

Web Technology - Assignment 4

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Aim:

Client Side Scripts for Validating Web Form Controls using DHTML.

Theory:

1. What is DHTML?
 - DHTML stands for Dynamic Hypertext Markup Language.
 - It refers to a combination of technologies used to create dynamic and interactive websites.
 - DHTML allows developers to manipulate various elements of a web page dynamically, including text, images, styles and layout, in response to user actions or other events, without requiring a page reload.
2. What are various components of DHTML?
 - HTML (Hypertext Markup Language): Provides the structure and content of the webpage.
 - CSS (Cascading Style Sheets): Controls the presentation and layout of elements on the webpage.
 - JavaScript: A scripting language used to add interactivity and dynamic behaviour to the webpage.
 - DOM (Document Object Model): Represents the structure of the HTML document as a tree-like structure, allowing scripts to access and manipulate the elements and content of the web page dynamically.
3. What is Document Object Model ?
 - The Document Object Model (DOM) is a programming interface for web documents.
 - It represents the structure of HTML, XML, and XHTML documents as a tree-like structure, where each node in the tree represents a part of the document, such as elements, attributes, and text.
 - The DOM provides a way for programs and scripts to dynamically access, manipulate, and update the content, structure, and style of web documents.
4. Define the syntax for creating a function and calling a function.
 -

Code:

HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width,
initial-scale=1.0">
  <title>Secure Payment Gateway</title>
  <link rel="stylesheet"
href="/home/veeransh/Desktop/Lab_work/WT/css/assn4.css">
</head>
<body>
  <div class="container">
    <div class="card">
      <div class="card-header">
        
        <h2 class="title">Secure Payment Gateway</h2>
      </div>
      <div class="card-body">
        <form id="paymentForm" onsubmit="return
processPayment()">
          <div class="form-group">
            <label for="name">Name</label>
            <input type="text" id="name" name="name"
class="form-control" placeholder="Enter your name" required>
          </div>
          <div class="form-group">
            <label for="email">Email</label>
            <input type="email" id="email" name="email"
class="form-control" placeholder="Enter your email" required>
          </div>
          <div class="form-group">
            <label for="address">Address</label>
            <textarea id="address" name="address"
class="form-control" placeholder="Enter your address"
required></textarea>
          </div>
          <div class="form-group">
```

```

        <label for="paymentMethod">Mode of
Payment</label>
        <select id="paymentMethod" name="paymentMethod"
class="form-control" required>
            <option value="">Select payment
method</option>
            <option value="credit">Credit Card</option>
            <option value="debit">Debit Card</option>
            <option value="paypal">PayPal</option>
        </select>
    </div>
    <div class="form-group">
        <label for="cardType">Card Type</label>
        <select id="cardType" name="cardType"
class="form-control" required>
            <option value="">Select card type</option>
            <option value="visa">Visa</option>
            <option
value="mastercard">Mastercard</option>
            <option value="amex">American
Express</option>
        </select>
    </div>
    <div class="form-group">
        <label for="cardNumber">Card Number</label>
        <input type="text" id="cardNumber"
name="cardNumber" class="form-control" placeholder="Enter card number"
pattern="\d{16}" title="Please enter a 16-digit card number" required>
    </div>

    <div class="form-group">
        <label for="expiry">Expiry</label>
        <input type="text" id="expiry" name="expiry"
class="form-control" placeholder="MM/YY" pattern="\d{2}/\d{2}"
title="Please enter a valid date (MM/YY)" maxlength="5" required>
    </div>

    <script>

document.getElementById('expiry').addEventListener('input', function(e)
{
    var input = e.target.value;

```

```

        var formattedInput = input.replace(/\D/g,
    ');

        if (formattedInput.length > 2) {

            formattedInput =
formattedInput.substr(0, 2) + '/' + formattedInput.substr(2, 2);
        }

        e.target.value = formattedInput;
    });
</script>

<div class="form-group">
    <label for="CVV">CVV</label>
    <input type="Password" id="CVV" name="CVV"
class="form-control" placeholder="Enter CVV" pattern="\d{3}"
title="Please enter a 3-digit CVV" required>
</div>
<div class="form-group">
    <label for="amount">Amount</label>
    <input type="number" id="amount" name="amount"
class="form-control" placeholder="Enter amount" required>
</div>
<div class="form-group">
    <button type="submit" class="btn btn-primary
btn-pay">Pay Now</button>
</div>
</form>
<div id="paymentStatus" class="payment-status"></div>
</div>
</div>

<script src="/home/veeransh/Desktop/Lab_work/WT/js/assn4.js"
defer></script>
</body>
</html>

```

CSS:

```
body {
```

```
    font-family: Arial, sans-serif;
    background-color: #f8f8f8;
    margin: 0;
    display: flex;
    justify-content: center;
    align-items: center;
    height: 100vh;
}

.container {
    width: 100%;
    max-width: 400px;
    padding: 20px;
}

.card {
    background-color: #fff;
    border-radius: 8px;
    box-shadow: 0 0 20px rgba(0, 0, 0, 0.1);
}

.card-header {
    background-color: #0078d4;
    color: #fff;
    padding: 20px;
    border-top-left-radius: 8px;
    border-top-right-radius: 8px;
    display: flex;
    align-items: center;
}

.logo {
    width: 40px;
    margin-right: 10px;
}

.title {
    margin: 0;
}

.card-body {
    padding: 20px;
}
```

```
.form-group {
  margin-bottom: 20px;
}

.form-control {
  width: 100%;
  padding: 10px;
  border: 1px solid #ced4da;
  border-radius: 4px;
  box-sizing: border-box;
}

.btn {
  padding: 10px 20px;
  border: none;
  border-radius: 4px;
  cursor: pointer;
}

.btn-primary {
  background-color: #0078d4;
  color: #fff;
}

.btn-primary:hover {
  background-color: #005a9e;
}

.btn-pay {
  width: 100%;
  background-color: #4caf50;
  color: #fff;
}

.btn-pay:hover {
  background-color: #45a049;
}

.payment-status {
  margin-top: 20px;
  padding: 10px;
  text-align: center;
}
```

```
border-radius: 4px;
background-color: #e9f8ff;
border: 1px solid #cfe2f1;
}
```

JS:

```
function processPayment() {
    // Simulate payment processing
    var name = document.getElementById('name').value;
    var email = document.getElementById('email').value;
    var address = document.getElementById('address').value;
    var paymentMethod = document.getElementById('paymentMethod').value;
    var cardType = document.getElementById('cardType').value;
    var cardNumber = document.getElementById('cardNumber').value;
    var expiry = document.getElementById('expiry').value;
    var cvv = document.getElementById('cvv').value;
    var amount = document.getElementById('amount').value;

    // You can replace this with actual payment processing code
    // This is just a demonstration
    // Here, we're simply showing a success message
    var paymentStatus = document.getElementById('paymentStatus');
    paymentStatus.innerHTML = `Payment successful! Amount paid:
    ${amount}`;

    // Prevent form submission
    return false;
}
```

Output:

The image shows a web form titled "Secure Payment Gateway". The form is styled with a blue header bar containing a logo and the title. Below the header, there are several input fields for user information and payment details. The fields are labeled "Name", "Email", "Address", "Mode of Payment", "Card Type", "Card Number", "Expiry", "CVV", and "Amount". The "Amount" field is highlighted with a red border. At the bottom of the form, there is a green "Pay Now" button and a light blue button below it.

Explanation:

This HTML code represents a webpage for a "Secure Payment Gateway" where users can enter their payment details to make a transaction. Let's break down the components and summarize the functionality:

1. HTML Structure:

- The code starts with the `<!DOCTYPE html>` declaration, indicating that this is an HTML5 document.
- It includes the necessary `<html>`, `<head>`, and `<body>` tags.
- The `<head>` section contains metadata like character encoding, viewport settings, and the title of the webpage.
- External CSS and JavaScript files are linked to the page for styling and functionality.

2. Form:

- The main content of the page is a form (<form>), which users fill out to provide their payment information.
 - The form includes fields for name, email, address, mode of payment, card type, card number, expiry date, CVV, and amount.
 - Various input types are used (text, email, textarea, select, number) to collect different types of data.
3. Validation:
- Input fields have required attribute to ensure they must be filled out before submitting the form.
 - Some fields have specific patterns (pattern attribute) and titles (title attribute) for validation purposes, such as card number, expiry date, and CVV.
 - There's a JavaScript function attached to the expiry input field to format the date as MM/YY as the user types.
4. JavaScript:
- A script block is included within the HTML to handle the expiry date formatting.
 - The addEventListener function is used to trigger the formatting function whenever there's an input event on the expiry field.
 - This script ensures that the expiry date is displayed in the MM/YY format and restricts non-numeric characters.
5. Styling:
- The appearance of the page is customized using an external CSS file (assn4.css).
 - Classes like container, card, card-header, card-body, form-group, btn, etc., are used for styling elements.
6. JavaScript Functionality:
- There's a reference to an external JavaScript file (assn4.js) for handling payment processing, but its implementation is not provided in the code snippet.

Conclusion:

In conclusion, this HTML code sets up a secure payment gateway webpage with a form for users to input their payment details. It incorporates validation, formatting, and styling to create a user-friendly and secure payment experience. However, the actual payment processing logic is expected to be implemented in the linked JavaScript file, which is not provided in the given code snippet.