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Lab Assignment 3

Aim: Write a program to perform following form validations using JavaScript:

a) All fields mandatory,

b) Phone number, Email Address, Zip code Validation etc.

Include JavaScript to access and manipulate Document Object Model (DOM) objects in an HTML web page.

Include JQuery to develop your application as an Ajax based application.

Objectives:

1. To understand what is form validation.
2. To learn basic functioning of DOM objects.
3. To learn how to apply various techniques to implement it.

Theory:

1. Different types of Form Validations :

Form validation is the process of checking the data entered into a web form to ensure it meets specific criteria before it's submitted to a server. There are various types of form validations, including:

- **Client-Side Validation** : This validation is performed on the client-side (in the user's browser) using JavaScript or HTML5 attributes. It's quick and provides a good user experience but can be bypassed by disabling JavaScript.

- **Server-Side Validation** : This validation occurs on the server after the form data is submitted. It's essential for security and data integrity because it can't be bypassed by users.

2. HTML Document Object Model (DOM) :

The HTML DOM is a programming interface for web documents. It represents the structure of an HTML document as a tree of objects, where each object corresponds to a part of the web page. Developers can use the DOM to interact with and manipulate the content and structure of a web page using scripting languages like JavaScript. This allows for dynamic web page creation and manipulation.

3. jQuery : jQuery is a fast, small, and feature-rich JavaScript library that simplifies HTML document traversal and manipulation, event handling, animation, and AJAX (Asynchronous JavaScript and XML) interactions. It provides a concise and efficient way to work with web documents.

- **jQuery Selectors :** jQuery selectors are patterns that help you select and manipulate HTML elements on a web page. Here are some common jQuery selectors :

- ``$("element")``: Selects elements based on their HTML tag name (e.g., ``$("div")`` selects all ``div`` elements).

- ``$("#id")``: Selects an element by its unique ``id`` attribute (e.g., ``$("#myElement")`` selects the element with ``id="myElement"``).

- ``$(".class")``: Selects elements by their CSS class (e.g., ``$(".myClass")`` selects all elements with ``class="myClass"``).

FAQ:

1. Write 3 reasons why Form validations are important.

3 reasons why Form validations are important :

- Data Integrity : Form validation ensures that the data submitted to a server is accurate, consistent, and adheres to predefined standards. This helps maintain the integrity of the database and prevents errors or inconsistencies in stored data.

- Security : Proper form validation can protect your website from malicious input, such as SQL injection, cross-site scripting (XSS), and other security vulnerabilities. It helps filter out potentially harmful data.

- User Experience : Validating user input on the client-side provides instant feedback to users, reducing the likelihood of errors and enhancing the overall user experience.

2. **Give an example of how to modify an attribute value using html**

Example of modifying an attribute value using DOM :

You can modify an attribute value using JavaScript and the DOM. Here's an example that changes the `src` attribute of an image element:

```
<html>
<body>
  
  <script>
    // Get the image element by its ID
    var imgElement = document.getElementById("myImage");

    // Modify the src attribute
    imgElement.src = "new.jpg";
  </script>
</body>
</html>
```

3. **What is jQuery Ajax?**

jQuery Ajax is a set of methods and techniques provided by jQuery to simplify asynchronous HTTP requests and responses in web applications. It allows you to fetch data from a server without having to refresh the entire web page. Ajax stands for "Asynchronous JavaScript and XML," but in practice, it can handle various data formats, not just XML. jQuery's Ajax methods include `\$.ajax()`, `\$.get()`, `\$.post()`, and more,

making it easier to work with server-side data and update the page dynamically.

Problem Statement:

Write a program to design Student registration form by using HTML, CSS having following fields: Username, Email, Phone number, Password, Confirm Password and write external javascript code to achieve following validations

- Fields should not be empty. If spaces are entered those should be considered empty
- Phone number must accept only numeric values and it should be 10 digits
- Password length must be at least 7 and it should contain at least one capital letter, one digit and one special character from the set (&,\$,#@)
- Value entered in password field and confirm password fields must match

Email address must contain @ sign and a ., there should be few letters before the @ sign, there should be three letters between @ sign and a . There must be 3 or 2 letters after the . (hint: Use regular expression)

Write a client-side script with JavaScript to access and manipulate Document Object Model (DOM) objects in an HTML web page. Develop a dynamic web page using javascript and DOM. Make use of the following for accessing elements

- getElementById,
- getElementsByTagName, getElementsByClassName
- Change the text using innerHTML property
- Change the CSS properties like color, position of a particular element on the page
- Change the image source after clicking on a button
- Add a text node and attach it to a parent node
- Delete a node

Include jQuery to perform following operations:

- Change button text using jQuery.

- Set background-image using jQuery CSS property.
- Access HTML form data using jQuery.
- Add attribute using jQuery

Output :

Form Styling

127.0.0.1:5500/Lab4(Form)/index.html

Enter Name:

Select School:

SCET

Phone number:

Email:

State:

Maharashtra

City:

Pune

Country:

India

Pin Code:

Submit

Form Styling

127.0.0.1:5500/Lab4(Form)/index.html

127.0.0.1:5500 says
Name cannot be empty

OK

Select School:

SCET

Phone number:

Email:

State:

Maharashtra

City:

Pune

Country:

India

Pin Code:

Submit

Form Styling x + 127.0.0.1:5500/Lab4(Form)/index.html

Bolly4u.org - Boli... Home | Show! 120.webcric.com Catchystream | Fr...

Enter Name:

Select School:

SCET

Phone number:

12345678901

Email:

Please match the format requested.

State:

Maharashtra

City:

Pune

Country:

India

Pin Code:

Submit

Form Styling x + 127.0.0.1:5500/Lab4(Form)/index.html

Bolly4u.org - Boli... Home | Show! 120.webcric.com Catchystream | Fr...

Enter Name:

Select School:

SCET

Phone number:

Email:

parimalkolhe.pk@gmail.com

Please include an '@' in the email address. 'parimalkolhe.pk@gmail.com' is missing an '@'.

Maharashtra

City:

Pune

Country:

India

Pin Code:

411038

Submit