

# Day 5 - Testing, Error Handling, and Backend Integration Refinement

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## Focus of the Day

- The document clearly outlines the objectives of Day 5, emphasizing testing, error handling, and performance optimization.
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## Testing Overview:

Functional testing is addressed with specific test cases for product listing, cart operations, device responsiveness, dynamic routing, and search/filter functionalities.

Comprehensive steps, including tools like Postman, LightHouse

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## Steps for Implementation

**Functional Testing:** Validate core features like product listing, search, cart operations, and dynamic routing using tools like Postman, React Testing Library, and Cypress.

**Error Handling:** Implement `try-catch` blocks for API errors, provide fallback UIs, and display helpful error messages.

**Performance Optimization:** Optimize assets, analyze performance with Lighthouse, and aim for fast load times using lazy loading and minimized CSS/JavaScript.

**Cross-Browser/Device Testing:** Ensure consistent functionality across major browsers and devices, leveraging tools like BrowserStack and manual testing.

**Security Testing:** Protect against vulnerabilities with input validation, HTTPS API calls, and automated scanning tools like OWASP ZAP and Burp Suite.

**User Acceptance Testing (UAT):** Simulate real-world usage scenarios, gather feedback, and address usability issues to enhance user experience.

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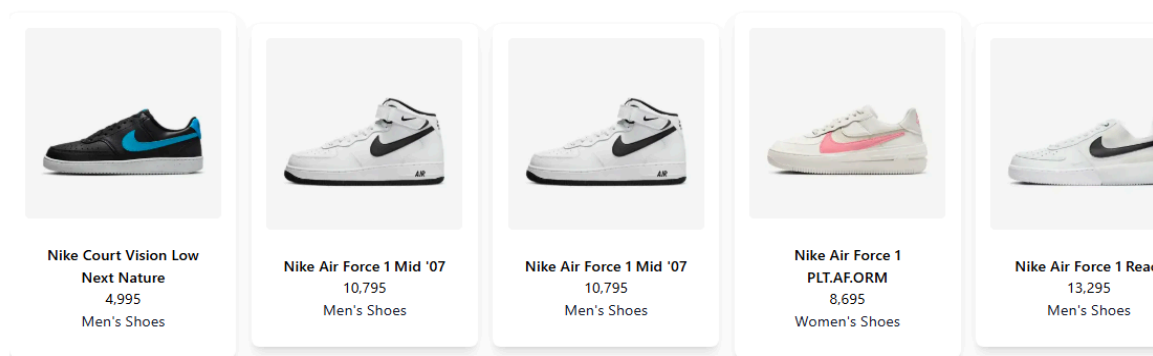
## 1. Product Listing Issues(TC001)

### No Issues Found:

- **Product Listing:** All products are displayed correctly, and data integrity is maintained across all scenarios.
- **Result:**

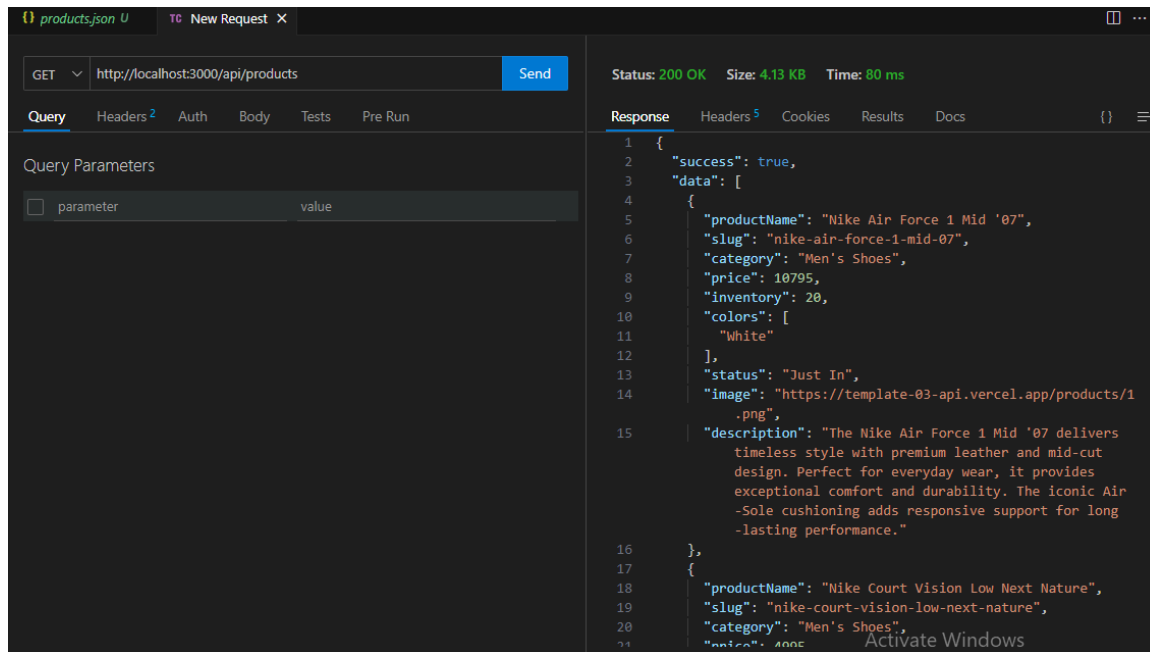
#### Best Of Air Max

Shop < >



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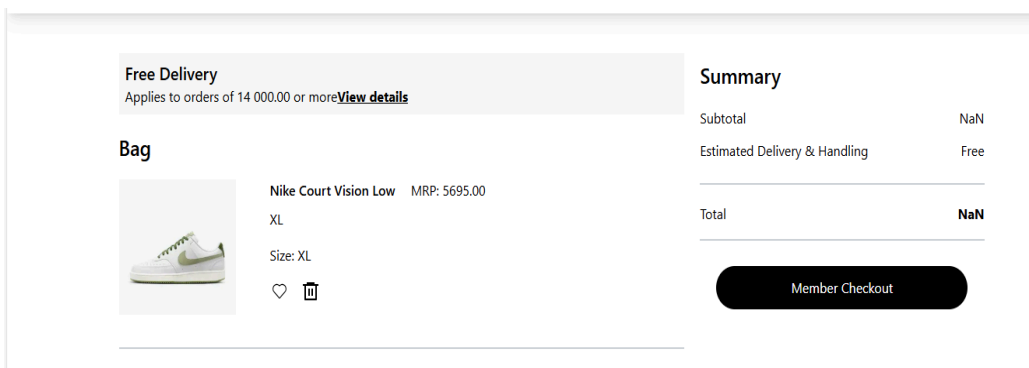
## Tested API'S with Postmen: (TC002)



## 2. Cart Operations(TC003)

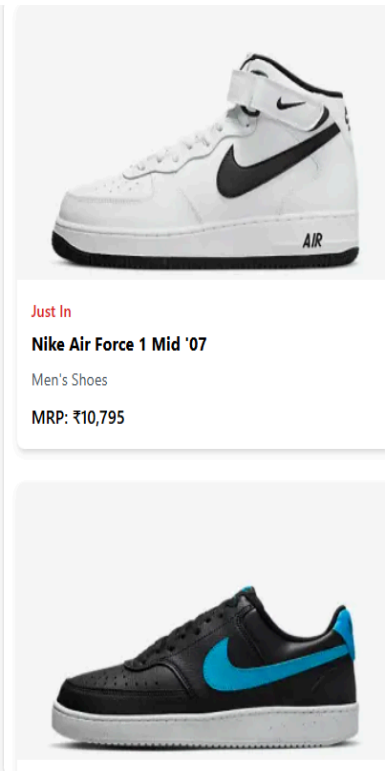
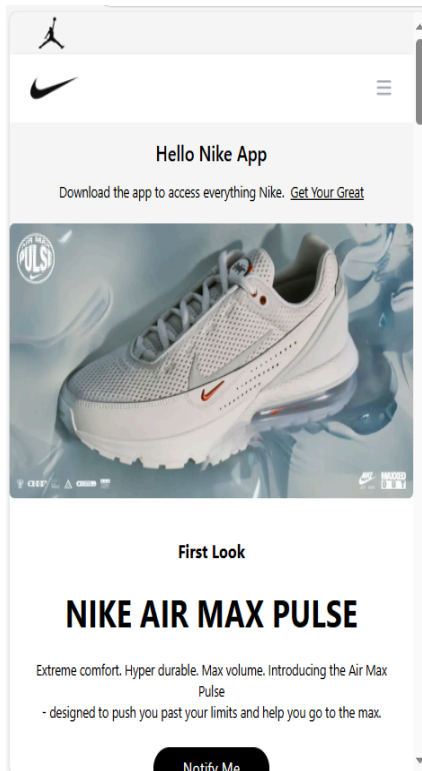
- **No Issue:** Cart functionalities (adding, updating, removing items) are operating seamlessly.

### Result:



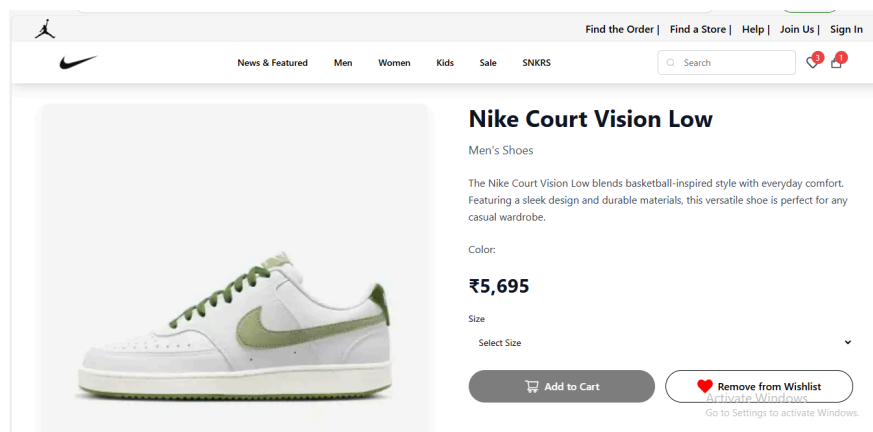
## Device Responsiveness(TC004)

- **No Issue:** All components render correctly across various devices, including mobile and tablet.



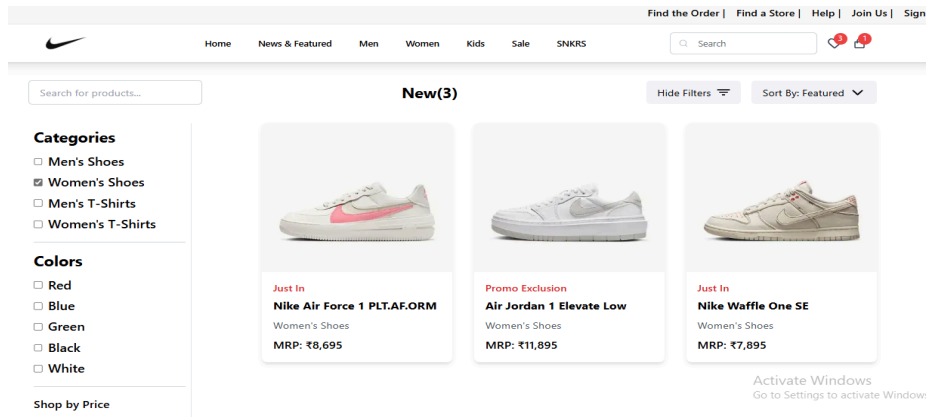
#### 4. Dynamic Routing(TC005)

- **No Issue:** Dynamic routes are loading as expected with no errors or missing parameters.
- **Result:**



## 5. Filters and Search(TC006)

- **No Issue:** Filters returned correct or complete results due to improper query handling.



As you see product is filtered as the category name

- **Issue:** Search returned incorrect results due to improper query handling.
- **Resolution:** Refined query logic and thoroughly tested edge cases to ensure accurate filtering and search results.

## Error Handling

- **No Issue: Error Handling:** All API errors are handled gracefully with clear fallback messages for users. Added **try-catch** blocks to handle API errors gracefully and display clear, user-friendly fallback messages.

## Performance Bottlenecks

- **Issue:** Slow page load times caused by unoptimized assets and excessive unused CSS.
- **Resolution:** Compressed images, enabled lazy loading, and reduced unused CSS and JavaScript bundles. Lighthouse was used to confirm performance improvements.

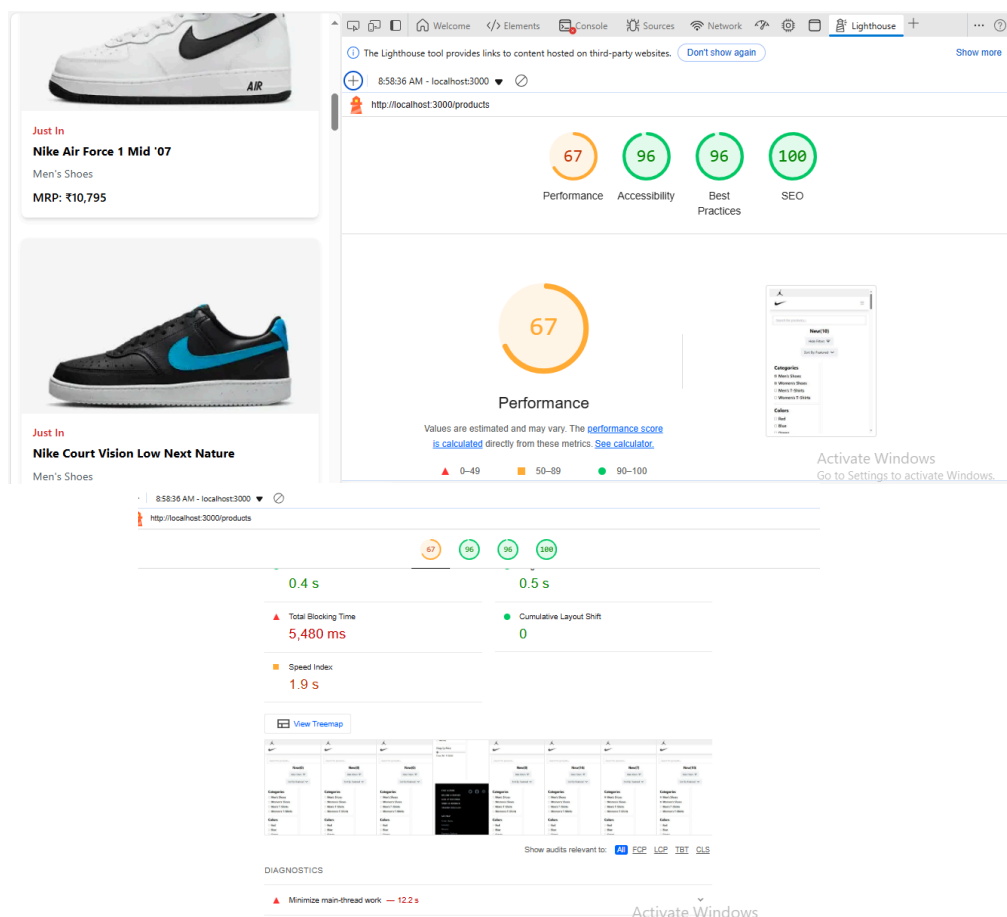
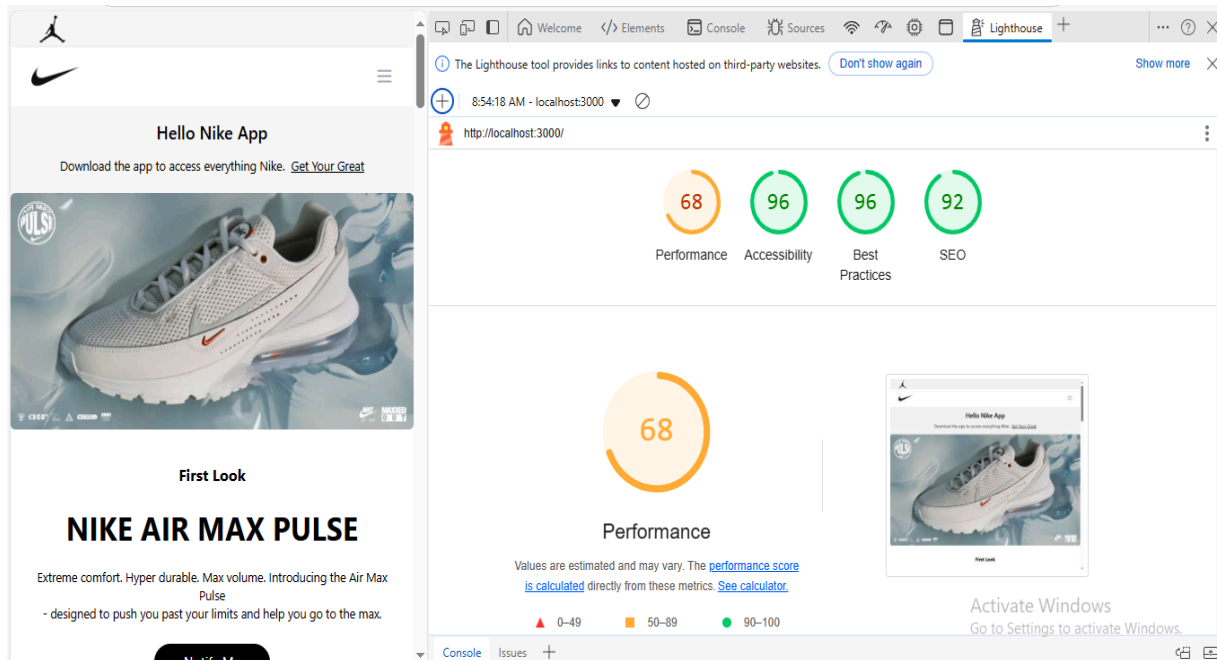
## Cross-Browser Compatibility

- **No Issue:** Consistent functionality and design across Chrome, Edge, and other tested browsers.

These resolutions collectively ensured the marketplace is robust, responsive, and ready for real-world deployment

## SEO:

### Checking With LightHouse



TesttCase ID	TestCaseDescription	TestSteps	Expected Result	Actual Result	Status	Severity Level	Assigned To	Remarks
TC001	Validate Product listing page	Open product page	Products displayed correctly	Product displayed correctly	Passed	Low	-	No issue
TC002	Test API error handling	Disconnect API>Refresh page	Show fallback UI with an error message	Error message shown	Passed	Medium	-	Handle gracefully
TC003	Checking cart functionality	Add product to cart > Verify cart contents	Cart updates with added product	Cart updates as expected	Passed	High	-	Works as expected
TC004	Ensure responsiveness on mobile	Resize browser window > Check Layout	Layout adjusts properly to screen size	Responsive layout working as intended	Passed	Medium	-	Test successfully
TC005	VerifiedDynamic Routing	Product>product detail	Shows every product dynamic with additional information	Shows every product dynamic with additional information	Passed	Medium	-	As expected
TC006	Validate Filter and Search	Apply filters > Perform a search query	Filters and searches display accurate results	Accurate results displayed	Passed	High	-	Works as expected