DOCUMENTATION

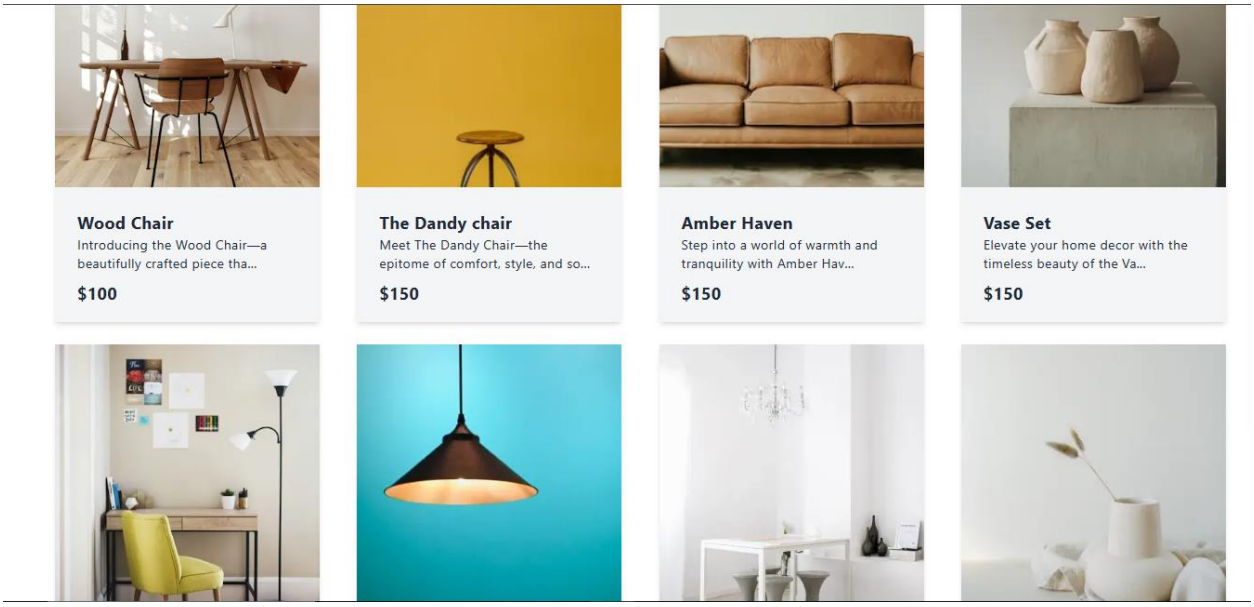
DAY 5 – TESTING AND BACKEND REFINEMENT

Functional Testing

Test Core Features:

Product listing:

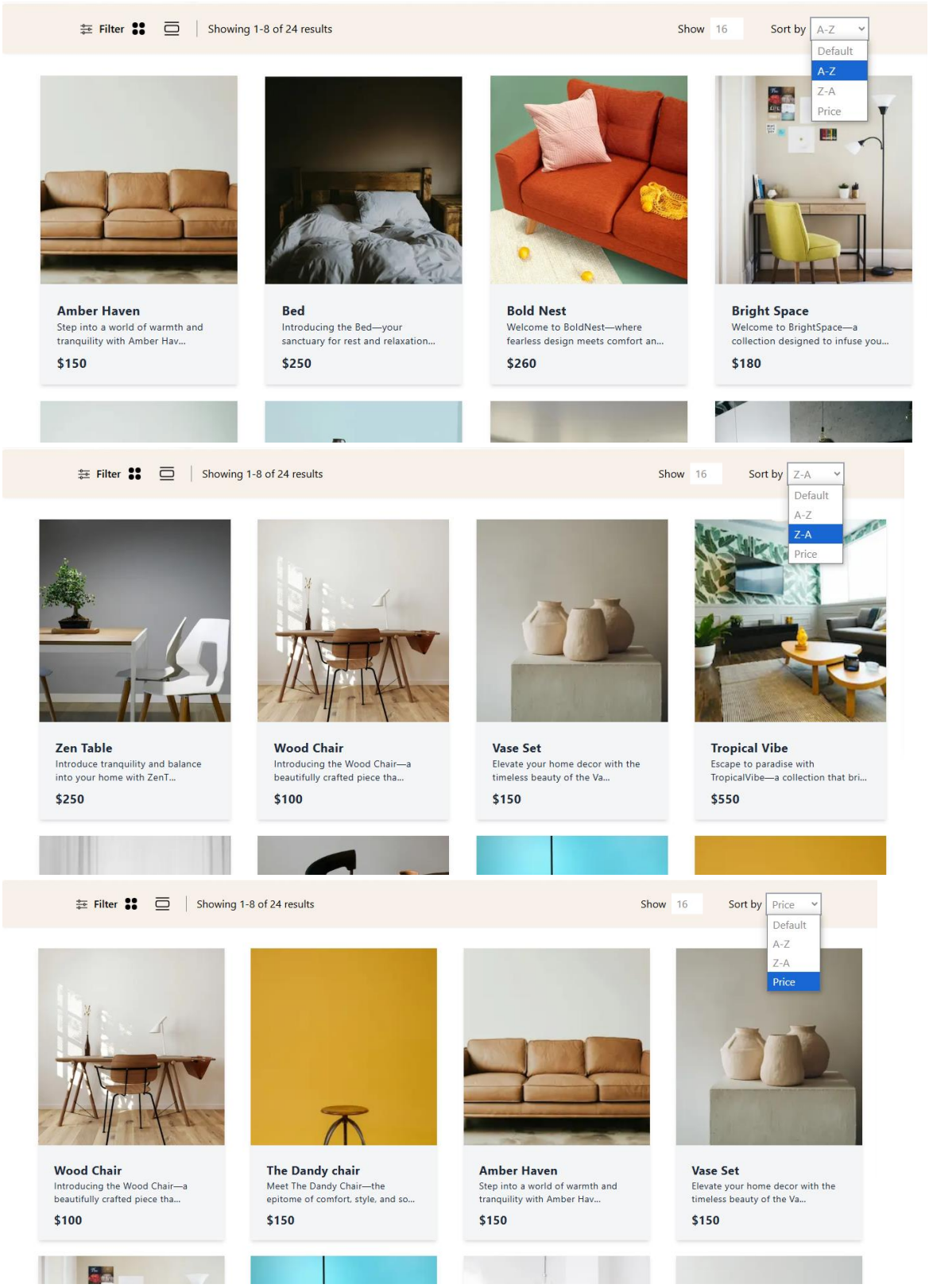
The product listing API is functioning correctly, displaying all products as expected. The response structure is consistent, and all required fields are present, ensuring a smooth user experience.

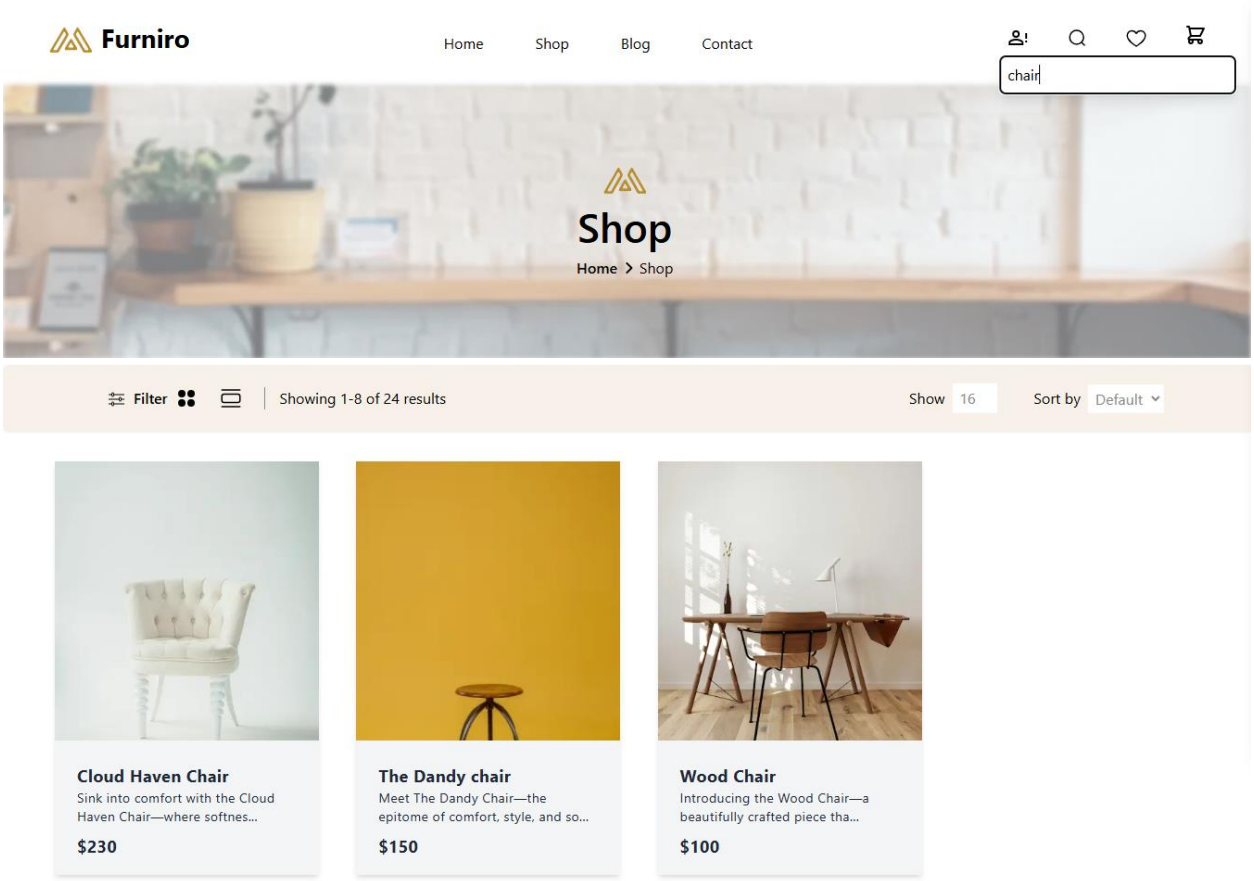


Filters and search:

The filtering and sorting functionality in the application is working correctly. Products are accurately displayed based on user-selected criteria, such as A-Z, Z-A, and price (low to high). The search feature returns relevant results, ensuring users

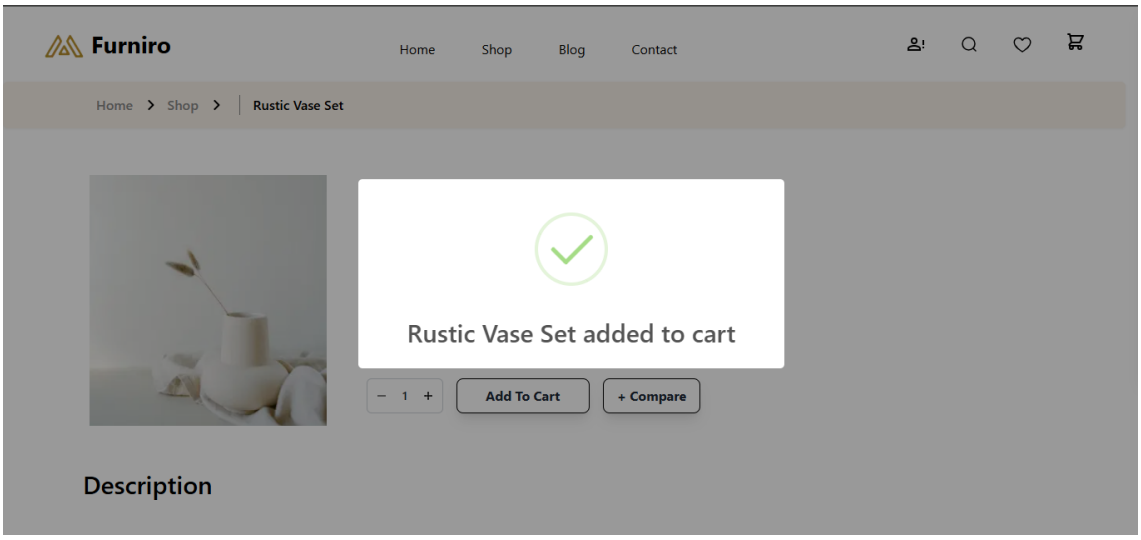
can easily find the desired products.

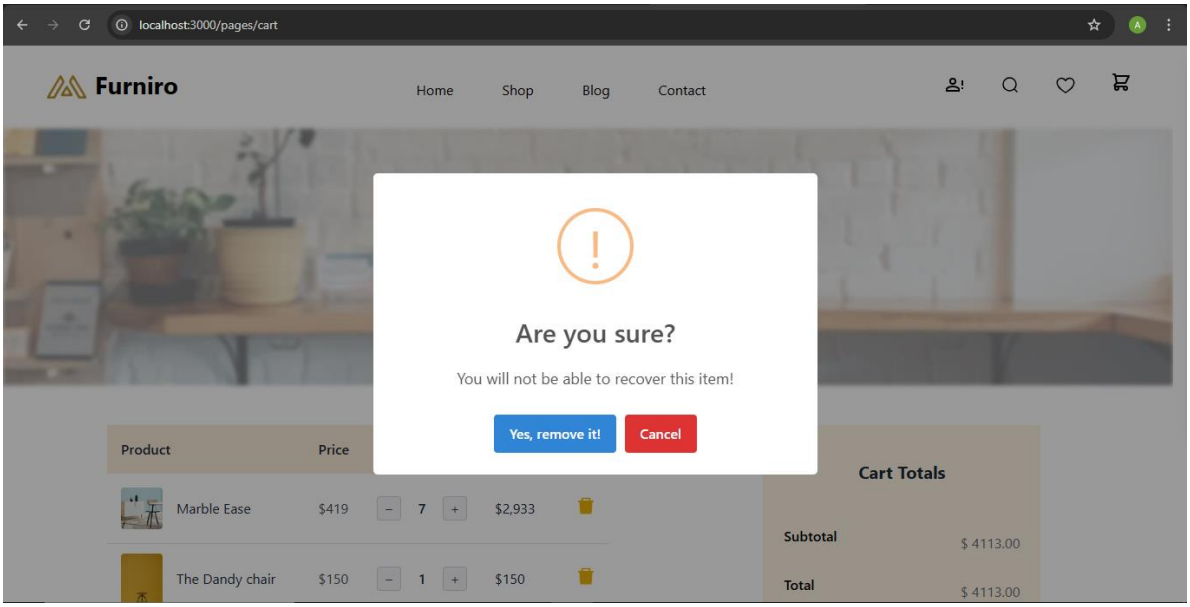


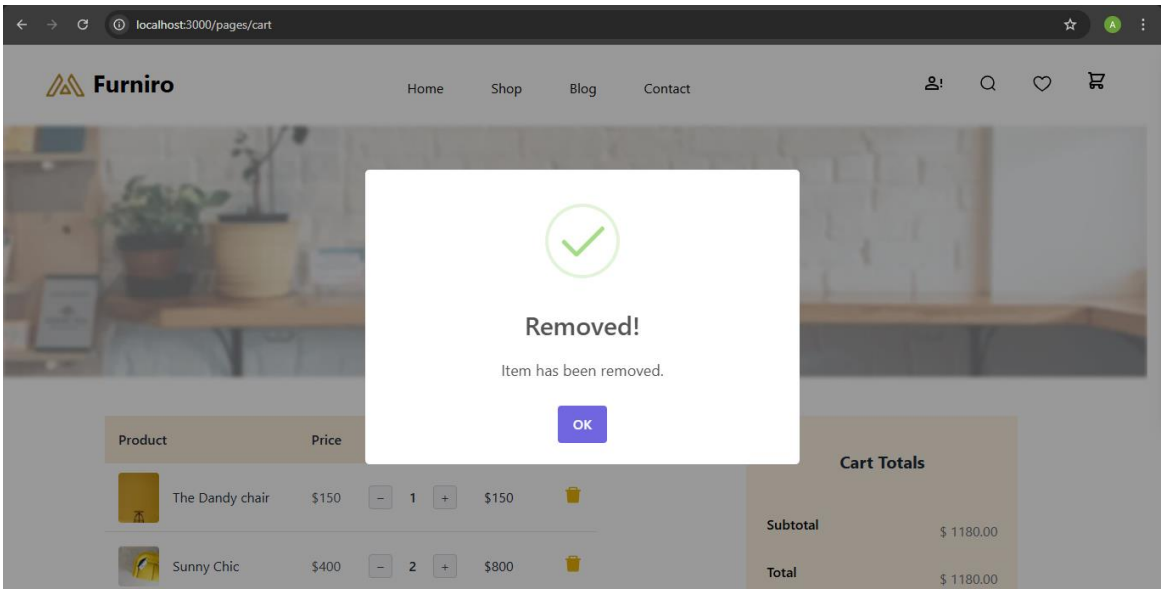


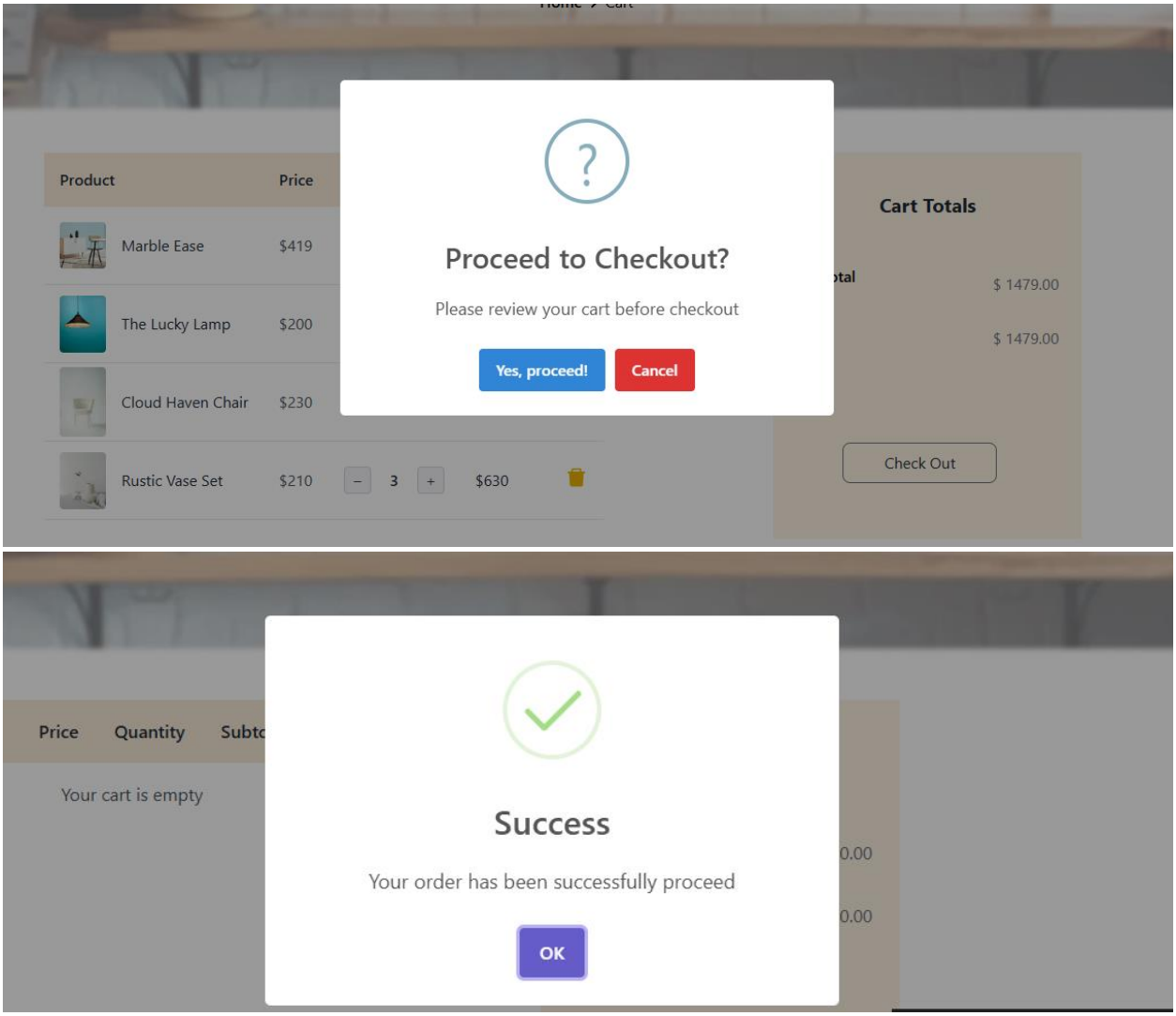
Cart Options:

The cart operations are working smoothly, allowing users to **add, update, and remove** items seamlessly. When a product is added, updated, or removed, a **Sweet Alert** success message is displayed, enhancing the user experience. This ensures users receive instant feedback on their actions.


Furniro
Home
Shop
Blog
Contact
Home > Shop > Rustic Vase Set
Rustic Vase Set added to cart
1
Add To Cart
+ Compare
Description

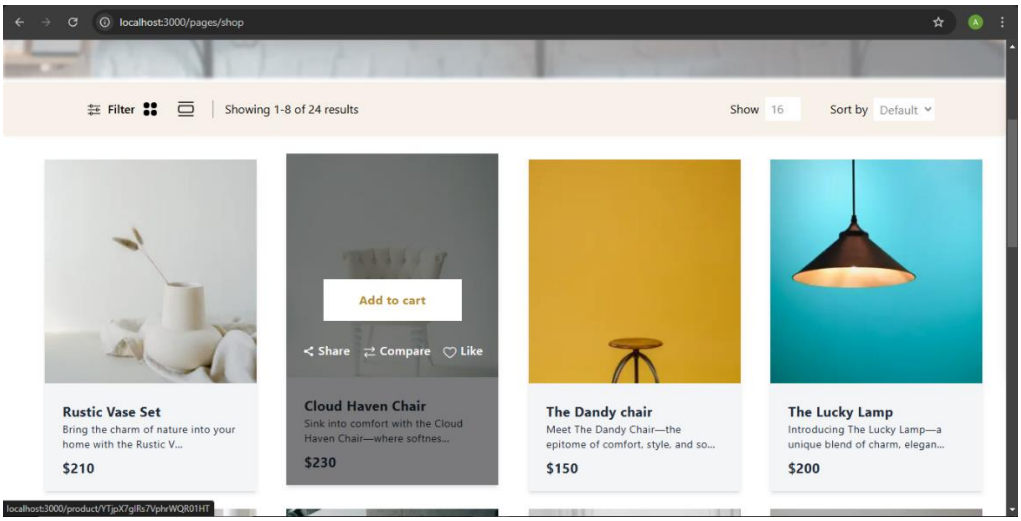

localhost:3000/pages/cart
Furniro
Home
Shop
Blog
Contact
Are you sure?
You will not be able to recover this item!
Yes, remove it!
Cancel
Product
Price
Marble Ease
$419
7
$2,933
The Dandy chair
$150
1
$150
Cart Totals
Subtotal
$ 4113.00
Total
$ 4113.00

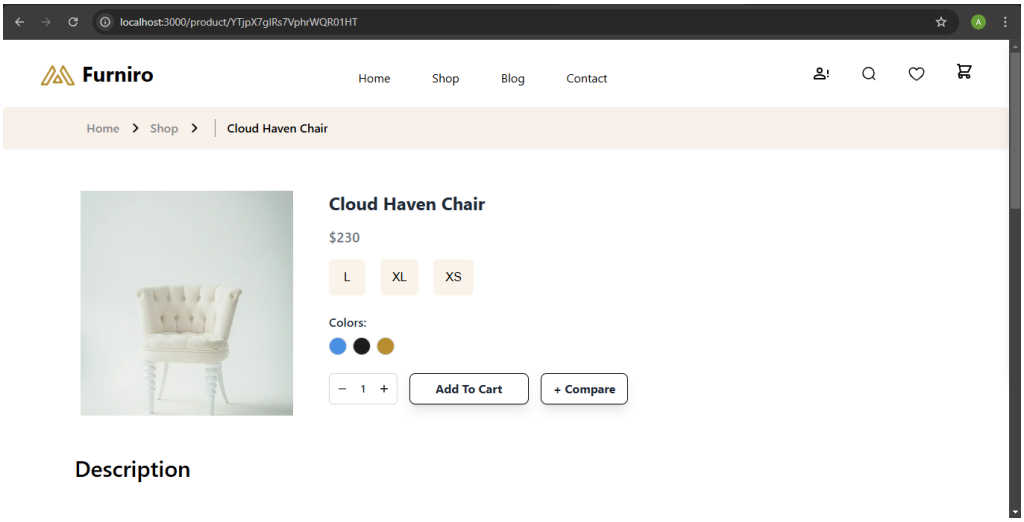

localhost:3000/pages/cart
Furniro
Home
Shop
Blog
Contact
Removed!
Item has been removed.
OK
Product
Price
The Dandy chair
$150
1
$150
Sunny Chic
$400
2
$800
Cart Totals
Subtotal
$ 1180.00
Total
$ 1180.00

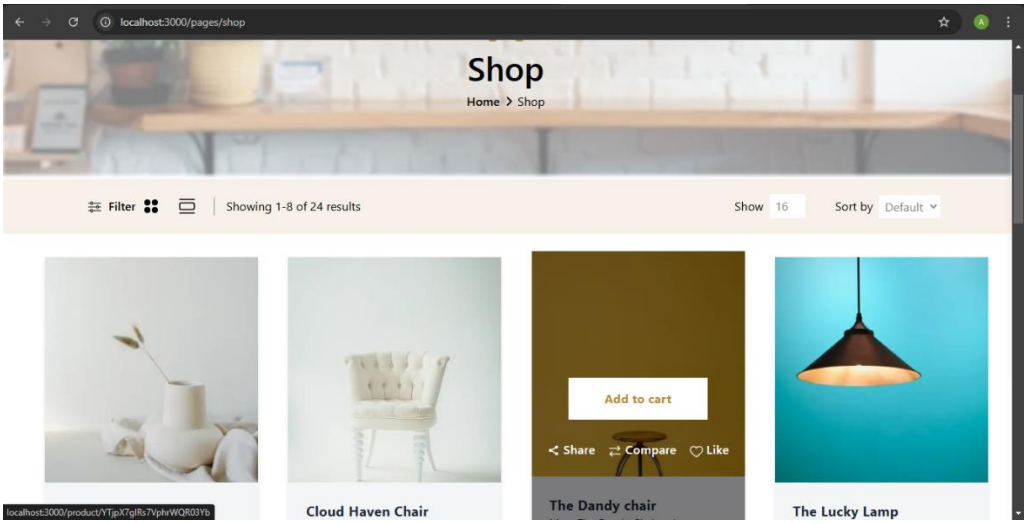


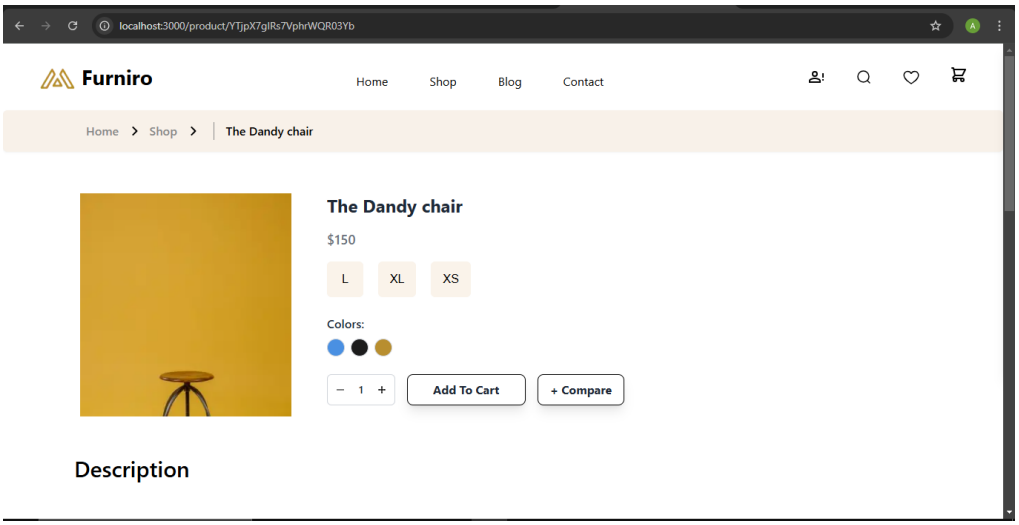
Dynamic Routing:

The dynamic routing is working correctly, ensuring that individual product detail pages load as expected. Each product page displays the correct information, including the product name, price, description, and images. This provides a smooth user experience.


localhost:3000/pages/shop
Filter
Showing 1-8 of 24 results
Show 16
Sort by Default
Add to cart
Share Compare Like
Rustic Vase Set
Bring the charm of nature into your home with the Rustic V...
$210
Cloud Haven Chair
Sink into comfort with the Cloud Haven Chair—where softnes...
$230
The Dandy chair
Meet The Dandy Chair—the epitome of comfort, style, and so...
$150
The Lucky Lamp
Introducing The Lucky Lamp—a unique blend of charm, elegan...
$200


localhost:3000/product/YTjpX7glRs7VphrWQR01HT
Furniro
Home
Shop
Blog
Contact
Home > Shop > Cloud Haven Chair
Cloud Haven Chair
$230
L
XL
XS
Colors:
1
Add To Cart
+ Compare
Description


localhost:3000/pages/shop
Shop
Home > Shop
Filter
Showing 1-8 of 24 results
Show 16
Sort by Default
Add to cart
Share Compare Like
Cloud Haven Chair
The Dandy chair
The Lucky Lamp



How to Perform Functional Testing:

1. Write Test Cases for Each Feature

Each feature should have test cases that define the expected input and output.

These are some examples of each feature

Test Case ID	Test Case Description	Test Steps	Expected Result	Actual Result	Status	Severity Level	Assigned To	Remarks
TC001	Validate product listing page	Open product page > Verify products	Products displayed correctly	Products displayed correctly	Passed	High	-	No issues found
TC002	Test API error handling	Disconnect API > Refresh page	Show fallback UI with error message	Error message shown	Passed	Medium	-	Handled gracefully

TC003	Check cart functionality	Add product to cart > Verify cart contents	Cart updates with added product	Cart updates as expected	Passed	High	-	Works as expected
TC004	Ensure responsiveness on mobile	Resize browser window > Check layout	Layout adjusts properly to screen size	Responsive layout working as intended	Passed	Medium	-	Test successful

2. Simulate User Actions

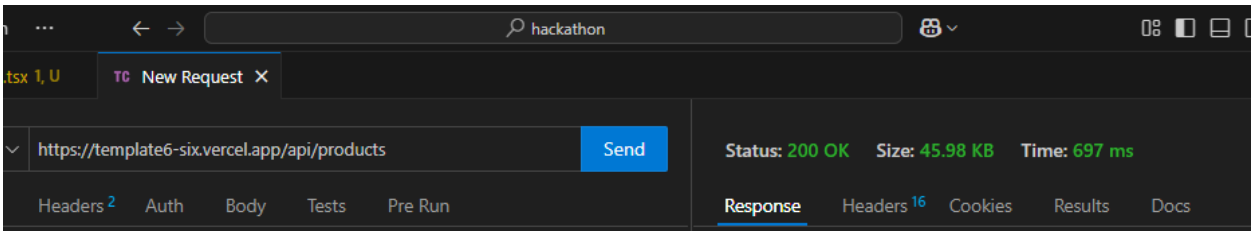
To ensure the API behaves as expected under real-world scenarios, user actions were simulated using Thunder Client. The following actions were tested:

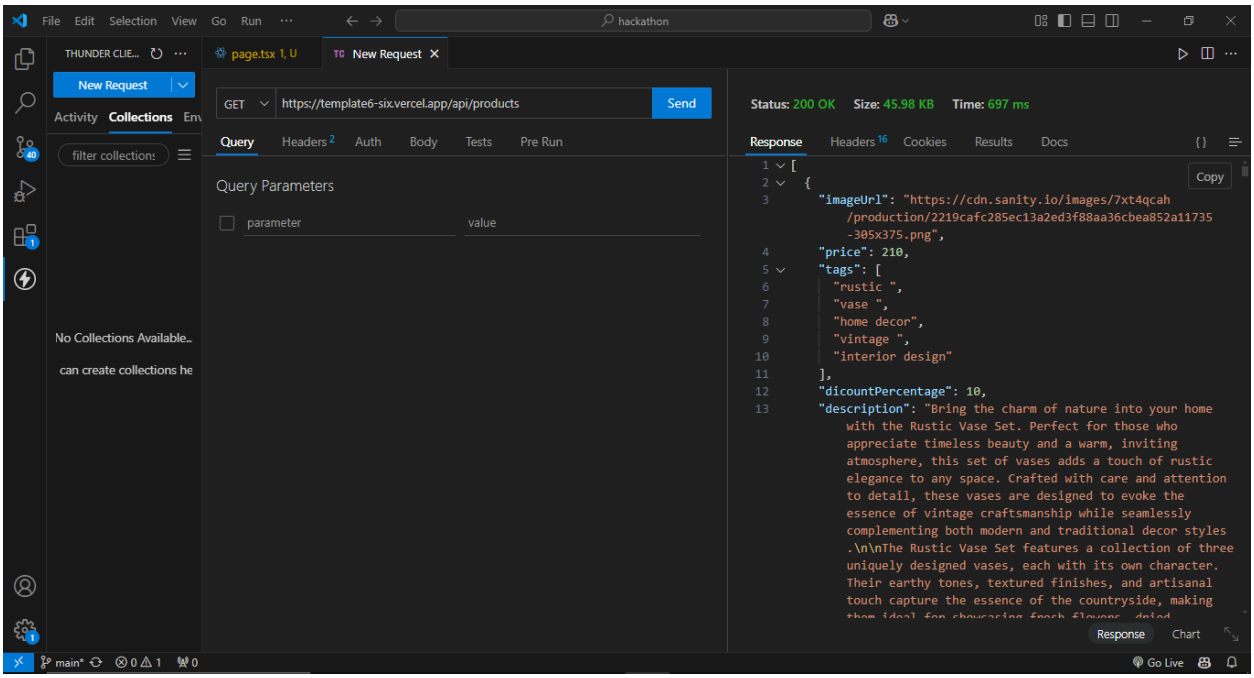
- **API Request Execution:** Sending requests to various endpoints to validate responses.
- **Response Validation:** Checking status codes, response body structure, and data integrity.
- **Performance Metrics:** Measuring response time and payload size for optimization.

API Response Check:

- **API Endpoint**: [https://template6-six.vercel.app/api/products]
- **HTTP Method**: [GET]
- **Response Status**: 200 OK
- **Response Size**: 45.98 KB
- **Response Time**: 697 ms

Screenshot of API Response:





This validation confirms that the API handles user interactions correctly, ensuring smooth functionality across the system.

3. Validate Output Against Expected Results

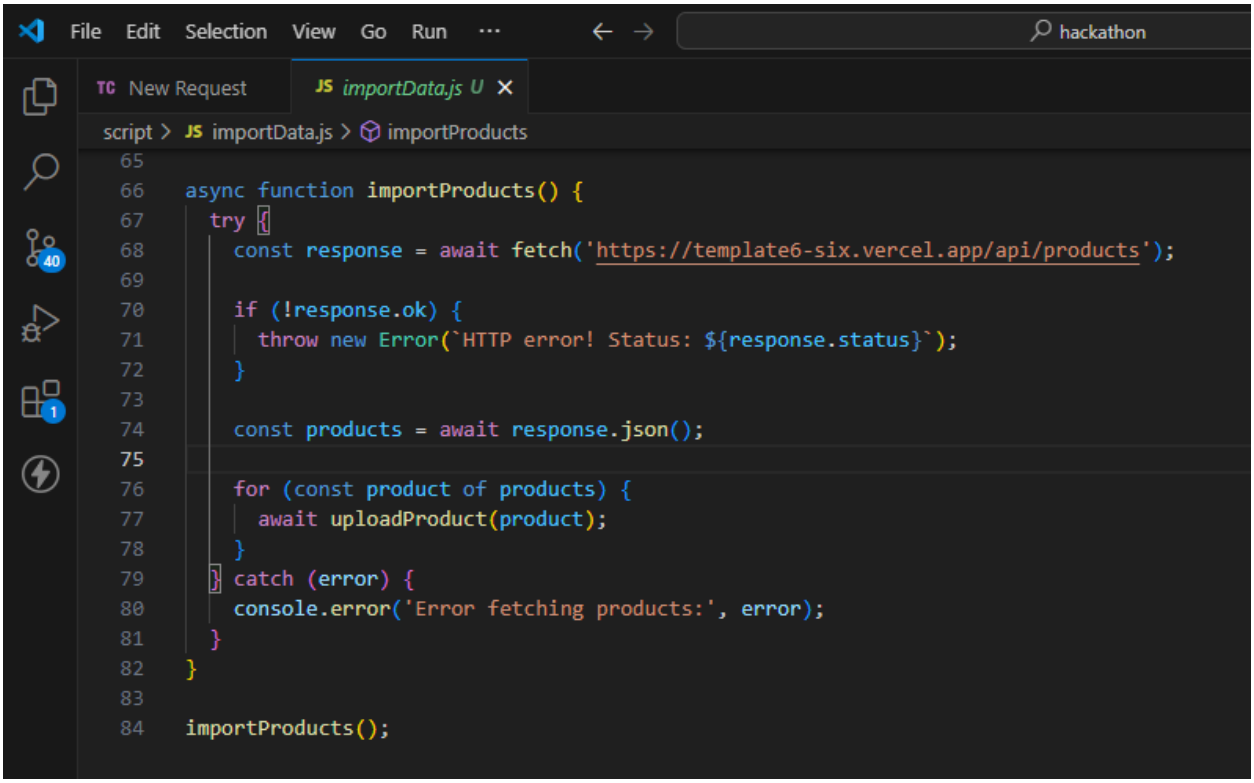
Compare the actual behavior of the application with the expected results.

- **Expected behavior:** Product gets added, checkout is successful, or search returns results.
- **If output deviates:** Error messages like *"No products found"* or *"Cart is empty"* should appear.

Error Handling

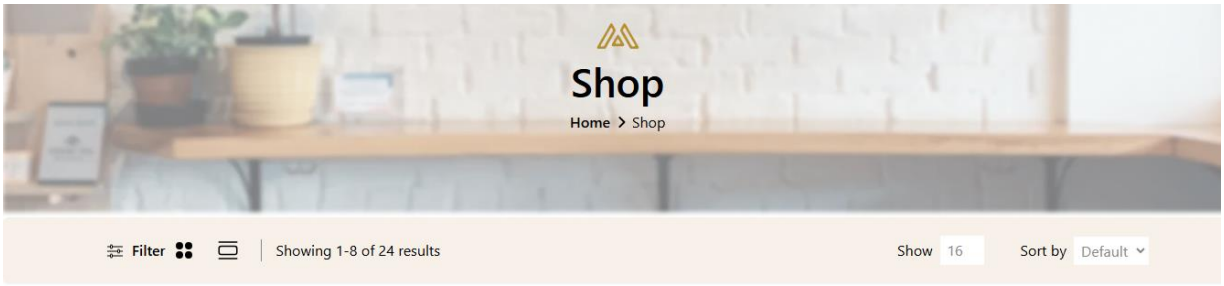
Add Error Messages:

By using try-catch blocks to handle API errors.

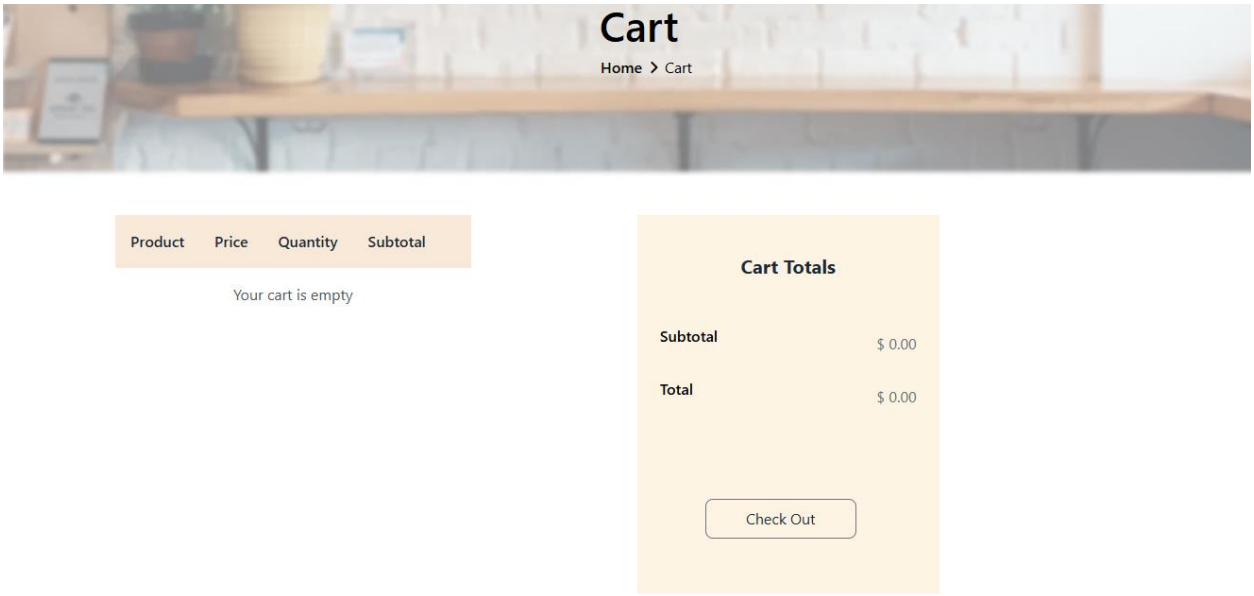


Fallback UI:

- Display alternative content when data is unavailable.
  Example: when products are unavailable this message will display.



Example: when cart is empty this message will display.



Performance Optimization

Optimization Steps:

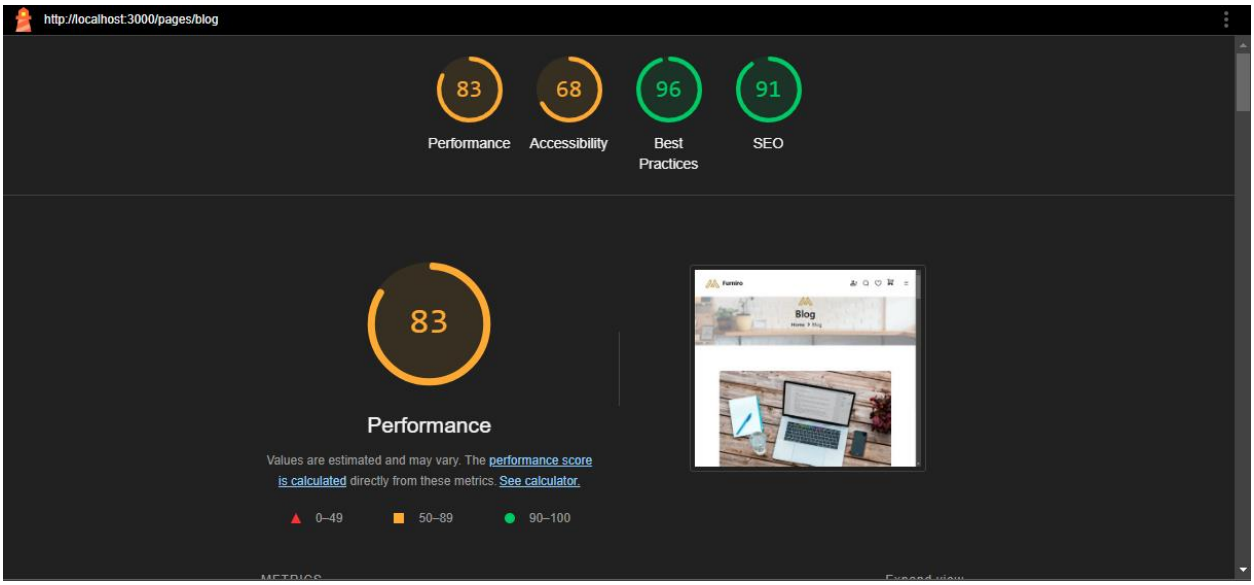
Optimize Images: Use WebP format via Sanity Image API for faster loading.
Lazy Load Products: Implement pagination to improve performance.

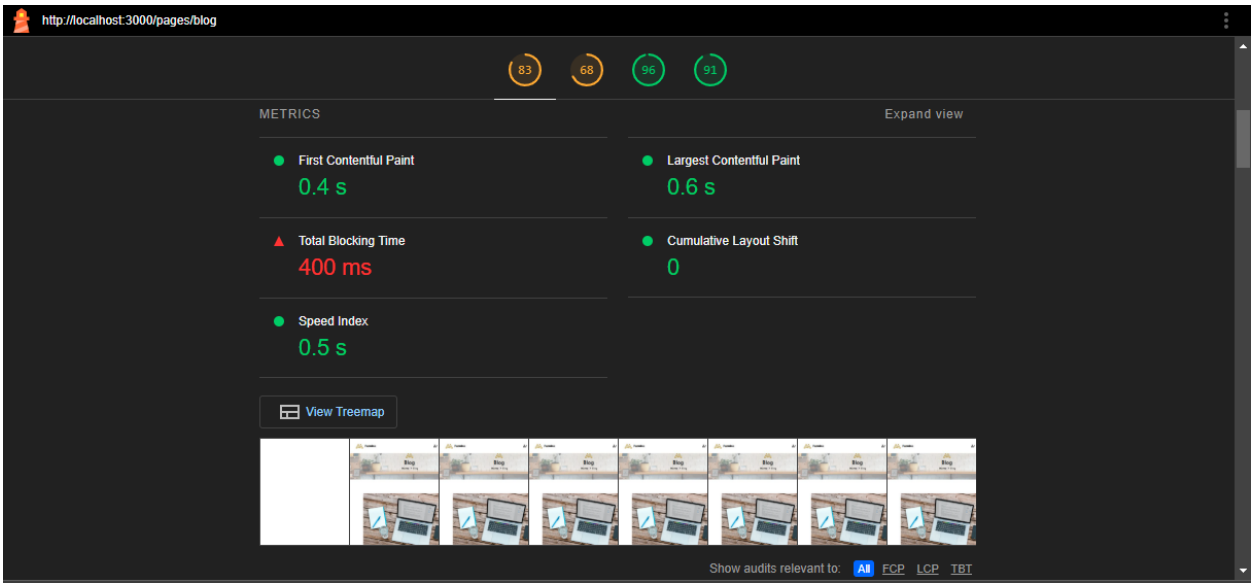
Use Efficient Queries: Fetch only necessary product data to minimize response time.
Set Image Priority: Use priority in **Next.js <Image>** for critical images to improve loading speed.
Leverage CDN: Use Sanity's built-in **CDN** to optimize image delivery and reduce load times.

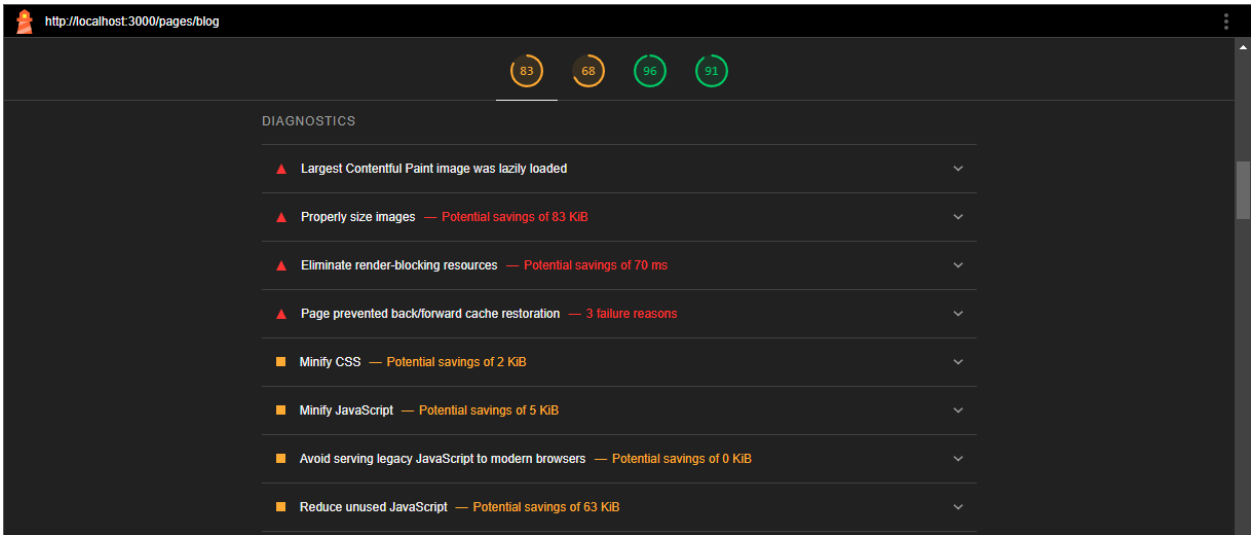
Analyze Performance:

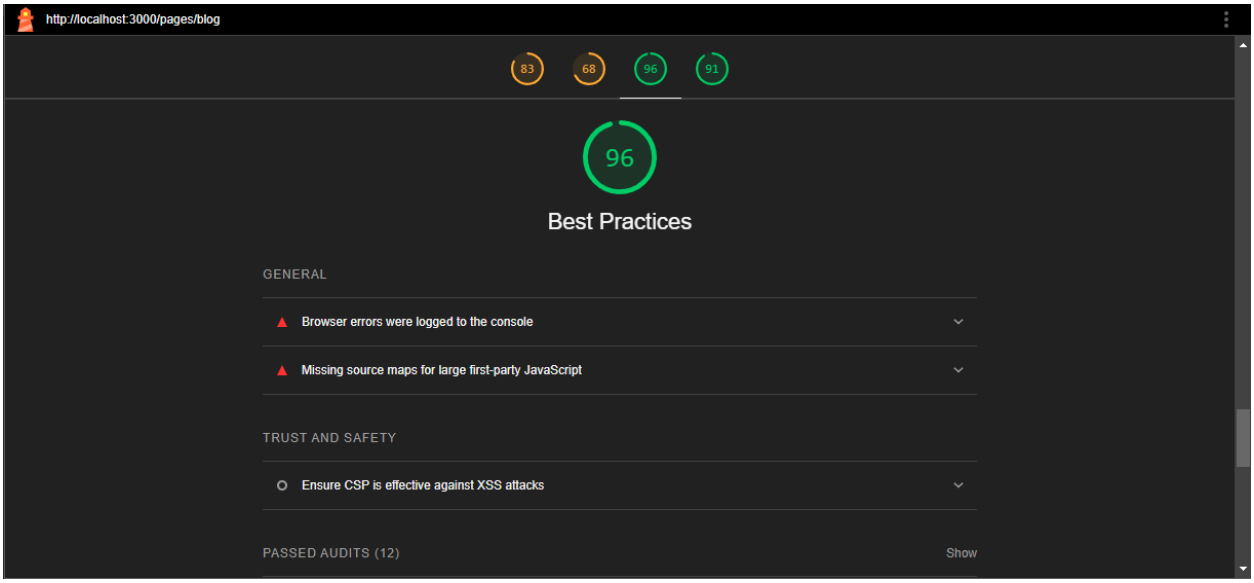
Use Lighthouse to identify speed and performance issues.

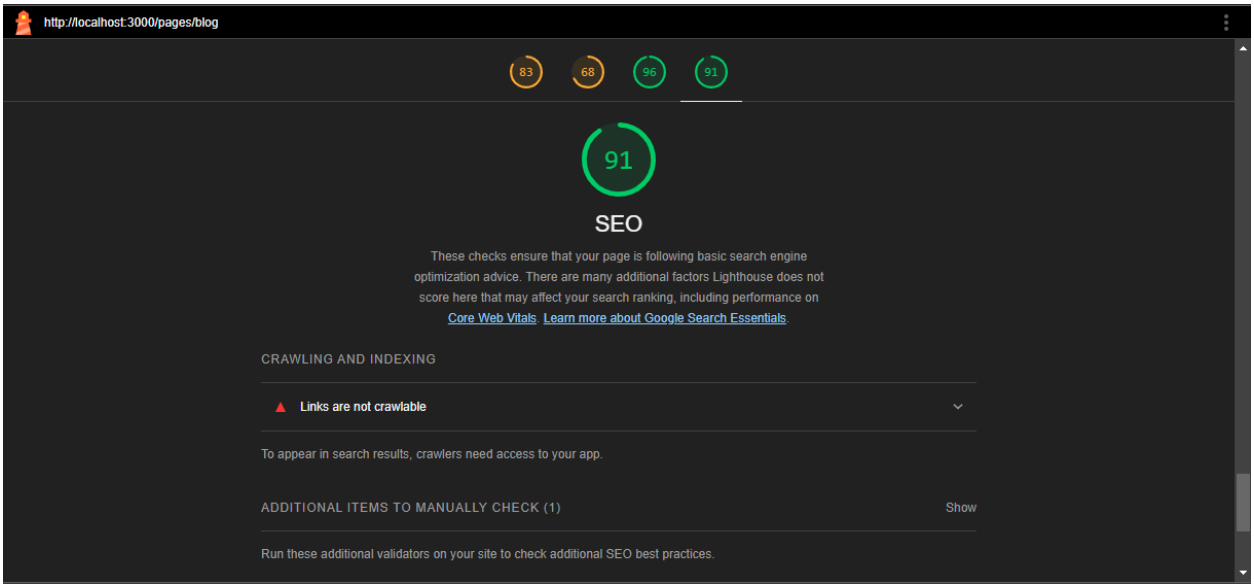
Here are some screenshots



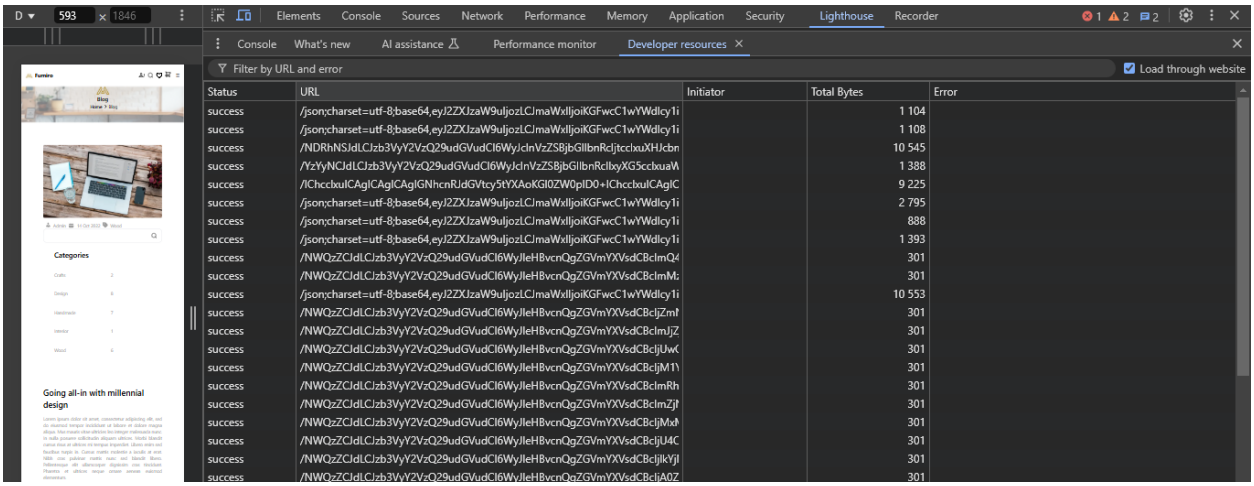



http://localhost:3000/pages/blog
83
68
96
91
DIAGNOSTICS
Largest Contentful Paint image was lazily loaded
Properly size images — Potential savings of 83 KiB
Eliminate render-blocking resources — Potential savings of 70 ms
Page prevented back/forward cache restoration — 3 failure reasons
Minify CSS — Potential savings of 2 KiB
Minify JavaScript — Potential savings of 5 KiB
Avoid serving legacy JavaScript to modern browsers — Potential savings of 0 KiB
Reduce unused JavaScript — Potential savings of 63 KiB

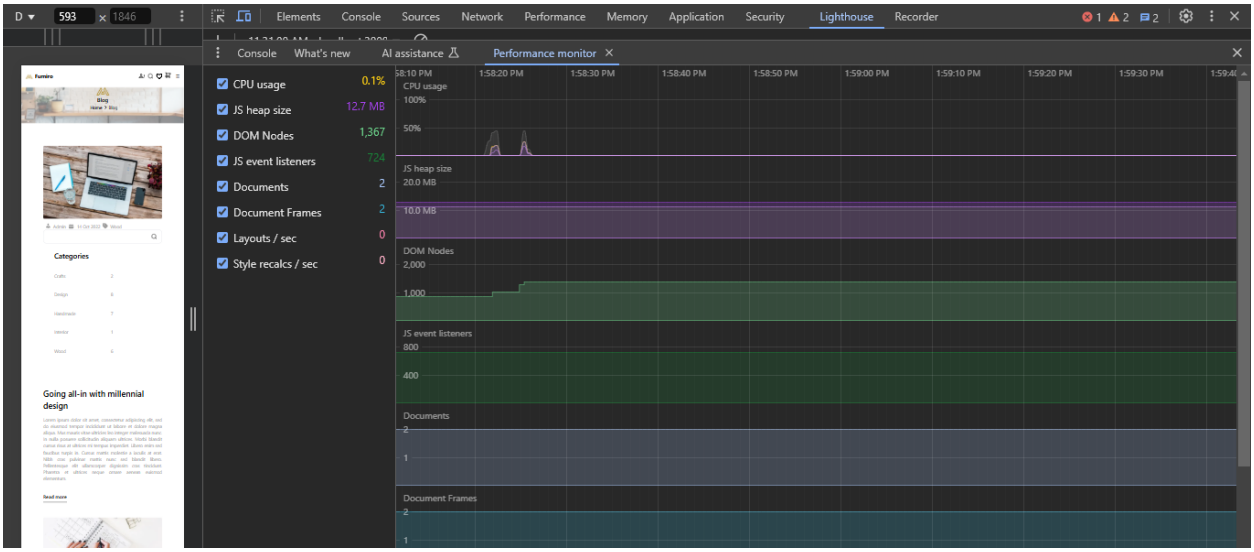

http://localhost:3000/pages/blog
83
68
96
91
96
Best Practices
GENERAL
Browser errors were logged to the console
Missing source maps for large first-party JavaScript
TRUST AND SAFETY
Ensure CSP is effective against XSS attacks
PASSED AUDITS (12)
Show


http://localhost:3000/pages/blog
83
68
96
91
91
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.
CRAWLING AND INDEXING
Links are not crawlable
To appear in search results, crawlers need access to your app.
ADDITIONAL ITEMS TO MANUALLY CHECK (1)
Show
Run these additional validators on your site to check additional SEO best practices.

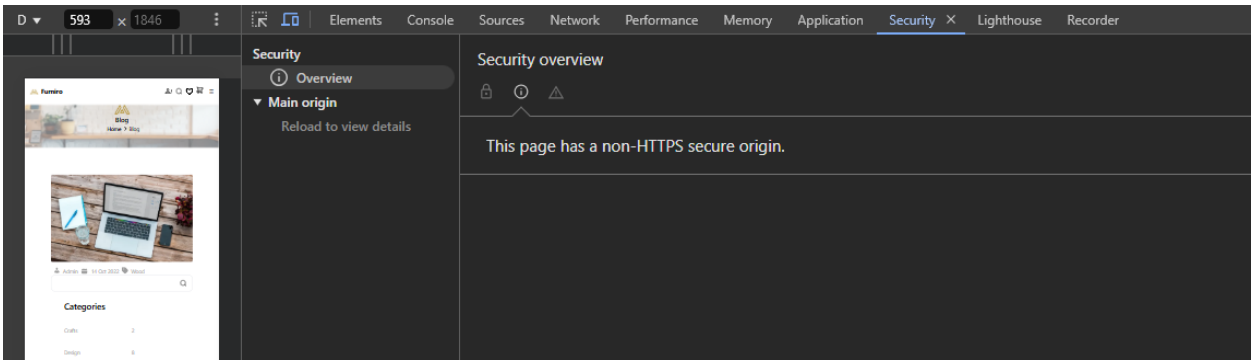
Developer Resources:



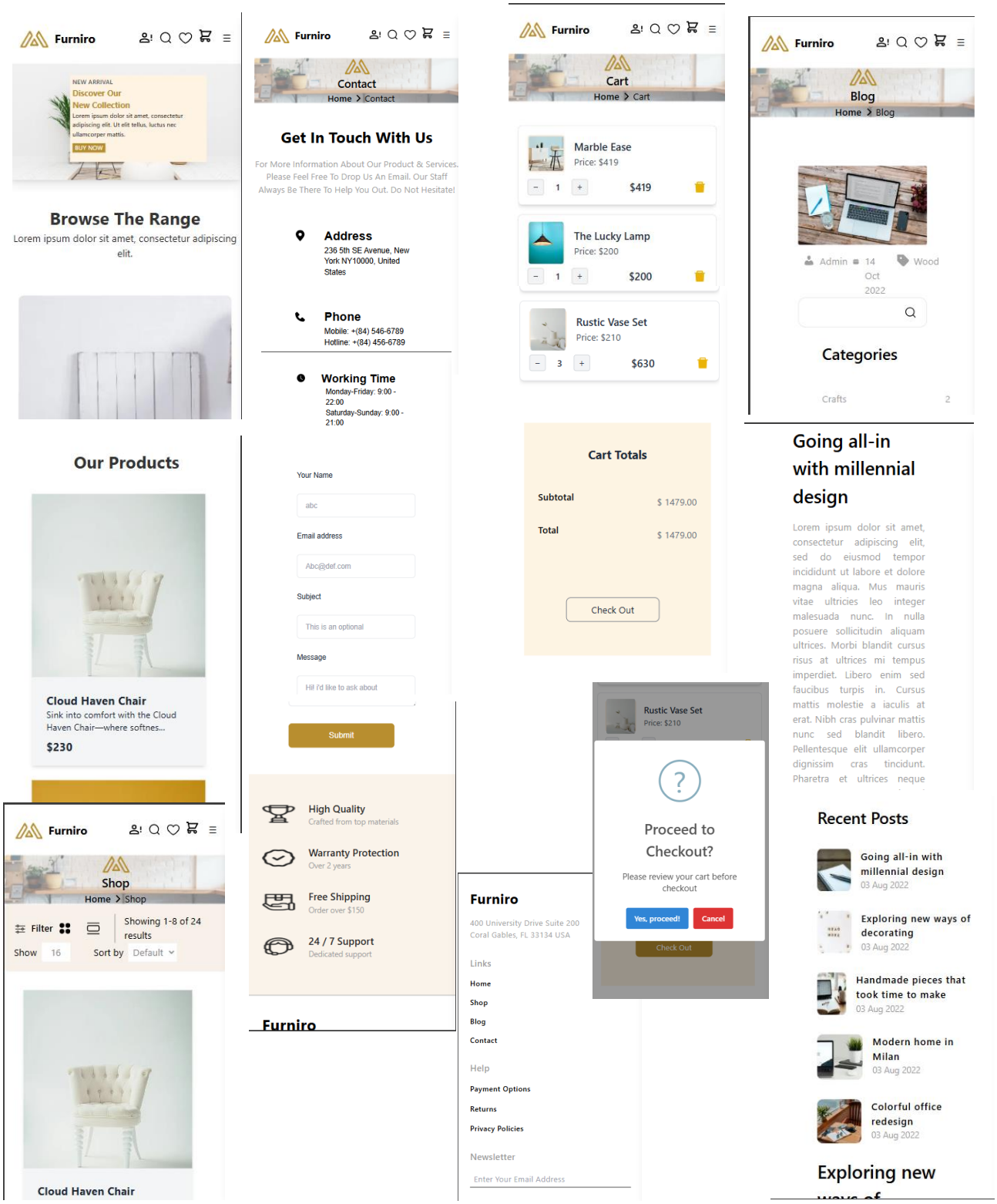
Performance Monitor:



Security:



Device Testing



The above screenshots are taken from an **iPhone SE** to test the website's responsiveness and performance on a smaller mobile screen.

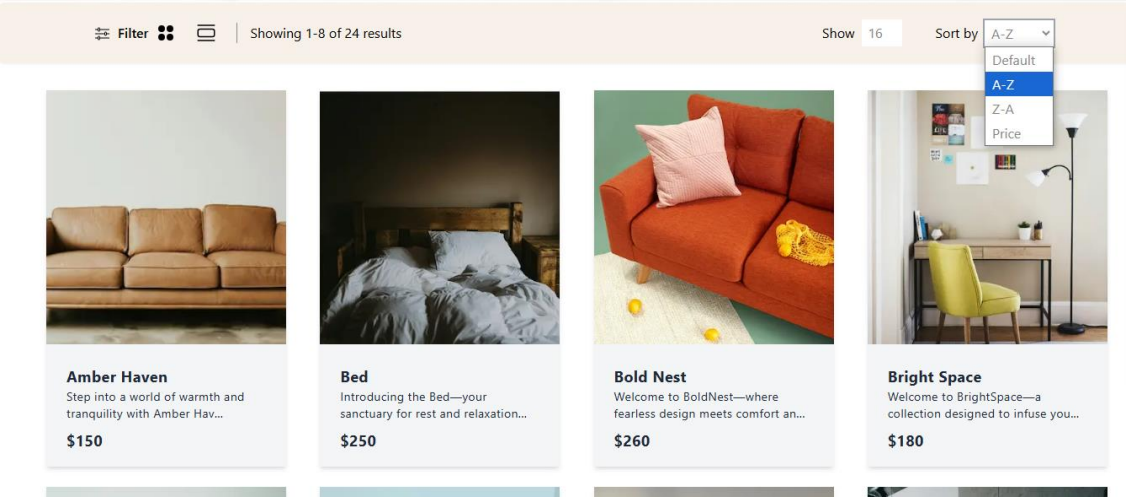
Device Testing

Store API keys in environment variables (.env.local).

```
$ .env.local
1   NEXT_PUBLIC_SANITY_PROJECT_ID="amke9rf5"
2   NEXT_PUBLIC_SANITY_DATASET="production"
3   NEXT_PUBLIC_SANITY_TOKEN="skdJCQuHHdQkoHyzBFhM1WhE6LW6QdMAaI2Nwj5WizYJWtX36mwZOGzQkdt1367QZQPkzJu5H6EQnreDYCTn3zSGOaxj5ULL
    n9nSb4DazCqcPYNVBtM4TY0pTNsPOMRNHWnzIVDj5ktwK0zRjQXVw5yMrbKRx4Y5ezJtSJUFSL25qpERqnIR"
```

User Acceptance Testing (UAT)

Browsing Products:



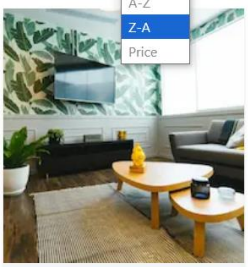
Filter | Showing 1-8 of 24 results | Show 16 | Sort by Z-A

Default
A-Z
Z-A
Price

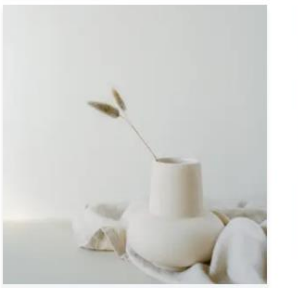
Zen Table
Introduce tranquility and balance into your home with ZenT...
$250

Wood Chair
Introducing the Wood Chair—a beautifully crafted piece tha...
$100

Vase Set
Elevate your home decor with the timeless beauty of the Va...
$150

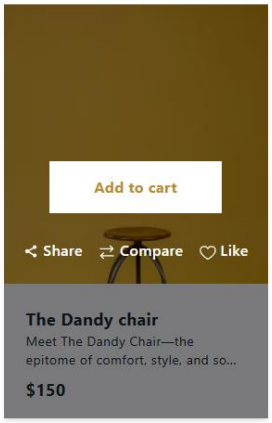


Tropical Vibe
Escape to paradise with TropicalVibe—a collection that bri...
$550



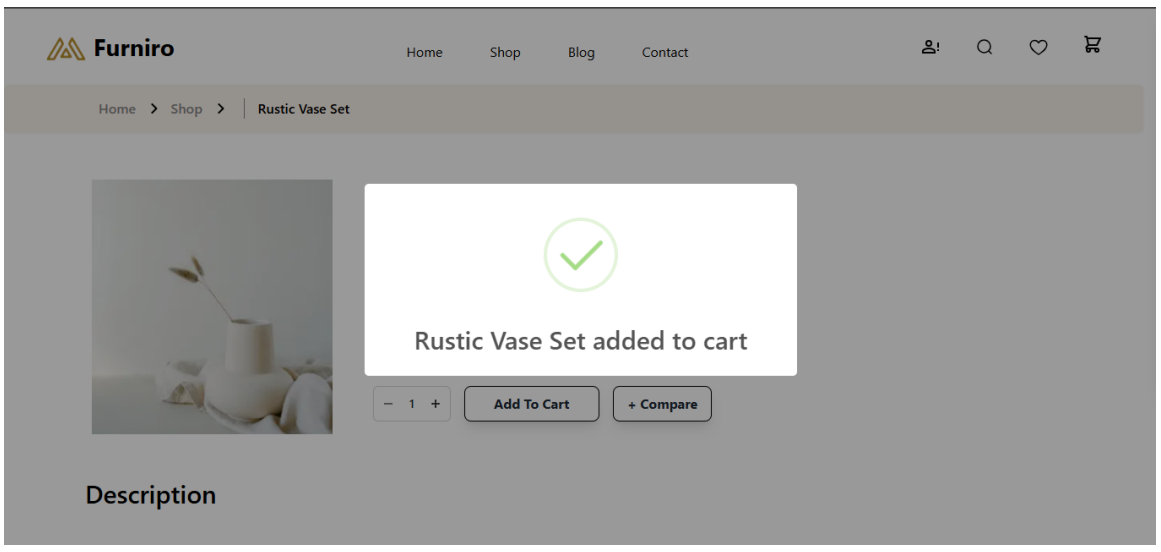
Rustic Vase Set
Bring the charm of nature into your home with the Rustic V...
$210

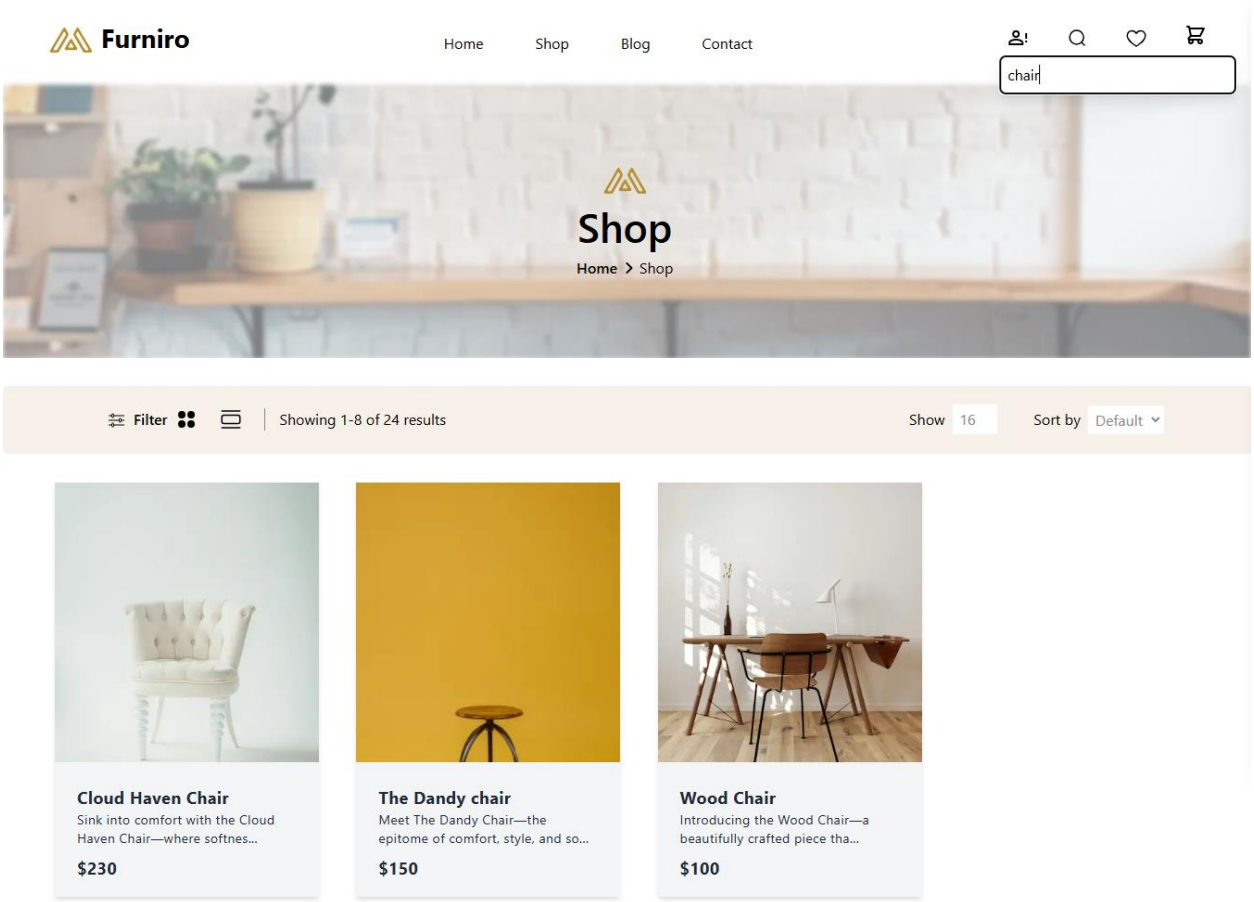
Cloud Haven Chair
Sink into comfort with the Cloud Haven Chair—where softnes...
$230



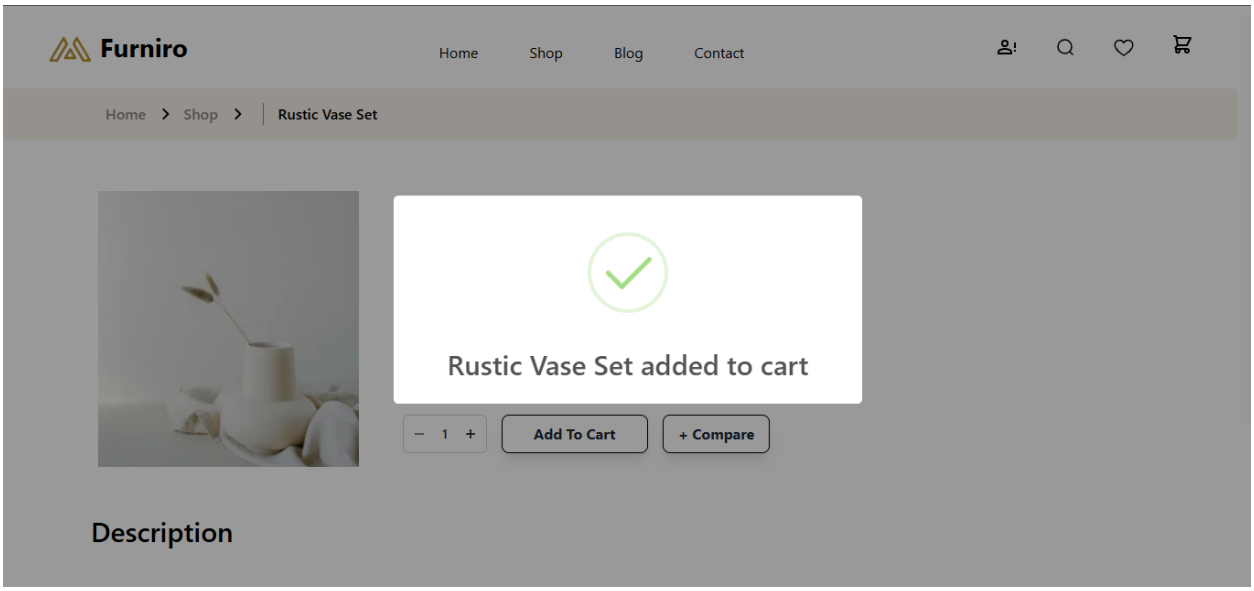
The Dandy chair
Meet The Dandy Chair—the epitome of comfort, style, and so...
$150

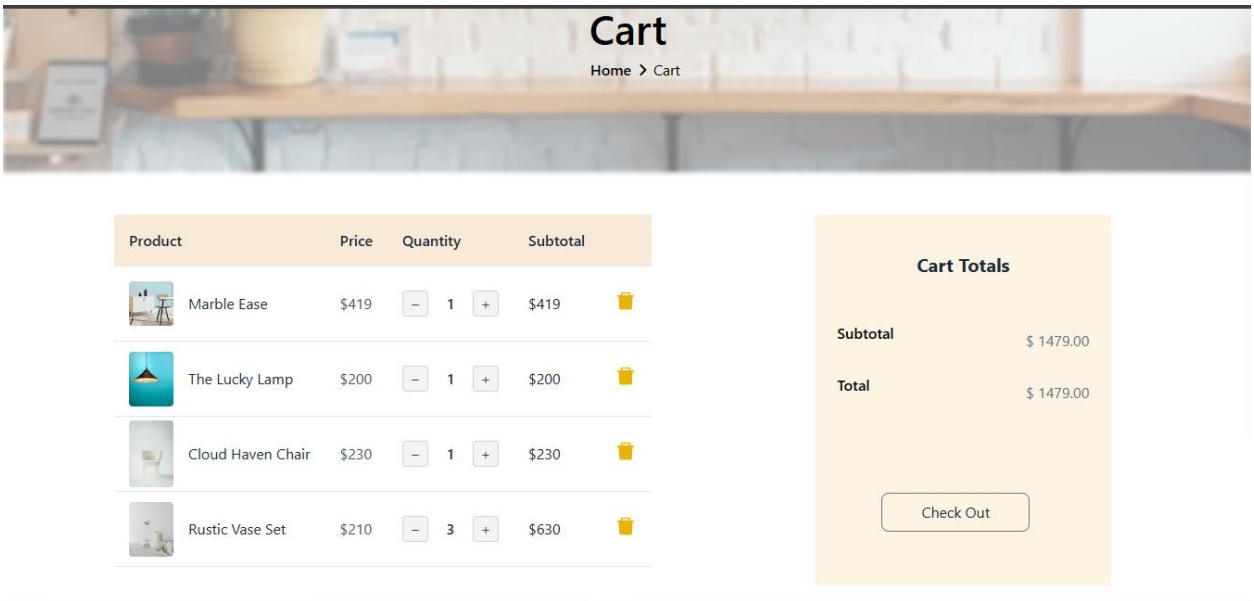
The Lucky Lamp
Introducing The Lucky Lamp—a unique blend of charm, elegan...
$200

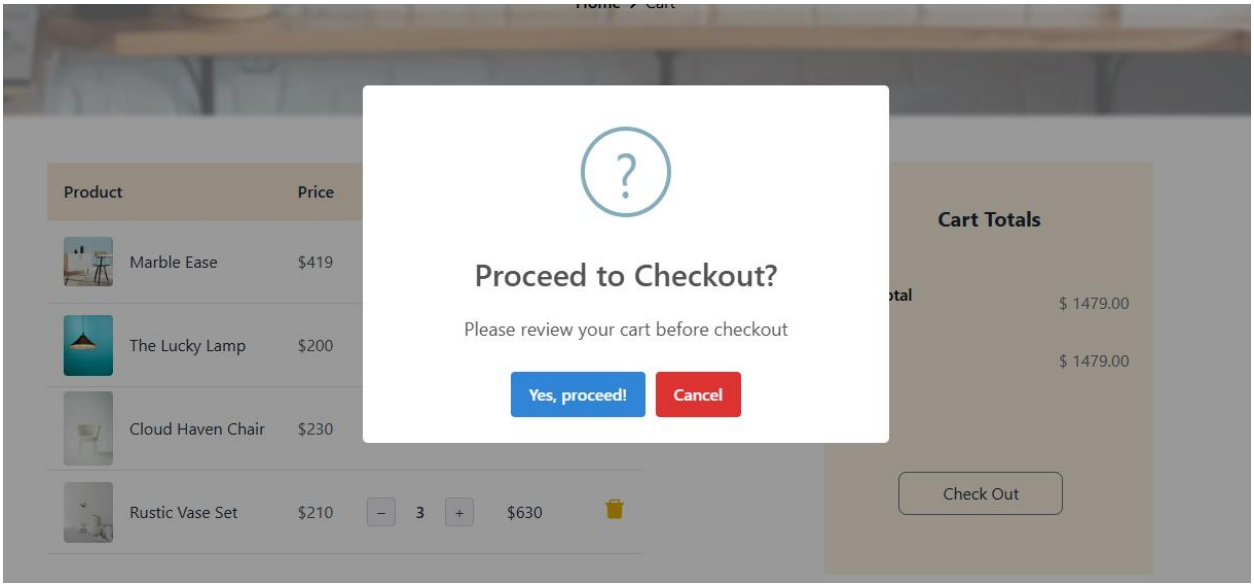


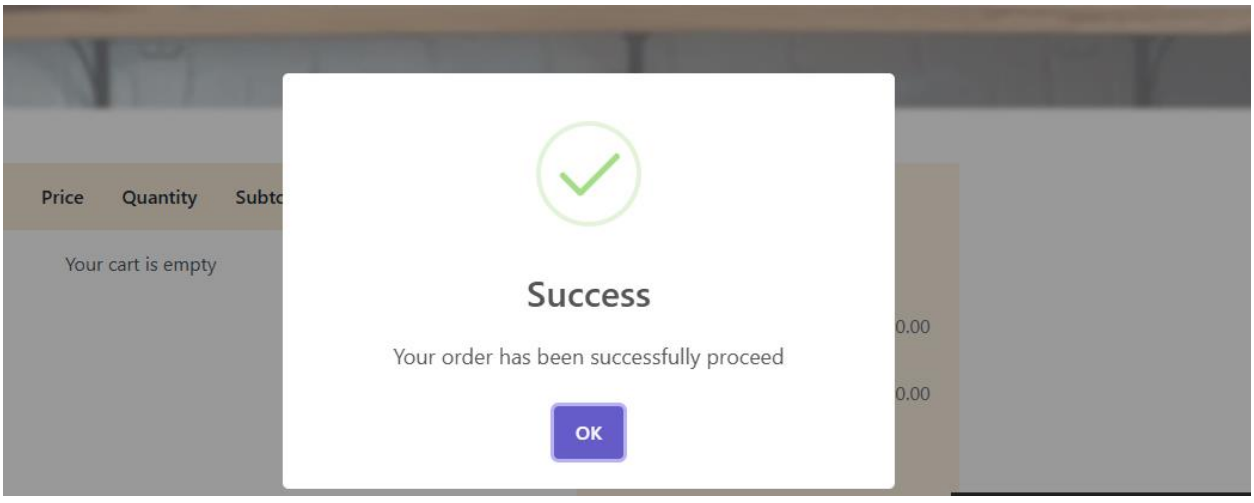


Adding items to the Cart:

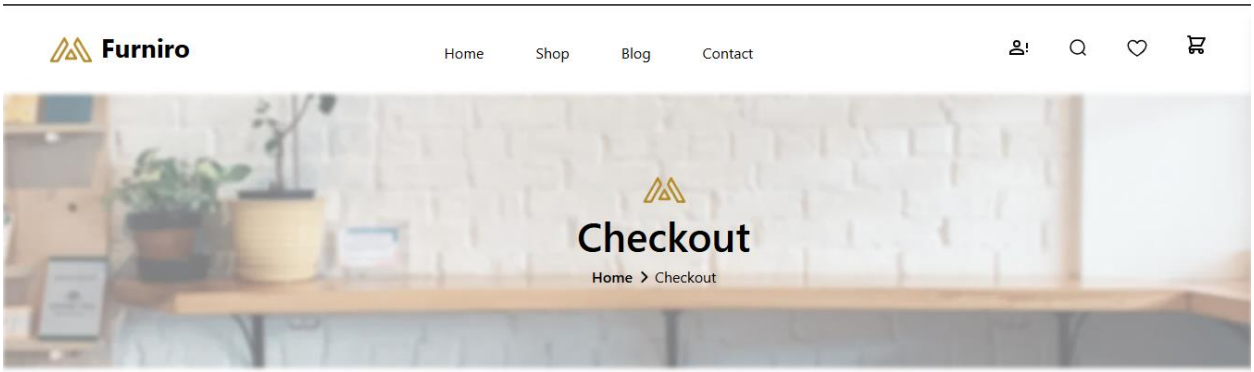



Cart
Home > Cart
Product
Price
Quantity
Subtotal
Marble Ease
$419
1
$419
The Lucky Lamp
$200
1
$200
Cloud Haven Chair
$230
1
$230
Rustic Vase Set
$210
3
$630
Cart Totals
Subtotal
$ 1479.00
Total
$ 1479.00
Check Out


Product
Price
Marble Ease
$419
The Lucky Lamp
$200
Cloud Haven Chair
$230
Rustic Vase Set
$210
3
$630
Cart Totals
$ 1479.00
$ 1479.00
Check Out
Proceed to Checkout?
Please review your cart before checkout
Yes, proceed!
Cancel


Price
Quantity
Your cart is empty
Success
Your order has been successfully proceed
OK

Checking out:



Billing details

First Name: Ayesha
Last Name: Maryam
Company Name (Optional): none
Contry / Region: Pakistan
Street Address: malir saudabad
Town / City: karachi
Province: sindh
ZIP code: 0020
Phone: 03333333333
Email address: ayesha123@gmail.com
Additional Information

Product		Subtotal
Marble Ease	x 1	$419
The Lucky Lamp	x 1	$200
Cloud Haven Chair	x 1	$230
Rustic Vase Set	x 3	$630
Subtotal		**$ 1479**
Discount		**$ 0**
Total		**$ 1479.00**

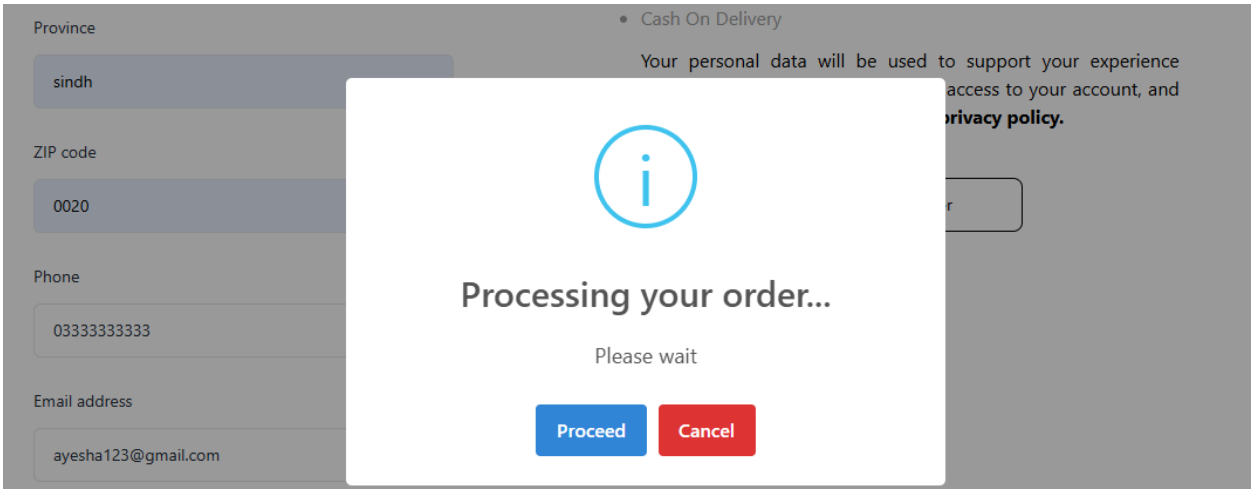
- **Direct Bank Transfer**

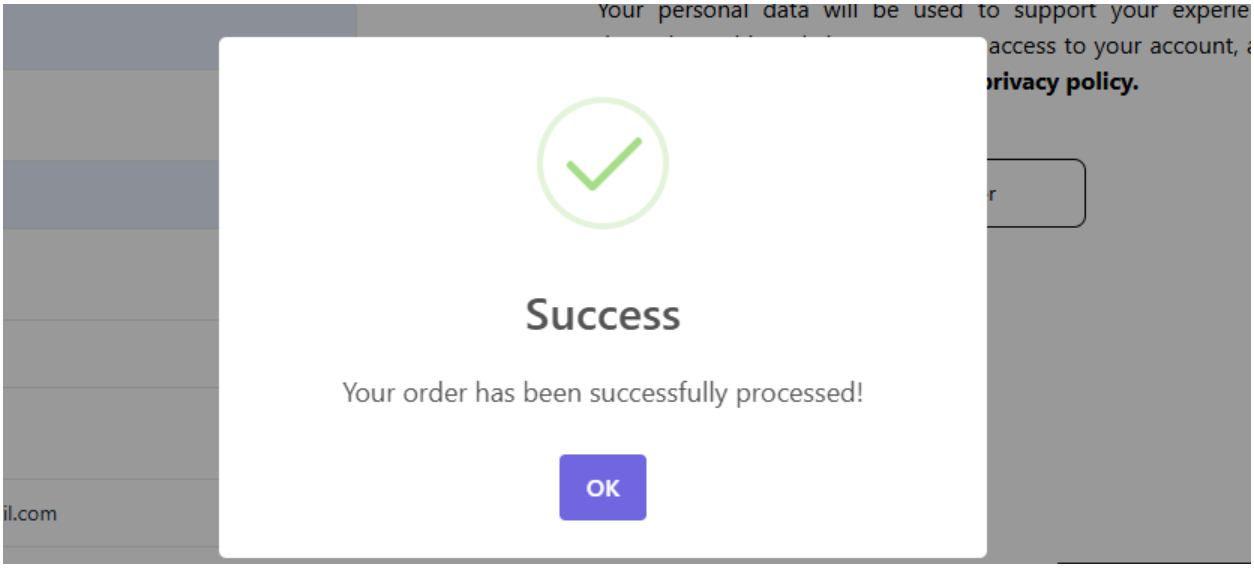
  Make your payment directly into our bank account. Please use your Order ID as the payment reference. Your order will not be shipped until the funds have cleared in our account.

- Direct Bank Transfer
- Cash On Delivery

Your personal data will be used to support your experience throughout this website, to manage access to your account, and for other purposes described in our **privacy policy.**

Place order





Testing Tools Used:

Manual Testing: Test across all screen sizes (mobile, tablet, desktop) for functionality such as filtering, search, add to cart, and success messages.

Lighthouse: To test performance, accessibility, best practices, and SEO across all screen sizes. It helps identify areas for improvement, such as optimizing images, reducing TBT, and enhancing user experience.