DAY-3

API INTEGRATION AND DATA MIGRATION

Process Of API Integration:

1. **Overview:**

The AP integration is connects an external API providing foods and chefs data to a Sanity CMS Project

2. **Steps Taken*:***

- **Environment Setups:**
  - i. Used .env to load environment variables from .env.local.
  - ii. Key Variables Includes:
    - o ***NEXT_PUBLIC_PROJECT_ID***
    - o ***NEXT_PUBLIC_DATASET***
    - o ***SANITY_API_TOKEN***

2. Data Fetching:

o Make concurrent API calls using axios to fetch food and chef data.

o **Endpoints Accessed** :

i. ~~https://sanity-nextjs-rouge.vercel.app/api/foods~~

ii. https://sanity-nextjs-rouge.vercel.app/api/chefs

Understand the Provided API:

1st API: Foods

URL: ~~https://sanity-nextjs-rouge.vercel.app/api/foods~~

This API provides data related to food items. Below are the key details to note:

1. **Key Endpoint**: /foods
   - This endpoint likely returns a list of available food items.
   - Each food item may include details such as:

- **Name**: The name of the food item.
- **Description**: A brief description of the food.
- **Price**: The cost of the item.
- **Tags**: Type of food (e.g., healthy, sweet, crispy).
- **Availability**: Item is available or not

2. Data Use:

- Display food items on the frontend,

o Create a dynamic routes for all products

2nd API: Chefs

URL: ~~https://sanity-nextjs-rouge.vercel.app/api/chefs~~

This API provides data related to chefs. Below are the key details to note:

1. Key Endpoint: /chefs

- This endpoint likely returns a list of chefs.
- Each chef may include details such as:
  - **Name**: The name of the chef.
  - **Position**: The postion of the chef (e.g, Head Chef, Sous Chef, Executive Chefs)
  - **Specialty**: The chef's area of expertise (e.g., Italian cuisine, desserts).
  - **Experience**: The number of years the chef has been in the industry.
  - **Associated Foods**: A reference to the foods prepared by this chef.

2. Data Use:

- Display chef profiles on the frontend.
- Show a chef's details alongside the food items they prepare.

Migration Process:

1. Approach: Using the Provided API

The migration process leverages two APIs:

- **Foods API:** https://sanity-nextjs-rouge.vercel.app/api/foods
- **Chefs API:** https://sanity-nextjs-rouge.vercel.app/api/chefs

Instead of manually inputting data into Sanity, the script automates the following:

- Fetching data from the APIs.
- Transforming the data to match Sanity's schema.
- Uploading images to Sanity's asset management system.
- Creating documents for food and chef entities in Sanity

2. Script Breakdown:

Environment Configuration

- The script uses the dotenv library to load environment variables from .env.local. This ensures secure handling of credentials, including:

  o **NEXT_PUBLIC_SANITY_PROJECT_ID:** The Sanity project ID.

  o **NEXT_PUBLIC_SANITY_DATASET:** The Sanity dataset name.

  o **SANITY_API_TOKEN:** The API token for write access.

Sanity Client Initialization:

The Sanity client is initialized with the provided environment variables. The useCdn flag is set to false to ensure the latest data is fetched during operations.

Data Fetching:

- Data is fetched concurrently from the Foods and Chefs APIs using Promise.all. This reduces the overall execution time.

Image Upload to Sanity:

- The uploadImageToSanity function downloads and uploads images to Sanity, returning a reference ID for each uploaded asset.
- Images are handled as optional fields to accommodate cases where images are missing.

Data Transformation and Upload:

- **Foods:**
  - Fields such as name, category, price, and tags are mapped directly.
  - Optional fields like originalPrice and description are assigned default values if missing.
  - Uploaded images are linked to the document using Sanity's _ref system.
- **Chefs:**
  - .. Fields like name, position, experience, and specialty are included.
  - Optional fields are handled similarly to the food documents

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- **Chefs**:
  - Fields like name, position, experience, and specialty are included.
  - Optional fields are handled similarly to the food documents.

Error Handling:

- Errors during API requests, image uploads, or document creation are logged to help identify and resolve issues.

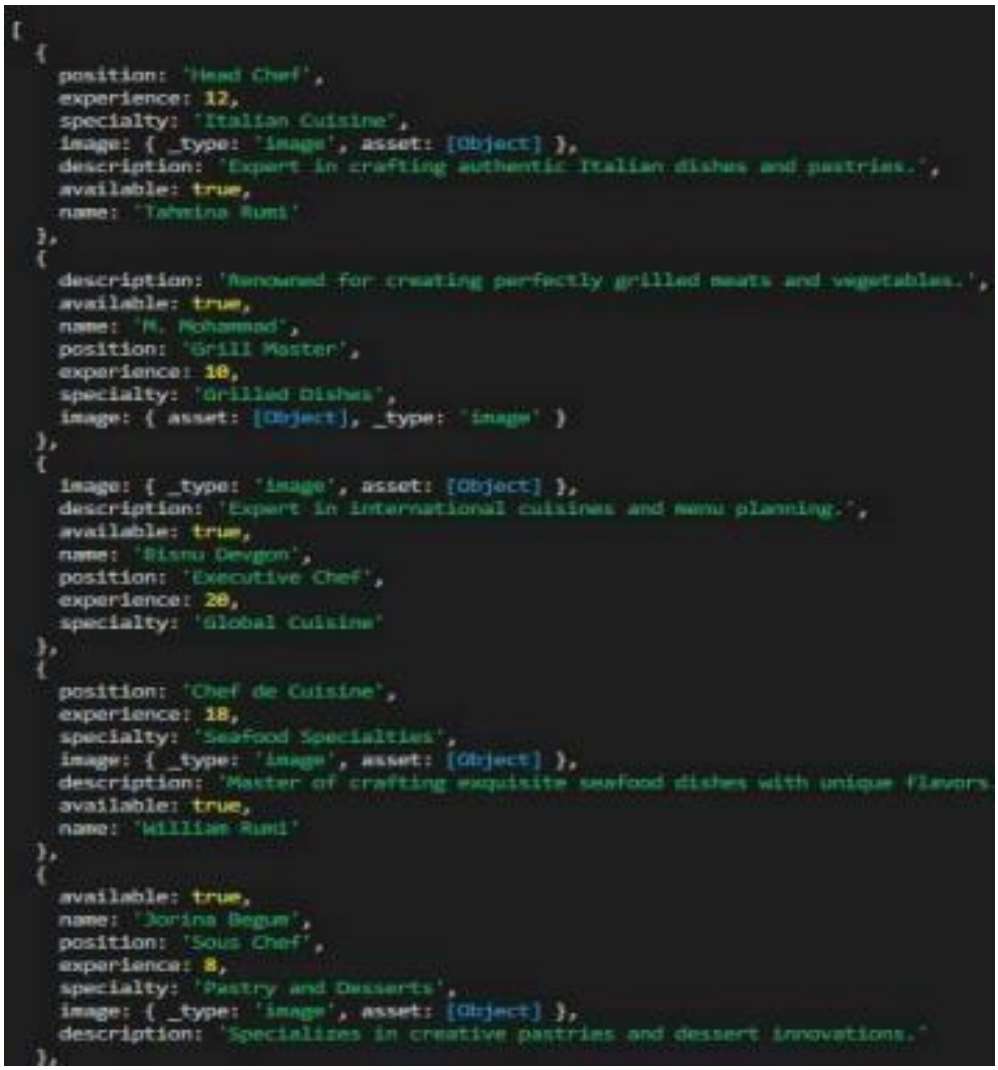
Advantages of This Approach:

1. **Efficiency:**
   - Automates the entire migration process, saving time and effort.
2. **Scalability:**
   - Can handle large datasets without manual intervention.
3. **Accuracy**:
   - Reduces human errors associated with manual data entry.
4. **Reusability**:
   - The script can be reused for future migrations with minimal modifications.

FOODS API CALL:


```
[
  {
    name: 'Chicken Chop',
    category: 'Appetizer',
    price: 12,
    originalPrice: 15,
    image: { _type: 'image', asset: [Object] },
    description: 'Crispy fried chicken bites served with dipping sauce.',
    available: true,
    tags: [ 'Sell', 'Crispy' ]
  },
  {
    name: 'Fresh Lime',
    category: 'Drink',
    price: 38,
    originalPrice: 45,
    image: { _type: 'image', asset: [Object] },
    description: 'Refreshing fresh lime drink made with natural ingredients.',
    available: true,
    tags: [ 'Healthy', 'Popular' ]
  },
  {
    available: true,
    tags: [ 'Sell', 'Sweet' ],
    name: 'Chocolate Muffin',
    category: 'Dessert',
    price: 28,
    originalPrice: 30,
    image: { _type: 'image', asset: [Object] },
    description: 'Soft and rich chocolate muffin topped with chocolate chips.'
  },
  {
    name: 'Country Burger',
    category: 'Sandwich',
    price: 45,
    originalPrice: 50,
    image: { _type: 'image', asset: [Object] },
    description: 'Classic country-style burger served with fries.',
    available: true,
    tags: [ 'Recommended' ]
  },
  {
    image: { _type: 'image', asset: [Object] },
    description: 'Juicy beef burger with fresh lettuce, tomatoes, and cheese.'
    available: true,
    tags: [ 'Popular' ],
    name: 'Burger',
    category: 'Sandwich',
    price: 21,
    originalPrice: 45
  },
```

CHEFS API CALL:

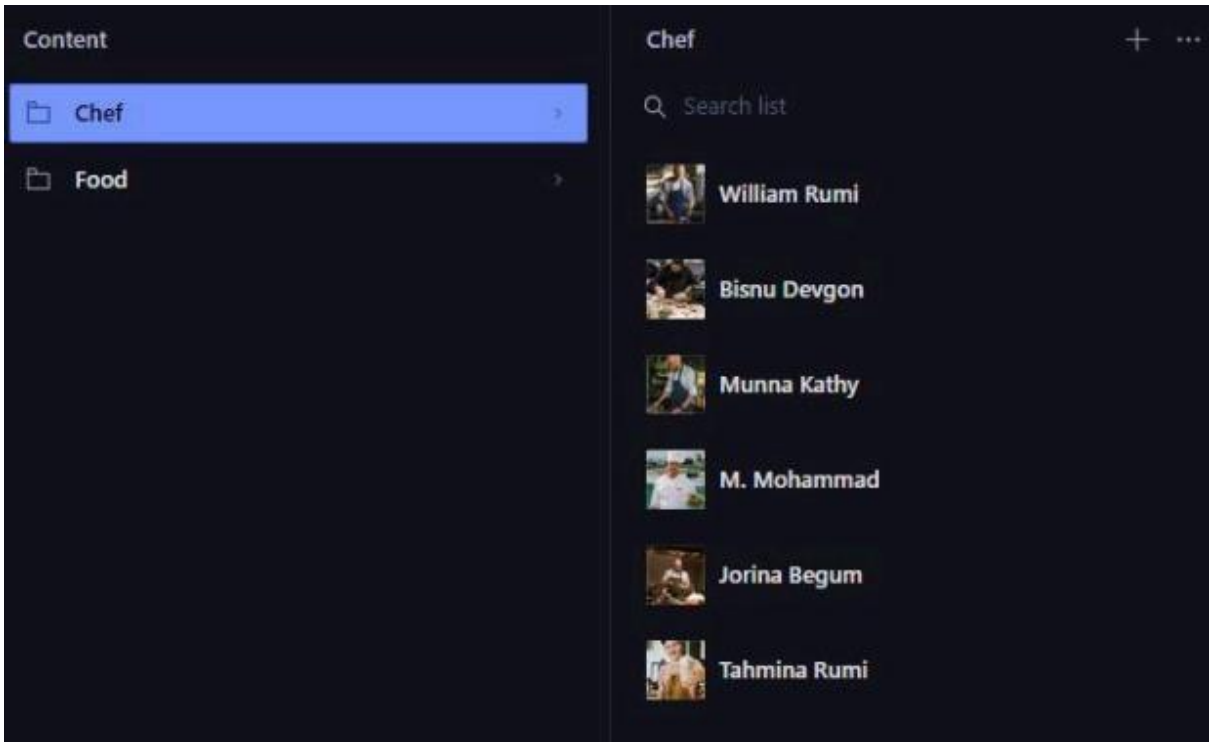



```
[
  {
    position: 'Head Chef',
    experience: 12,
    specialty: 'Italian Cuisine',
    image: { _type: 'image', asset: [Object] },
    description: 'Expert in crafting authentic Italian dishes and pastries.',
    available: true,
    name: 'Tahmina Rumi'
  },
  {
    description: 'Renowned for creating perfectly grilled meats and vegetables.',
    available: true,
    name: 'M. Mohammad',
    position: 'Grill Master',
    experience: 10,
    specialty: 'Grilled Dishes',
    image: { asset: [Object], _type: 'image' }
  },
  {
    image: { _type: 'image', asset: [Object] },
    description: 'Expert in international cuisines and menu planning.',
    available: true,
    name: 'Bisnu Devgon',
    position: 'Executive Chef',
    experience: 20,
    specialty: 'Global Cuisine'
  },
  {
    position: 'Chef de Cuisine',
    experience: 18,
    specialty: 'Seafood Specialties',
    image: { _type: 'image', asset: [Object] },
    description: 'Master of crafting exquisite seafood dishes with unique flavors.',
    available: true,
    name: 'William Rumi'
  },
  {
    available: true,
    name: 'Jorina Begum',
    position: 'Sous Chef',
    experience: 8,
    specialty: 'Pastry and Desserts',
    image: { _type: 'image', asset: [Object] },
    description: 'Specializes in creative pastries and dessert innovations.'
  },
```

Data Successfully Import On Sanity:

1. Foods Data:

2. Chefs Data:



Display On My Frontend:

1. Setting Up the Sanity Client

To fetch data from Sanity, a client is required for communication between the frontend and the Sanity backend.

```
import { createClient } from 'next-sanity'

import { apiVersion, dataset, projectId } from '../env'

export const client = createClient({
  projectId:process.env.NEXT_PUBLIC_SANITY_PROJECT_ID,
  dataset: process.env.NEXT_PUBLIC_SANITY_DATASET,
  apiVersion: '2023-03-25',
  useCdn: true, // Set to false if statically generating pages, using ISR or tag-based revalidation
})

```

- **projectId**: The unique identifier for your Sanity project.
- **dataset**: The dataset to query (e.g., production).
- **useCdn**: Enabled for faster read operations by caching results.
- **apiVersion**: The version of the Sanity API to ensure compatibility.

2. Fetching Data Using GROQ:

GROQ is used to query data stored in Sanity. Queries can be customized to fetch specific documents or fields.

- ***Fetch Food Data Using GROQ Query***

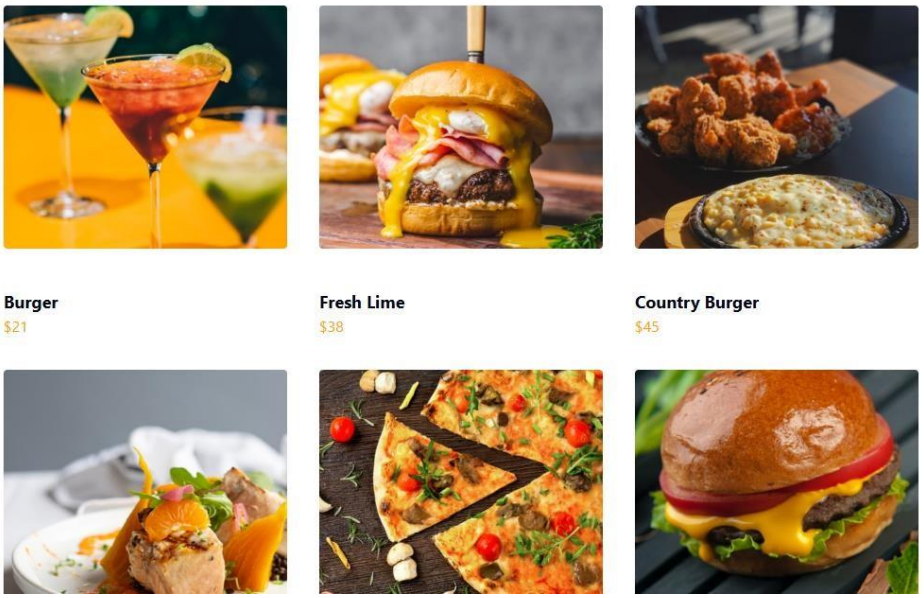
```
const product = await client.fetch(`
    *[_type == "food"]{
      name,
      price,
      originalPrice,
      "image": image.asset->url,
      "slug": slug.current,
    }
  `);
```

- ***FETCH CHEFS DATA USING GROQ QUERY***

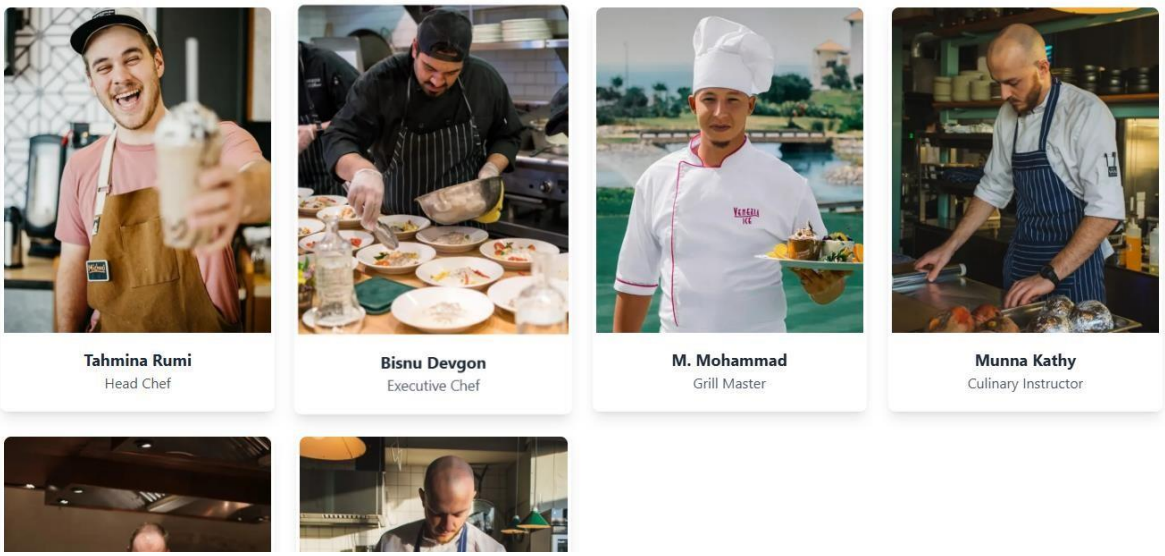
```
const chefs:IChefs[] = await client.fetch(`
      *[_type == "chef"]{
        name,
        position,
        "image": image.asset->url,
        "slug": slug.current,
      }
    `);

```

Data successfully displayed in the frontend:

- **Foods Data**



- **Chefs Data**



3. Dynamic Routing for Details

To create a dynamic route for food or chef details, configure a [slug].ts file in the page's directory.

```
async function Productpage({ params }: { params: { slug: string } }) {
  const product:IProduct =
    await client.fetch(`*[_type == "food" && slug.current == $slug][0] {
      name,
      description,
      price,
      originalPrice,
      tags,
      "imageUrl": image.asset->url,
      "slug": slug.current,
    }`,{slug:params.slug});

```

Self-Validation Checklist

API Understanding

- **Status: ✓**

Verify that I have a clear understanding of how the API works, including its endpoints, request methods, and expected responses.

Schema Validation

- **Status: ✓**
  Confirm that the schemas in Sanity are properly configured, matching the structure of the data to be migrated. Ensure required fields are set correctly and optional fields are handled appropriately.

Data Migration

- **Status: ✓**
  Validate that the data from the API has been successfully migrated into Sanity. Check for completeness, accuracy, and proper image uploads.

API Integration in Next.js

- **Status: ✓**
  Ensure that the frontend successfully fetches data from Sanity using the GROQ queries. Validate that the data is displayed correctly in the intended format.

Submission Preparation

- **Status: ✓**
  Confirm that all requirements are met, code is clean and organized, and the project is ready for submission. Include documentation, screenshots, or demo links.

Outcome:

The project is now functional, with APIs integrated, data migrated into Sanity, and displayed dynamically on the frontend. These skills are essential for handling a complex client project in a professional environment.