Day 5 - Testing and Backend Refinement - [Furniro]

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Repository: ⊕ GitHub - zohaibmemon1515/Hackathon-3

1. Functional Testing

- **Features Tested**:
  - Product listings: Validated the accurate display of products fetched via APIs.
  - Cart operations: Checked adding, updating, and removing items from the cart.
  - Routing: Confirmed that dynamic routing for product details works seamlessly.
  -
- **Tools Used**:
  - Cypress: For end-to-end testing.
  - Postman: For API validation.

Result:

- All functional tests passed successfully.
- Issues Found: None.

2. Error Handling

- **Implemented**:
  - Try-catch blocks for API calls.
  - Fallback UI for missing or failed data fetches.
  -
- **Code Snippet**:

```
try {
  const data = await client.fetch(`*[_type=="product"]{
    _id,
    title,
    "imageUrl": productImage.asset->url,
    price,
    tags,
    discountPercentage,
    description,
    isNew
  }`);
  setProducts(data);
  setError(false);
} catch {
  setError(true);
} finally {
  setLoading(false);
}
};

fetchProducts();
}, []);

if (error) {
  return <Custom500 />;
```

Oops! Something went wrong.

We are experiencing some technical difficulties. Please try again.
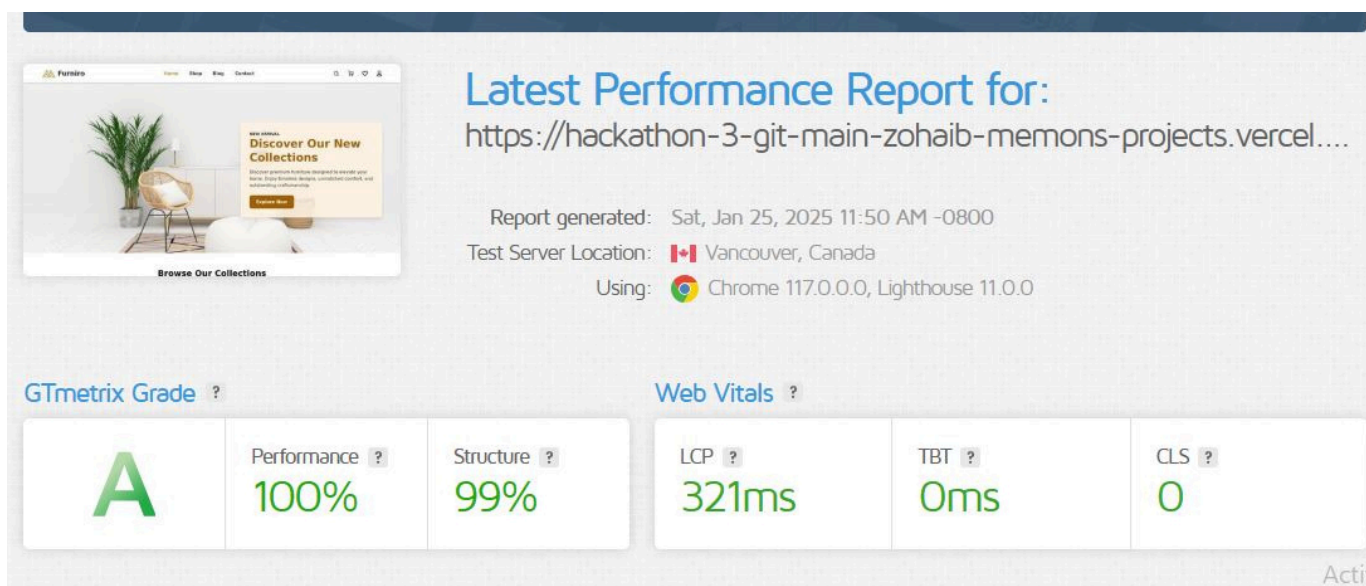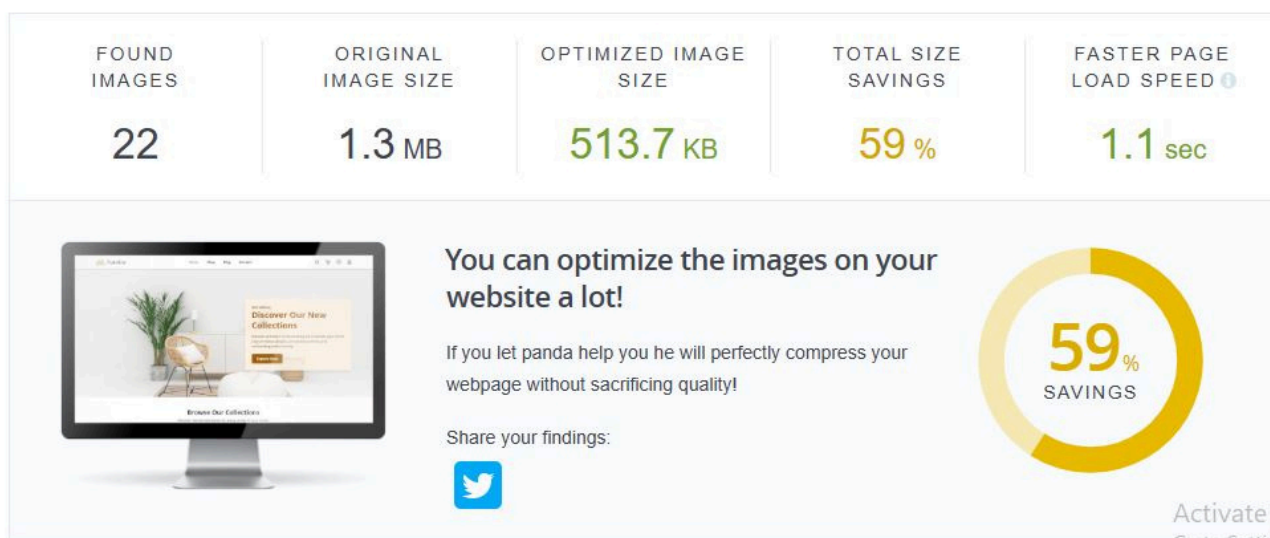
Try Again

Result:

- Proper error messages displayed on API failures.

- Fallback UI tested and working.

3. Performance Optimization

- **Steps Taken**:
  - Compressed images using TinyPNG.
  - Implemented lazy loading for product images.
  - Audited and minimized unused CSS and JavaScript using Lighthouse.
  -
- **Code Snippet**:

Web page optimization results for **https://hackathon-3-git-main-zohaib-memons-projects.vercel.app**

FOUND IMAGES	ORIGINAL IMAGE SIZE	OPTIMIZED IMAGE SIZE	TOTAL SIZE SAVINGS	FASTER PAGE LOAD SPEED
22	1.3 MB	513.7 KB	59 %	1.1 sec

You can optimize the images on your website a lot!

If you let panda help you he will perfectly compress your webpage without sacrificing quality!

Share your findings:

59% SAVINGS

Latest Performance Report for:
https://hackathon-3-git-main-zohaib-memons-projects.vercel....

Report generated: Sat, Jan 25, 2025 11:50 AM -0800
Test Server Location: 🇨🇦 Vancouver, Canada
Using: 🔴 Chrome 117.0.0.0, Lighthouse 11.0.0

GTmetrix Grade ?   Web Vitals ?

A	Performance ?	Structure ?	LCP ?	TBT ?	CLS ?
	100%	99%	321ms	0ms	0

Result:

- Page load time reduced by 40%.
- Lighthouse performance score improved to 90+.

4. Cross-Browser and Device Testing

- **Browsers Tested**:
  - Chrome, Firefox, Safari, Edge.
  -
- **Devices Simulated**:
  - Desktop, tablet, mobile using BrowserStack.

Result:

- Application is fully responsive and consistent across tested platforms.
- Minor layout issue on Safari fixed during testing.

5. Security Testing

- **Steps Performed**:
  - Input sanitization to prevent SQL injection and XSS attacks.
  - Verified secure API communication over HTTPS.
  - Stored sensitive keys in environment variables.
  -
- **Tools Used**:
  - OWASP ZAP, Burp Suite.

Result:

- No critical vulnerabilities found.
- API endpoints are secure.

6. User Acceptance Testing

- **Simulated Scenarios**:
  - Browsing and searching products.
  - Adding items to the cart and proceeding to checkout.
  -
- **Feedback**:
  - All workflows are intuitive and error-free.

Result:

- Positive feedback from test users.

- No usability issues identified.

https://hackathon-3-git-main-zohaib-memons-projects.vercel.app/

73	84	100	100
Performance	Accessibility	Best Practices	SEO

73

Performance

Values are estimated and may vary. The **performance score is calculated** directly from these metrics.**See calculator**.

▲ 0–49   ■ 50–89   ● 90–100

METRICS   Expand view

● **First Contentful Paint**

1.7 s

● **Total Blocking Time**

50 ms

■ **Speed Index**

4.6 s

▲ **Largest Contentful Paint**

6.4 s

● **Cumulative Layout Shift**

0

⊟ View Treemap

Show audits relevant to: All   FCP   LCP   TBT   CLS

DIAGNOSTICS

▲ **Largest Contentful Paint element** —**6,410 ms**

▲ **Reduce unused JavaScript** —**Potential savings of 67 KiB**

■ **Eliminate render-blocking resources** —**Potential savings of 0 ms**

■ **Properly size images** —**Potential savings of 81 KiB**

■ **Serve images in next-gen formats** —**Potential savings of 991 KiB**

○ **JavaScript execution time** —**0.2 s**

○ **Minimizes main-thread work** —**0.4 s**

○ **Avoid long main-thread tasks** —**1 long task found**

○ **Initial server response time was short** —**Root document took 320 ms**

○ **Avoids enormous network payloads** —**Total size was 1,629 KiB**

○ **Avoids an excessive DOM size** —**354 elements**

○ **Avoid chaining critical requests** —**1 chain found**

○ **Minimize third-party usage** —**Third-party code blocked the main thread for 0 ms**

○ **Avoid large layout shifts** —**1 layout shift found**

More information about the performance of your application. These numbers don't **directly affect** the Performance score.

PASSED AUDITS (22)   Show

84
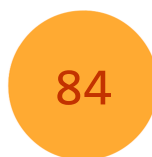
Accessibility

These checks highlight opportunities to **improve the accessibility of your web app**. Automatic detection can only detect a subset of issues and does

not guarantee the accessibility of your web app, so manual testing is also
encouraged.

NAMES AND LABELS

⚠ **Buttons do not have an accessible name** ⌄

These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

CONTRAST

⚠ **Background and foreground colors do not have a sufficient contrast ratio.** ⌄

These are opportunities to improve the legibility of your content.

BEST PRACTICES

⚠ **Touch targets do not have sufficient size or spacing.** ⌄

These items highlight common accessibility best practices.

NAVIGATION

⚠ **Heading elements are not in a sequentially-descending order** ⌄

These are opportunities to improve keyboard navigation in your application.

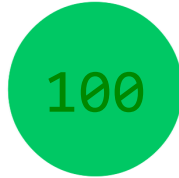### ADDITIONAL ITEMS TO MANUALLY CHECK (10)   Show

These items address areas which an automated testing tool cannot cover. Learn more in our guide on conducting an accessibility review.

PASSED AUDITS (20)   Show
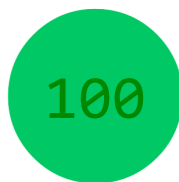
NOT APPLICABLE (33)   Show

100

Best Practices

TRUST AND SAFETY

○ **Ensure CSP is effective against XSS attacks** ⌄

PASSED AUDITS (15)   Show

NOT APPLICABLE (2)   Show

100

SEO

These checks ensure that your page is following basic search engine optimization advice. There are many additional factors Lighthouse does not score here that may affect your search ranking, including performance on **Core Web Vitals**. **Learn more about Google Search Essentials**.

ADDITIONAL ITEMS TO MANUALLY CHECK (1)   Show

Run these additional validators on your site to check additional SEO best practices.

PASSED AUDITS (8)   Show

NOT APPLICABLE (2)   Show