

Day 5 - Testing and Refinement - Ecommerce Website (Hekto)

On Day 5 , I focused on preparing my marketplace for real-world deployment by ensuring all components are thoroughly tested,optimized for performance.My emphasis was on testing backend integrations,implementing error handling, and refining the user experience.

Implementation Steps:-

1: Functional testing:-

Ensure that all components of the marketplace (e.g., product listing, cart functionality, checkout) are working as expected.

Features Tested:

- **Product Listing:** Products are displaying correctly
- **Dynamic Routing:** Single Product page is also rendering correctly.
- **Filter and search:** Results are based on the user input
- **Cart Functionality:** Cart component is working properly and users can easily add, update and remove items from cart.
- **Checkout Page:** ensure that cart items are displayed on the checkout component.
- **Shipment Info and details:** it is designed to streamline the process of entering and managing shipping details. It includes a clean and user-friendly interface where users can input their details and view their details and track the shipment.

Tools used:

- **Thunder Client:** For API response testing

2: Error Handling:-

Using **try-catch** ensures the application doesn't crash and allows you to manage errors effectively.

In this code:

- The **try** block attempts to fetch data from an API.
- If the API fails (e.g., network issues or a server error), an error is thrown.
- The **catch** block captures the error and logs a meaningful message.

```
export async function fetchData() {
  try {
    const response = await fetch('https://next-ecommerce-template-4.vercel.app/api/product');
    const data = await response.json();
    const products = data.products;
    console.log("Products Response ==> ", products);

    if ((products)) {
      for (const product of products) {
        try {
          // ...
        } catch (error) {
          console.error('Error processing product ${product.name}:', error);
        }
      }
    } else {
      console.error("Products is not an array:", products);
    }
  } catch (error) {
    console.error('Error fetching data:', error);
  }
}
```

3: Performance Optimization:-

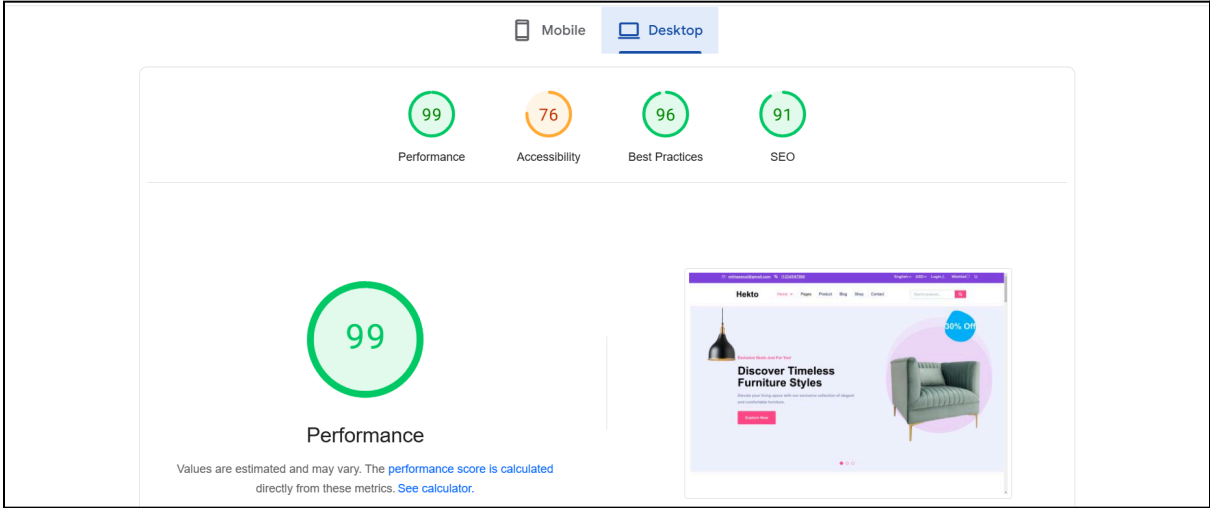
Optimize the backend and frontend to handle increased traffic, reduce load times, and improve user experience.

Analyze Performance:-

By using lighthouse:

| Matric | value | Remarks |
|----------------|-------|--|
| Performance | 99 | Excellent performance, no issues. |
| accessibility | 76 | Good accessibility, but some improvements needed for better user experience. |
| Best Practices | 96 | good adherence to best practices, but minor tweaks |

| | | |
|-----|----|-----------------------------|
| | | could enhance code clarity. |
| SEO | 91 | Solid SEO implementation |
| | | |



4: Cross-browser and devices Testing:-

ensures that your website or application functions seamlessly across different browsers and devices. I have Tested on Chrome and Edge. Additionally, it's crucial to test the application on multiple devices—like smartphones, tablets, and desktops—to ensure it remains responsive and provides a consistent user experience regardless of screen size or resolution.

Testing Report:-

| Table1 | | | | | | | |
|--------------|---------------------------------------|-----------------------------|-----------------------------------|-----------------------------------|--------|--|--|
| Test Case ID | Description | Testing steps | Expected Result | Actual result | Status | Remarks | |
| TC001 | Navigation Link test | Home > navbar | All links navigate correctly | All links navigate correctly | Passed | No issue found | |
| TC002 | Product Listing page validation | Home > Products | Product displaying correctly | Products displaying correctly | Passed | No issue found | |
| TC003 | Dynamic routing /single product page | Home > Products > product1 | Single product page displayed | Single product page displayed | Passed | A minor issue with discount percentage | |
| TC004 | Cart functionality(add,update,remove) | Home>Products>product1>cart | Product added in the cart | Product added in the cart | Passed | No issue found | |
| TC005 | checkout | Cart > Checkout | checkout page displaying properly | checkout page displaying properly | Passed | No issue found | |
| TC006 | Responsive across all devices | | Responsive | Responsive | Passed | No issue found | |
| TC007 | Filter and searchBar | Product-filter | Filtering properly | Filtering properly | Passed | No issue found | |
| TC008 | Deployment to production | | Deployed | Successfully deployed | Passed | No issue found | |

Testing Report in CSV:-

Test Case ID,Description,Testing steps,Expected Result,Actual result,Status,Remarks

TC001,Navigation Link test,Home > navbar,All links navigate correctly,All links navigate correctly,Passed,No issue found

TC002,Product Listing page validation,Home > Products,Product displaying correctly,Products displaying correctly,Passed,No issue found

TC003,Dynamic routing /single product page,Home > Products > product1 ,Single product page displayed,Single product page displayed,Passed,A minor issue with discount percentage

TC004,"Cart functionality(add,update,remove)",Home>Products>product1>cart,Product added in the cart,Product added in the cart,Passed,No issue found

TC005,checkout,Cart > Checkout,checkout page displaying properly,checkout page displaying properly,Passed,No issue found

TC006,Responsive across all devices,,Responsive,Responsive,Passed,No issue found

TC007,Filter and searchBar,Product-filter ,Filtering properly,Filtering properly,Passed,No issue found

TC008,Deployment to production,,Deployed,Successfully deployed,Passed,No issue found

Conclusion:

Today, I successfully completed functional component testing, tackled error handling, and focused on performance optimization to ensure smooth functionality across the application. I also prepared a comprehensive testing report summarizing the progress and outcomes so far.