Day 3 - API Integration Report - Furniture Marketplace

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INTRODUCTION

The Furniture Marketplace aims to revolutionize online furniture shopping by integrating Sanity CMS with its platform, ensuring real-time data synchronization, improved schema structure, and a smooth migration process.

This report highlights the end-to-end API integration, the adjustments made to schemas, and the data migration strategies implemented. By leveraging modern web technologies, this project ensures that product listings, images, and pricing data are accurately managed while enhancing scalability and performance.

The document will cover:

- **API Integration Process:** How Sanity CMS connects with the marketplace and handles data flow.
- **Schema Adjustments:** Modifications made to optimize product listings.
- **Data Migration:** Tools and techniques used for seamless data transfer.
- **Technical Implementations:** Code snippets demonstrating API calls and migration scripts.
- **Results & Outcomes:** How the integration has improved the platform's efficiency.

1. Understanding the Provided API

Key Endpoints

- **Product Listings**:
  - **Endpoint**: **/products**
  - **Description**: Retrieves a list of all available products, including details such as name, price, description, and images.

- **Categories**:
  - **Endpoint**: **/categories**
  - **Description**: Fetches product categories to help users filter their searches effectively.
- **Order History**:
  - **Endpoint**: **/orders** (if applicable)
  - **Description**: Allows users to view their past orders, including order details and statuses.

Adjustments and Mapping

- **Field Adjustments**: Modify field names, types, and relationships to ensure compatibility.
  - **Example**:
    - API Field: **product_title**
    - Schema Field: **name**
    - **Action**: Rename **product_title** in the API response to **name** in the schema.
- **Data Types**: Ensure that data types match (e.g., strings, integers, booleans).
- **Relationships**: Adjust relationships between entities (e.g., products and categories) to reflect the API structure.

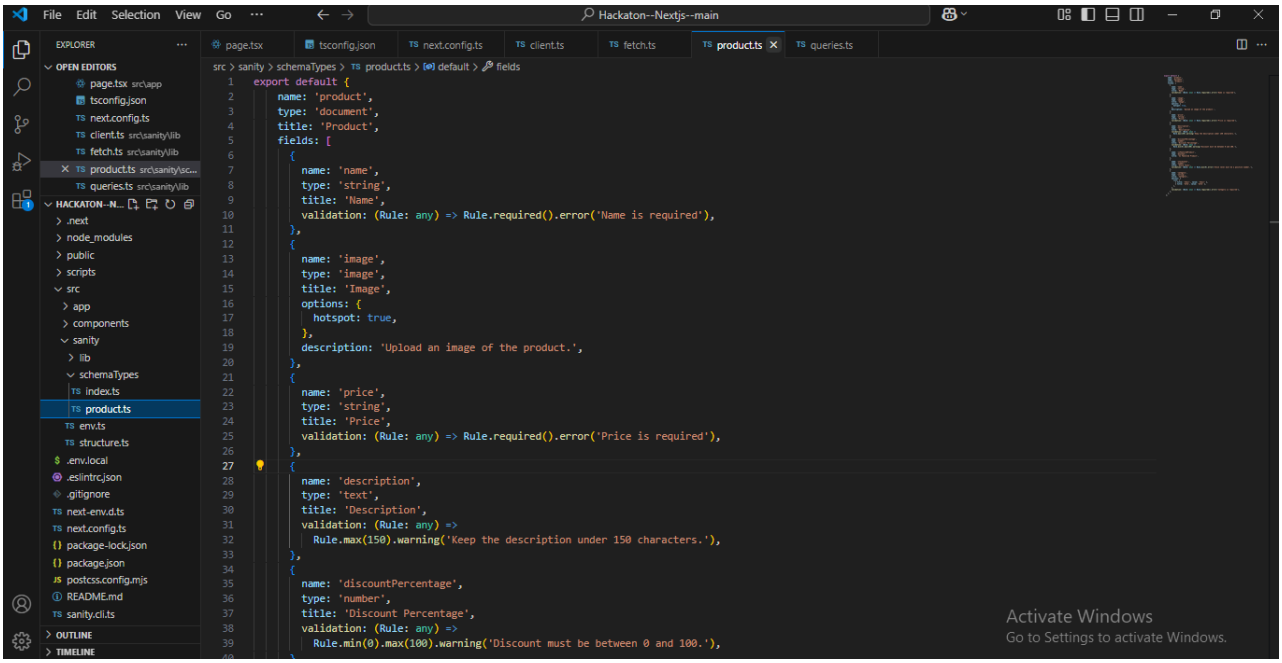
2. API Integration in Next.js

Steps for Integration

1. **Create Utility Functions**: Develop functions to handle API requests and responses.
   a. Example: Create a function to fetch product data from the API.
2. **Render Data in Components**: Use React components to display the fetched data dynamically.
   a. Example: Create a ProductList component that maps over the fetched product data to render individual product
3. **Handling Responses:**

- Parse API responses using JSON format.

- Handle errors and success responses accordingly.



3. Data Migration Options

To streamline the migration process, consider the following methods:

Using the Provided API

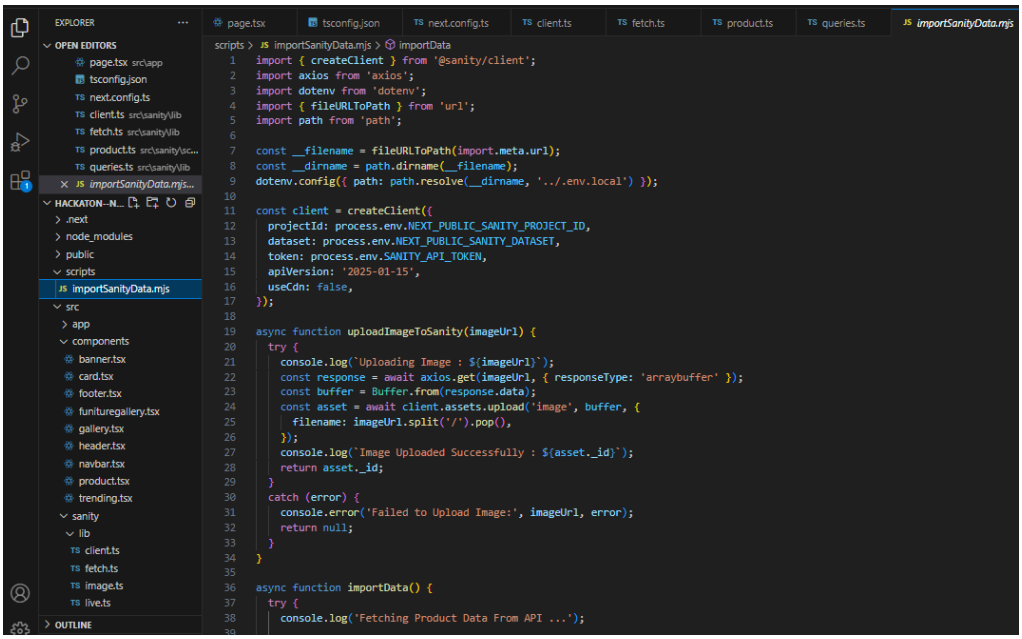
- **Script Writing**: Write scripts to fetch and transform data from the API.

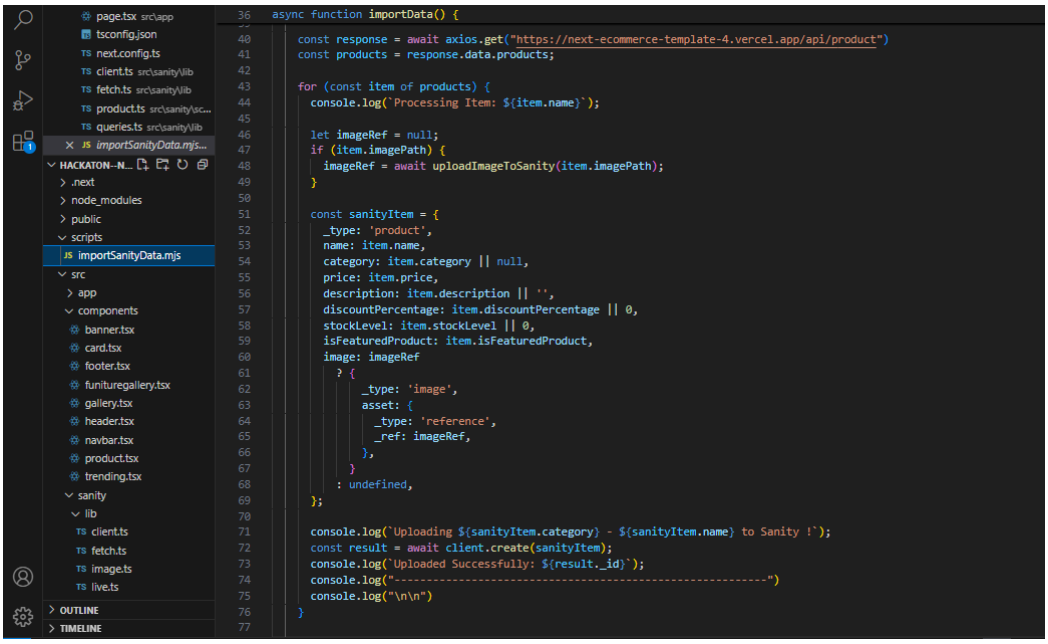
Manual Import

- **Export Data**: Export data from the API as JSON or CSV.
- **Sanity Import Tools**: Use Sanity's built-in import tools to upload the data.
- **Ideal Use Case**: This method is particularly useful for small datasets or when learning basic import methods.

Using External Platform APIs

- **Fetch Data**: Retrieve data from platforms like Shopify or WooCommerce.
- **Field Mapping**: Map fields to your Sanity schema to ensure data consistency.
- **Script-Based Migration**: Follow a similar script-based migration process, ensuring data transformation aligns with schema requirements.





4.Populated Sanity CMS Fields

Overview of Sanity CMS Integration

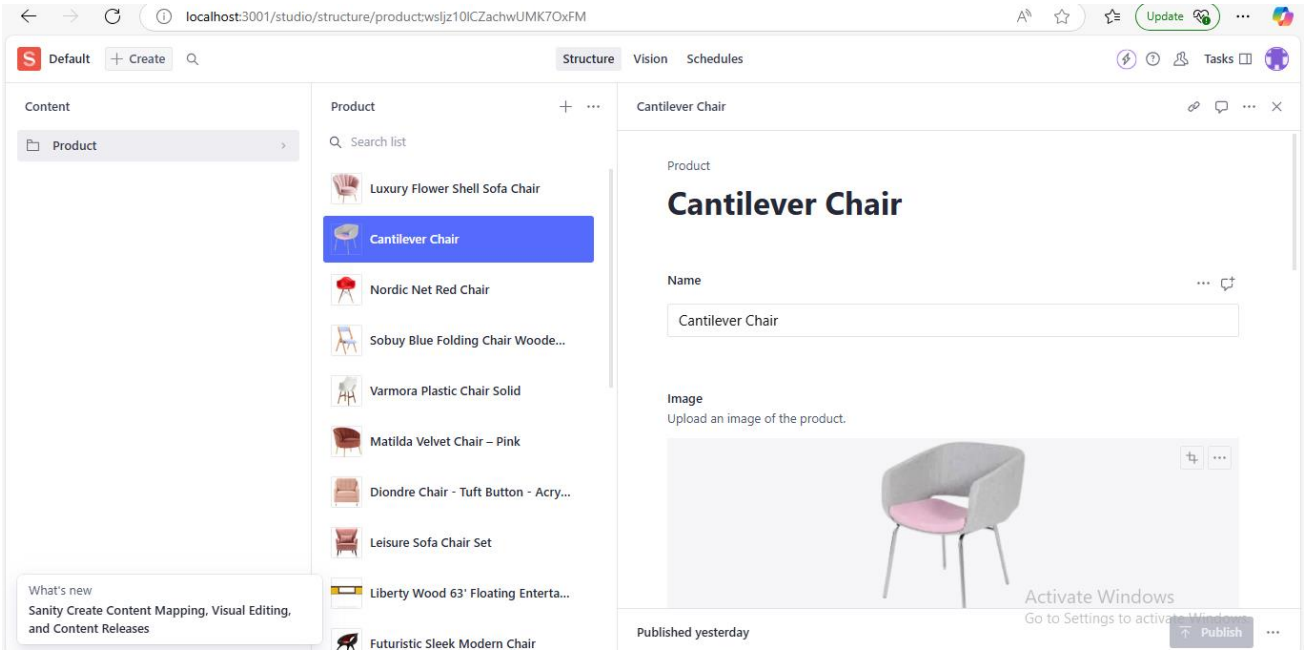
Sanity CMS was integrated to manage content fields such as product descriptions, images, and categories. The content is dynamically populated on the frontend of the marketplace.

Example of Populated Fields:

- Product names, descriptions, images, and prices were pulled from the CMS and displayed on the marketplace.

- Categories and tags were also dynamically updated.

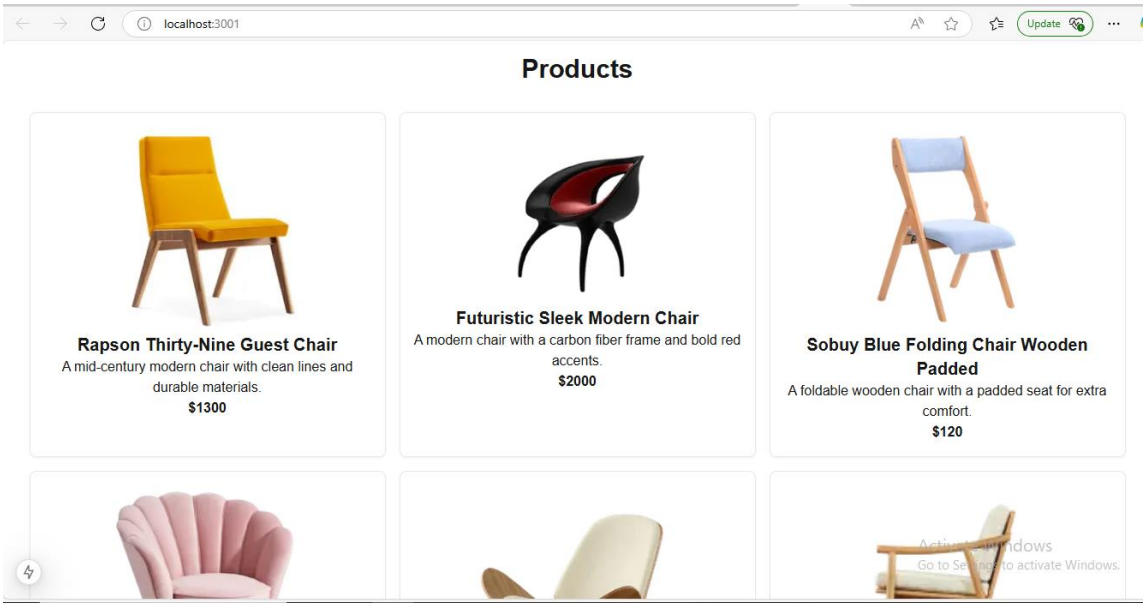
Populated Sanity CMS Fields



5. Data Successfully Displayed in Frontend

The integration of the API and CMS allows data to be dynamically rendered on the Furniture Marketplace website. Product data, including images, descriptions, and pricing, is fetched from the backend and displayed in real time.

Frontend Display



Conclusion

The successful **integration of Sanity CMS** with the Furniture Marketplace marks a significant step toward a **more efficient, scalable, and dynamic e-commerce platform**. By implementing **real-time API connectivity, optimizing schemas, and executing a seamless data migration**, we have ensured that product listings, pricing, and images are accurately managed with minimal latency.

Through this project, we have:

✅ **Enhanced data integrity** by structuring schemas with proper validation.

✅ **Streamlined API calls** for faster product updates and real-time synchronization.

✅ **Executed efficient data migration**, ensuring a smooth transition without data loss.

✅ **Improved platform scalability**, making it adaptable for future growth and expansions.

With this implementation, the Furniture Marketplace is now **better equipped to handle dynamic product updates, user interactions, and seamless content management**. Moving forward, further enhancements can include **AI-driven recommendations, performance optimizations, and additional automation** to refine the user experience further.

This project demonstrates how **strategic API integration and effective data management** can transform an online marketplace, making it more robust, user-friendly, and future-proof.