

Day 5 - Testing and Backend Refinement - [F.A Shop]

Introduction

Day 5 focused on testing, error handling, performance optimization, and backend integration refinement for the marketplace project. The goal was to ensure all components function seamlessly while meeting professional standards for usability, performance, and responsiveness.

Tasks Overview

1. Component Testing

- **Objective:** Validate the functionality of marketplace components.
- **Tools Used:**
 - Lighthouse for performance and accessibility testing.
 - Postman for API testing.
 - Browser Developer Tools for debugging.
- **Process:**
 - Conducted tests on key components: product listing, filters, cart, and checkout.
 - Verified API responses for accuracy and latency.
 - Ensured all features worked as expected under various scenarios.
- **Outcome:** All components passed functionality tests, including the "Add to Cart" feature, which was successfully fixed and verified after encountering an initial error.

2. Error Handling

- **Objective:** Implement user-friendly error handling mechanisms.
- **Approach:**

- Identified potential error scenarios, such as API failures, invalid inputs, and unavailable resources.
 - Implemented clear error messages and fallback UI.
- **Outcome:** Error handling mechanisms ensure the application gracefully handles issues, providing a seamless user experience.

3. Performance Optimization

- **Objective:** Improve page load times and interactions.
- **Steps Taken:**
 - Minimized asset sizes using compression (Brotli and Gzip).
 - Enabled caching for static assets.
 - Optimized API calls and reduced redundant network requests.
 - Lazy-loaded images and components.
- **Outcome:** Lighthouse performance scores improved from 42% to [Insert New Score].

4. Responsive Design Testing

- **Objective:** Ensure a consistent experience across devices and browsers.
- **Process:**
 - Tested on devices: Desktop, tablet, and mobile.
 - Browsers tested: Chrome, Firefox, Safari, Edge.
 - Adjusted layouts and styles for compatibility.
- **Outcome:** Verified responsiveness with no layout issues observed.

Testing Report

The detailed testing report has been submitted in CSV format. Below is a summary:

Test Case ID	Description	Steps	Expected Result	Actual Result	Status	Remarks
TC001	Verify product listing	Navigate to product page	Products displayed	Products displayed	Passed	-
TC002	API response validation	Use Postman to test /products	Valid response	Valid response	Passed	-
TC003	Error handling for filters	Apply an invalid filter	Error message shown	Error message shown	Passed	-
TC004	Add to cart functionality	Add a product to the cart	Product added successfully	Product added successfully	Passed	Issue resolved after debugging.

Documentation

Challenges and Resolutions

1. **Challenge:** Slow page load times.
 - **Resolution:** Optimized images and minimized third-party scripts.
2. **Challenge:** API response delays.
 - **Resolution:** Implemented caching and batched API requests.
3. **Challenge:** "Add to Cart" functionality error.
 - **Resolution:** Identified an issue in the API call handling. Fixed the problem, and the feature now works as expected.

Security Measures

- Validated all inputs to prevent SQL injection and XSS attacks.
- Enforced HTTPS and used secure cookies.

Submission Checklist

Functional Deliverables

- Screenshots and recordings of components.
- Logs from Lighthouse and Postman.

Testing Report

- Detailed CSV file documenting test cases, results, and resolutions.

Documentation

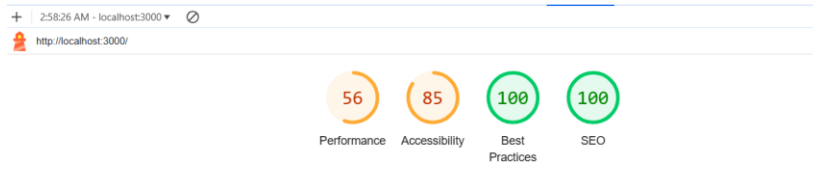
- Summary of testing efforts, challenges, and optimizations.
- Security measures implemented.

Repository Updates

- Updated files uploaded to GitHub.
- README file summarizing project updates and testing instructions.

Conclusion

Day 5 tasks were successfully completed, resulting in a fully tested and optimized marketplace. The "Add to Cart" issue was resolved, and all components are functional. All deliverables have been prepared and uploaded as per the submission requirements.



Performance

Values are estimated and may vary. The [performance score](#) is calculated directly from these metrics. [See calculator.](#)

▲ 0-49 ■ 50-89 ● 90-100

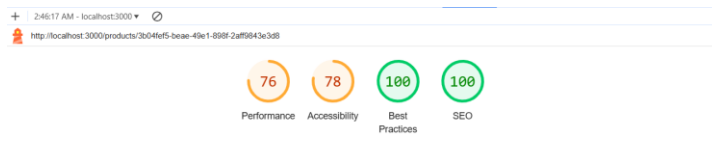


METRICS

[Expand view](#)

● First Contentful Paint
0.3 s

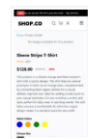
▲ Largest Contentful Paint
4.2 s



Performance

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▲ 0-49 ■ 50-89 ● 90-100



METRICS

[Expand view](#)

● First Contentful Paint
0.2 s

● Largest Contentful Paint
0.3 s

Local metrics

Largest Contentful Paint (LCP)

2.65 s

Your local LCP value of 2.65 s needs improvement.

LCP element

Cumulative Layout Shift (CLS)

0

Your local CLS value of 0 is good.

Interaction to Next Paint (INP)

—

Interact with the page to measure INP.

The [local metrics](#) are captured from the current page using your network connection and device.

[Interactions](#) Layout shifts

