

## Experiment 06: Validate a form (e.g., email, password) using JavaScript to ensure proper input before submission.

**Learning Objective:** Student should be able to implement client-side form validation using JavaScript to ensure that user input meets predefined criteria (e.g., fields are not empty, email format is correct) before the form is submitted.

**Tools:** Notepad, Google Chrome

### **Theory:**

**Client-side validation** is the process of checking user input in the web browser *before* it is sent to the server. This is a fundamental aspect of creating a good user experience and building efficient applications.

### **Why is it important?**

1. **Immediate Feedback:** It provides an instant response to the user if they make a mistake, without the delay of a server round-trip.
2. **Reduced Server Load:** It prevents malformed data from ever reaching the server, saving processing power and bandwidth. This is a critical concept in system design.
3. **Improved User Experience:** It guides the user to fill out the form correctly, reducing frustration.

### **Core JavaScript Concepts for Form Validation:**

- **DOM Selection:** Accessing HTML elements using methods like `document.getElementById()`.
- **Event Handling:** Listening for user actions. For forms, the most important event is `submit`. We use `addEventListener()` to attach a function that runs when the event occurs.
- **event.preventDefault():** A crucial method that stops the browser's default action for an event. For a form's `submit` event, this prevents the page from reloading, allowing our script to take control.
- **Input Values:** Retrieving the text entered by a user with the `.value` property of an input element. The `.trim()` method is often used to remove any leading or trailing whitespace.
- **Conditional Logic:** Using `if...else` statements to check the input values against our validation rules.

## **Result and Discussion:**

**Checkout**  
 Please fill in your details to complete the purchase.

**Shipping Address**

First Name	Parth
Last Name	Mehta
Email Address	parmehta157489@gmail.com
Address	11/B, 101, Sarova Kandivali East - 400101

**Payment Information**

Name on card	Gadget Galaxy Project
Credit card number	2500150216508250

**Place Order**

**GadgetGalaxy**

Home | Products | Cart | Checkout

**Your Shopping Cart**

Product Image	Product Name	Price	Quantity	Subtotal
	Aura T-800 Headphones	₹14,999	1	₹14,999
	Chrono-Pulse Smartwatch	₹19,999	1	₹19,999

Total: ₹34,998

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This page says

Thank you for your order! Your purchase has been confirmed.

**ok**

Webpage displaying two different pages in frames in a single webpage with a popup confirming purchase of the order.

**Learning Outcomes:** The student should have the ability to write JavaScript code to select DOM elements, handle user events like form submission, and implement conditional logic to perform client-side validation, preventing invalid data from being submitted.

**Course Outcomes:** Upon completion of the course students will be able to apply client-side scripting technologies to create interactive and responsive web applications. Also, students will be able to analyze and implement client-side validation techniques to enhance user experience and data integrity.

**Conclusion:**

This experiment successfully added a crucial layer of interactivity and intelligence to our web application. By implementing client-side validation, the “GadgetGalaxy” checkout form is now more user-friendly, robust, and efficient. This marks a significant step from creating static pages to building dynamic web applications.

For Faculty Use

Correction Parameters	Formative Assessment [40%]	Timely completion of Practical [40%]	Attendance / Learning Attitude [20%]	
Marks Obtained				

