Testing, Error Handling, and Backend Integration Report

1. Functional Testing Summary

- Product Listing: Successfully loads all products dynamically.

- Search Functionality: Works correctly, showing relevant products.

- Add to Cart: Items are successfully added to the cart and displayed correctly.

- Checkout Process: Completes smoothly without errors.

- Responsiveness: Verified on multiple devices, rendering is consistent.

2. Error Handling Implemented

- API Error Handling: Implemented try-catch blocks for API failures.

- Fallback UI: Displays messages like 'No products available' when API fails.

- Invalid Input Handling: Prevented SQL injections and XSS attacks.

3. Performance Optimization

- Lighthouse Score: 90+ achieved.

- Optimizations Done: Lazy loading for images, JS & CSS minification, and caching strategies.

- Load Time: Reduced to under 2 seconds.

4. Security Enhancements

- HTTPS enforced for all API calls.

- Environment variables used for API keys instead of hardcoding.

- Input validation added to prevent malicious attacks.

5. Cross-Browser & Device Testing

- Tested on: Chrome, Firefox, Safari, Edge.

- Tested Devices: Desktop, Tablet, Mobile.

- Outcome: No rendering issues detected.

6. Submission Details

- CSV Testing Report Attached.

- Code Updates & Fixes Pushed to GitHub.

All testing and optimizations are completed successfully!