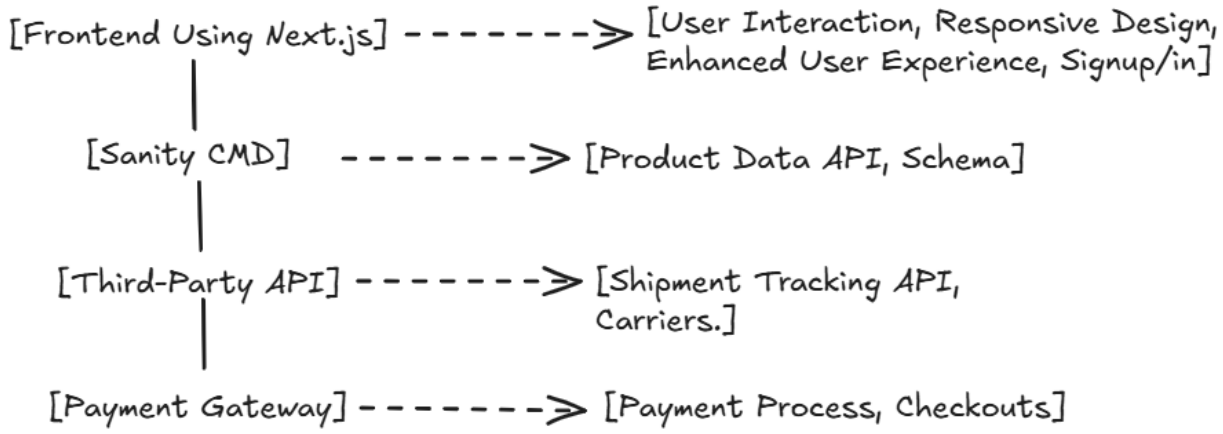
Technical Foundation for General E-Commerce Clothing WEBSITE

INTRODUCTION:

This document outlines the technical foundation for your clothing e-commerce website. It includes details about the system architecture, workflows, API endpoints, and Sanity CMS schemas. The goal is to help build a scalable, user-friendly, and efficient online store. By following this structure, which ensure smooth operations, seamless user experiences, and easy management of content and inventory.

SYSTEM ARCHITECTURE

- The frontend is built with Next.js for server-side rendering (SSR) and optimized performance.
- A modular and scalable design that supports future integrations.
- The backend API is managed through Next.js API routes.



KEY WORKFLOW OF THE SYSTEM

Frontend Using NeXT's

- On the frontend, built with Next.js, users can browse products, filter by categories or price, and view detailed product pages.
- They can securely add items to their cart, proceed to checkout, and make payments.
- The design ensures a fast, responsive, and seamless shopping experience.

Sanity CMS

- Sanity CMS allows easy management of website content, such as adding, editing, or updating products, categories.
- Admins can make changes in real-time without needing to modify the code.
- It also provides a user-friendly dashboard for handling inventory and dynamic content efficiently.

Third-party APIs

- Third-party APIs at the backend play a crucial role in enabling advanced functionalities and streamlining processes.
- APIs will handle shipment, tracking
- Authentication managing secure login/signup, Delivery process,
- send transactional emails or SMS updates to users using APIs like Twilio or SendGrid.

Payment Gateway

- A payment gateway is a secure service that will processes online payments for e-commerce website.
- It will handle secure payment, Validate and process user payment information.
- Ensure compliance with payment security standards. Supports multiple payment methods.

API END-POINTS

Product Endpoints

- **GET /api/products:** Fetch a list of all products.
- **GET /api/products/:id:** Fetch details of a single product by its ID.
- **POST /api/products:** Add a new product (admin only).
- **PUT /api/products/:id:** Update product details.
- **DELETE /api/products/:id:** Remove a product from the inventory.

Order Management Endpoints

- **POST /api/orders:** Create a new order.
- **GET /api/orders/:id:** Fetch details of a specific order.
- **GET /api/orders/user/:userId:** Fetch all orders placed by a specific user.

Cart Endpoints

- **POST /api/cart:** Add items to the user's cart.
- **GET /api/cart:** Retrieve items in the user's cart.
- **DELETE /api/cart/:id:** Remove an item from the cart.

Payment Endpoints

- **POST /api/payments:** Process a payment transaction.
- **GET /api/payments/status:** Check the status of a payment.

Shipment Endpoint

- **POST /api/shipments:** Create a new shipment for an order.
- **GET /api/shipments/:id/status:** Retrieve the status of a specific shipment by its ID (e.g., pending, in transit, delivered).
- **GET /api/shipments/:id:** Get detailed information about a shipment.
- **PUT /api/shipments/:id:** Update shipment details (e.g., change shipping address or delivery instructions).
- **GET /api/shipments/track/:trackingNumber:** Track a shipment using the tracking number provided by the courier.

- **DELETE /api/shipments/:id:** Cancel an existing shipment before it is dispatched.

Sanity CMS Schemas

```
export default {
  name: "customer",
  type: "document",
  title: "Customer",
  fields: [
    { name: "name", type: "string", title: "Name" },
    { name: "email", type: "string", title: "Email" },
    { name: "phone", type: "string", title: "Phone" },
    { name: "address", type: "text", title: "Address" },
    { name: "createdAt", type: "datetime", title: "Created At" },
    { name: "updatedAt", type: "datetime", title: "Updated At" },
  ],
};
```

```
export default {
  name: "shipment",
  type: "document",
  title: "Shipment",
  fields: [
    { name: "order", type: "reference", to: [{ type: "order" }], title: "Order" },
    { name: "trackingNumber", type: "string", title: "Tracking Number" },
    { name: "carrier", type: "string", title: "Carrier" },
    { name: "shippingMethod", type: "string", title: "Shipping Method" },
    { name: "shippingAddress", type: "text", title: "Shipping Address" },
    { name: "dispatchDate", type: "datetime", title: "Dispatch Date" },
    { name: "estimatedDeliveryDate", type: "datetime", title: "Estimated Delivery Date" },
    { name: "actualDeliveryDate", type: "datetime", title: "Actual Delivery Date" },
    { name: "status", type: "string", title: "Status", options: { list: ["Pending", "In Transit", "Delivered"] } },
    { name: "shippingCost", type: "number", title: "Shipping Cost" },
    { name: "createdAt", type: "datetime", title: "Created At" },
    { name: "updatedAt", type: "datetime", title: "Updated At" },
  ],
};
```

```
export default {
  name: "product",
  type: "document",
  title: "Product",
  fields: [
    { name: "name", type: "string", title: "Name" },
    { name: "description", type: "text", title: "Description" },
    { name: "price", type: "number", title: "Price" },
    { name: "stock", type: "number", title: "Stock" },
    { name: "category", type: "reference", to: [{ type: "category" }], title: "Category" },
    { name: "size", type: "string", title: "Size" },
    { name: "color", type: "string", title: "Color" },
    { name: "images", type: "array", of: [{ type: "image" }], title: "Images" },
    { name: "createdAt", type: "datetime", title: "Created At" },
    { name: "updatedAt", type: "datetime", title: "Updated At" },
  ],
};
```

```
export default {
  name: "order",
  type: "document",
  title: "Order",
  fields: [
    { name: "customer", type: "reference", to: [{ type: "customer" }], title: "Customer" },
    { name: "product", type: "array", of: [{ type: "reference", to: [{ type: "product" }] }], title: "Products" },
    { name: "quantity", type: "number", title: "Quantity" },
    { name: "totalPrice", type: "number", title: "Total Price" },
    { name: "orderDate", type: "datetime", title: "Order Date" },
    { name: "status", type: "string", title: "Status", options: { list: ["Pending", "Shipped", "Delivered", "Cancelled"] } },
  ],
};
```

CONCLUSION

This document outlines the key technical elements needed to build a scalable and efficient e-commerce website for clothing business. By using Next.js for frontend development, the website ensures fast performance and a smooth user experience. Sanity CMS makes it easy for admins to manage content, products, and inventory. Third-party APIs add extra features, such as payment gateways (like Stripe or PayPal) for secure payments, shipping services for tracking and delivery, and authentication APIs for user account management.

On the backend, the website uses well-organized API endpoints to handle important tasks like user login, product listings, order management, and cart handling. These endpoints ensure that the website runs smoothly, processing customer requests and transactions efficiently. Additionally, the shipment endpoint works with shipping services to track and update orders.

By combining technologies like Next.js, Sanity CMS, and third-party services, website will be secure, user-friendly, and scalable, ensuring it can grow as your business expands.