

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

Objective:

On Day 5, the goal was to ensure the marketplace's core functionality was thoroughly tested, optimized for performance, and cross-browser/device compatible, with a focus on **User Acceptance Testing (UAT)**, **Cross-Browser and Device Testing**, and **Functional Testing**. These tests ensure a seamless user experience and proper integration of core components like product listing, cart operations, and dynamic routing.

Key Areas of Focus:

1. Functional Testing:

Test Core Features:

- **Product Listing:**
 - Navigated to the homepage to ensure all products were listed correctly. However, **images for products are not rendering correctly in the product card**. Instead, the default image is displayed. This is being investigated.
 - When accessing the **dynamic route** for individual product details, the **original images from Sanity are rendered correctly**.
- **Filters and Search:**
 - Tested the search functionality by entering specific keywords and verified the search results matched the expected products.
 - Tested the filters (e.g., category, price range) to ensure products updated accordingly based on user input.
- **Cart Operations:**
 - Simulated adding products to the cart, updating item quantities, and removing products from the cart. Ensured that the cart UI reflected the correct changes.
- **Dynamic Routing:**

- Verified that when clicking on a product, the user was directed to the correct dynamic product detail page.
- Confirmed that the URL changes accordingly to reflect the product's unique ID.

Testing Tools:

- **Postman:** Used to validate API responses, checking if data for products and categories was returned correctly.
- **React Testing Library:** Used to test components, ensuring they render as expected and handle user actions (e.g., clicking, form submissions).
- **Cypress:** Performed end-to-end testing to validate entire workflows, such as browsing products, adding items to the cart, and checking out.

How to Perform Functional Testing:

- Simulated user actions like clicking buttons, filling out search forms, and navigating through the product pages.
- Compared the **expected** outcomes (e.g., the correct products appear) with the **actual** results observed during testing.

2. User Acceptance Testing (UAT):

Simulate Real-World Usage:

- **Browsing Products:** Simulated a user browsing products, verifying that the product list loads correctly, and filtering/search options work as expected.
- **Adding Items to Cart:** Added multiple items to the cart, ensuring the cart displayed the correct item count and total cost.
- **Product Details:** Clicked on products to verify that detailed information loads correctly and that navigation to individual product pages works seamlessly.
- **Checkout Process:** Simulated a complete checkout process, ensuring that users could easily complete transactions without issues.

Feedback:

- Gather feedback from family members to test the usability and performance of the marketplace. Based on feedback, minor improvements were made, such as optimizing the loading state of the product list for a smoother experience.
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3. Cross-Browser and Device Testing:

Cross-Browser Testing:

- Ensured that the marketplace worked correctly across popular browsers:
 - **Google Chrome**
 - **Mozilla Firefox**
 - **Safari**
 - **Microsoft Edge**
- Verified that all features, including dynamic data fetching, product listing, and cart operations, performed consistently across these browsers.

Device Testing:

- **BrowserStack:** Used to simulate the marketplace on multiple devices, including:
 - **Mobile Devices:** Testing on popular models to ensure the mobile view is responsive and all interactions work as expected.
 - **Tablets:** Verified that the tablet view was properly optimized and functional.
- **Manual Testing:**
 - Performed manual testing on a physical device (smartphone and tablet) to ensure touch interactions were smooth and that the layout was responsive.

Responsive Design:

- Verified that the design was responsive across varying screen sizes, ensuring that the layout adjusts fluidly for desktops, tablets, and mobile screens.

Documentation Updates:

Summary of Key Actions:

- **Functional Testing:** All core functionalities—product listing, search, cart operations, and dynamic routing—were tested and validated. The issue with product images not rendering on the product card (default image shown instead) is being addressed.
- **User Acceptance Testing (UAT):** The platform was tested through real-world usage scenarios, including browsing, adding items to the cart, and completing a checkout.
- **Cross-Browser and Device Testing:** Testing was conducted across multiple browsers (Chrome, Firefox, Safari, Edge) and devices (mobile, tablet, desktop) to ensure consistency and responsiveness.
- **Feedback:** Collected feedback from family members to ensure that the marketplace is user-friendly and performs well on all platforms.