UIT2602 WEB PROGRAMMING

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

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1. Aim:

The aim is to create a web-based form for credit card validation using HTML, CSS, and JavaScript. The form will include fields for the user's title, full name, credit card number, CVV number, and expiry date. The goal is to ensure that the user provides valid information, adhering to specific requirements for each field, and to provide immediate feedback to the user if any input is incorrect or missing.

2. Required web tools and methodology:

HTML: For structuring the form elements.

CSS: For styling the form and providing visual feedback to the user.

JavaScript: For implementing form validation logic and DOM manipulation.

Regular expressions: For validating input fields such as credit card numbers and CVV numbers.

DOM manipulation: To dynamically update the form based on user input and to display validation messages.

3. Implementation procedure:

- HTML structure was designed for the form, including input fields for title, full name, credit card number, CVV number, and expiry date.
- Form was styled using CSS to improve the user interface and provide visual feedback for validation.
- JavaScript functions were implemented to validate the form inputs:
    1. Validate the title selection.
    2. Validate the full name input to ensure it contains only alphabets.
    3. Validate the credit card number using a regular expression for the pattern and Luhn algorithm for validity.
    4. Validate the CVV number to ensure it consists of only 3 digits.
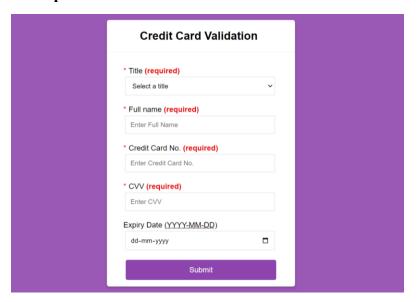   5. Validate the expiry date to ensure it is in the future.

- Appropriate error messages were displayed for invalid inputs and success indicators for valid inputs.
- DOM manipulation was used techniques to dynamically update the form based on user input and to display validation messages.

4. Code:

```javascript
function validateCreditCardForm() {
        const titleInput = document.getElementById('title1');
        const firstNameInput = document.getElementById('fname1');
        const creditCardNumberInput = document.getElementById('creditCardNumber');
        const cvvNumberInput = document.getElementById('cvvNumber');
        const expiryDateInput = document.getElementById('expiryDate');

        // Validate title
        if (titleInput.value === "") {
           setErrorFor(titleInput, 'Please select a title');
        } else {
           setSuccessFor(titleInput);
        }

        // Validate first name
        if (!/^[A-Za-z]+$/.test(firstNameInput.value)) {
           setErrorFor(firstNameInput, 'Name can only contain alphabets');
        } else if (firstNameInput.value.trim() === "") {
           setErrorFor(firstNameInput, 'Name cannot be blank');
        } else {
           setSuccessFor(firstNameInput);
        }

        // Validate credit card number
        if (!/^\d{16}$/.test(creditCardNumberInput.value)) {
           setErrorFor(creditCardNumberInput, 'Credit card number should be 16
digits');
        } else {
           setSuccessFor(creditCardNumberInput);
        }

        // Validate CVV number (only digits and length of 3)
        const cvvNumber = cvvNumberInput.value;
        const cvvNumberPattern = /^[0-9]{3}$/;
        if (!cvvNumberPattern.test(cvvNumber)) {
           setErrorFor(cvvNumberInput, 'CVV number must be 3 digits');
        } else {
           setSuccessFor(cvvNumberInput);
        }


        // Validate expiry date
        const currentDate = new Date();
```

```
        const expiryDate = new Date(expiryDateInput.value);
        if (expiryDate < currentDate) {
            setErrorFor(expiryDateInput, 'Enter valid Expiry date');
        } else {
            setSuccessFor(expiryDateInput);
        }
    }

    function setErrorFor(input, message) {
        const formControl = input.parentElement;
        const small = formControl.querySelector('small');
        formControl.className = 'form-control error';
        small.innerText = message;
    }

    function setSuccessFor(input) {
        const formControl = input.parentElement;
        formControl.className = 'form-control success';
    }
```

5. Output:

Invalid Inputs:

a. TITLE (required field)
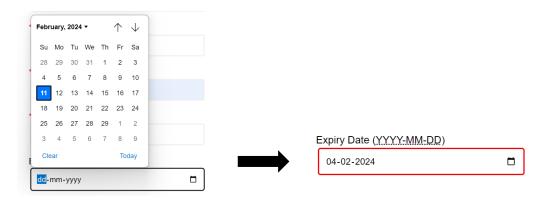
b. FULL NAME (required field - only alphabets)

* Full name **(required)**

Enter Full Name

---

* Full name **(required)**

Enter Full Name

* Credit C ⚠ Please fill out this field.

---

* Full name **(required)**

Vasundhara123

* Cr ⚠ Please match the requested format.
         Only alphabets allowed

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c. Credit Card Number (required field – 16 digits only)

* Credit Card No. **(required)**

Enter Credit Card No.

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* Credit Card No. **(required)**

Enter Credit Card No.

* CVV **(re** ⚠ Please fill out this field.

---

* Credit Card No. **(required)**

672849728910

* C ⚠ Please match the requested format.
        Credit card number should be 16 digits

E

d. CVV Number (required field – 3 digits only)

* CVV **(required)**

Enter CVV

---

* CVV **(required)**

Enter CVV

Expiry Da ⚠ Please fill out this field.

---

* CVV **(required)**

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Exp ⚠ Please match the requested format.
        CVV number should be 3 digits

dc

e. Expiry Date (required field – must be greater than Current date)

February, 2024 ▾   ↑   ↓

Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	1	2
3	4	5	6	7	8	9

Clear   Today

dd-mm-yyyy

Expiry Date (YYYY-MM-DD)

04-02-2024

Valid Input:

6. Conclusion:

In conclusion, this project demonstrates the implementation of form validation using HTML, CSS, and JavaScript.

By providing real-time feedback to users, the form ensures that valid data is submitted, improving user experience and data integrity.