# UIT2602 WEB PROGRAMMING

## Ex. No 02: HTML/DHTML form validation using scripting language.

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## Introduction:

This document describes the development of a website that validates credit card information before submission, using HTML, JavaScript, and regular expressions. The project aims to:

- Create a user-friendly form for collecting credit card data.
- Implement client-side validation to ensure data accuracy and security.
- Enhance understanding of web development and form validation techniques.

## Objectives:

- Develop a functional website with a credit card information form.
- Validate user input for name, credit card number, CVV, and expiry date using regular expressions.
- Provide clear error messages to guide users during data entry.
- Submit the form only if all data is valid.

## Required Tools and Methodology:

## Web Technologies:

HTML: Form structure and data input.

JavaScript: Event handling, input validation, and error messages.

Regular Expressions: Pattern matching for data validation.

**Development Methodology:**

Agile development approach with iterative testing and refinement.

Unit testing for JavaScript functions.

Cross-browser testing to ensure compatibility.

**Implementation Procedure:**

HTML Structure:

Designed the form layout using HTML elements like <form>, <label>, <input>, and <select>.

Added clear labels for each field to improve user comprehension.

Used appropriate input types (e.g., text, number) for different data.

JavaScript Validation:

Attached event listeners to form fields to capture user input.

Implemented JavaScript code using regular expressions to validate:

Name: Contains only letters (e.g., /^[A-Za-z]+$/). * Credit card number: 16 digits (e.g., /^\d{16}$/).

CVV: 3 digits (e.g., /^\d{3}$/).

Expiry date:

Future date (considering current year and month).

Displayed clear error messages (e.g., using alert() or on-page notifications) when validation failed.

Prevented form submission using event.preventDefault() until all fields were valid.

Expiry Year Dropdown:

Used JavaScript to dynamically populate the expiry year dropdown with options up to 10 years from the current year.

Form Submission:

Allowed form submission only after successful validation of all fields.

Considered implementing server-side validation for added security in future iterations.

**Code:**

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Form Validation Website</title>
<link rel="stylesheet" href="styles.css">
</head>
<body>

<h1>Form Validation Website for CC</h1>
<h2>Exercise 2</h2>
<form id="validationForm">
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required><br><br>

    <div class="credit-card-input">
        <label for="creditCard1">Credit Card Number:</label>
        <input type="text" id="creditCard1" name="creditCard1" maxlength="4"
required>
        <input type="text" id="creditCard2" name="creditCard2" maxlength="4"
required>
        <input type="text" id="creditCard3" name="creditCard3" maxlength="4"
required>
        <input type="text" id="creditCard4" name="creditCard4" maxlength="4"
required>
    </div><br>
```

```html
    <label for="cvv">CVV:</label>
    <input type="text" id="cvv" name="cvv" required><br><br>

    <label for="expiryMonth">Expiry Month:</label>
    <select id="expiryMonth" name="expiryMonth" required>
        <option value="">Select Month</option>
        <option value="01">January</option>
        <option value="02">February</option>
        <option value="03">March</option>
        <option value="04">April</option>
        <option value="05">May</option>
        <option value="06">June</option>
        <option value="07">July</option>
        <option value="08">August</option>
        <option value="09">September</option>
        <option value="10">October</option>
        <option value="11">November</option>
        <option value="12">December</option>
    </select><br><br>

    <label for="expiryYear">Expiry Year:</label>
    <select id="expiryYear" name="expiryYear" required>
        <option value="">Select Year</option>
    </select><br><br>

    <div id="cardType">
    </div><br>

    <button type="submit">Submit</button>
</form>

<script>
    document.getElementById('validationForm').addEventListener('submit',
function(event) {
        event.preventDefault();

        var name = document.getElementById('name').value;
        var creditCard1 = document.getElementById('creditCard1').value;
        var creditCard2 = document.getElementById('creditCard2').value;
        var creditCard3 = document.getElementById('creditCard3').value;
        var creditCard4 = document.getElementById('creditCard4').value;
        var cvv = document.getElementById('cvv').value;
        var expiryMonth = document.getElementById('expiryMonth').value;
        var expiryYear = document.getElementById('expiryYear').value;
```

```javascript
    var nameRegex = /^[A-Za-z]+$/;
    var creditCardRegex = /^\d{4}$/;
    var cvvRegex = /^\d{3}$/;

    // Card type identification
    var cardType = '';
    var firstFourDigits = parseInt(creditCard1);
    if (firstFourDigits >= 1000 && firstFourDigits <= 3333) {
        cardType = 'master';
    } else if (firstFourDigits >= 3334 && firstFourDigits <= 6666) {
        cardType = 'visa';
    } else if (firstFourDigits >= 6667 && firstFourDigits <= 9999) {
        cardType = 'rupay';
    }

    if (!nameRegex.test(name)) {
        alert('Name must contain only alphabets');
        return false;
    }
    if (!creditCardRegex.test(creditCard1) ||
!creditCardRegex.test(creditCard2) || !creditCardRegex.test(creditCard3) ||
!creditCardRegex.test(creditCard4)) {
        alert('Invalid credit card number');
        return false;
    }
    if (!cvvRegex.test(cvv)) {
        alert('Invalid CVV');
        return false;
    }
    if (expiryYear < new Date().getFullYear() || (expiryYear == new
Date().getFullYear() && expiryMonth < (new Date().getMonth() + 1))) {
        alert('Expiry date must be in the future');
        return false;
    }

    // document.getElementById('cardType').innerHTML = 'Card Type: ' +
cardType;

    document.getElementById('cardType').innerHTML = 'Card Type: <img src="' +
cardType + '.png "alt="' + cardType + '">';
    return true;
});

var currentYear = new Date().getFullYear();
for (var i = currentYear; i <= currentYear + 10; i++) {
```

```
        var option = document.createElement('option');
        option.value = i;
        option.textContent = i;
        document.getElementById('expiryYear').appendChild(option);
    }

    var inputs = document.querySelectorAll('.credit-card-input input');
    for (var i = 0; i < inputs.length; i++) {
        inputs[i].addEventListener('input', function() {
            if (this.value.length === this.maxLength) {
                var nextInput = this.nextElementSibling;
                if (nextInput !== null) {
                    nextInput.focus();
                }
            }
        });
    }
</script>

</body>
</html>
```

**Output:**

# Form Validation Website for CC

## Exercise 2

Name:

[                                        ]

Credit Card Number:  [    ] [    ] [    ] [    ]

CVV:

[                                        ]

Expiry Month:

[ Select Month                        ▾ ]

Expiry Year:

[ Select Year                         ▾ ]

[ Submit ]

# Form Validation Website for CC

## Exercise 2

Name:

Modi

Credit Card
Number:

| 1234 | 5678 | 9876 | 5431 |

CVV:

123

Expiry Month:

January

Expiry Year:

2026

Card Type: mastercard

Submit

# Form Validation Website for CC

## Exercise 2

Name:

Modi

Credit Card
Number:

| 7034 | 5678 | 9876 | 5431 |

CVV:

123

Expiry Month:

January

Expiry Year:

2026

Card Type: *RuPay)*

Submit

**Conclusion:**

This project successfully created a website that validates credit card information using client-side techniques. It provided valuable learning experience in web development and form validation.