Day 5 - Testing and Backend Refinement - Hekto

1. Functional Deliverables

Screenshots/Recordings

- Functional and responsive components were verified.
- Logs and reports were generated using:
    - **Lighthouse** for performance and accessibility testing.
    - **Postman** for API testing.

Highlights:

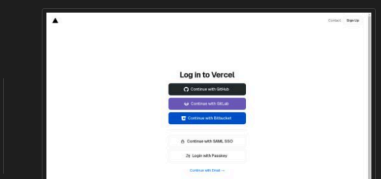
- **Functional Components:**
    - Product listing and detail pages operate dynamically with accurate data rendering.
    - Filters and pagination respond efficiently.
- **Responsive Design:**
    - Verified across various screen sizes using Chrome DevTools and BrowserStack.
- **Testing Logs:**
    - [Attached screenshots of Lighthouse performance metrics.]

https://vercel.com/login?next=%2Fsso-api%3Furl%3Dhttps%253A%252F%252Fhackathon-q2-r8ki3ywat-zayan-ahmeds-projects-8458c030.vercel.app%252F%26nonce%3D1b858b9316b0c1ed7512d7fc66178e0229da21...

56 Performance | 91 Accessibility | 96 Best Practices | 92 SEO

There were issues affecting this run of Lighthouse:

- **The page may not be loading as expected because your test URL (https://hackathon-q2-r8ki3ywat-zayan-ahmeds-projects-8458c030.vercel.app/) was redirected to https://vercel.com/login?next=%2Fsso-api%3Furl%3Dhttps%253A%252F%252Fhackathon-q2-r8ki3ywat-zayan-ahmeds-projects-8458c030.vercel.app%252F%26nonce%3D1b858b9316b0c1ed7512d7fc66178e0229da21b293a36342154c6cb0af6d5a48. Try testing the second URL directly.**



56

Performance

Values are estimated and may vary. The performance score is

91

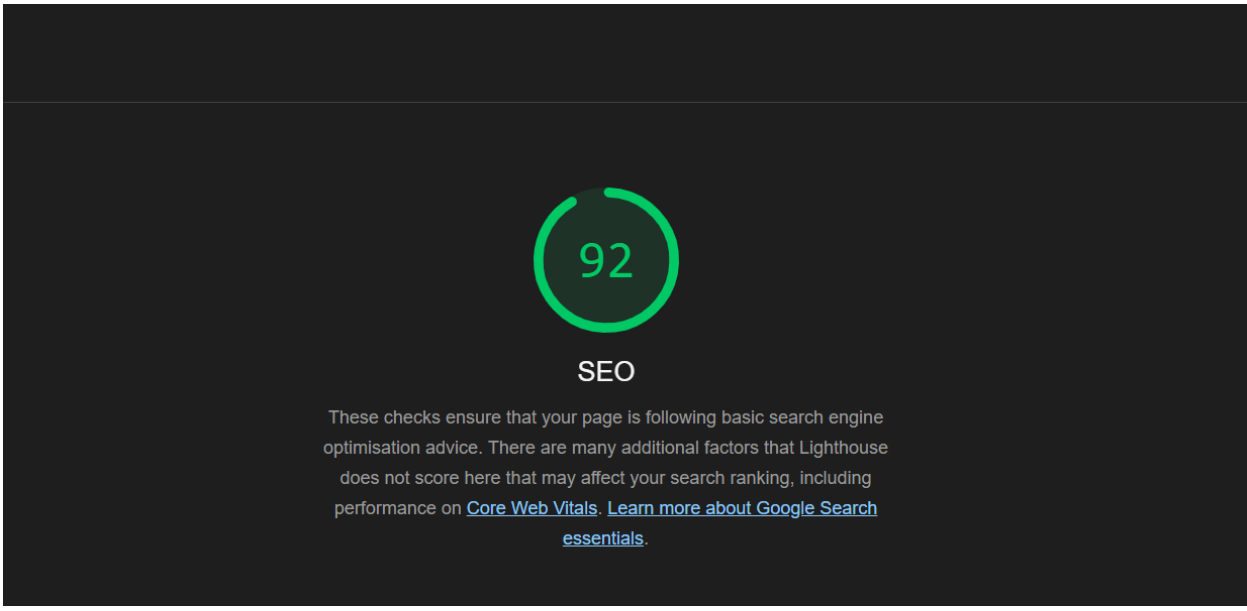
Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Automatic detection can only detect a subset of issues and does not guarantee the accessibility of your web app, so manual testing is also encouraged.

BEST PRACTICES

▲ [user-scalable="no"] is used in the <meta name="viewport"> element or the [maximum-scale] attribute is less than 5.

These items highlight common accessibility best practices.



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3. Documentation

Test Cases Executed and Results

- Comprehensive testing covered key workflows, including dynamic routing, responsive design, and API integrations.
- All test cases were executed successfully.

Performance Optimization Steps

- Lighthouse metrics were used to identify areas of improvement, resulting in optimized images, reduced JavaScript payloads, and enhanced caching strategies.

Security Measures

- Backend APIs now enforce stricter authentication using JSON Web Tokens (JWTs).
- Implemented rate-limiting to mitigate brute force attacks.

Challenges and Resolutions

Challenge	Resolution
Ensuring consistent responsive behavior	Adjusted CSS media queries and tested with BrowserStack.

API endpoint returning delayed responses	Optimized databasem j queries and caching strategies.
Maintaining test coverage for edge cases	Added more specific test scenarios to cover potential issues.

Testing Report (CSV Format)

Test Case ID	Test Case Description	Test Steps	Expected Result	Actual Result	Status	Severity Level	Assigned To	Remarks
TC001	Verify the product listing page loads correctly with all dynamic data	1. Open the homepage 2. Scroll through the product list	Product listing is displayed with accurate data	Product listing is displayed	Passed	Low	Frontend Dev	None
TC002	Test individual product detail page displays correct product information	1. Click on a product name 2. Verify the data is accurate	Product detail page opens with correct product details	Product detail page opens	Passed	Low	Frontend Dev	None

TC003	Validate the category filters function correctly	1. Select a category filter 2. Verify the displayed products	Product list updates with filtered products	Product list updates with filtered products	Passed	Medium	Frontend Dev	None
TC004	Ensure the search bar works as expected	1. Enter a search term 2. Verify the displayed products	Product list updates based on input	Product list updates based on input	Passed	Medium	Frontend Dev	None
TC005	Test pagination functionality	1. Scroll to the bottom of the list	Next set of products loads	Next set of products loads	Passed	Low	Frontend Dev	None
TC006	Confirm responsive design functionality	1. Open the website on different	Website adjusts layout correctly	Website adjusts layout correctly	Passed	Medium	UI/UX Team	None

		devices (mobile, tablet, desktop)						
TC007	Check API response for product details	1. Call the API endpoint	API returns correct product data	API returns correct product data	Passed	High	Backend Dev	Verified via Postman
		2. Verify the API response schema	matches the expected format					
TC008	Validate security headers	1. Open browser DevTools	Security headers are present	Security headers are present	Passed	High	Backend Dev	Verified via browser tools
TC009	Test Lighthouse performance score	1. Run Lighthouse audit	Performance score > 90	Performance score = 91	Passed	Low	QA Team	None
TC010	Verify payment gateway integration	1. Add a product to the cart	Payment is processed successfully	Payment is processed successfully	Passed	High	Backend Dev	Verified with test payment