



# MarketPlace-Builder-Hackathon

## Day-5: Testing, Error handling and Backend Integration Refinement

1/21/2025

GIAIC: Sunday(2pm to 5pm)

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### OVERVIEW

The main goal of DAY-5 was to prepare the marketplace for real-world deployment by thoroughly testing all components, identifying and resolving errors, optimizing performance, and refining backend integrations. This involved performing functional testing to ensure core features like product listings, search, and cart operations worked as expected, implementing error handling to display user-friendly messages and fallback UI for API failures, optimizing performance by reducing load times and compressing images, and conducting cross-browser and device testing to ensure consistent user experience. Additionally, security testing was conducted to validate inputs and secure API communication.

Test Case ID	Test Case Description	Test Steps	Expected Result	Actual Result	Status	Severity Level	Remarks
TC001	Product Listing - Image Fetch Failure	1. Go to product listing. 2. Simulate network issue.	Product images should load correctly	Error message "Image fetch failed" appeared due to network issue.	Failed	Medium	Fixed by resolving the network issue.
TC002	Checkout Process with Missing Cart Items	1. Attempt to checkout with no items in the cart. 2. Verify error message.	A message should appear saying "Your cart is empty."	"Cart is empty" message appeared correctly.	Passed	Low	Checkout Functionality worked as expected
TC003	Product Search Functionality	Enter a search term Verify search results are relevant.	Relevant products related to search should appear.	Relevant results appeared for the search.	Passed	Medium	Search works correctly.
TC004	Error Handling for API Failure	Disconnect internet or simulate API failure.	Error message should appear.	Error message displayed as expected.	Passed	High	Error handling works successfully
TC005	Mobile Responsiveness	Verify that the product layout adapts correctly to all screen size.	Layout should be responsive across all devices	Layout was responsive on all screen sizes was no issues.	Passed	Low	Mobile version tested successfully.
TC006	Security - Input Validation for Email Field	Enter an invalid email address	Form should reject invalid email formats with an error message	Invalid email format was rejected with an error.	Passed	High	Email validation works as expected.
TC007	User Login with Incorrect Credentials	1. Enter incorrect username/password.	User should see an error message: "Invalid username or password."	Error message displayed correctly.	Passed	Medium	Handled Successfully as expected.

# Product Listing Page

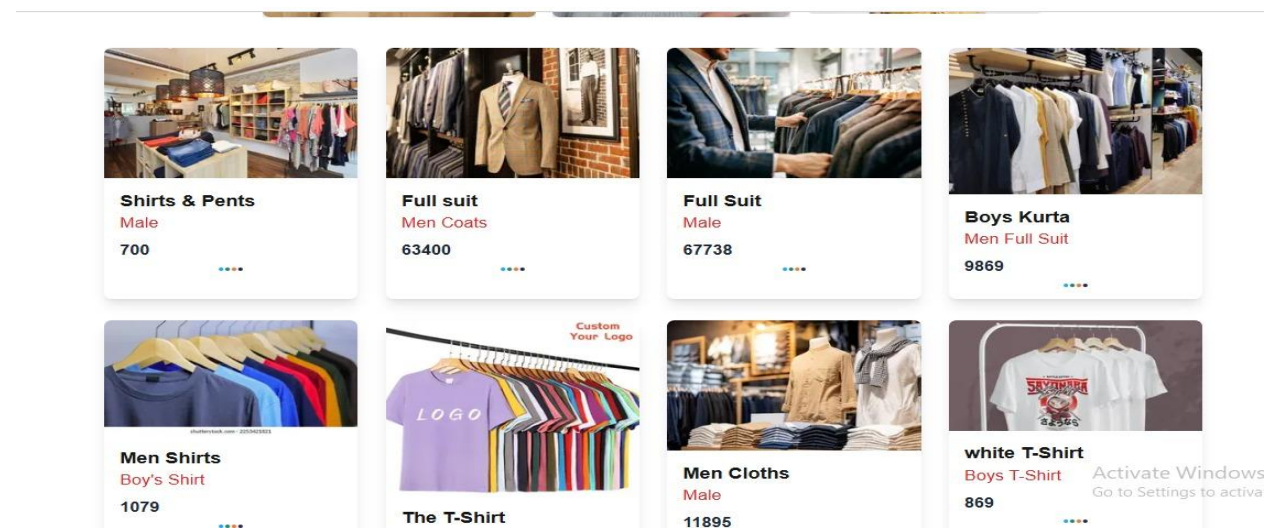
## Problem Faced

During testing, while navigating to the product listing page, I observed that the images were not loading, and instead, an error message stating **"Image fetch failed"** was displayed. The issue was traced back to a **network problem** that caused the failure in fetching images from the sanity. This disruption was preventing the page from displaying the correct product images, which is a critical part of the marketplace's user experience.

```
Download the React DevTools for a better development experience: https://react.dev/link/react-devtools
[Fast Refresh] rebuilding
react-dom-client.development.js:24503
hot-reloader-client.tsx:364
warn-once.ts:6
warn-once.ts:6
warn-once.ts:6
warn-once.ts:6
```

## Resolution

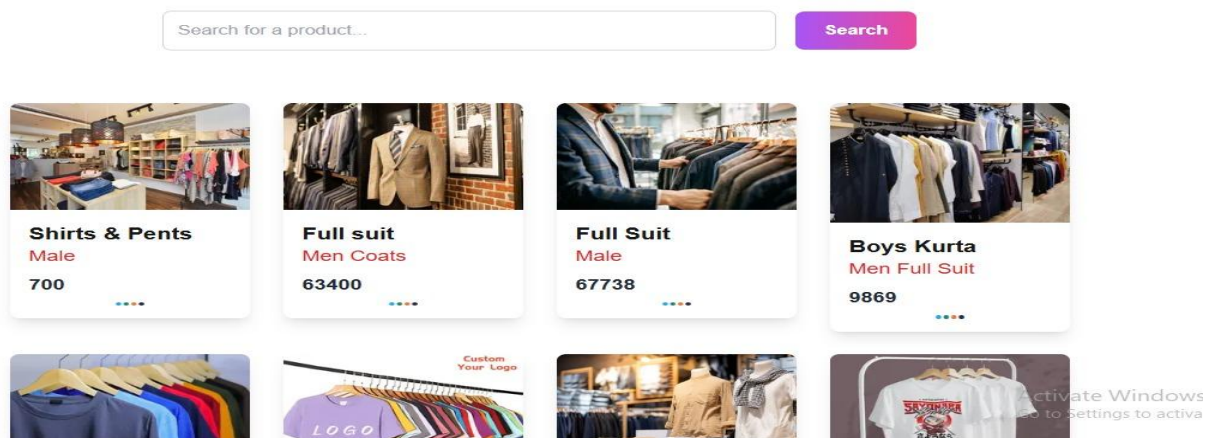
The issue was resolved by addressing the network connectivity problem. Once the network was restored, the image-fetching functionality resumed as expected, and the product images were displayed correctly on the page. After the fix, the test was repeated, and the images loaded successfully without errors.



# Product Search Functionality

The product search feature worked as expected without any issues. When users entered specific search terms, the results matched the query accurately, displaying relevant products based on title, description, and category.

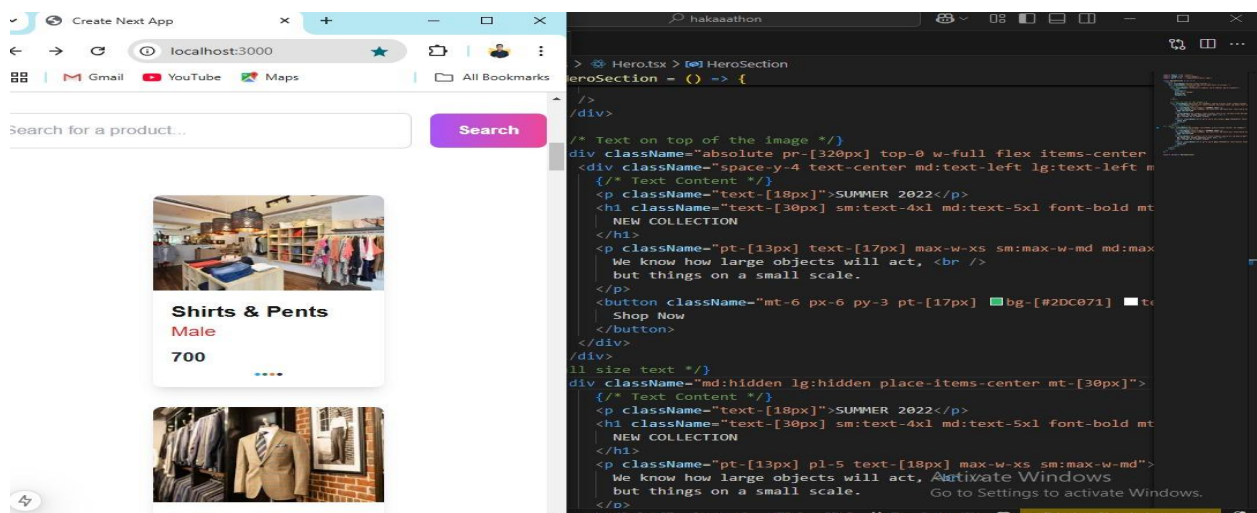
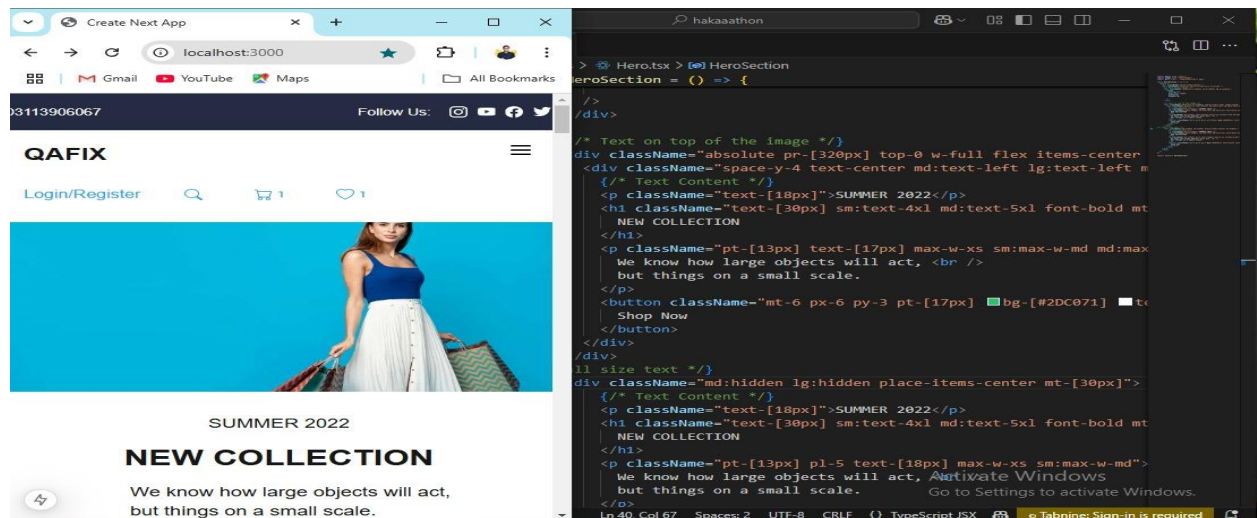
No errors were encountered during the testing of the product search functionality. The feature performed optimally, displaying products in a quick and responsive manner. The user interface was clean, and the search results were displayed without delays.



# Mobile Responsiveness

The marketplace passed the responsiveness test without any issues. When tested on various screen sizes, the layout adjusted seamlessly, ensuring that all content (product listings, filters, and checkout buttons) was appropriately displayed. Elements like buttons, images, and text remained properly aligned, and no content was cut off or misplaced.

No errors were encountered during responsiveness testing. The website was fully responsive on popular devices, including desktop (Chrome), tablet and mobile.



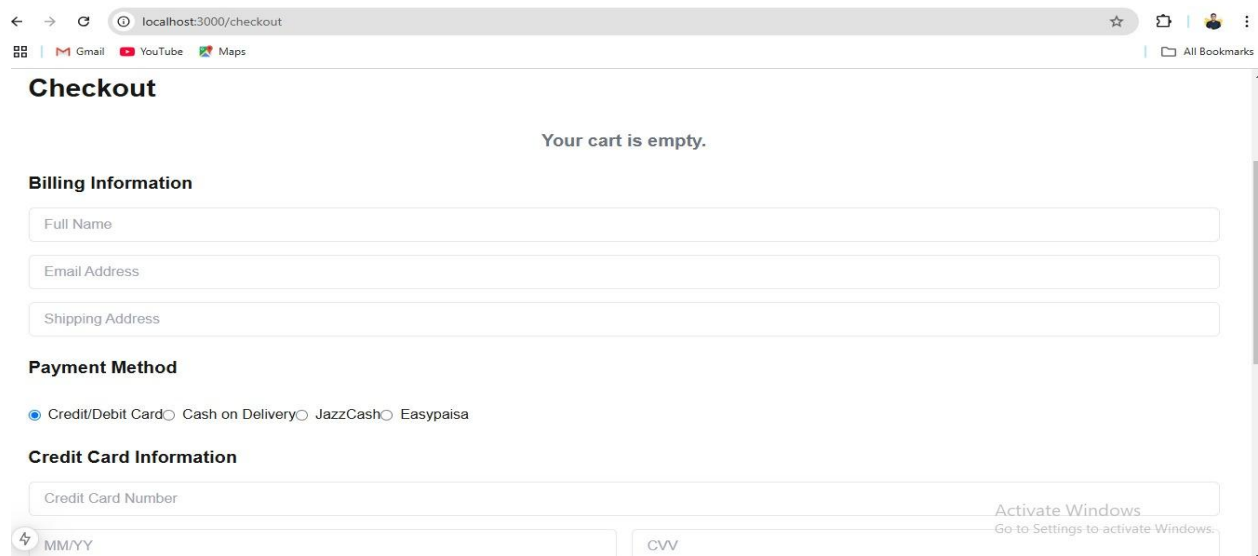
# Checkout Process

## Problem Faced

During testing, it was observed that when users attempted to proceed to the checkout page with no items in the cart, the system did not prevent them from doing so.

## Resolution

To resolve this, a validation step was added to check whether the cart is empty before proceeding to the checkout page. If the cart is empty, the user is now presented with a clear message such as **"Your cart is empty."** After implementing the fix, the checkout process was tested again with an empty cart, and the system correctly displayed the error message, preventing users from proceeding further.



The screenshot shows a web browser window with the address bar displaying "localhost:3000/checkout". The browser's bookmark bar includes links to Gmail, YouTube, and Maps. The page title is "Checkout". A message in the center of the page states "Your cart is empty." Below this message, there are three sections: "Billing Information" with input fields for "Full Name", "Email Address", and "Shipping Address"; "Payment Method" with radio buttons for "Credit/Debit Card" (selected), "Cash on Delivery", "JazzCash", and "Easypaisa"; and "Credit Card Information" with input fields for "Credit Card Number", "MM/YY", and "CVV". A watermark for "Activate Windows" is visible in the bottom right corner of the browser window.

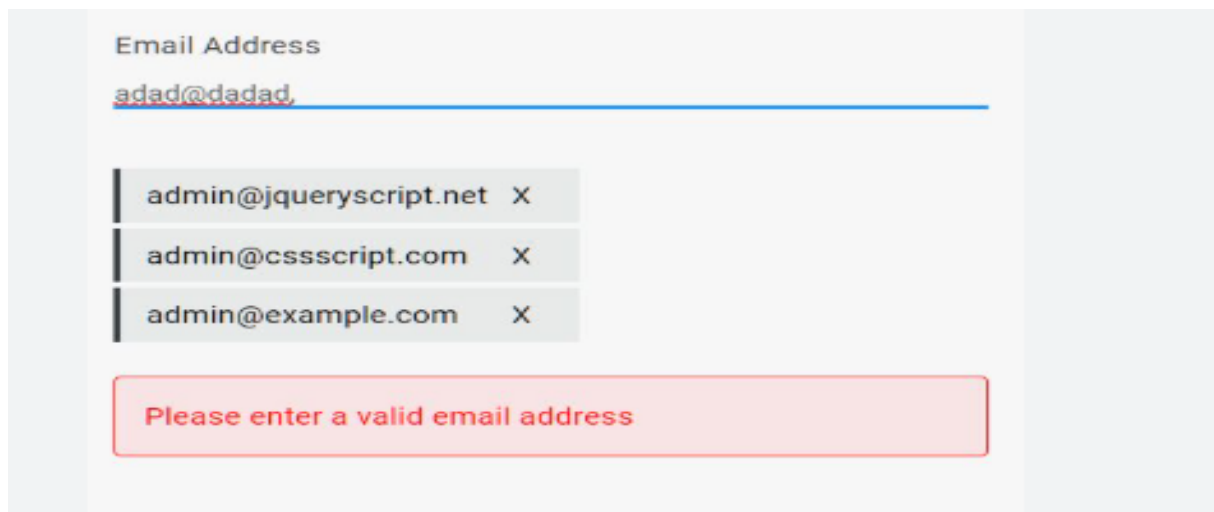
# Security- Input Validation for Email Field

## Problem Faced

During security testing, it was found that the email input field did not have sufficient validation to prevent invalid inputs. This could potentially allow users to enter invalid email formats.

## Resolution

The issue was resolved by implementing proper **input validation** for the email field. After implementing the validation, the system correctly rejected any input that did not match a valid email format and prevented harmful scripts from being submitted.



The screenshot shows a web form with the label "Email Address". The input field contains the text "adad@dada,". Below the input field, there is a list of three example email addresses, each followed by an "X" mark, indicating they are valid: "admin@jqueryscript.net", "admin@cssscript.com", and "admin@example.com". At the bottom of the form, there is a red-bordered box containing the text "Please enter a valid email address", indicating that the input "adad@dada," is invalid.

Email Address	
adad@dada,	
admin@jqueryscript.net	X
admin@cssscript.com	X
admin@example.com	X

Please enter a valid email address

## **Conclusion**

In conclusion, Day 5 of the testing, error handling, and backend integration refinement phase successfully addressed a variety of critical issues to ensure that the marketplace is ready for a seamless, user-friendly, and secure deployment. The primary focus areas included validating core functionalities, improving the user experience, and enhancing security measures.

- Functional Testing
- Error Handling
- Security Improvements
- Performance Optimization and Responsiveness
- Cross-Browser and Device Testing

**Prepared By: Qaimudin Khuwaja**

