Naseer Uddin Wighio

Day-5 Testing & Integration

Car Rental Web Marketplace Hackathon

Overview & Goal

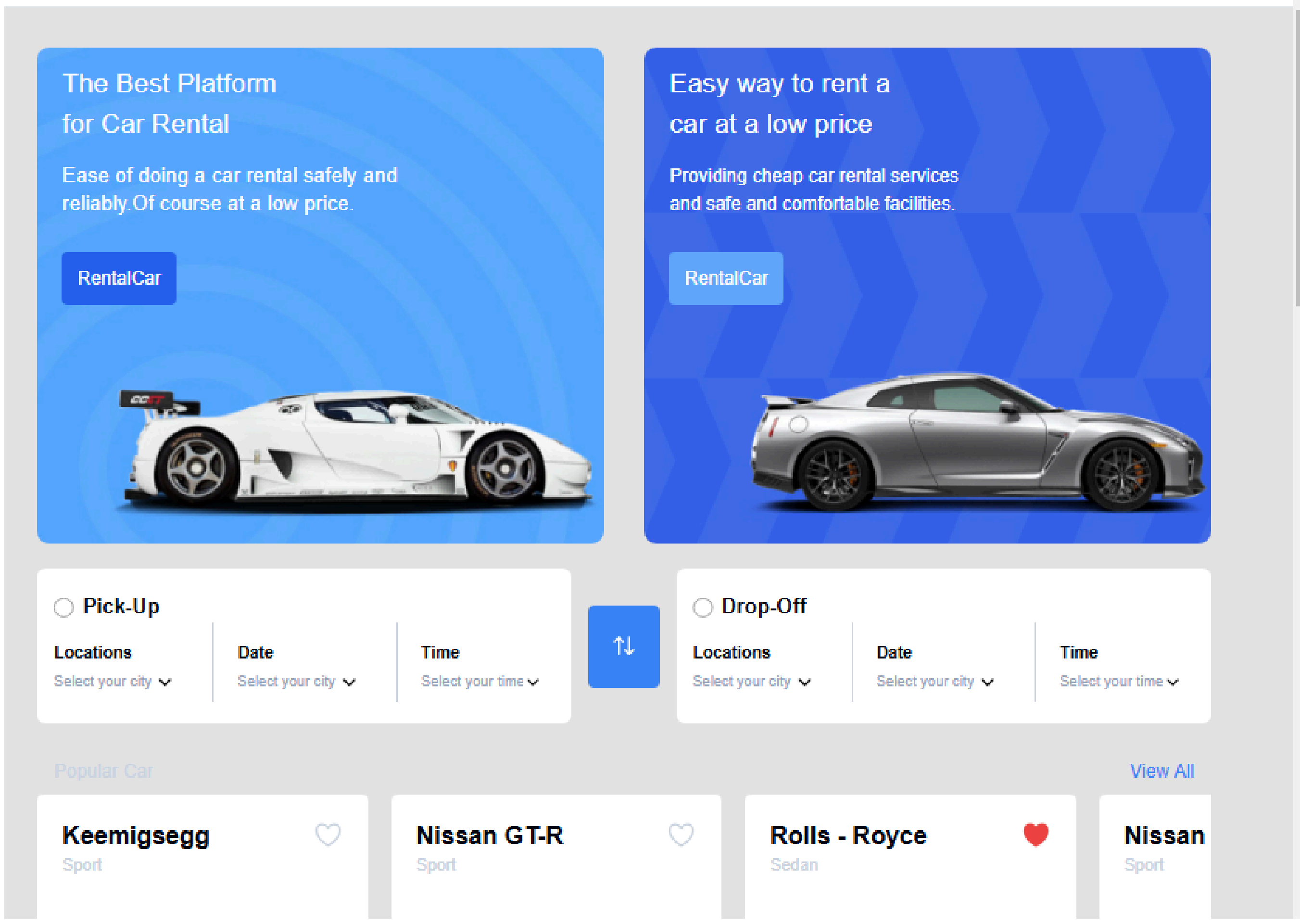
The primary focus of Day 5 is to ensure the E-commerce marketplace is fully functional, optimized for performance, and free of critical errors before deployment. The key objectives include:

- **Comprehensive Testing:** Functional, performance, security, and user acceptance testing.
- **Error Handling:** Implementing proper error messages and fallback mechanisms.
- **Backend Integration Refinement:** Ensuring smooth API communication and data flow.
- **Performance Optimization:** Improving page load speed and responsiveness.
- **Security Measures**: Protecting user data and API keys from vulnerabilities.

Implementation & Testing Process

1. **Functional Testing**

- Product Listing (fetched from sanity)
- Categories
- Best of All Products
- Header & Footer
- Popular & Recommended Products
- Login & Register (Clerk Authentication)
- Slug Page (Dynamic Routing for Products)
- Add to Cart Functionality with Toast Notifications
- Checkout Process & Order Submission Toast
- Order Data Pushed to Sanity CMS



The Best Platform for Car Rental

Ease of doing a car rental safely and reliably.Of course at a low price.

RentalCar

Easy way to rent a car at a low price

Providing cheap car rental services and safe and comfortable facilities.

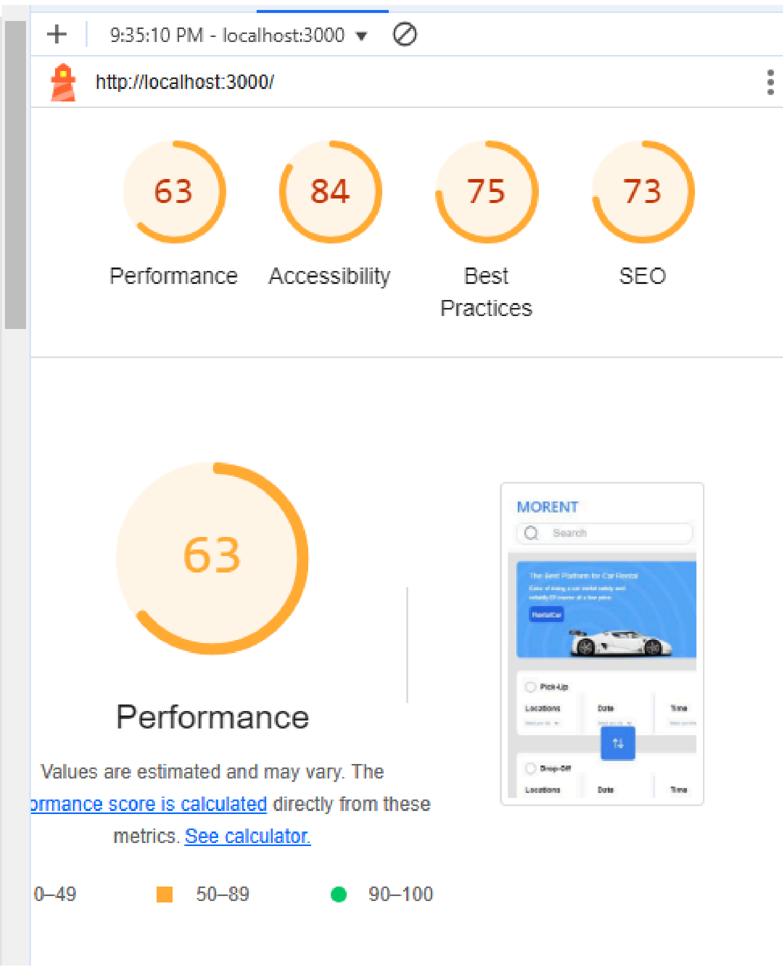
RentalCar

Pick-Up
Locations: Select your city
Date: Select your city
Time: Select your time

Drop-Off
Locations: Select your city
Date: Select your city
Time: Select your time

Popular Car — View All

Keemigsegg — Sport
Nissan GT-R — Sport
Rolls - Royce — Sedan
Nissan — Sport



9:35:10 PM - localhost:3000

http://localhost:3000/

63	84	75	73
Performance	Accessibility	Best Practices	SEO

63

Performance

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

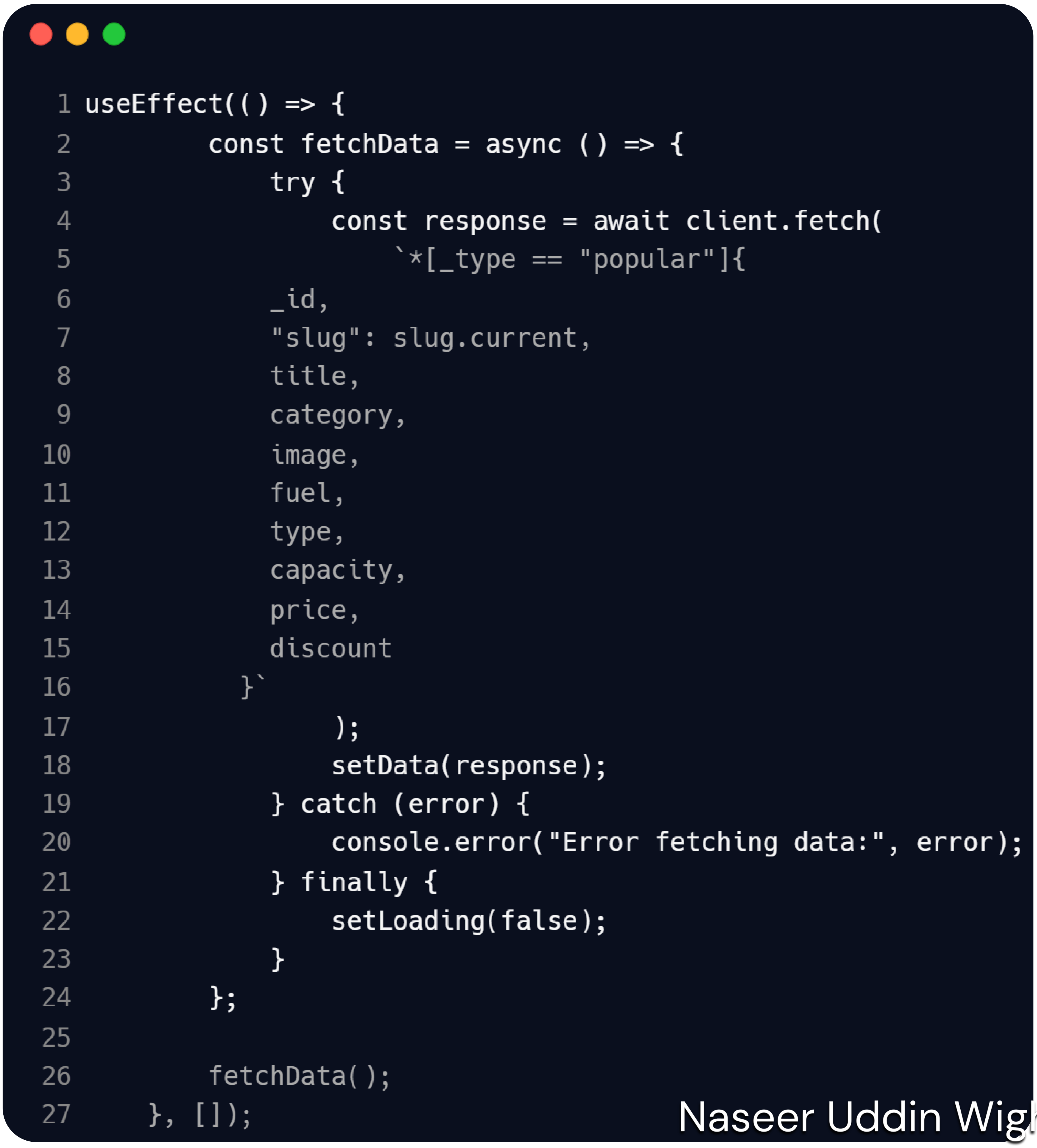
0–49 ■ 50–89 ● 90–100

2.**Error Handling**

To ensure a smooth user experience, error handling was implemented using try-catch blocks.

Examples of Error Handling Implemented:

- API failures gracefully handled with proper fallback UI.
- try-catch used in API requests to prevent app crashes.
- Error messages displayed for failed authentication and checkout issues



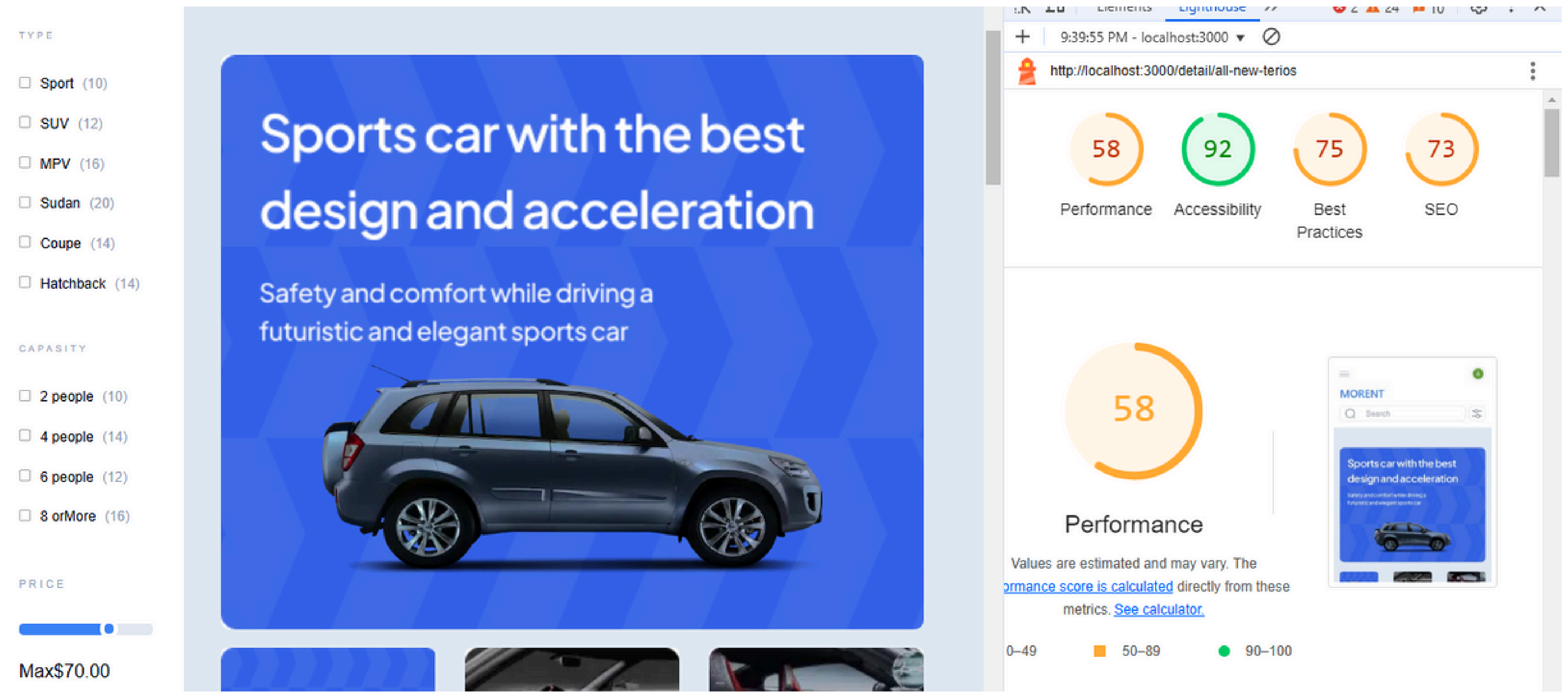
```
useEffect(() => {
        const fetchData = async () => {
            try {
                const response = await client.fetch(
                    `*[_type == "popular"]{
            _id,
            "slug": slug.current,
            title,
            category,
            image,
            fuel,
            type,
            capacity,
            price,
            discount
          }`
                );
                setData(response);
            } catch (error) {
                console.error("Error fetching data:", error);
            } finally {
                setLoading(false);
            }
        };

        fetchData();
    }, []);
```

3.**Performance Optimization**

To improve the marketplace’s loading speed and responsiveness:

- Lazy Loading: Implemented for images and assets.
- Image Optimization: Used TinyPNG for compression.
- Minified CSS & JavaScript: To reduce unnecessary load.
- Google Lighthouse & GTMetrix: Used to analyze performance bottlenecks.


TYPE
Sport (10)
SUV (12)
MPV (16)
Sudan (20)
Coupe (14)
Hatchback (14)
CAPASITY
2 people (10)
4 people (14)
6 people (12)
8 orMore (16)
PRICE
Max$70.00
Sports car with the best design and acceleration
Safety and comfort while driving a futuristic and elegant sports car
9:39:55 PM - localhost:3000
http://localhost:3000/detail/all-new-terios
MORENT
Search

58 Performance
92 Accessibility
75 Best Practices
73 SEO

58
Performance

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

0–49 🟧 50–89 ● 90–100

Challenges Faced & Solutions

Challenge	Description	Solution Implemented
Authentication Issues	Clerk authentication was causing session inconsistencies.	Used proper session handling and token management.
Dynamic Routing	Clerk authentication was causing session inconsistencies.	Implemented Next.js dynamic routes and fallback loading state.
API Errors	Data fetching failures due to rate limits	Added caching and optimized API requests.
Cart Not Updating	Items were not updating in real-time.	Fixed state management and backend response issues.
Performance Issues	Page load time was high due to large assets.	Used lazy loading and compressed images.

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