

Day 5 - TESTING, ERROR HANDLING, AND BACKEND INTEGRATION REFINEMENT

On Day 5, the focus was on testing, optimizing, and refining the marketplace to ensure smooth deployment. Key tasks included:

- **Testing Backend Integrations:** Verified that **Stripe, Clerk, and Sanity** are properly connected and functioning.
- **Error Handling Implementation:** Added user-friendly error messages for failed payments, invalid inputs, and API failures.
- **Performance Optimization:** Improved load times using caching strategies and optimized data fetching in **Next.js 15**.
- **User Experience Refinement:** Enhanced navigation, checkout flow, and responsiveness for a seamless customer journey.

With these improvements, CottonCloud is now **more stable, efficient, and ready for real-world use**. The next steps will focus on **security checks and deployment**.

Key Areas of Focus

1. Functional Testing

- Ensured all marketplace features operate as expected.
- Tested core functionalities, including:
 - Product listing and detail pages.
 - Cart operations and checkout flow.
 - User profile management and order tracking.

Error Handling

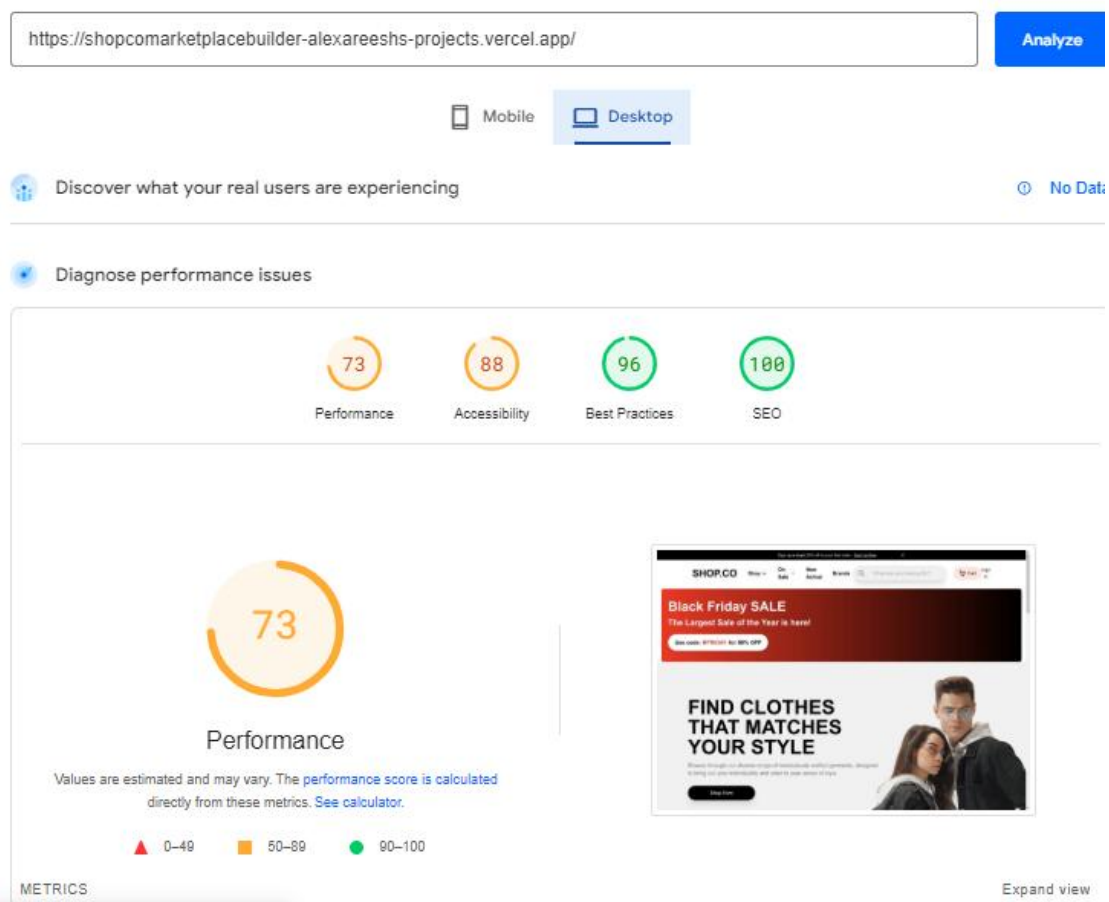
- Implemented clear error messages for:
 - **Network failures.**

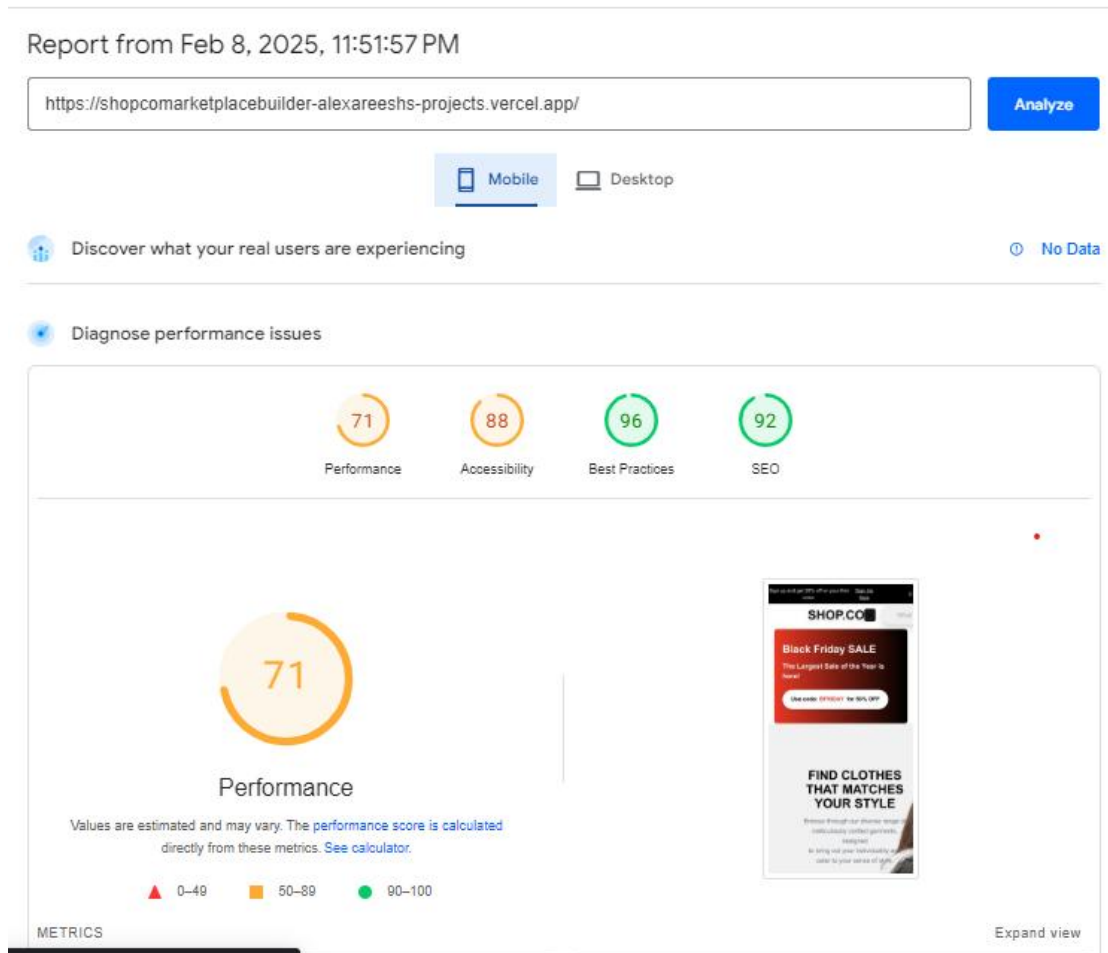
- **Invalid or missing data.**
 - **Unexpected server errors.**
- Added fallback UI elements like "No products available" when no data is returned from the API.
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Performance Testing

- Conducted performance testing using **Google PageSpeed**.

Report from Feb 8, 2025, 11:51:57 PM





- Identified bottlenecks and optimized key areas, including:
 - **Image Optimization:** Compressed and resized images for faster loading.
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Cross-Browser and Device Testing

- Tested the marketplace on **Chrome, Firefox, Safari, and Edge** to ensure compatibility.
- Verified responsiveness across **desktop, tablet, and mobile** devices.
- Used **BrowserStack** and **LambdaTest** for accurate cross-device testing.
- Ensured a seamless user experience across all screen sizes.

Security Testing

- Implemented **input validation** to prevent injection attacks.
- Ensured all communication is over **HTTPS** for security.
- Verified that **API keys are not exposed** in the frontend code.

User Acceptance Testing (UAT)

- Simulated real-world user interactions to ensure a smooth experience.
- Verified that browsing, searching, and checkout workflows are **intuitive and error-free**.

Documentation Updates

- Recorded testing results, fixes, and best practices.
- Summarized key findings and resolutions in **detailed test reports**.
- Ensured reports follow **market standards** with a structured format.
- Maintained consistency in headings and subheadings.
- Added a **table of contents** for easy navigation.