Hackathone Day:5 Testing and Error Handling For Chair E-Commerce:

The focus of Day 5 is to ensure the Chair E-commerce Marketplace is ready for deployment by thoroughly testing its functionalities, optimizing performance, and documenting results specific to an online platform for chairs. Chairs have unique attributes such as dimensions, materials, and customizations, which require tailored testing strategies to ensure reliability and an enhanced user experience.

OBjECtive:

To validate, optimize, and document the core functionalities of the Chair E-commerce Marketplace, ensuring a seamless user experience for customers purchasing chairs.

KEY Area For Chair-specific Testing:

Comprehensive Testing of Core Functionalities:

Validate chair-specific features like material filters, color options, and size dimensions.

Verify customizations (e.g., fabric, armrests) function correctly and display dynamically.

Error Handling for Chair Inventory:

Handle errors for low-stock chairs gracefully (e.g., display "Only 2 left in stock").

Provide fallback UI when customizations or out-of-stock chairs are unavailable.

Performance Optimization for Chair Listings:

Optimize performance for high-resolution chair images with next-gen formats.

Reduce load times for detailed chair pages that feature 3D views or AR preview options.

Cross-Browser and Device Compatibility:

Ensure chair listings and customizations render consistently across devices and browsers.

Test chair preview and zoom features on mobile and desktop.

Documentation of Findings:

Create detailed test cases for chair-specific functionalities like customization workflows.

Include performance metrics, accessibility validations, and cross-browser testing results.

Key Learnings for Chair Marketplace:

FUnctional Testing:

Validate chair-specific features such as navigating between chair categories, viewing detailed dimensions, and testing customization workflows.

Performance Enhancements:

Use Google Lighthouse to improve chair page load times.

Implement lazy loading for high-resolution chair images to ensure smooth scrolling.

Achieve a 100% accessibility score by ensuring keyboard navigation works across all chair customization forms.

SEO Optimization:

Ensure chair descriptions and metadata are tailored for search queries like "ergonomic office chairs" or "wooden dining chairs."

Improve SEO scores with proper alt tags for chair images and structured data for rich snippets.

Cross-Device Testing:

Test chair pages on devices with smaller screens to ensure AR or 3D view integrations work effectively.

Error Handling:

Implement "Notify Me" options for chairs out of stock and provide meaningful error messages for unavailable customizations.

Implementation Plan For Chair-specific Testing:

1:Functional Testing:

Navigation Links: Ensure chair categories like "Office Chairs" and "Dining Chairs" navigate correctly.

Product Listing: Verify accurate rendering of chair images, dimensions, and pricing details.

Customization Features: Test dynamic updates for chair material, size, and color options.

2:Error Handling:

Use try-catch blocks for API calls to ensure smooth fallback for unavailable chair options.

Log chair inventory errors for debugging and notify users when customizations are **unavailable.**

3:Optimization:

Improve Performance Metrics:

Reduce initial server response time for chair detail pages.

Optimize chair images for faster rendering.

Implement lazy loading for 360° chair previews.

Enhance Accessibility Features:

Provide screen-reader-compatible descriptions of chair materials, dimensions, and colors.

4:Cross-Browser and Device Testing:

Test chair listings and detail pages on Chrome, Firefox, Safari, and Edge.

Use tools like BrowserStack to simulate chair customizations and cart functionality on mobile, tablet, and desktop.

5:Security Testing:

Sanitize user input for chair search and filters to prevent XSS or SQL injection.

Use HTTPS for secure transactions during chair purchases.

Documentation for Chair Testing:

Test Cases and Results:

Example:

Test Case ID Description Expected Result Actual Result Status Severity Remarks

TC001 Test chair category navigation Links navigate correctly Links function correctly Pass Low None

TC002 Verify customization options Options update in real-time Options update accurately Pass Medium None

Performance Optimization:

Reduce CLS for dynamic chair pages by improving layout stability.

Optimize chair image formats to reduce page load times.

Security Measures:

Document all vulnerabilities identified and resolved, such as sanitizing inputs for chair filters.

Conclusion:

Day 5 ensured the Chair E-commerce Marketplace is reliable, optimized, and user-friendly. Testing chair-specific features, optimizing performance for rich visuals, and enhancing accessibility provided a robust platform ready for deployment. Future recommendations include regular security audits, AI-driven personalization for chair recommendations, and further performance tuning for 3D or AR integrations.