

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

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Objective

Day 5 focuses on ensuring the marketplace is **fully tested, optimized for performance, and secure**. Key areas covered include functional testing, error handling, performance testing, cross-browser compatibility, and security testing.

Testing Overview

The following tests were conducted to verify the stability and reliability of the application:

1. Functional Testing

- ✓ Product listing, search, and cart operations tested successfully.
- ✓ No critical errors encountered during functional testing.
- ✓ API responses validated with Postman.

2. Error Handling

- ✓ Implemented try-catch blocks for API failures.
- ✓ Custom error.tsx page ensures user-friendly error messages.
- ✓ Fallback UI elements display when data is unavailable.

3. Performance Optimization

- ✓ **GTmetrix Score:** B grade ([GTmetrix Report](#))

- ✓ Lazy loading implemented via loading.tsx.
- ✓ Skeleton loaders added using ShadCN for better user experience.
- ✓ Optimized images and reduced blocking JavaScript for faster load times.

4. Cross-Browser & Device Testing

- ✓ Tested successfully on **Chrome, Firefox, Safari, and Edge**.
- ✓ Fully responsive on **mobile, tablet, and desktop devices**.
- ✓ No major layout issues detected.

5. Security Testing

⚠ **Pending:** Security testing using OWASP ZAP.

🚀 Next step: Validate API security, input sanitization, and perform penetration testing.

6. User Acceptance Testing (UAT)

- ✓ Simulated real-world usage (browsing, searching, checkout).
- ✓ Peer review conducted, and no usability issues found.

Testing Report Submission

A CSV-based testing report was created and uploaded to GitHub:

📁 [GitHub Repository](#)

The report includes:

- **Test Case ID & Description**
- **Expected & Actual Results**
- **Status (Passed/Failed/Pending)**
- **Severity Level**
- **Remarks**

Next Steps

- Conduct **security testing** using **OWASP ZAP**.
- Optimize further to achieve an **A grade in GTmetrix**.
- Submit final testing documentation for evaluation.

Final Notes:

The marketplace is functionally stable, responsive, and performs well across devices. Security testing and additional optimizations will further improve reliability. 🚀