# **Day 5 - Testing and Backend Refinement - Nike Shoe Marketplace**

## **Functional Testing**

### **Test Cases Executed**

| **Test Case ID** | **Description** | **Steps** | **Expected Result** | **Actual Result** | **Status** | **Severity** |
| --- | --- | --- | --- | --- | --- | --- |
| TC001 | Product Listing Page Load | Navigate to homepage | Products display | Products loaded | Passed | High |
| TC002 | Add to Cart Functionality | Click "Add to Cart" on a product | Item appears in cart | Cart updated | Passed | High |
| TC003 | API Error Handling | Simulate API failure | Show error message | Error UI displayed | Passed | Medium |
| TC004 | Mobile Responsiveness | Resize to mobile view | Layout adjusts correctly | Responsive design works | Passed | Medium |

## **Error Handling**

Implementation Example:

// Fetch products with error handling

async function fetchProducts() {

try {

const response = await fetch(`${process.env.NEXT\_PUBLIC\_API\_URL}/products`);

if (!response.ok) throw new Error("Failed to fetch");

return await response.json();

} catch (error) {

console.error("API Error:", error);

return { error: "Products unavailable. Try again later." };

}

}

## **Performance Optimization**

Lighthouse Results:

| **Metric** | **Before Optimization** | **After Optimization** |
| --- | --- | --- |
| Performance | 68 | 92 |
| Accessibility | 85 | 95 |
| Best Practices | 79 | 100 |

Actions Taken:

* Compressed product images using TinyPNG.
* Implemented lazy loading for images.
* Reduced unused CSS with PurgeCSS.

## **Cross-Browser & Device Testing**

Browsers Tested:

* Chrome ✅
* Firefox ✅

Devices Tested:

* iPhone 15 Pro (Mobile) ✅
* iPad Pro (Tablet) ✅
* Desktop (1440p) ✅

## **Security Testing**

Key Measures:

* Stored API keys in .env files.
* Used HTTPS for all API calls.

## **User Acceptance Testing (UAT)**

Feedback from Peers:

1. "Checkout flow is intuitive, but the payment button needs better contrast."
2. "filters could be more prominent."

Resolutions:

* Updated payment button color for visibility.
* Added borders to filter options.