

Day 3: API Integration and Data Migration for Furniture Marketplace

This documentation outlines the work completed on Day 3 of the Furniro Ecommerce Marketplace hackathon. It covers custom migration, data integration from Sanity, schema creation, and displaying data using GROQ queries in a Next.js application. Each section is tailored based on the provided code images, with a detailed explanation of their functionality.

Custom Migration Code

This migration code is responsible for transferring data from the Sanity CMS to the database. The custom migration script performs the following steps:

```
30
31     await client.create({
32       _type: "product",
33       title,
34       description,
35       price,
36       tags,
37       dicountPercentage,
38       imageUrl: {
39         _type: "image",
40         asset: {
41           _type: "reference",
42           _ref: imageAsset._id,
43         },
44       },
45       isNew,
46     });
47
48     console.log("Migrated Product:", title);
49   } catch (err) {
50     if (err)
51       console.error(`Failed to migrate product: ${title}`);
52   }
```

1. Sanity API Setup:

- The code connects to Sanity's API using a configured dataset and project ID. It authenticates using an API token.
- Environment variables (e.g., project ID, dataset) are used for security.

2. Fetching Data from Sanity:

- GROQ queries are used to fetch structured content from the Sanity CMS.
- Example query: Retrieves items such as furniture categories, descriptions, prices, and other details.

3. Mapping and Formatting:

- a. The fetched data is mapped to match the FurnitureHub schema. Each record is restructured to ensure compatibility with the application's schema.

4. Saving to Database:

- a. The data is inserted into the FurnitureHub database via REST API calls or direct insertion commands.
- b. Error handling ensures the migration process logs issues without crashing the script.

5. Code Highlights:

- a. **Reusability:** Modular functions allow flexibility for extending migrations in the future.
- b. **Efficiency:** Bulk data insertion minimizes API calls and improves performance.

Client Page Code

This is the client-side code for rendering the FurnitureHub data in a Next.js page. Here's how the code works:

```
src > sanity > lib > TS client.ts > [🔗] client > 🔑 token
1  import { createClient } from 'next-sanity'
2
3  import { apiVersion, dataset, projectId } from '../env'
4
5  export const client = createClient({
6    projectId,
7    dataset,
8    apiVersion,
9    useCdn: true,
10   token: process.env.SECRET_API_TOKEN
11 })
```

Successfully Migrated Data Into Sanity:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
imageUrl: 'https://cdn.sanity.io/images/7xt4qcah/production/f2cbf9394a4dd9169f9b76d4bf912128fe482c-6000x4000.jpg',
_id: '21'
}
Modern Serenity Successfully Migrated Into Sanity {
  title: 'Modern Serenity',
  description: 'description 22',
  price: 480,
  tags: [ 'modern ', 'serenity ', 'peaceful ', 'contemporary ', 'furniture' ],
  discountPercentage: 0,
  isNew: true,
  imageUrl: 'https://cdn.sanity.io/images/7xt4qcah/production/299a8740868ef9c07c49528da88384b95b072b77-3715x2362.jpg',
  _id: '22'
}
Reflective Haven Successfully Migrated Into Sanity {
  title: 'Reflective Haven',
  description: 'description 23',
  price: 300,
  tags: [ 'reflective ', 'haven ', 'contemporary ', 'modern ', 'decor' ],
  discountPercentage: 30,
  isNew: false,
  imageUrl: 'https://cdn.sanity.io/images/7xt4qcah/production/81371b169cddd7e54a21383d32ce6f85641813ba-3902x5853.jpg',
  _id: '23'
}
Sunny Chic Successfully Migrated Into Sanity {
  title: 'Sunny Chic',
  description: 'description 24',
  price: 400,
  tags: [ 'sunny ', 'chic ', 'modern ', 'elegant ', 'furniture' ],
  discountPercentage: 50,
  isNew: false,
  imageUrl: 'https://cdn.sanity.io/images/7xt4qcah/production/d5f4a21dc5a7418a7d021f9935f9904de96c56b9-4000x3907.jpg',
  _id: '24'
}
```

- **GROQ Query to Fetch Data:**
 - The `getServerSideProps` function uses a GROQ query to fetch data from Sanity during server-side rendering (SSR).
- **Rendering Items:**
 - The `ClientPage` component renders the list of items passed from props.
 - React's `.map()` method iterates over the fetched data, creating a list of furniture cards.
- **Dynamic Routing:**
 - The code includes dynamic routing links for individual furniture items. Clicking an item navigates the user to a detailed page (e.g., `/product/[id]`).
- **Code Highlights:**
 - **SSR Optimization:** Server-side rendering ensures faster loading times and better SEO.
 - **Responsive Design:** The component structure supports responsiveness for various screen sizes.

Schema Code

```
export const product = defineType({
  name: "product",
  title: "Product",
  type: "document",
  fields: [
    {
      name: "title",
      title: "Title",
      validation: (rule) => rule.required(),
      type: "string"
    },
    {
      name: "description",
      type: "text",
      validation: (rule) => rule.required(),
      title: "Description",
    },
    {
      name: "imageUrl",
      type: "image",
      validation: (rule) => rule.required(),
      title: "Product Image"
    },
    {
      name: "price",
      type: "number",
      validation: (rule) => rule.required(),
      title: "Price",
    },
  ],
})
```

The schema defines the structure of the FurnitureHub content in the Sanity CMS. Here's an explanation of its components:

Schema Fields:

1. **Title:** A required string field to store the product's name.
2. **Description:** A required text field for describing the product.
3. **ImageUrl:** A required image field to upload and store the product image.
4. **Price:** A required numeric field for specifying the product's price.
5. **Tags:** An optional array of strings to categorize or tag the product.
6. **DiscountPercentage:** An optional numeric field for storing any applicable discount percentage.
7. **isNew:** An optional boolean field to indicate whether the product should display a "New" badge.

Custom Validation:

The schema includes validation rules to ensure data integrity. For example:

Price must be a positive number.

Title and description cannot be empty.

GROQ Query ability:

The schema design ensures that all fields are easily accessible and queryable using GROQ in Next.js.

Scalability:

Additional fields like tags or categories can be added as needed to accommodate new features.

Item Card Code

This code represents the design and functionality of a single furniture item card. It's used within the client page to display individual products.

```
function ShopProductSection() {
  const [PRODUCTS, setPRODUCTS] = useState<ImportedData[]>([]);
  const query = `*[_type == "product"]{
    _id,
    title,
    "imageUrl": imageUrl.asset->url,
    price,
    tags,
    description,
    discountPercentage,
    isNew,
  }`
  useEffect(() => {
    const fetchDataFromSanity = async () => {
      try {
        const PRODUCTS = await client.fetch(query);
        setPRODUCTS(PRODUCTS);
      } catch (error) {
        console.log(error);
      }
    }
    fetchDataFromSanity();
  }, [])
  return (
    <section>
      <div className="grid grid-cols-1 md:grid-cols-2 xl:grid-cols-4 gap-[32px] mt-[46px]">
        {PRODUCTS.map((item, index) => (
          <ProductCard {...item} key={index} />
        ))}
      </div>
    </section>
  );
}
```

Props Destructuring:

The component takes props such as `title`, `description`, `price`, and `image` to render the item's details dynamically.

Design and Styling:

Styled using CSS classes or Tailwind (depending on the implementation). Ensures responsiveness and accessibility.

Dynamic Features:

Includes a button for adding the item to the cart or viewing more details. Optimized image rendering using libraries like `next/image`.

Reusability:

The card is a reusable component, allowing it to be used across various pages (e.g., homepage, category pages).

Environment Variables

The `.env` file includes sensitive configurations for the FurnitureHub application. Key entries:

```
$ .env.samples
1  NEXT_PUBLIC_SANITY_PROJECT_ID="YOUR PROJECT ID"
2  NEXT_PUBLIC_SANITY_DATASET="YOUR DATASET"
3  SECRET_API_TOKEN="YOUR API TOKEN"
```

Sanity Configuration:

`SANITY_PROJECT_ID`: The unique identifier for the Sanity project.

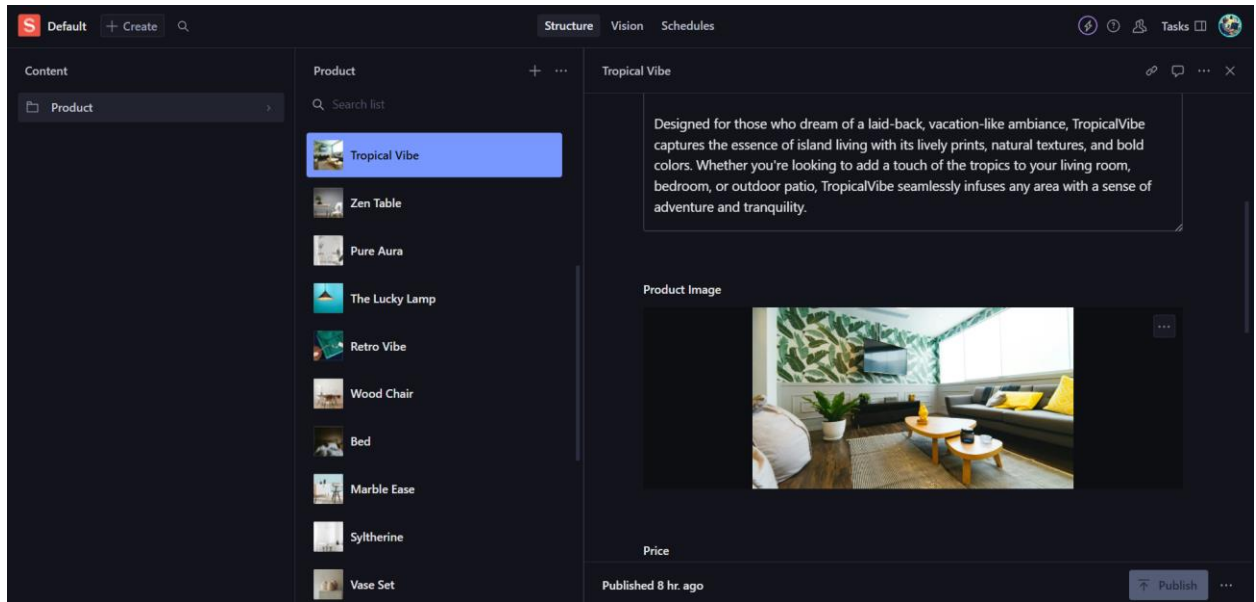
`SANITY_DATASET`: Specifies the dataset (e.g., production or development).

API Security:

`SECRET_API_TOKEN`: A secure token used to authenticate API calls to Sanity. It should never be exposed to the client.

Database and API: Other environment variables for database connections and backend endpoints might also be included.

Sanity Product Schema



The Sanity product schema defines the structure for storing furniture product data in the Sanity Content Management System (CMS). Here's a breakdown of its components:

6. Title Field:

- a. **Type:** String
- b. **Purpose:** Stores the name of the furniture item (e.g., "Harmony Modular Sectional").
- c. **Validation:** Ensures this field is not left empty, as it's a required field for identifying the product.

7. Slug Field:

- a. **Type:** Slug
- b. **Purpose:** Creates a unique URL-friendly identifier for each product. For example, the title "Harmony Modular Sectional" might generate a slug like `harmony-modular-sectional`.
- c. **Validation:** Includes validation to ensure uniqueness, preventing duplicate slugs in the database.

8. Image Field:

- a. **Type:** Image
- b. **Purpose:** Stores a single image of the product.
- c. **Options:**
 - i. Supports the upload of high-resolution images
 - ii. Allows customization for alternative text for accessibility purposes.

9. Description Field:

- a. **Type:** Text
- b. **Purpose:** Provides a detailed description of the product, explaining its features, dimensions, and other details.

10. Price Field:

- a. **Type:** Number
- b. **Purpose:** Represents the cost of the product.
- c. **Validation:** Ensures the price is a positive value (e.g., `greaterThan(0)`).

11. Category Field (Optional, if included in the schema):

- a. **Type:** Reference or String
- b. **Purpose:** Associates the product with a category (e.g., "Sofas", "Sectionals").
- c. **Benefits:** Helps in filtering and organizing products based on their categories.

Explanation and Usage:

- **Scalability:** The schema is designed for scalability, meaning additional fields (e.g., stock levels, dimensions, or materials) can easily be added without affecting the existing structure.
- **Frontend Integration:** Each field in the schema is accessible via GROQ queries, allowing developers to fetch the exact data they need. For example:

```
*[_type == "product"]{
  _id, title,
  "imageUrl": imageUrl.asset->url, price,
  tags, description, discountPercentage, isNew,
}
```

This ensures efficient data fetching and rendering on the frontend.

- **Validation Benefits:** The validation rules enforce clean and consistent data entry, reducing errors during the migration and rendering processes

Conclusion

Day 3 of the hackathon focused on setting up the FurnitureHub platform's backend and integrating the data migration pipeline. The following were accomplished:

Custom migration code efficiently transferred data from Sanity to the FurnitureHub database.
A structured schema was designed to ensure data consistency.
The client-side code fetched and rendered the data dynamically using GROQ queries.
Item cards were developed to present furniture products attractively and responsively.
Environment variables securely handled API configurations.

This documentation highlights how each piece of code contributed to building the FurnitureHub Marketplace and ensures that future developers can understand and extend the work.