Day 3 - API Integration and Data migration

- **Introduction**

This report aims to improve our proficiency in API integration by outlining the process, challenges faced, and the solutions implemented. To enhance efficiency and streamline the workflow, we utilized the Sanity tool.

- ## API Integration Process

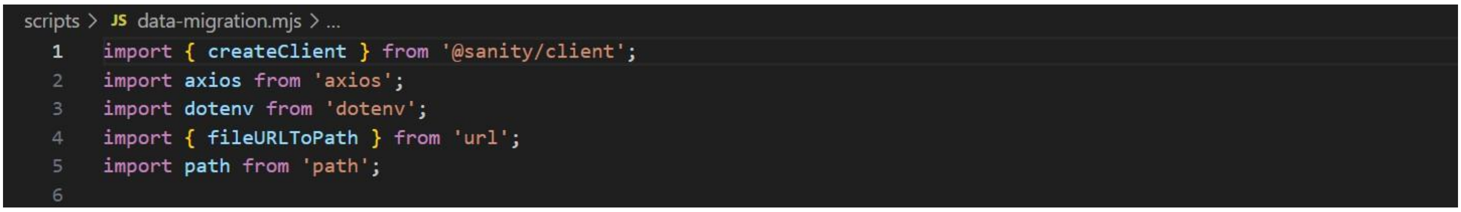
➢ Provided Data:

- **Provided API** : In this integration process we were provided a API from one of our teachers in my case it was **Sir Bilal Muhammad Khan.**
- **Template #3 api :** https://template-03-api.vercel.app/api/products
- **Other Components** : we were also provided with some helping pre-build components.
- **migration script** : https://github.com/OkashaTanoli/template-03-api/blob/master/scripts/data-migration.mjs
- **sanity schema** : https://github.com/OkashaTanoli/template-03-api/blob/master/src/sanity/schemaTypes/products.ts

Implementation Process

To start our implementation, first we need to take a look at the libraries that needs be installed before starting this process

Code Snippet



```
import { createClient } from '@sanity/client';
import axios from 'axios';
import dotenv from 'dotenv';
import { fileURLToPath } from 'url';
import path from 'path';

```

1. **Axios** : The main purpose of Axios library is to fetch data from an API.
2. **Sanity** : Sanity is a (Content Management System) it is commonly used for managing large amount of content or data.
3. **Dotenv** : The main purpose of dotenv is to load environment variables from a .env file into process.env in Node.js applications, enhancing security and configuration management.

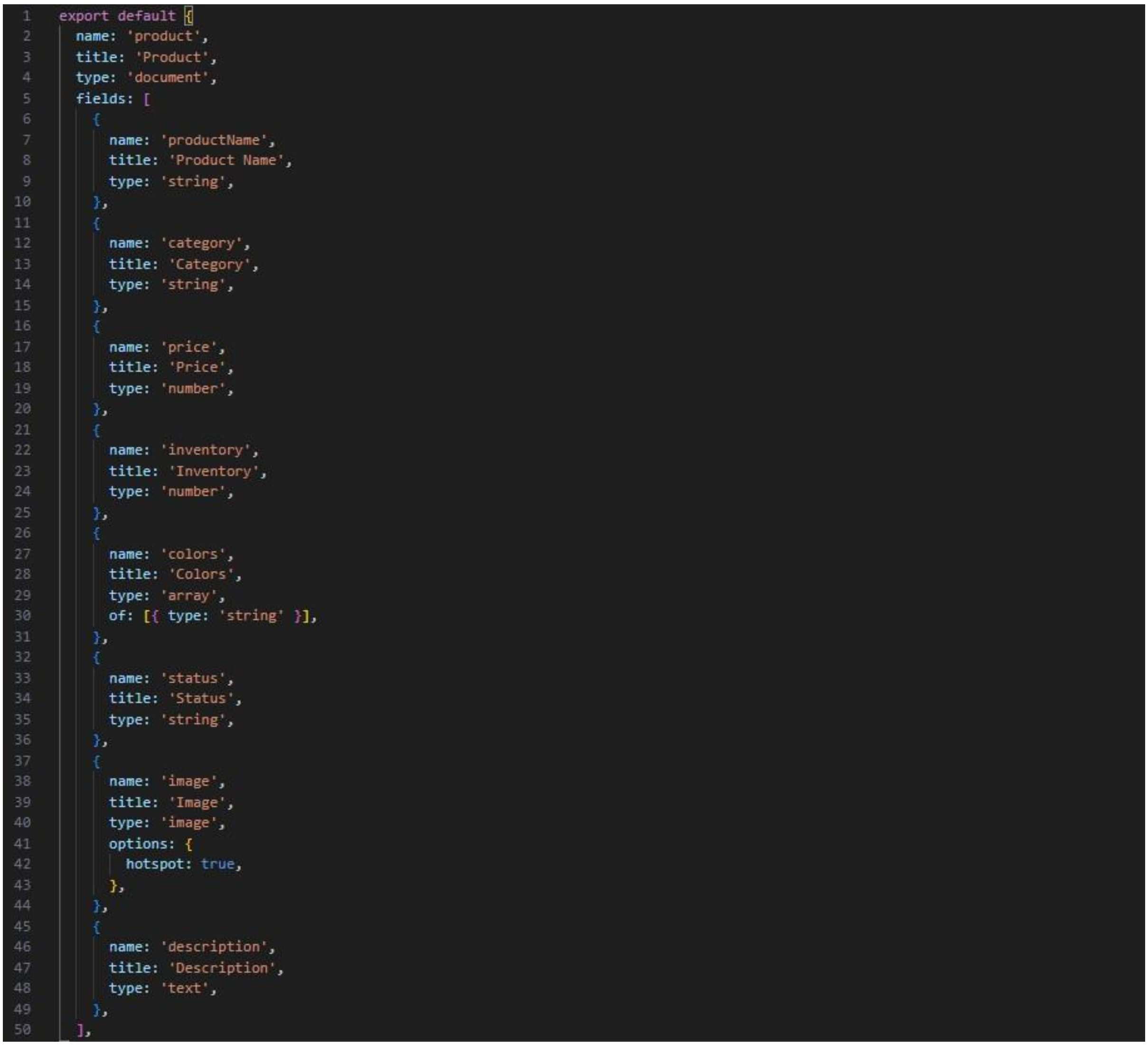
- **Adjustment Made To Schema**

There is a minor adjustment that I did make to my schema that I enabled image hotspot which will crop and scale the image for better quality.

Enabling {hotspot} Code Snippet

```
{  name: 'image',

 title: 'Image',

 type: 'image',

 options: {

  hotspot: true, // Enables hotspot functionality for better image cropping

 },}
```

Schema Overview



```
export default {
  name: 'product',
  title: 'Product',
  type: 'document',
  fields: [
    {
      name: 'productName',
      title: 'Product Name',
      type: 'string',
    },
    {
      name: 'category',
      title: 'Category',
      type: 'string',
    },
    {
      name: 'price',
      title: 'Price',
      type: 'number',
    },
    {
      name: 'inventory',
      title: 'Inventory',
      type: 'number',
    },
    {
      name: 'colors',
      title: 'Colors',
      type: 'array',
      of: [{ type: 'string' }],
    },
    {
      name: 'status',
      title: 'Status',
      type: 'string',
    },
    {
      name: 'image',
      title: 'Image',
      type: 'image',
      options: {
        hotspot: true,
      },
    },
    {
      name: 'description',
      title: 'Description',
      type: 'text',
    },
  ],
```

- **Migration Steps And Tools Used**

Tool Used

We have already installed the libraries (**Axios, Dotenv, sanity**) at the start of this project so we are good to go for now.

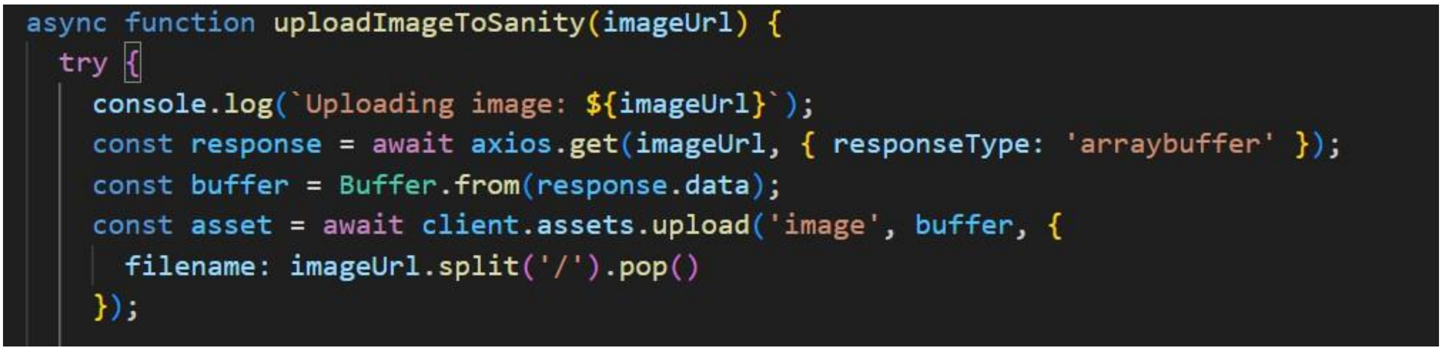
Framework Used In This Process

The Framework that is used in this process is **Next.js** as it is one of the best and fastest growing Framework out there.

Data Fetching

API data is retrieved as well as **Images** are downloaded with the help of **Axios** library that we installed in the start of out project.

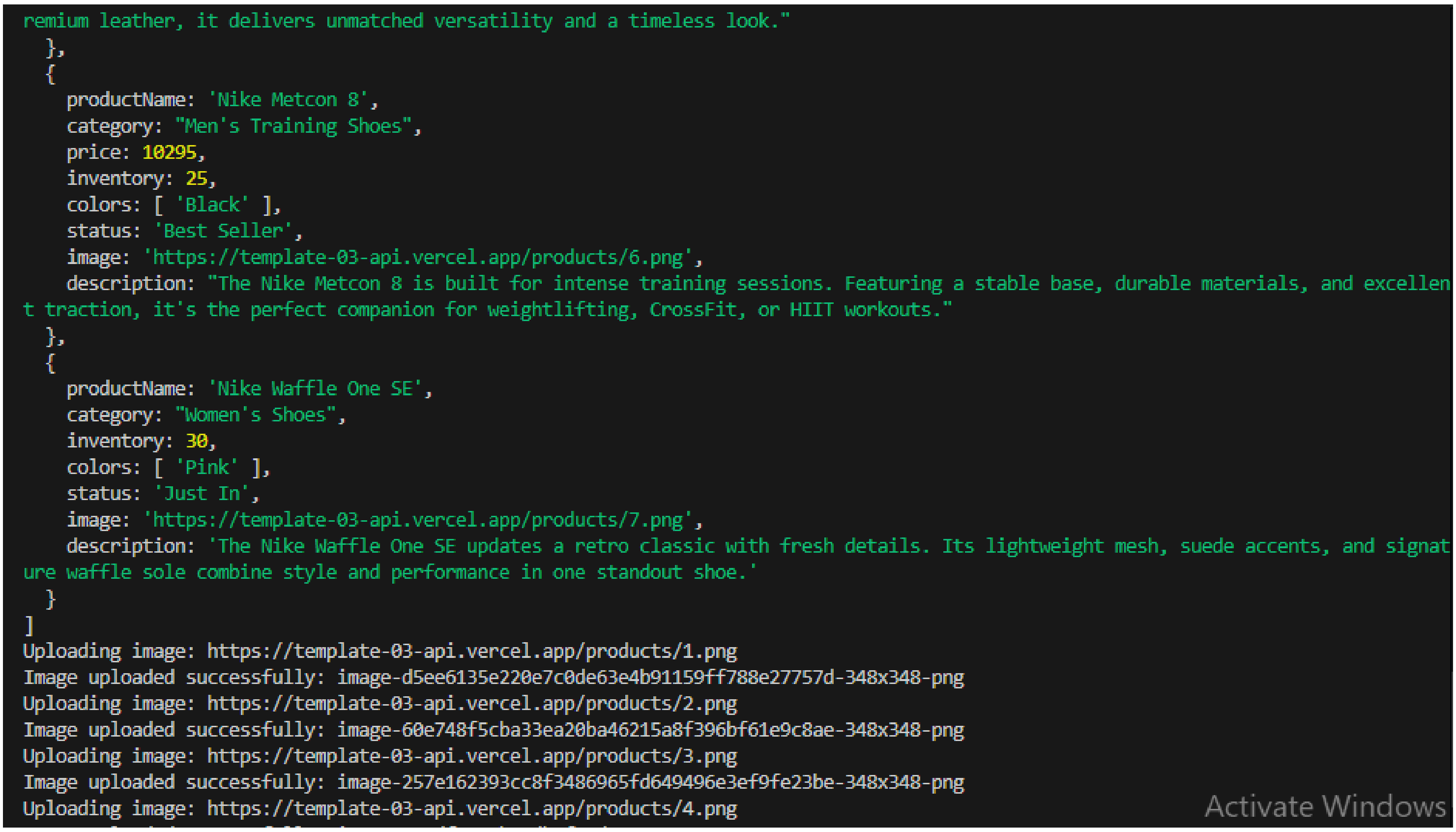
Code Snippet



```
async function uploadImageToSanity(imageUrl) {
  try {
    console.log(`Uploading image: ${imageUrl}`);
    const response = await axios.get(imageUrl, { responseType: 'arraybuffer' });
    const buffer = Buffer.from(response.data);
    const asset = await client.assets.upload('image', buffer, {
      filename: imageUrl.split('/').pop()
    });
```

- **Screenshots**

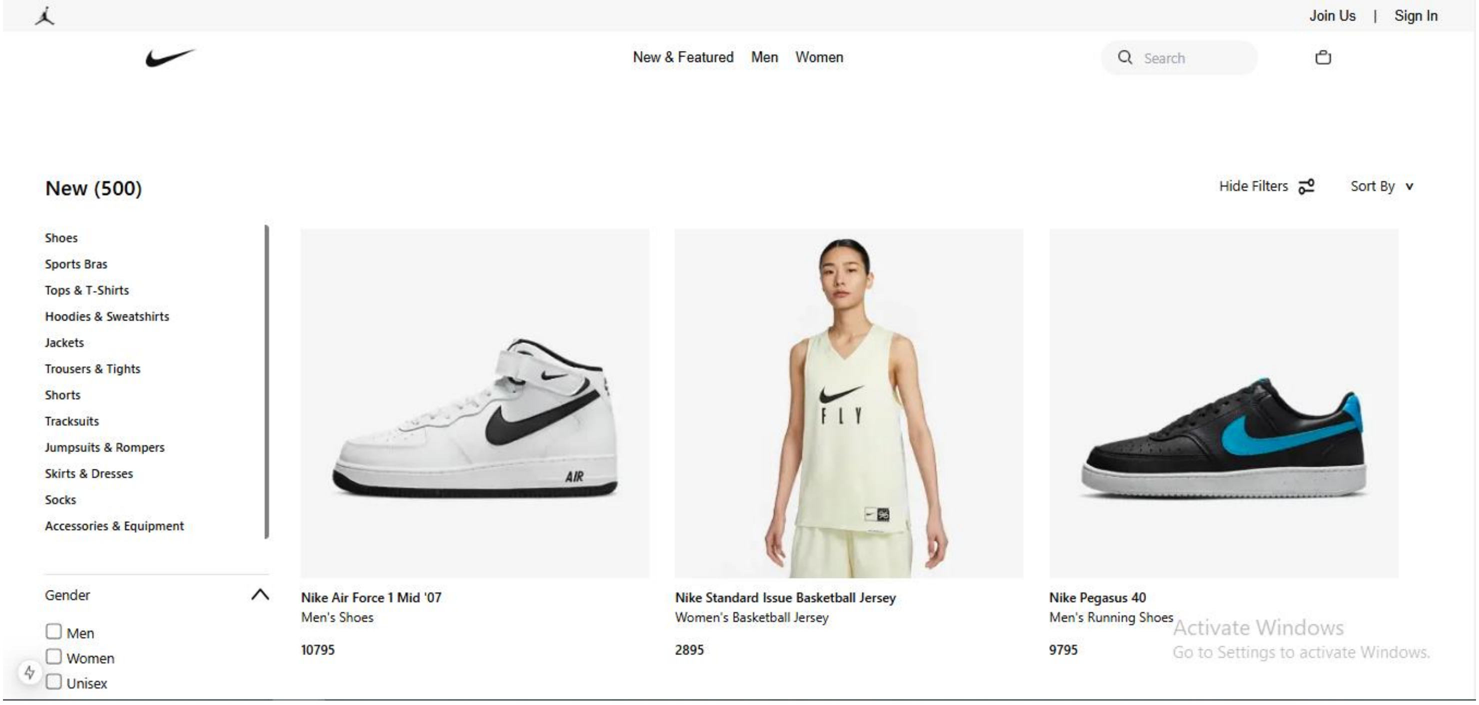
API Calls



```
remium leather, it delivers unmatched versatility and a timeless look."
  },
  {
    productName: 'Nike Metcon 8',
    category: "Men's Training Shoes",
    price: 10295,
    inventory: 25,
    colors: [ 'Black' ],
    status: 'Best Seller',
    image: 'https://template-03-api.vercel.app/products/6.png',
    description: "The Nike Metcon 8 is built for intense training sessions. Featuring a stable base, durable materials, and excellen
t traction, it's the perfect companion for weightlifting, CrossFit, or HIIT workouts."
  },
  {
    productName: 'Nike Waffle One SE',
    category: "Women's Shoes",
    inventory: 30,
    colors: [ 'Pink' ],
    status: 'Just In',
    image: 'https://template-03-api.vercel.app/products/7.png',
    description: 'The Nike Waffle One SE updates a retro classic with fresh details. Its lightweight mesh, suede accents, and signat
ure waffle sole combine style and performance in one standout shoe.'
  }
]
Uploading image: https://template-03-api.vercel.app/products/1.png
Image uploaded successfully: image-d5ee6135e220e7c0de63e4b91159ff788e27757d-348x348-png
Uploading image: https://template-03-api.vercel.app/products/2.png
Image uploaded successfully: image-60e748f5cba33ea20ba46215a8f396bf61e9c8ae-348x348-png
Uploading image: https://template-03-api.vercel.app/products/3.png
Image uploaded successfully: image-257e162393cc8f3486965fd649496e3ef9fe23be-348x348-png
Uploading image: https://template-03-api.vercel.app/products/4.png
```

- **Data Successfully Displayed In The Frontend**

- ## Front-End



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Accessories & Equipment

Gender

□ Men
□ Women
□ Unisex

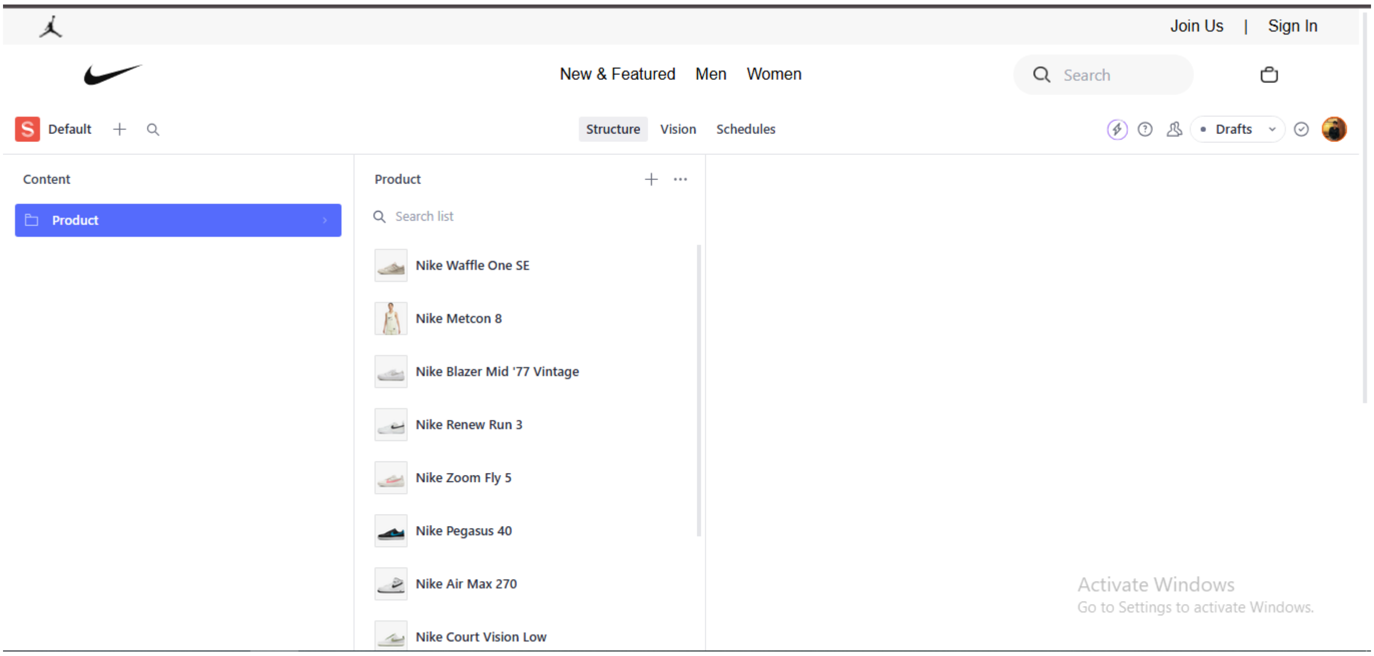
Nike Air Force 1 Mid '07
Men's Shoes
10795

Nike Standard Issue Basketball Jersey
Women's Basketball Jersey
2895

Nike Pegasus 40
Men's Running Shoes
9795

Activate Windows
Go to Settings to activate Windows.

Populated Sanity CMS Fields



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Nike Pegasus 40
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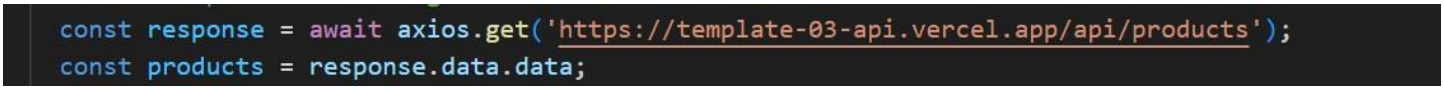
Nike Court Vision Low

Activate Windows
Go to Settings to activate Windows.

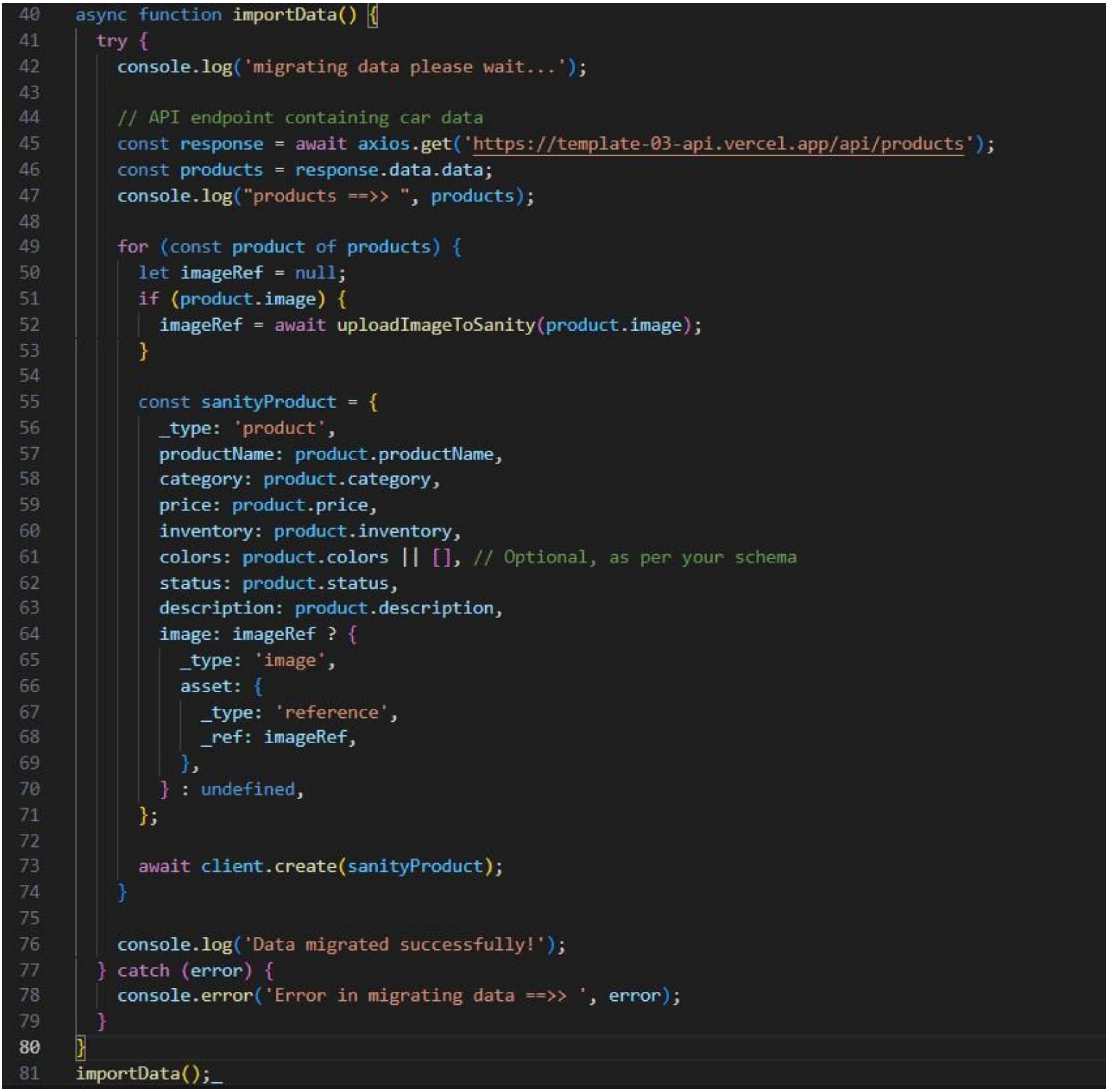
- **Code Snippets**

API Integration



```javascript
const response = await axios.get('https://template-03-api.vercel.app/api/products');
const products = response.data.data;
```

Migration Script



```javascript
async function importData() {
  try {
    console.log('migrating data please wait...');

    // API endpoint containing car data
    const response = await axios.get('https://template-03-api.vercel.app/api/products');
    const products = response.data.data;
    console.log("products ==>> ", products);

    for (const product of products) {
      let imageRef = null;
      if (product.image) {
        imageRef = await uploadImageToSanity(product.image);
      }

      const sanityProduct = {
        _type: 'product',
        productName: product.productName,
        category: product.category,
        price: product.price,
        inventory: product.inventory,
        colors: product.colors || [], // Optional, as per your schema
        status: product.status,
        description: product.description,
        image: imageRef ? {
          _type: 'image',
          asset: {
            _type: 'reference',
            _ref: imageRef,
          },
        } : undefined,
      };

      await client.create(sanityProduct);
    }

    console.log('Data migrated successfully!');
  } catch (error) {
    console.error('Error in migrating data ==>> ', error);
  }
}
importData();
```