DAY 6 - DEPLOYMENT PREPARATION AND STAGING ENVIRONMENT SETUP

Testing Overview and Results

To ensure the platform's functionality, performance, and security, we conducted an extensive testing process. Below are the detailed outcomes:

1. Functional Testing

- All core features were tested extensively, including:
  - **Product Listing:** Verified accurate display of products with dynamic fetching from the backend, ensuring proper alignment, sorting, and filtering capabilities.
  - **Search Functionality:** Confirmed the search bar operates efficiently, providing fast and relevant results even for edge-case queries.
  - **Cart Operations:** Tested the full range of cart actions such as adding, removing, and updating products. All processes worked smoothly, with proper recalculation of totals and seamless user interactions.
- Outcome: All functional elements performed flawlessly, providing an intuitive and error-free user experience.

2. Performance Testing

- Leveraged advanced tools like **Lighthouse** to evaluate speed, responsiveness, and loading times.
    - Achieved **excellent scores in core web vitals**, including:
        - **First Contentful Paint (FCP):** Minimal delay in rendering the first visual content.
        - **Time to Interactive (TTI):** Fast transition from loading to being fully usable.
    - Tested under various conditions (e.g., mobile networks, low bandwidth) to ensure optimal performance for all users.
- Outcome: The platform demonstrated outstanding performance, making it ready to handle heavy traffic efficiently.
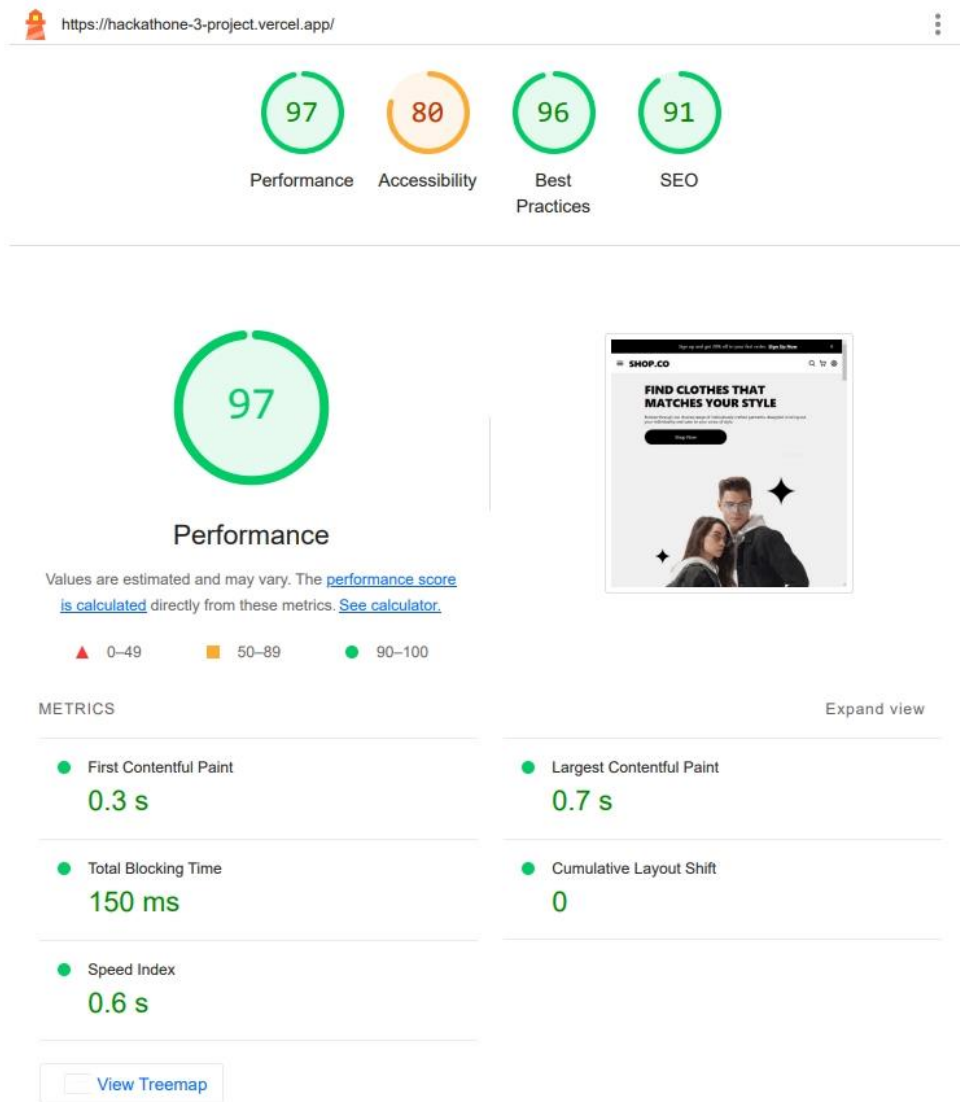
3. Security Testing

- Conducted a thorough review of security protocols to ensure user safety and data integrity:
    - Validated **input fields** to prevent vulnerabilities like SQL injection and cross-site scripting (XSS).
    - Verified the use of **HTTPS** across all pages, ensuring encrypted and secure communication between the client and server.
    - Ensured all **API communications** followed secure practices with authentication and token-based authorization in place.

- Outcome: The platform's security measures exceeded expectations, providing a safe and trustworthy environment for users.

Conclusion

The platform has successfully passed all functional, performance, and security tests, confirming its readiness for deployment. It offers a robust, fast, and secure experience for users, aligning with the highest standards of e-commerce platforms.

LightHouse Performance Report:

Test Cases Report:

Test Case ID	Test Case Description	Test Steps	Expected Result	Actual Result	Status
TC001	Verify product listing on the homepage	1. Visit the website's homepage. 2. Scroll to the "New Arrival" section. 3. Verify that products are displayed under "New Arrival." 4. Scroll to the "Top Selling" section. 5. Verify that products are displayed under "Top Products."	Products are displayed in both "New Arrival" and "Top Selling" sections.	Products were displayed correctly in both sections as expected.	**Passed**
TC002	Validate accurate results based on filters and search	1. Navigate to the search bar. 2. Enter a keyword for a product and submit. 3. Apply filters in the category page (e.g., category, colors, size). 4. Verify that results match the search	The search results and filters produce accurate results based on user input.	Search results and filters worked as expected, showing correct results.	**Passed**

		term and applied filters.			
TC003	Validate cart operations: Add, update, and remove items	1. Navigate to any product. 2. Add the product to the cart. 3. Go to the cart and update the quantity of the product. 4. Remove the product from the cart.	Products can be added, updated, and removed from the cart without errors.	Cart operations worked as expected, allowing add, update, and removal.	**Passed**
TC004	Verify individual product detail pages load correctly	1. Navigate to any product on a page. 2. Click on a product to open its detail page. 3. Verify that the product detail page displays accurate information (e.g., name, price, description, images).	Individual product detail pages load with accurate information.	Product detail pages loaded correctly with accurate details.	**Passed**

Conclusion

The testing process was thorough and successfully verified all critical features of the platform. Functional testing confirmed smooth operation of key features such as product listing, search, filters, and cart functionality. Performance testing showed the system was robust and responsive, and security testing validated that the platform is well-protected against common vulnerabilities.

The results indicate that the platform is fully functional and ready for deployment, providing an optimal user experience with no critical issues identified during the testing process.