{num1} + \text{num2} + \text{num3}$
 - Displays result with alert message

Testing and Verification

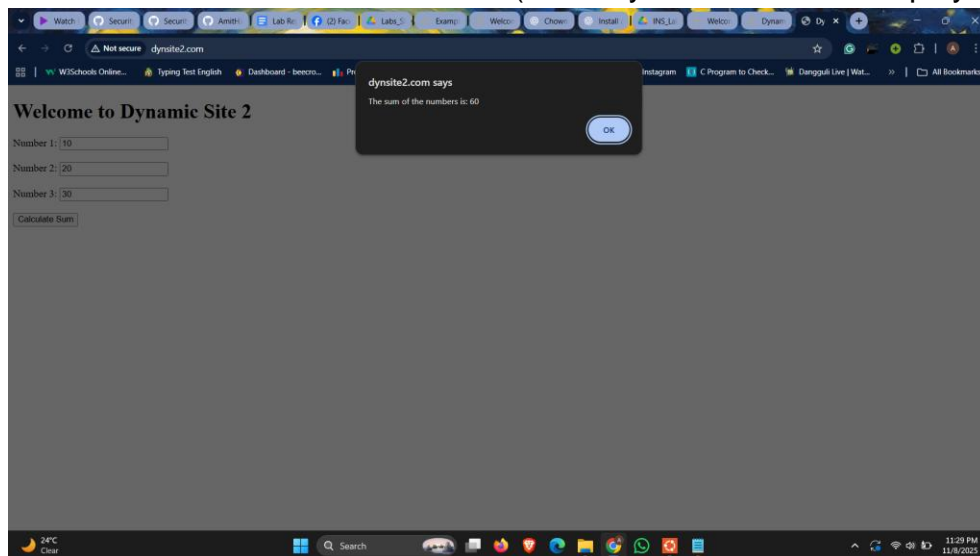
Simple Calculator Application Testing

Browser access and testing of calculator at dynsite2.com:



Test Results:

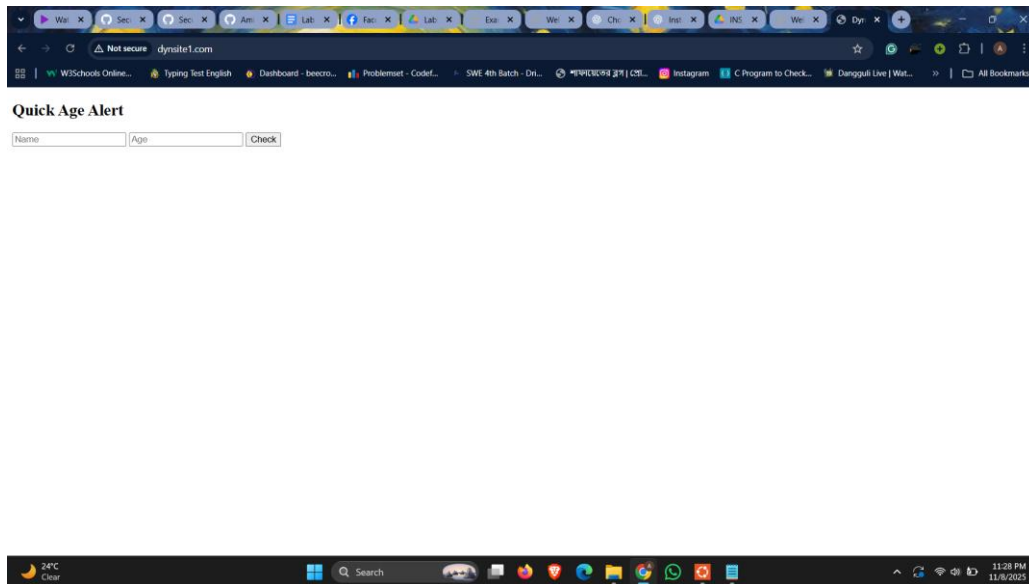
- Input: First number = 10, Second number = 20, Third Number= 30
- Calculate button clicked
- Result: The sum of the numbers is 60 (correctly calculated and displayed)



- Application functioning correctly

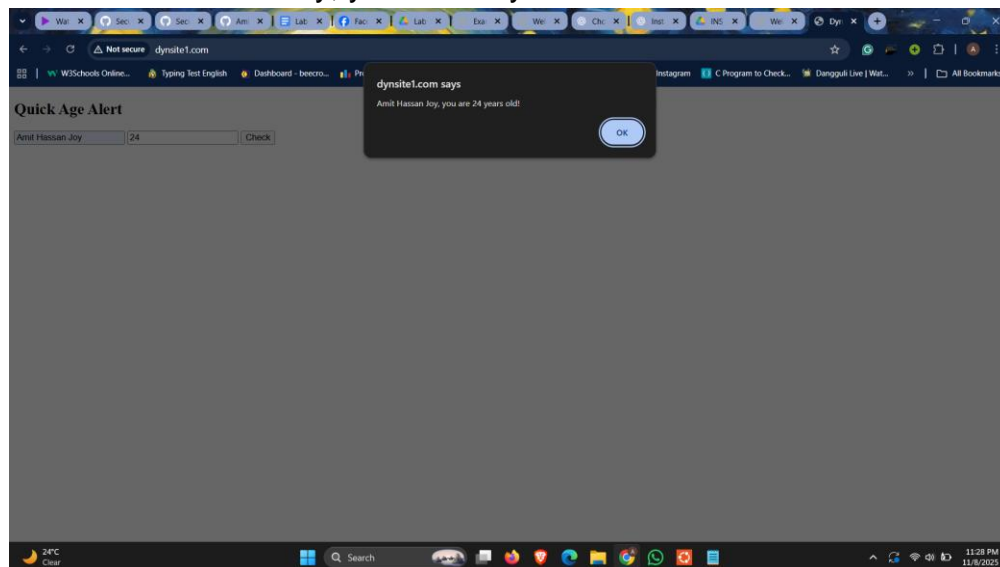
Quick Age Alert Application Testing

Browser access and testing of temperature converter at dynamite1.com:



Test Results:

- Input: Name = Amit Hassan Joy, Age = 24
- Convert button clicked
- Result: Amit Hassan Joy, you are 24 years old



- Application functioning correctly with proper decimal formatting

Configuration Details

Simple Calculator - Code Structure

HTML Form Elements:

- Input field: `id="num1"` for entering the first number
- Input field: `id="num2"` for entering the second number
- Input field: `id="num3"` for entering the third number
- Button: `onsubmit="calculateSum(event) "` to trigger the sum calculation

JavaScript Function – `calculateSum()`:

- `event.preventDefault();` – prevent form submission from refreshing the page
- `var num1 = parseFloat(document.getElementById('num1').value);` – get the first number
- `var num2 = parseFloat(document.getElementById('num2').value);` – get the second number
- `var num3 = parseFloat(document.getElementById('num3').value);` – get the third number
- `var sum = num1 + num2 + num3;` – calculate the total sum
- `alert('The sum of the numbers is: ' + sum);` – display the result in an alert box

Quick age alert - Code Structure

HTML Form Elements:

- Input field: `id="name"` for entering the user's name
- Input field: `id="age"` for entering the user's age
- Button: `onsubmit="showMessage(event) "` to trigger the alert message

JavaScript Function – `showMessage()`:

- `event.preventDefault();` – prevent form from reloading the page
- `let name = document.getElementById('name').value;` – get the entered name
- `let age = document.getElementById('age').value;` – get the entered age
- `alert(name + ", you are " + age + " years old!");` – show the alert message with name and age

JavaScript Concepts Used

1. **document.getElementById() Method**

Retrieves an HTML element using its unique `id` attribute. This allows JavaScript to access user input values from form fields.

2. **event.preventDefault() Method**

Prevents the default form submission behavior (page reload). This lets the script handle input processing and display results dynamically.

3. **alert() Function**

Displays a popup message box in the browser. Used to show personalized messages (like name and age) or calculated results (like the sum of numbers).

4. **Value Property (.value)**

Retrieves the data entered into input fields. This is how the script reads user-provided values for further processing.