

# PHOTO GALLERY

## UI/UX Design Fundamentals

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## **Abstract:**

This project demonstrates the development of a **form validation system** using HTML, CSS, Bootstrap, and vanilla JavaScript. The form includes **text, email, and password inputs** with client-side validation. Validation rules ensure that fields are filled correctly, improving usability and preventing errors. Error messages are displayed dynamically to guide users, ensuring better UX.



## **Objectives**

- To design a clean and responsive form interface.
- To apply client-side validation using JavaScript.
- To implement error messages for invalid inputs.
- To enhance user experience through interactive feedback.
- To explore Bootstrap form styling and responsive layout.



## **Scope of the Project**

- Only client-side validation implemented.
- No backend integration or database storage.
- Designed for desktop and mobile devices.
- Validation limited to text, email, and password fields.

## Tools & Technologies Used:

Tool/Technology	Purpose
HTML5	Structure of the form
CSS3	Styling and error highlighting
Bootstrap 5	Form layout and responsiveness
JavaScript	Validation logic
VS Code	Code editor
Chrome DevTools	Testing and debugging

### ▣ HTML Structure Overview

- Used semantic elements <main> and <section>.
- Bootstrap's **grid system** (row, col) for responsive layout.
- Bootstrap's **modal component** for enlarged image display.

### CSS Styling Strategy

- Bootstrap classes for responsiveness.
- Custom CSS for hover effects and shadows.
- Media queries to improve spacing and layout for mobile screens.

## **Bootstrap Overview**

- Bootstrap **Grid System** (col-6 col-md-4 col-lg-3) was used to create a responsive gallery layout.
- **Utility classes** like img-fluid, rounded, and shadow-sm ensured proper image scaling and styling.
- **Bootstrap Modal** was integrated to display enlarged versions of images when clicked.
- **Spacing utilities** (g-3, mb-3) helped maintain clean spacing between elements.

## **JavaScript Overview**

- Used **vanilla JavaScript** to handle image click events.
- When an image is clicked, its src is passed dynamically to the modal image (#modallImage).
- This created an **interactive photo viewing experience** without requiring external libraries.

## **Key Features**

Feature	Description
Input Validation	Checks for empty name, valid email, and strong password
Error Messages	Shown below respective fields
Bootstrap Form Layout	Clean, professional look
Responsive Design	Works seamlessly on all devices

## Challenges Faced & Solutions

Challenge	Solution
Incorrect regex for email validation	Implemented a standard email pattern regex
Password too short	Added length validation (min 6 characters)
Error messages overlapping	Placed messages in dedicated <div> elements

## Outcome

- Implemented a **working form validation system**.
- Error handling was displayed dynamically.
- Learned integration of **JavaScript with Bootstrap-styled forms**.

## Future Enhancements

- Add **strong password checker** (symbols, uppercase, numbers).
- Implement backend storage for submitted data.
- Integrate a success page on valid submission.
- Add accessibility improvements (ARIA attributes).

## CODE:

```
Untitled-1.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <meta charset="UTF-8">
5    <meta name="viewport" content="width=device-width, initial-scale=1.0">
6    <title>Photo Gallery</title>
7    <!-- Bootstrap CSS -->
8    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css" rel="stylesheet">
9    <style>
10     body {
11       background-color: #f8f9fa;
12     }
13     .gallery img {
14       cursor: pointer;
15       border-radius: 8px;
16       transition: transform 0.3s;
17     }
18     .gallery img:hover {
19       transform: scale(1.05);
20     }
21     #modalImage {
22       max-width: 90vw;
23       max-height: 85vh;
24       border-radius: 10px;
25     }
26   </style>
27 </head>
28 <body>
29
30 <div class="container py-4">
31   <h2 class="text-center mb-4">Photo Gallery</h2>
32   <div class="row gallery g-3">
33     <div class="col-6 col-md-4 col-lg-3">
34       
35     </div>
36     <div class="col-6 col-md-4 col-lg-3">
37       
38     </div>
39     <div class="col-6 col-md-4 col-lg-3">
```

```

40     
41 </div>
42 <div class="col-6 col-md-4 col-lg-3">
43     
44 </div>
45 <div class="col-6 col-md-4 col-lg-3">
46     
47 </div>
48 <div class="col-6 col-md-4 col-lg-3">
49     
50 </div>
51 <div class="col-6 col-md-4 col-lg-3">
52     
53 </div>
54 </div>
55 </div>
56
57 <!-- Modal -->
58 <div class="modal fade" id="imageModal" tabindex="-1" aria-hidden="true">
59     <div class="modal-dialog modal-xl modal-dialog-centered">
60         <div class="modal-content bg-transparent border-0 shadow-none">
61             <div class="modal-body d-flex justify-content-center p-0">
62                 <img src="" id="modalImage" class="img-fluid" alt="Large View">
63             </div>
64         </div>
65     </div>
66 </div>
67
68 <!-- Bootstrap JS -->
69 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"></script>
70
71 <script>
72     const galleryImages = document.querySelectorAll('.gallery img');
73     const modalImage = document.getElementById('modalImage');

```

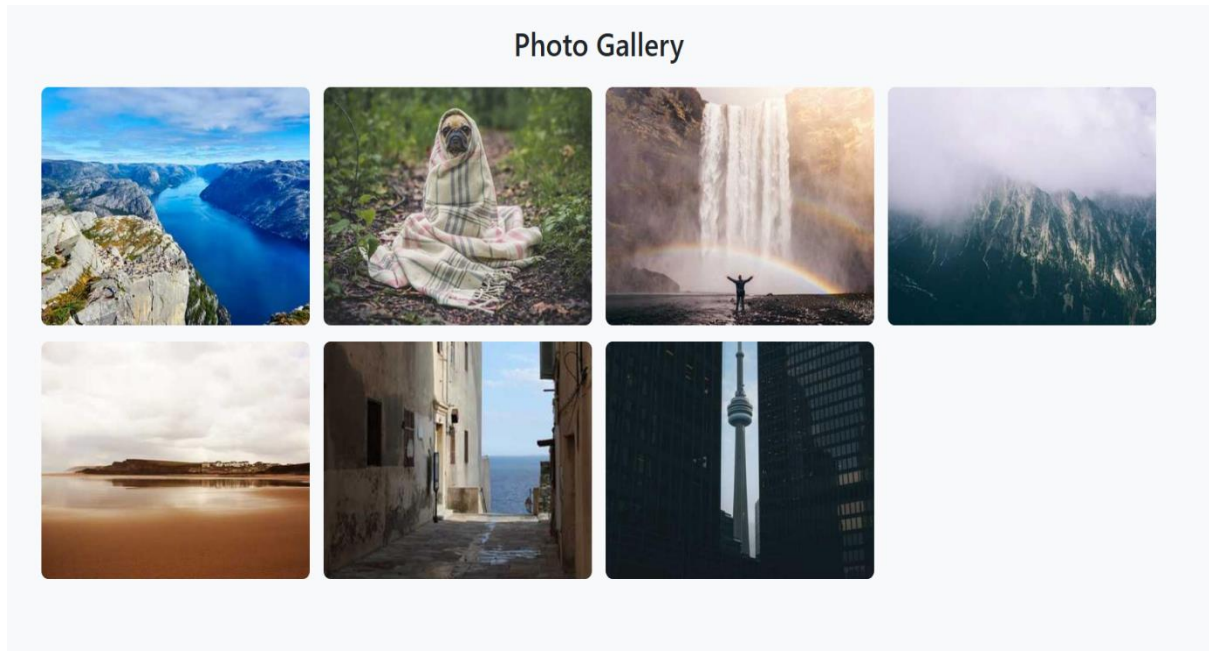
```

74     const imageModal = new bootstrap.Modal(document.getElementById('imageModal'));
75
76     galleryImages.forEach(img => {
77         img.addEventListener('click', () => {
78             modalImage.src = img.src;
79             imageModal.show();
80         });
81     });
82 </script>
83
84 </body>
85 </html>

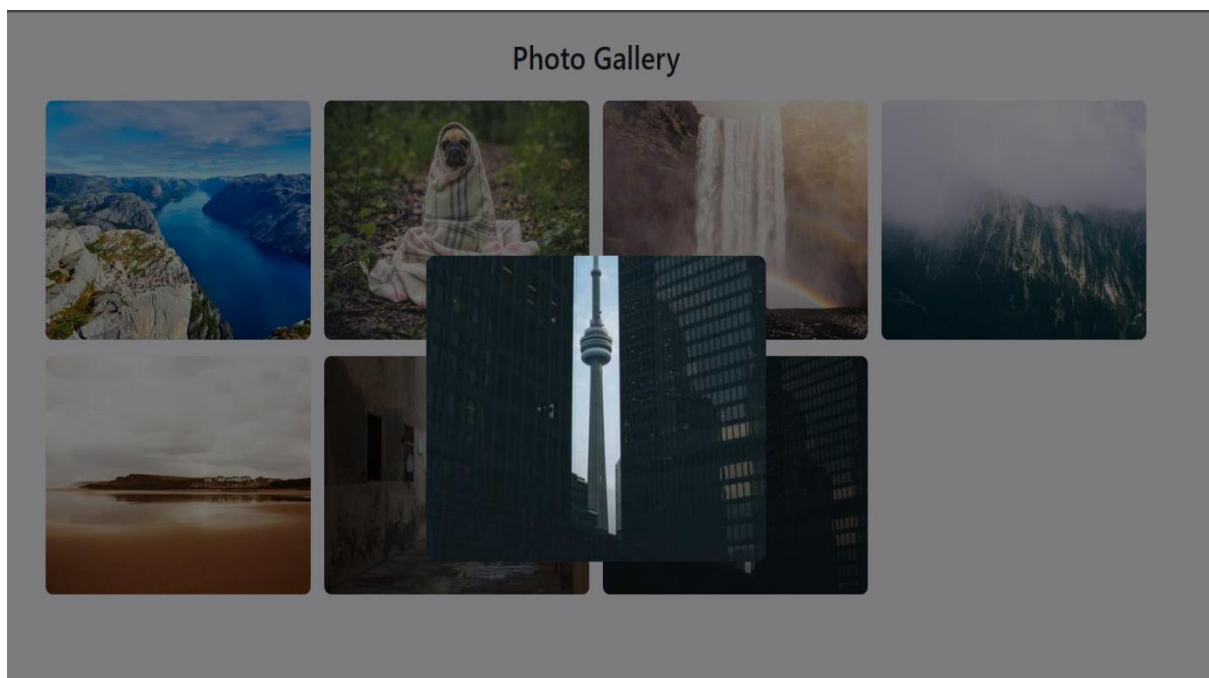
```

## **OUTPUT:**

### ***BEFORE SELECTING A PHOTO:***



### ***AFTER SELECTING A PHOTO IN PHOTO GALLERY:***







## **Conclusion:**

This Photo Gallery and Form Validation project demonstrates how HTML, CSS, Bootstrap, and JavaScript can be combined to build responsive, user-friendly web applications. The photo gallery provides an interactive viewing experience with modals, while the form validation ensures data accuracy and improves usability. The project enhanced our understanding of UI/UX design principles, responsive frameworks, and client-side scripting, strengthening our practical web development skills.



## **References:**

- MDN Web Docs: <https://developer.mozilla.org/>
- Bootstrap Documentation: <https://getbootstrap.com/docs/5.3/>
- W3Schools: <https://www.w3schools.com/>
- JavaScript.info: <https://javascript.info/>
- FreeCodeCamp: <https://www.freecodecamp.org/>