**5. Testing Phase**

The **Testing Phase** is a critical stage in the development of the **Image Gallery with Filters** project. It ensures that all components function as intended, the user experience is smooth, and the system meets all specified requirements. This phase involves different types of testing to identify and fix any errors or bugs before the final deployment.

**1. Testing Objectives:**

* Verify that the image gallery displays correctly across different devices and screen sizes.
* Ensure that the filtering functionality works as expected.
* Identify and resolve any layout, functional, or performance-related issues.
* Confirm the project meets all functional and non-functional requirements.

**2. Types of Testing Conducted:**

**Functional Testing:**

* Verified that all images load correctly.
* Checked that each filter button or dropdown option displays the correct set of images.
* Tested the “All” option to ensure it resets the gallery properly.

**Usability Testing:**

* Evaluated the user interface for ease of use and navigation.
* Ensured that buttons are clearly labeled and responsive to user actions.

**Compatibility Testing:**

* Tested the gallery on different web browsers such as Google Chrome, Mozilla Firefox, and Microsoft Edge.
* Verified performance and layout on different screen resolutions including desktop, tablet, and mobile.

**Responsive Testing:**

* Ensured that the gallery layout adjusts properly on all device sizes using media queries.
* Verified that filtering options remain accessible and usable on smaller screens.

**Accessibility Testing:**

* Confirmed the use of alt text for images to support screen readers.
* Verified keyboard navigation for filter options and general browsing.

**Performance Testing:**

* Checked that images load within an acceptable time.
* Ensured that the filtering functionality is quick and does not lag.

**3. Issues Identified and Resolved:**

| **Issue Found** | **Resolution** |
| --- | --- |
| Some images were not displaying properly on mobile view | Adjusted CSS and applied responsive design techniques |
| Filter buttons overlapping on smaller screens | Used flex-wrap and improved layout structure |
| Filters not working in one browser | Resolved JavaScript compatibility issue |
| Missing alt attributes for some images | Added appropriate alt text for all images |

1. **Testing Tools Used:**

* Browser Developer Tools (Chrome DevTools, Firefox Inspector)
* Online responsive testing tools (e.g., Responsinator, BrowserStack)
* Manual testing across devices
* WAVE Web Accessibility Tool (optional)

1. **Final Outcome:**

* All features of the image gallery were tested successfully.
* No critical bugs remained after the testing phase.
* The system performed well across all targeted browsers and devices.
* The user interface was found to be intuitive, responsive, and functional.

The successful completion of the testing phase ensures that the **Image Gallery with Filters** is stable, user-friendly, and ready for deployment.