

TITLE : Development of a Password-Protected Web Application for Form Validation and User Data Integrity

- **Aim:-** The aim of this experiment is to develop a secure and interactive web-based application that requires users to enter a password to access and fill out a form, ensuring that inputs such as mobile numbers and email addresses adhere to specific formats. The application aims to improve data integrity and user experience through validation mechanisms and user-friendly feedback.
- **Used Tags :-**
 - *HTML Tags Used :*
 - ◆ **<!DOCTYPE html>:** Declares the document type and HTML version (HTML5).
 - ◆ **<html>:** The root element of an HTML document.
 - ◆ **<head>:** Contains meta-information about the document.
 - ◆ **<meta>:** Specifies metadata about the HTML document (e.g., character encoding, viewport settings).
 - ◆ **<title>:** Defines the title of the document.
 - ◆ **<link>:** Links external resources to the document (e.g., CSS files).
 - ◆ **<body>:** Contains the contents of the HTML document.
 - ◆ **<div>:** Defines a division or section.
 - ◆ **<form>:** Defines an HTML form for user input.
 - ◆ **<label>:** Defines a label for an <input> element.

◆ **<input>**: Defines an input control (text, email, date, password).

◆ **<button>**: Defines a clickable button.

○ *JavaScript Methods Used :*

◆ **document.addEventListener()**: Attaches an event handler to the document.

◆ **document.getElementById()**: Retrieves an element by its ID.

◆ **querySelectorAll()**: Returns all elements in the document that matches a specified CSS selector(s).

◆ **addEventListener()**: Attaches an event handler to a specified element.

◆ **replace()**: Used to find and replace specified characters or substrings within a string.

◆ **forEach()**: Executes a provided function once for each array element (used here to iterate through NodeList of input elements).

◆ **prompt()**: Displays a dialog box that prompts the visitor for input.

◆ **alert()**: Displays an alert box with a specified message and an OK button.

◆ **confirm()**: Displays a dialog box with a specified message, along with an OK and a Cancel button.

◆ **preventDefault()**: Prevents the default action of the event (e.g., submitting the form).

- **CSS Selectors:**

- **body:** Targets the <body> element.
- **#formContainer:** Targets the element with id="formContainer".
- **label:** Targets all <label> elements.
- **input[type="text"], input[type="password"], input[type="email"], input[type="date"], button:** Targets all <input> elements of types text, password, email, date, and all <button> elements.
- **input[type="text"]:hover, input[type="password"]:hover, input[type="email"]:hover, input[type="date"]:hover:** Targets all <input> elements of types text, password, email, date when they are hovered over.
- **button:** Targets all <button> elements.
- **button:hover:** Targets all <button> elements when they are hovered over.
- **button:disabled:** Targets all <button> elements when they are disabled.
- **.validation-message:** Targets elements with the class validation-message.

- **CSS Properties:**

- **font-family:** Specifies the font for the text.
- **display:** Specifies the display behavior (flexbox).

- **justify-content**: Aligns the flexible container's items when the items do not use all available space on the main-axis.
- **align-items**: Aligns the flexible container's items when the items do not use all available space on the cross-axis.
- **height**: Sets the height of an element.
- **background-color**: Sets the background color of an element.
- **padding**: Sets the padding area on all four sides of an element.
- **border-radius**: Defines the radius of the element's corners.
- **box-shadow**: Applies shadow to elements.
- **width**: Sets the width of an element.
- **margin-top**: Sets the margin space on the top of an element.
- **color**: Sets the color of the text.
- **box-sizing**: Defines how the width and height of an element are calculated: should they include padding and borders, or not.
- **border**: Sets the border around elements.
- **cursor**: Defines the mouse cursor to be displayed when pointing over an element.
- **transition**: Allows for a change in CSS properties to occur smoothly over a specified duration.
- **transform**: Applies a 2D or 3D transformation to an element.
- **margin-top**: Sets the top margin of an element.

- *Source Code :-*

- *Styles.css*

```
body {
    font-family: Arial, sans-serif;
    display: flex;
    justify-content: center;
    align-items: center;
    height: 100vh;
    background-color: #E3F2FD; /* Light blue background */
}

#formContainer {
    background: white;
    padding: 20px;
    border-radius: 5px;
    box-shadow: 0 2px 4px rgba(0,0,0,0.1);
    width: 500px; /* Adjust width as needed */
}

label {
    display: block;
    margin-top: 20px;
    color: #333; /* Darker text for better readability */
}

input[type="text"],      input[type="password"],      input[type="email"],
input[type="date"], button {
    display: block;
    width: 100%;
    padding: 10px;
    margin-top: 5px;
    box-sizing: border-box;
    border-radius: 5px;
    border: 1px solid #BDBDBD; /* Light grey border */
    background-color: #FFFFFF; /* White background */
}
```

```
input[type="text"]:hover,          input[type="password"]:hover,
input[type="email"]:hover, input[type="date"]:hover {
    background-color: #FFCDD2; /* Light pink background on hover */
    border-color: #F48FB1; /* Deeper pink border on hover */
}

button {
    background-color: #2196F3; /* Light blue background */
    color: white;
    border: none;
    cursor: pointer;
    margin-top: 20px;
    transition: background-color 0.3s ease, transform 0.1s ease;
}

button:hover {
    background-color: #1976D2; /* Darker blue on hover */
    transform: scale(1.05); /* Slightly larger on hover */
}

button:disabled {
    background-color: #BDBDBD; /* Grey out when disabled */
    cursor: not-allowed;
}

/* Additional styles for validation messages */
.validation-message {
    color: #D32F2F; /* Red text for errors */
    margin-top: 5px;
}
```

- ***Index.html***

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
```

```
<meta name="viewport" content="width=device-width,
initial-scale=1.0">
<title>Extended Form with Validation</title>
<link rel="stylesheet" href="styles.css">
</head>
<body>
  <div id="formContainer">
    <form id="registrationForm">
      <label for="fullName">Full Name:</label>
      <input type="text" id="fullName" placeholder="Enter your full
name" title="Enter your full name" disabled required>

      <label for="mobileNumber">Mobile Number:</label>
      <input type="text" id="mobileNumber" placeholder="Enter your
mobile number" title="Enter a 10-digit mobile number without any spaces or
symbols" disabled required>

      <label for="email">Email:</label>
      <input type="email" id="email" placeholder="Enter your email"
title="Enter a valid email address, e.g., user@example.com" disabled
required>

      <label for="dob">Date of Birth:</label>
      <input type="date" id="dob" title="Enter your date of birth" disabled
required>

      <label for="passwordField">Password:</label>
      <input type="password" id="passwordField" placeholder="Create a
password" title="Create a password (min 8 characters)" disabled required>

      <button type="button" id="activateBtn">Activate
Textboxes</button>
      <button type="submit" id="submitBtn" disabled>Submit</button>
    </form>
  </div>

  <script>
    document.addEventListener('DOMContentLoaded', function() {
      const activateBtn = document.getElementById('activateBtn');
      const submitBtn = document.getElementById('submitBtn');
```

```
const form = document.getElementById('registrationForm');
const inputs = form.querySelectorAll('input');

// Additional functionality to prevent digits in the full name and
non-digits in the mobile number
const fullNameInput = document.getElementById('fullName');
const mobileNumberInput = document.getElementById('mobileNumber');

fullNameInput.addEventListener('input', function() {
    this.value = this.value.replace(/\d/g, ""); // Removes digits from full
name
});

mobileNumberInput.addEventListener('input', function() {
    this.value = this.value.replace(/\D/g, ""); // Removes non-digit
characters from mobile number
});

activateBtn.addEventListener('click', function() {
    const password = prompt("Please enter the password to activate the
textboxes:");
    if (password === "correctPassword") { // Replace with actual
password check
        inputs.forEach(input => input.disabled = false);
        submitBtn.disabled = false;
        alert("Textboxes activated successfully.");
    } else {
        let tryAgain = confirm("Password is incorrect. Would you like to
try again?");
        if (tryAgain) {
            activateBtn.click(); // Simulate another click to prompt again.
        }
    }
});

form.addEventListener('submit', function(event) {
    event.preventDefault(); // Prevent form submission
    if(validateFields()) {
        alert("Form submitted successfully!");
    }
});
```



```
        // Further processing can be added here, e.g., sending data to a
server
    }
});

function validateFields() {
    const fullName = fullNameInput.value;
    const mobileRegex = /^d{10}$/;
    const emailRegex = /^[^s@]+@[^s@]+\.[^s@]+$/;
    const passwordField =
document.getElementById('passwordField').value;
    let errors = "";

    if (fullName.length === 0) {
        errors += "Full name is required.\n";
    }
    if (!mobileRegex.test(mobileNumberInput.value)) {
        errors += "Mobile number is not correct. It must be 10 digits.\n";
    }
    if (!emailRegex.test(document.getElementById('email').value)) {
        errors += "Email is not correct. Email must be in the format:
user@example.com\n";
    }
    if (passwordField.length < 8) {
        errors += "Password is too short. It must be at least 8
characters.\n";
    }

    if (errors) {
        alert(errors);
        return false;
    }
    return true;
}
});
</script>
</body>
</html>
```

- Outputs :-

- First Look :-

Full Name:
Enter your full name

Mobile Number:
Enter your mobile number

Email:
Enter your email

Date of Birth:
dd/mm/yyyy

Password:
Create a password

Activate Textboxes

Submit

- Password Alert :-

localhost:63342 says
Please enter the password to activate the textboxes:

Full Name:
Enter your full name

Mobile Number:
Enter your mobile number

Email:
Enter your email

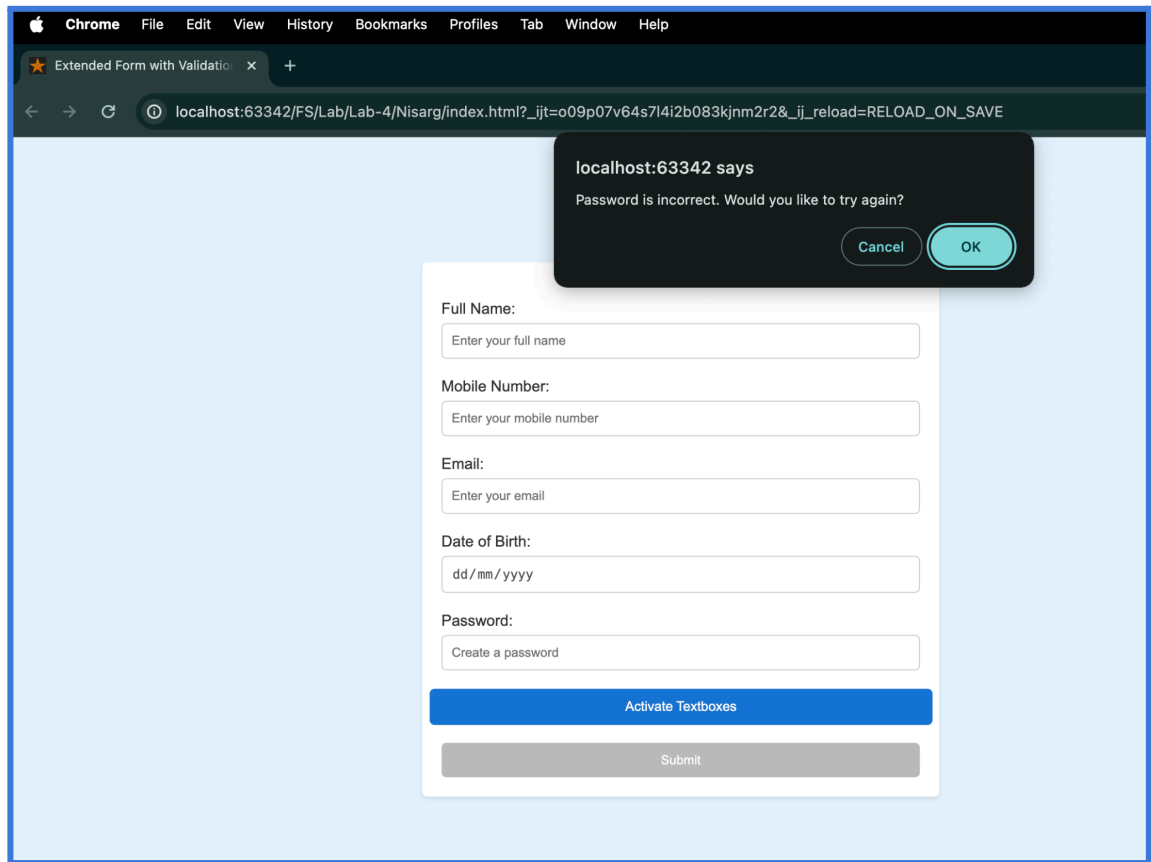
Date of Birth:
dd/mm/yyyy

Password:
Create a password

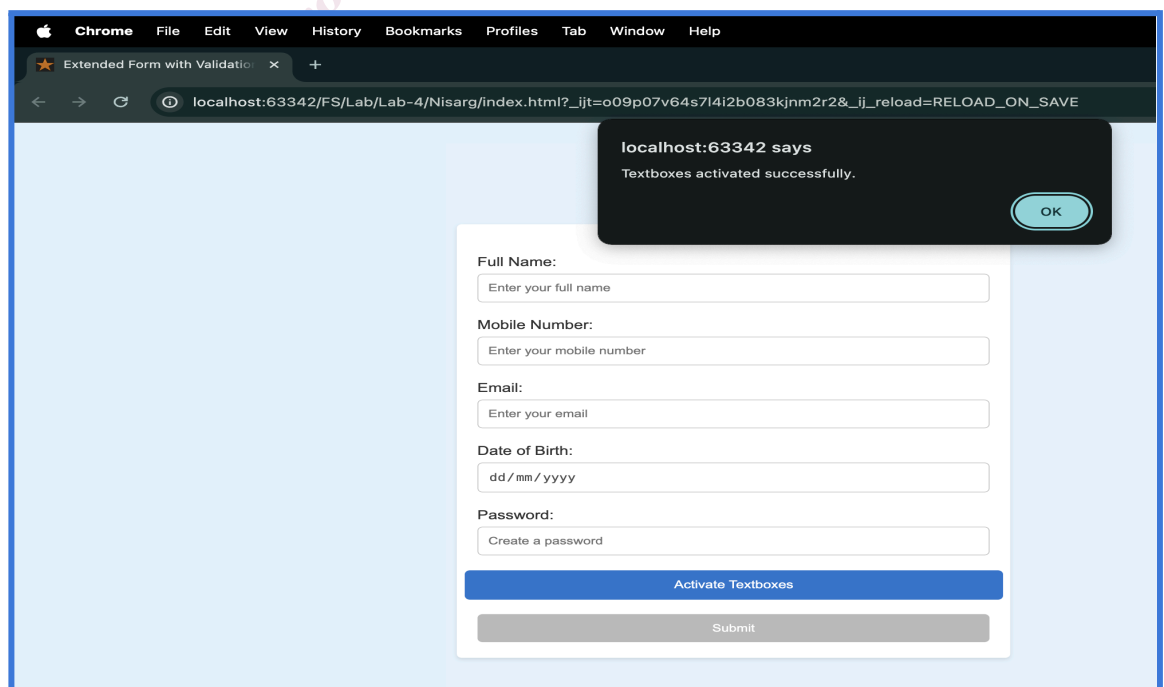
Activate Textboxes

Submit

- Wrong Password Alert :-



- Correct Password Alert :-



- Wrong Inputs :-

A screenshot of a web form titled "Extended Form with Validation". The form contains the following fields and values:

- Full Name: Nisarg Patel
- Mobile Number: 1234
- Email: aa (highlighted with a red border)
- Date of Birth: 28/01/2024
- Password:

Below the fields are two buttons: "Activate Textboxes" and "Submit". A tooltip message is displayed over the Email field, stating: "Please include an '@' in the email address. 'aa' is missing an '@'."

- Multiple Wrong Inputs :-

A screenshot of a web browser (Chrome) displaying the same form as above. The form fields contain the following values:

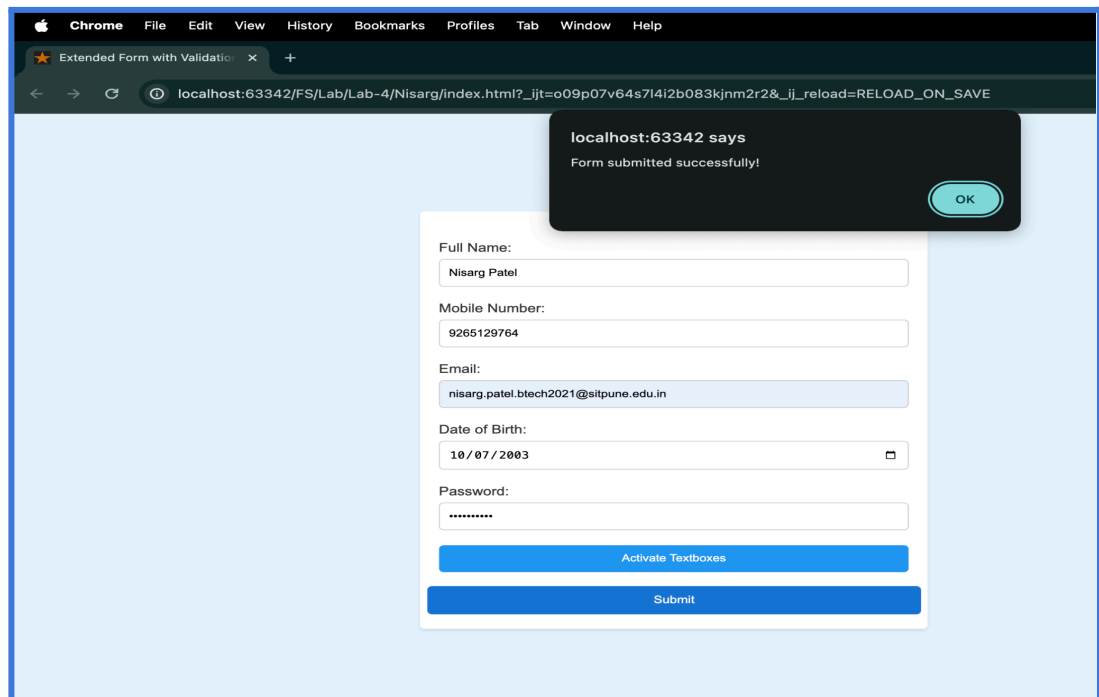
- Full Name: Nisarg Patel
- Mobile Number: 1234
- Email: aa@123
- Date of Birth: 28/01/2024
- Password:

Below the fields are two buttons: "Activate Textboxes" and "Submit". A modal dialog box is open, titled "localhost:63342 says", containing the following error messages:

- Mobile number is not correct. It must be 10 digits.
- Email is not correct. Email must be in the format: user@example.com
- Password is too short. It must be at least 8 characters.

The dialog box has an "OK" button.

- **Submitting Correct Form :-**



The screenshot shows a web browser window with the address bar displaying 'localhost:63342/FS/Lab-4/Nisarg/index.html?_ijt=o09p07v64s7l4i2b083kjm2r2&_ij_reload=RELOAD_ON_SAVE'. A dark notification box at the top center of the page reads 'localhost:63342 says Form submitted successfully!' with an 'OK' button. Below the notification is a registration form with the following fields: 'Full Name:' (Nisarg Patel), 'Mobile Number:' (9265129764), 'Email:' (nisarg.patel.btech2021@sitpune.edu.in), 'Date of Birth:' (10/07/2003), and 'Password:' (masked with dots). At the bottom of the form are two buttons: 'Activate Textboxes' and 'Submit'.

- **Description :-**

- The project's HTML layout ensures an engaging and structured user experience by incorporating a clean and organized form design. Visitors are introduced to an efficient and streamlined interface, embodied within a central form titled "Extended Form with Validation," reflecting the core functionality of user data collection and verification.
- Upon arrival, users are presented with a clear, concise heading, "User Registration," encapsulating the form's purpose. The form is meticulously arranged, encompassing fields for essential personal details such as Full Name, Mobile Number, Email, Date of Birth, and Password. This structured approach facilitates easy navigation and data entry, making the user's journey straightforward and intuitive.
- The form employs a captivating flip effect for the 'Activate' button, introducing an interactive element that enhances user engagement. Initially, input fields are inactive, maintaining a secure environment. Activation occurs upon successful password input, signifying a seamless blend of interactivity and security. The front side of the form invites users to enter

their information, while backend validation ensures data accuracy and integrity.

- Each input field is accompanied by a clear, descriptive label, ensuring users are well-informed about the required data. The application enforces specific validation rules, such as mobile number length and email format, enhancing the reliability of collected data.
 - A notable feature is the dynamic tooltip associated with the password field, which provides users with immediate guidance on creating a strong password. This interactive tooltip appears upon hovering over or focusing on the input field, offering real-time assistance and enhancing password security.
 - The project boasts a responsive design, optimized for various devices and screen sizes, ensuring a consistent and accessible user experience across desktops, tablets, and smartphones. Users can interact with the form comfortably, regardless of their device, enjoying a visually appealing and functional journey through the registration process.
- [GitHub Link](#)
 - [Live Link](#)