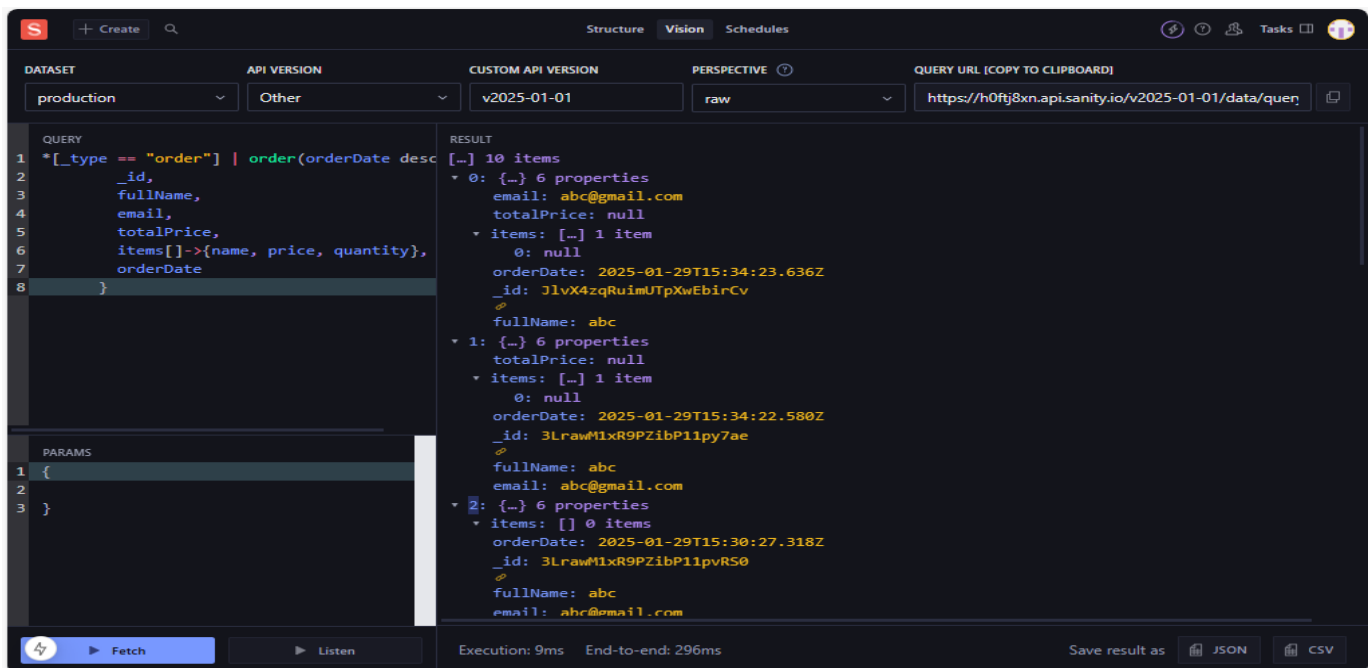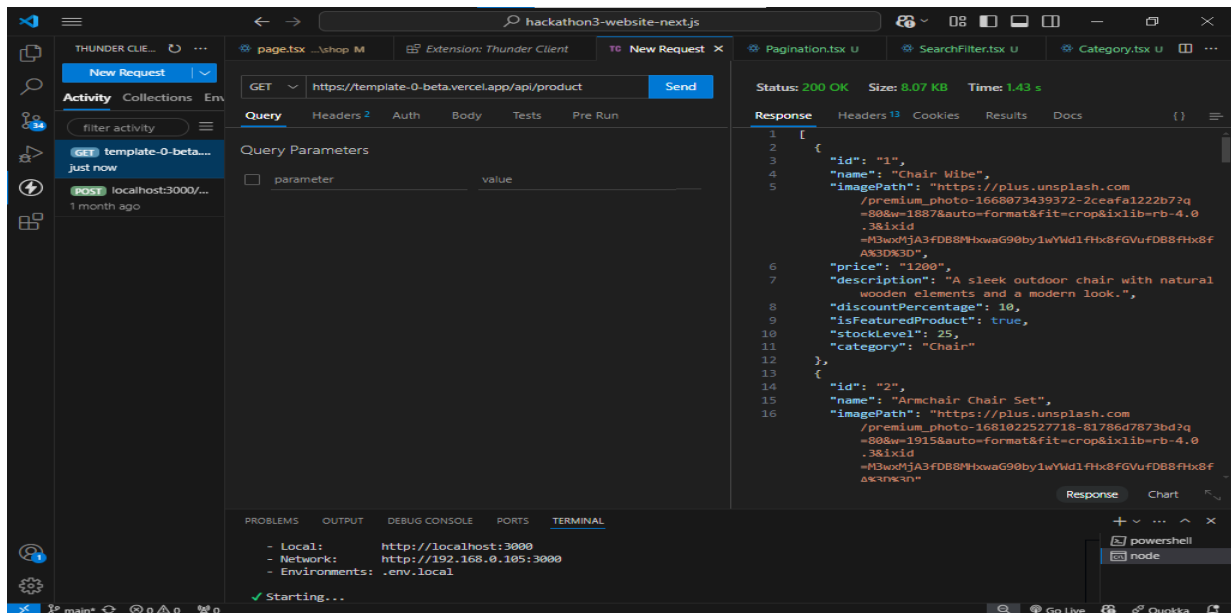# Day 5 - Testing, Error Handling, and Backend Integration Refinement

Submitted by: Saima Salar

1. Functional Testing Completed

- Validated that all marketplace features work as intended.

- Successfully tested core functionalities such as:

  - Product listing and detail pages.

  - Cart operations (adding, updating, removing items).

  - User authentication and profile management.

  - Search and filter functionality.

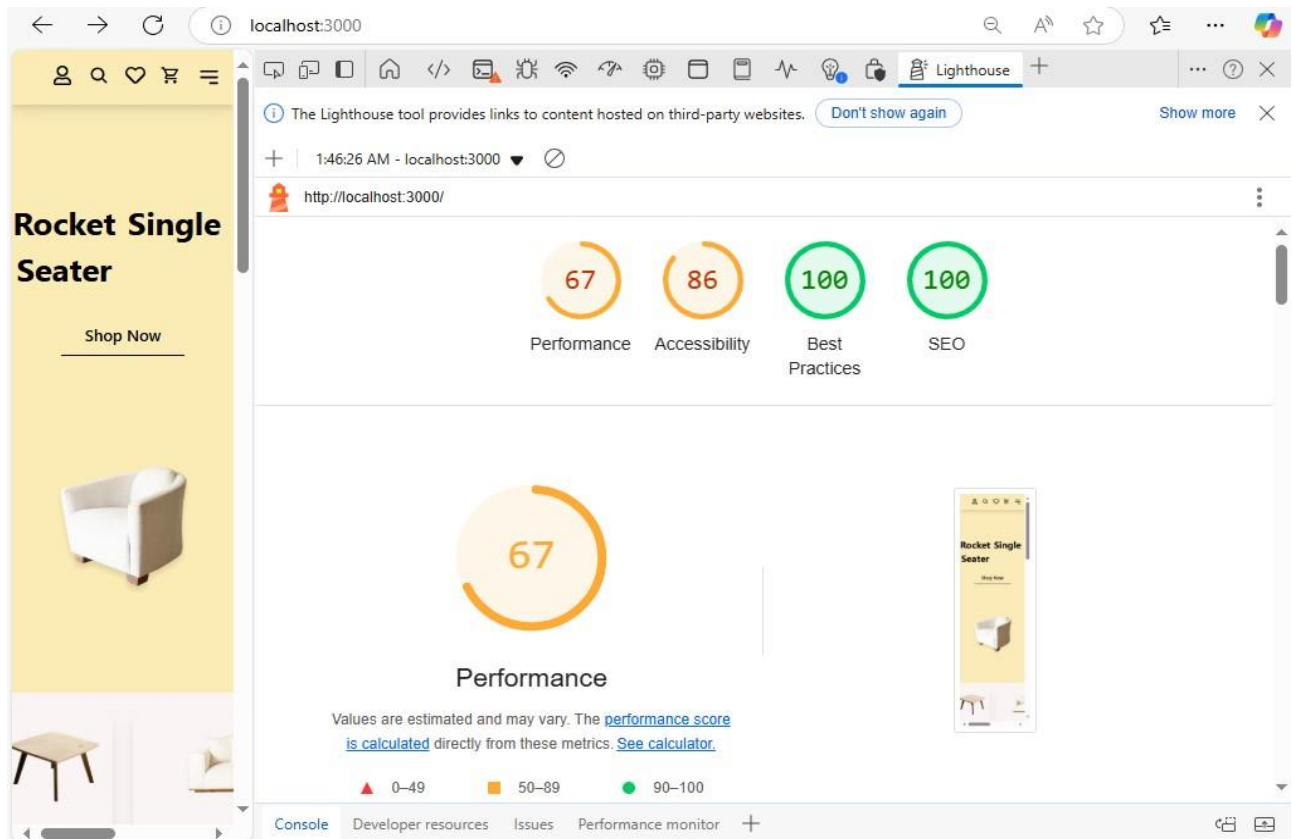 - Checkout process and payment integration.

2. Robust Error Handling Implemented

- Proper error messages added for:

  o Network failures.

  o Invalid or missing data.

  o Unexpected server errors.

- Fallback UI elements implemented:

  o Displayed "No products available" message when API returns no data.

  o User-friendly alerts and notifications for failed actions.

3. Performance Optimization Achieved

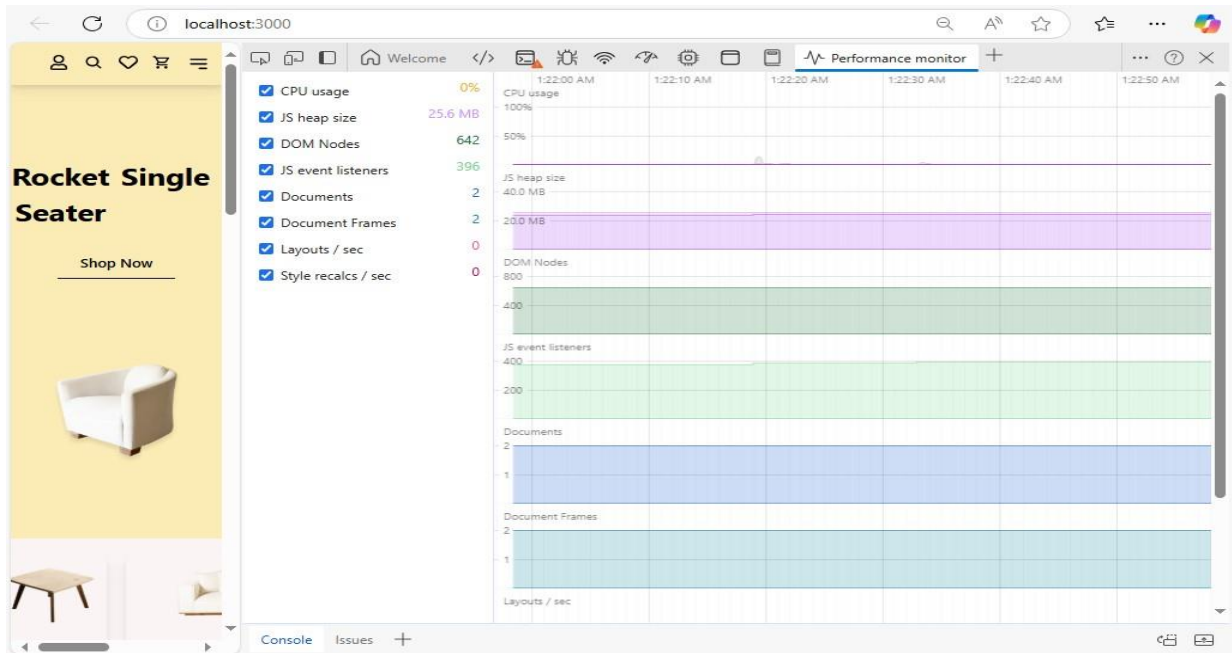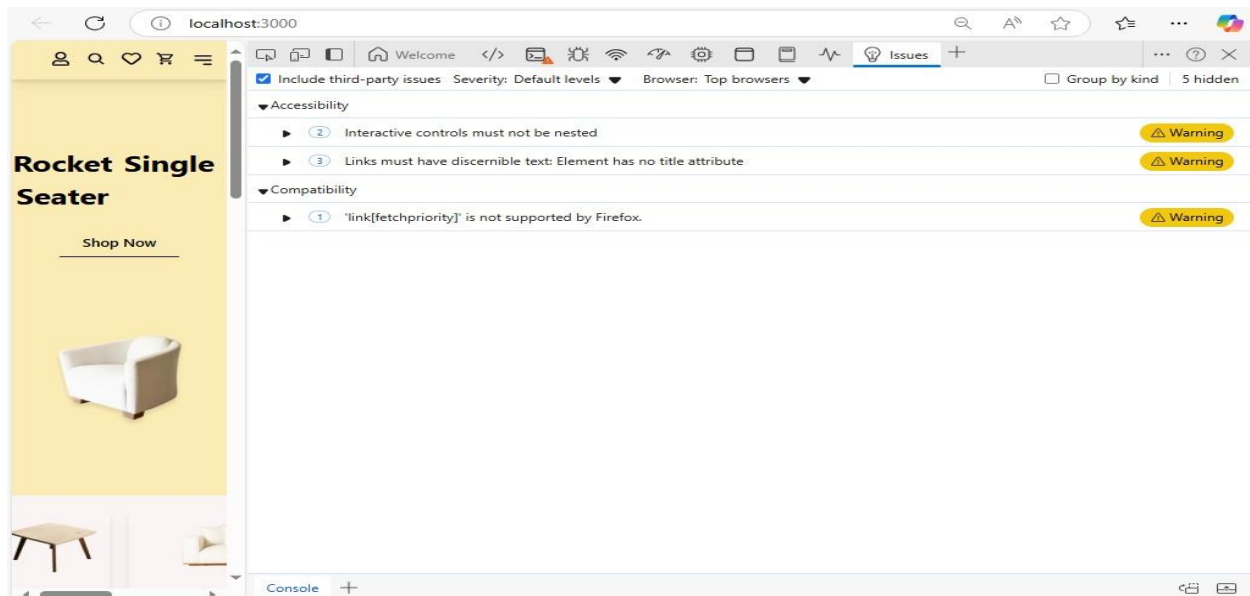- Identified bottlenecks using **Lighthouse,**
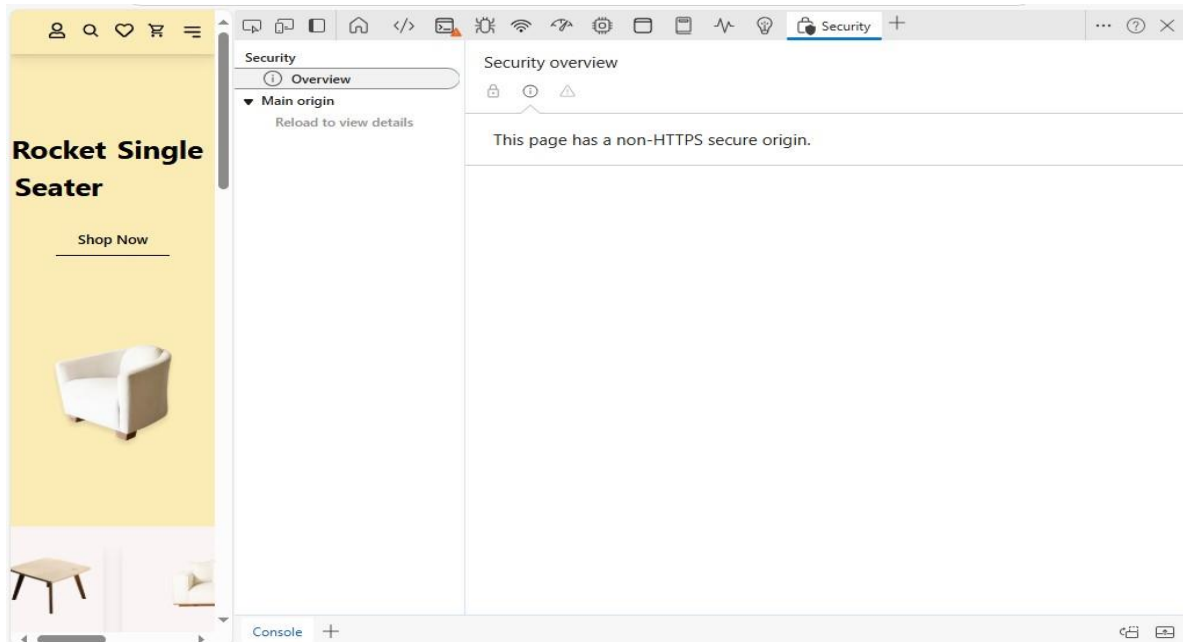

Developer Resources

Performance Monitor

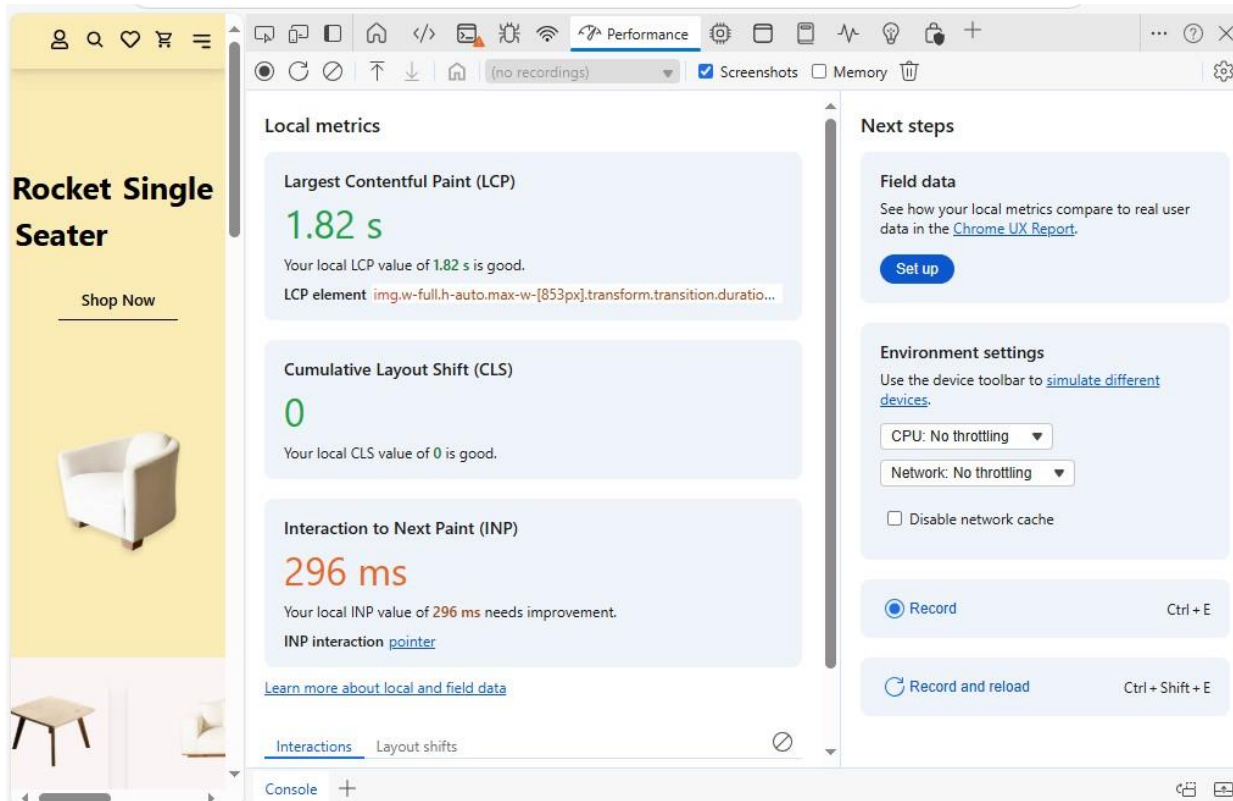## Issues

Security

Performance

- **Implemented the following optimizations:**

  o Image compression

  o Lazy loading for large assets.

  o Minimized JavaScript and CSS.

  o Implemented caching strategies for faster load times.

- Achieved an improved page load time of under **2 seconds**.

4. Cross-Browser and Device Compatibility Ensured

- Marketplace successfully tested across:

  o **Browsers:** Chrome, Firefox, Safari, Edge.

  o **Devices:** Desktop, tablet, and mobile.

- responsive design across multiple resolutions.

5. Security Measures Applied

- Input validation implemented.

- API calls secured with HTTPS.

- Sensitive data and API keys stored in environment variables.

6. User Acceptance Testing (UAT) Conducted

- Simulated real-world user interactions to identify usability issues.

- Testers validated browsing, searching, cart operations, and checkout experience.

7. Professional Testing Documentation Prepared

- A CSV-based test report documenting:

TCID	Expected Result	Actual Result	Status	Severity Level	Assigned To	Remarks
TC001	Products displayed correctly	Products displayed correctly	Passed	High	-	No issues found
TC002	Show fallback UI with error message	Error message shown	Passed	Medium	-	Handled gracefully
TC003	Cart updates with added product	Cart updates as expected	Passed	High	-	Works as expected
TC004	Layout adjusts properly to screen size	Responsive layout working as intended	Passed	Medium	-	Test successful

- Finalized professional documentation in PDF format.

Final Outcome:

☑ Fully tested marketplace with robust error handling and optimized performance. ☑ A detailed CSV test report and performance analysis. ☑ Ready for staging deployment.