SYSTEM ARCHITECTURE & WORK FLOWS

System Architecture

[Frontend(Next.Js + TailwindCSS)]

↓

[API Routes(Next.Js)]

↓

(Sanity) ← Third Party API's (ShipEngine, Stripe.

▸ Frontend ▸

The frontend will be developed using Next.js, which offers advanced features such as server-side Rendering (SSR), static site generation (SSG), and client-side Rendering (CSR). These capabilities ensure optimized performance, enhanced SEO, and seamless API routing. Next. js is a cutting-edge framework in modern Web development aligning with current market demands for efficiency and scalability.

To ensure type safety and minimize runtime errors, we will use TypeScript alongside -

— Nextjs. Typescript provides robust features, such as static typing and better code refactoring, which are not effectively implemented in Java script.

for styling, we will utilized Tailwindcss, a utility-first CSS framework. Tailwindcss enables faster, modern, and efficient design Implementation. Its pre-built utility classes simplify styling and significantly reduce devlp time while maintain Flexiblity for constamiento

To manage the application state and side effects specially for large scale proJects, we will Integrate Redux Toolkit its simplifies state management, reducing complexity and improving maihtaniblity in Realt/Nextjs ProJects.

4 Backend,

for the Backend, we will use sanity, a powerful and flexible headless cms. sanity enables efficient content management with the ability to define and intoract with data schemas

seamlessly; GROQ (Graph Relational Object Queries) will be Utilized to fetch and manage data effectively. sanity's built-in APIS allow for smoth Integration with front end ensuring a dynamic and responsive user experience.

→ Third Party API's ⊢
we will incorporate third-party APIS for specific functalities.

• shipment Tracking ⊢ Integration like the Shipengine, TCS, Leopards Realtime updates.

- Payment Processing ⊢ utilization of stripe, Grohken, UBL secure and efficent payments methods.

Augmented Reality (AR) ⊢
To enhance user engagments and provide immersive shopping Experience we will Integrated AR models.

Workflows

①-User Browsing and Authentiation
•) user can freely browse the marketpla with out signing in.

•) To proceed with a purchase, user must sign in or create an account, ensuring their details are stored in data base.

②) Data Migration to Sanity (CMS).
•) A custom post API will fetch the Product data including categories details.

•) A migration scripts will mapp and store this data ~~including~~ into sanit based on the predefined schema. This ensures scallibility and eliminates manuall data entries.

③) Product Listing and Augmented Reality
•) A get API using Next.js API Routes and dynamic Routing will fetch product data for the frontend.

) Tailwind CSS will insure a visually appealing products listings Interface.

2 An AR Model Integration will allow users to visualize products in thier real-world environment by clicking a " view in AR" button, enhancing user decision-making.

④ Add to Cart functnality:-
) Redux Toolkit will manage state has adding Items to the cart avoiding issues like props drilling and ensuring state handling for large scale Projects.

) user can review, adjust quantites, or remove items from cart based on thei Befrences.

⑤ checkout Process:-
) once the cart is finalized, user will be navigted Details form to provide essential information such as name, email, shipping address and payment details.

) Payment will be proceed securely through Stripe, UBL, Crobreen.

• Post-payment, user will receive an Invoice containing their order details and a tracking ID.

⑥ Order Tracking and Management:-
  • Users can track their orders via tracking Id or applies filter (Date, search, status) on their Dashboard.

  • Order statuses will provide real-time updates, ensuring transparency and satisfaction.

⑦ Claims and Resolutions:-
  • A claim form will be available for users to report issues like missing or defective Items.

  • Missing Items: Refunds will be proceed directly in to the user's account.

  • Defective Items: A replacement order will be shipped promptly.

  • This workflow fosters trust and encourages repeat purchases.