General E-Commerce Overview

- **Definition**: General e-commerce refers to online platforms that facilitate buying and selling goods and services.
- **Examples**: Amazon, eBay, Shopify, Flipkart, and Daraz.
- **Importance**: Provides a scalable business model, 24/7 availability, and global reach.

1. Understanding the API in Next.js Projects

- **Purpose**: APIs (Application Programming Interfaces) enable communication between different software systems. In e-commerce, they fetch product data from external servers.
- **How APIs Work in Next.js**:
    - Fetch data using getServerSideProps or getStaticProps for server-side rendering.
    - Use fetch() or Axios to connect to APIs.
- **Comparison**:
    - **Storing Large Data Locally**: Requires significant storage and slows down performance.
    - **Fetching Data from APIs**: Ensures dynamic updates, scalability, and reduced local storage needs.

2. Next.js Installation for API Integration

1. Install Next.js using

   npx create-next-app@latest

   my-ecommerce

   cd my-ecommerce (you can choose your folder name)

   npm run dev

API Integration:

- Use pages/api folder to create custom APIs.
- Fetch external APIs in components or server-side methods.

3. Sanity Installation and Schema Creation

- **Importance**: Sanity.io is a headless CMS for structured content, ideal for dynamic e-commerce applications.
- **Steps**

  Install Sanity CLI:

  npm install -g @sanity/cli sanity init

1. Configure project and dataset.

 Schema:

- Defines the structure of data in Sanity.
- Example schema for products

```
export default {
name: "product",
 type: "document",
 title: "Product",
 fields: [
 { name: "name", type: "string", title: "Product Name" },
 { name: "price", type: "number", title: "Price" },
 { name: "description", type: "text", title: "Description" },
 { name: "image", type: "image", title: "Product Image" },
 ],};
```

4. Data Migration via API

- Use APIs to fetch product data and import it into Sanity.
- Benefits: Real-time synchronization, reduced redundancy, and scalability.

5. Folder and File Structure

my-ecommerce/

├— public/ # Static assets

├— src/

| ├— app/ | | ├— layout.tsx |

| ├— page.tsx | ├— components/ # UI components

| ├— pages/ # API endpoints and pages

| ├— sanity/ # Sanity configurations and schemas

├— package.json # Dependencies

6. Testing API and Data Migration

- **Testing APIs:**
  - Use Postman or Thunder Client to test endpoints.
  - Example test:
    - Request: GET /api/products
    - Expected Response: List of products.

Code Example

```
async function fetchData( ) {
const res = await fetch('/api/products');
return res.json();
 }
```

7. Fetching Data into Sanity

- Write a script to fetch data and send it to Sanity:

```
import client from './sanityClient';
 async function migrateData() {
 const data = await fetchExternalData();
 data.forEach(item => {
 client.create({ _type: 'product', ...item });
 });
 }
```

8. Displaying Data on Localhost

- Use the map function to render product data dynamically:

```
export default function Products({ products }) {
 return (
 <div>
 {products.map(product => (
<div key={product._id}>
 <h2>{product.name}</h2>
 <p>{product.price}</p>
 </div>
 ))}
 </div>
 );
}
```

- **Map Method**: Iterates over an array, transforming and rendering each element.

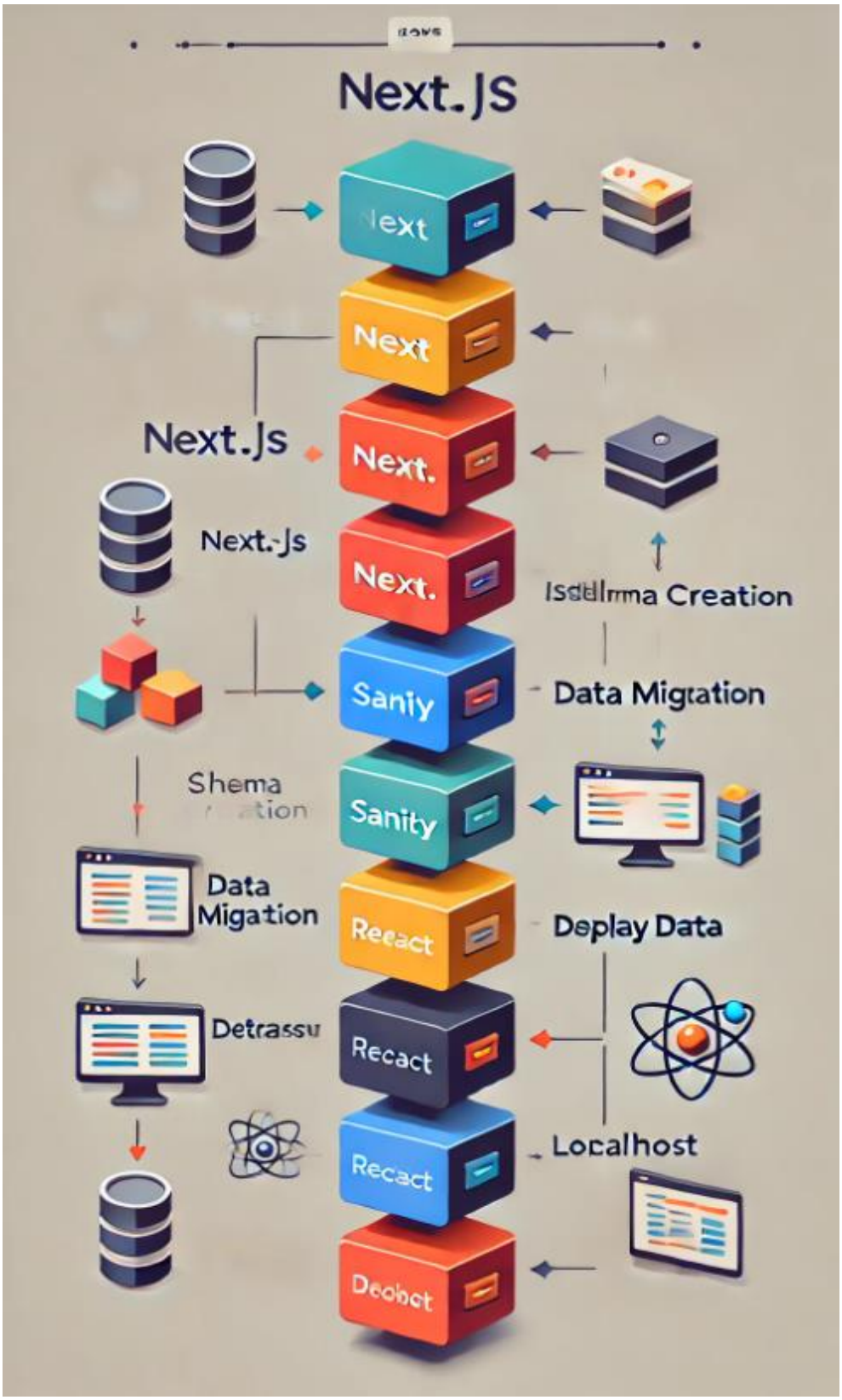
9. Summary

- **Steps**:
    1. Install and configure Next.js and Sanity.
    2. Create schemas for structured data.
    3. Fetch and migrate data via APIs.
    4. Display dynamic data using React's map method.
- **Suggested Platforms**: Amazon, eBay, Shopify, Flipkart, Daraz.

Visual Block Diagram

1. **Installation**
   [Next.js] → [Sanity]
   ↓
2. **Schema Creation**
   [Define Fields] → [Sanity Dashboard]
   ↓
3. **Data Migration**
   [Fetch API] → [Sanity Data Store]
   ↓
4. **Display Data**
   [React Components] → [Localhost]

Note: Check diagram at next page.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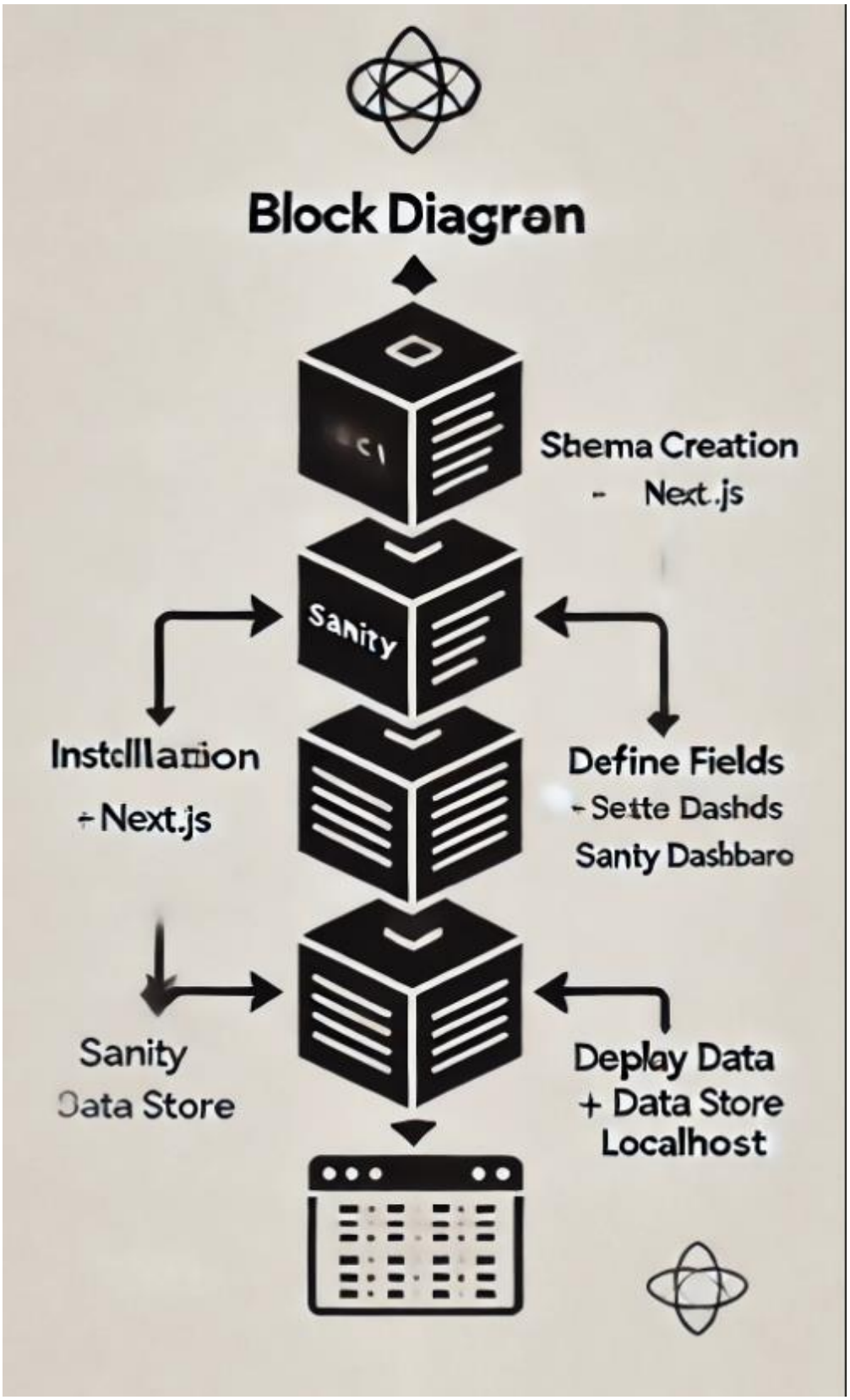
Block Diagram
Schema Creation
- Next.js
Sanity
Installation
+ Next.js
Define Fields
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