

# GIAIC: HACKATHON

## TASK: 2

### PLANNING TECHNICAL FOUNDATION FOR TULOS:

#### Project Architecture:

##### 1. Tech Stack:

**Frontend:** Next.js - A React framework used for its performance, flexibility, and scalability, enabling SSR and SSG for an improved shopping experience.

**Styling:** Tailwind CSS - Utilized for its responsive, customizable design and ease of creating beautiful UIs quickly.

**Backend:** Vercel Hosting - Powers fast and reliable deployments with seamless scaling for growing traffic.

**Database:** MongoDB or Firebase - To store user data, product listings, and order information.

**Payment Integration:** Stripe - Secure payment processor to handle financial transactions smoothly.,

## **2. Features & Functionality:**

### **User Authentication:**

Secure user login/signup and profile management, integrating Firebase Authentication or JWT for handling sessions.

### **Product Catalog:**

Category-based display of clothing items (Casual Wear, Formal Wear, etc.), with detailed descriptions, images, and sizes.

Customers can filter by category, size, color, price, etc.

### **Shopping Cart:**

A simple, intuitive cart system with functionalities for adding/removing items, updating quantities, and easy checkout.

## **Search Functionality:**

Advanced search options for users to find clothing quickly by type, size, brand, and price range.

Autocomplete search results for better user experience.

## **Order Management:**

A system that lets customers track orders, view purchase history, and process returns or exchanges.

## **Admin Panel:**

Admin dashboard for managing product listings, monitoring orders, and updating stock levels.

Analytics tools to review sales data, user behavior, and other performance metrics.

### **3. Deployment:**

#### **Vercel Hosting:**

Vercel ensures excellent performance and scalability for a fast-growing e-commerce website

Provides serverless functions to handle backend requests, making it cost-efficient.

**CI/CD Pipeline:** GitHub actions or other CI tools for continuous deployment and updates without downtime.

### **4. Performance Optimization:**

#### **Next.js Image Optimization:**

Ensures that product images (clothing) are optimized for fast loading, providing a better customer experience.

## **Static Site Generation (SSG):**

Product catalog pages are statically generated for better performance and SEO.

## **Server-Side Rendering (SSR):**

Key dynamic pages like the homepage and product listings are server-rendered to improve SEO and first-load time.