# Project Proposal

## Project Title: Egyptian E-commerce Platform

## Project Team:

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## Project Description:

This project aims to establish a comprehensive online marketplace exclusively dedicated to Egyptian brands and stores. The platform will serve as a centralized hub for local businesses to showcase their products and reach a wider customer base, while also offering consumers a convenient and unique shopping experience.

## Problem Statement:

We have all noticed in the recent period the decline in the economic level of Egypt, especially after the events of the Corona virus and the events of the Ukraine-Russia war, and the weakness of Egyptian products appeared even more during the Israeli aggression against Palestine. At that time, campaigns appeared to boycott non-Egyptian products that support the occupier entity, we the Egyptians began to search for Egyptian alternatives. We discovered that there were many powerful Egyptian products that were unknown to us and were completely marginalized, even though a large portion of these products were of high quality, we did not hear about them or see them in any offline nor online markets that’s because Egyptian brands and stores face challenges in reaching a wider customer base and effectively promoting their products.

## Project Goals:

The project aims to address this problem by creating an online marketplace that:

* Create a thriving online marketplace: Establish a vibrant and sustainable platform that connects Egyptian brands and stores with consumers.
* Helps local businesses reach a wider customer base and increase their sales throw platform for local businesses to grow and thrive.
* Drive economic growth: Contribute to the local economy by stimulating consumer spending and supporting businesses.
* Foster community: Create a sense of community and connection among Egyptian brands, stores, and consumers.
* Promote Egyptian Brands To increase visibility and sales for local businesses by providing them with a dedicated platform.
* Offer a Unique Shopping Experience: To create a distinctive marketplace focused solely on Egyptian products, catering to the preferences of Egyptian consumers.
* Leverage AI for Enhanced Search: To implement an advanced search feature powered by artificial intelligence, allowing users to find products similar to images they upload.
* Provide a User-Friendly Interface: To design an intuitive and easy-to-navigate platform for both users and sellers, offer a user-friendly and enjoyable shopping experience for consumers.
* Enable Brand Partnerships: To offer brands the opportunity to have their own dedicated admin accounts, allowing them to manage their product listings and promotions effectively.
* Offer Exclusive Discounts: To provide users with exclusive discounts and promotions from participating stores.

## Project Scope:

* Core Functionality
  + **User Registration and Login:** Allow users to create accounts, log in, and manage their profiles.
  + **Product Catalog:** Develop a comprehensive product catalog featuring Egyptian local brands and products.
  + **Search and Filtering:** Implement a robust search function and filtering options to help customers find products easily.
  + **AI-Powered Image Search:** Users can upload an image to find similar products within our database, with the system returning the top 10 matches.
  + **Shopping Cart:** Enable customers to add products to their shopping cart, view, and modify their selections.
  + **Checkout and Payment:** Offer secure payment options, including cash on delivery, credit cards, and mobile payments.
  + **Order Processing and Fulfillment:** Manage order processing, shipping, and delivery.
  + **Customer Reviews and Ratings:** Allow customers to write reviews and rate products.
  + **Brand Partnership System:** Local brands can create their own merchant accounts, manage their products, and interact directly with customers.
* Platform Features
  + **Mobile-Friendly Design:** Ensure the platform is optimized for mobile devices.
  + **Social Integration:** Integrate with social media platforms for sharing and marketing.
  + **Delivery and Shipping:** Partner with local delivery services and offer tracking and notifications.
  + **Customer Support:** Provide customer support, including email and phone.
  + **Marketing and Promotions:** Implement marketing tools for promotions, discounts, and email campaigns.
  + **tore-Specific Discounts:** Users can access exclusive discounts from particular stores, encouraging repeat purchases and brand loyalty.
  + **Analytics and Reporting:** Track platform performance and generate reports for analysis.
* Target Audience
  + Egyptian consumers seeking authentic local products.
  + Egyptian brands looking to expand their online presence and reach a wider audience.
  + **Age:** 18-45, with a focus on young adults and working professionals.
  + **Gender:** Both men and women, with specific product categories targeting each gender.
  + **Location:** Urban and suburban areas in Egypt, where internet penetration is high.
  + **Income:** Middle-to-high income households, as they are more likely to make online purchases.
  + **Lifestyle:** Individuals who value quality, craftsmanship, and supporting local businesses.
  + **Interests:** Clothing, fashion, footwear, jewelry, handbags, Cosmetics, skincare, and hair care products and categories in Egypt.
  + **Values:** Egyptian culture, heritage, and national pride.
  + **Behavior:** Online shoppers who are comfortable using digital platforms and making purchases online.
  + Additional Considerations
    - **Students:** Students who are increasingly using online platforms for shopping.
    - **Expatriates:** Foreign residents in Egypt who may be interested in local products.
    - **Tourists:** Tourists visiting Egypt who seek unique and authentic souvenirs.

## Project Values:

* **Supporting Local Communities:** Contributing to the economic development of local communities.
* **Celebrating Egyptian Culture:** Showcasing the beauty and diversity of Egyptian heritage.
* **Promoting Local Brands:** Empowering Egyptian businesses and fostering a sense of pride.
* **High-Quality Products:** Offering products made with the finest materials and attention to detail.
* **Supporting Local Artisans:** Collaborating with skilled artisans to create unique and authentic products.
* **Exceptional Service:** Providing excellent customer service and support.
* **Trust and Transparency:** Building trust through open communication and honesty.
* **Creating a Sense of Community:** Fostering a sense of belonging and connection among customers and merchants.

## Project Contribution:

* Economic Development
  + **Job Creation:** Creating jobs in various sectors, including e-commerce, logistics, and customer service.
  + **Boosting Local Economy:** Stimulating local economic activity by increasing consumer spending and supporting local businesses.
  + **Export Opportunities:** Facilitating the export of Egyptian products to international markets.
* Social Impact
  + **Empowering Local Businesses:** Providing a platform for local businesses to reach a wider audience and grow their customer base.
  + **Preserving Traditional Craftsmanship:** Supporting local artisans and preserving traditional skills.
* Technological Advancement
  + **Digital Transformation:** Driving the digital transformation of the Egyptian retail industry.
  + **Innovation:** Encouraging innovation and the development of new technologies in the e-commerce sector.
  + **Improving Efficiency:** Improving the efficiency of supply chains and logistics operations.
* Global Impact
  + **Positioning Egypt as a Global Player:** Positioning Egypt as a global player in the e-commerce industry.
  + **Attracting Foreign Investment:** Attracting foreign investment in the Egyptian e-commerce sector.
  + **Increasing Egypt's Visibility:** Increasing Egypt's visibility on the international stage.

## Project Timeline:

* **Phase 1:** Research and Documentations (1 month)
  + Conduct market research and competitor analysis.
  + Develop platform architecture and design.
* **Phase 2:** Platform Implementations (4 months)
  + Build the e-commerce platform.
  + Develop admin panels for brands.
  + Implement payment and shipping features.
* **Phase 3:** AI Integrations (2 months)
  + Select AI technology for image search.
  + Integrate AI-powered image search.
* Phase 4: Test and Deploying (1 month)
  + Do all the tests & security measurements.
  + Fix any faced problems.
  + deploy project.

## Project Risk Assessment:

* **Technical Challenges:** Potential difficulties in integrating AI technology or ensuring platform stability.
* **Market Competition:** Competition from other e-commerce platforms, both local and international
* **Brand Acquisition:** Difficulty in attracting and retaining local brands to join the platform.

**Mitigation Strategies:**

* **Thorough Testing:** Conduct rigorous testing to identify and address technical issues before launch.
* **Competitive Analysis:** Continuously monitor market trends and adjust strategies accordingly.
* **Brand Outreach:** Develop a targeted brand acquisition strategy and offer attractive incentives for participation.

By focusing on promoting Egyptian brands and providing a unique shopping experience, this project aims to contribute to the growth and development of the local economy while also fostering a sense of pride and cultural identity.

# Market Research – Benchmarking

## Market Research

### Key Findings:

* **Growing E-commerce Penetration:** Egypt's e-commerce market is rapidly expanding, driven by increased internet access and smartphone adoption.
* **Preference for Local Brands:** Egyptian consumers increasingly favor local brands for their authenticity, quality, and support for the domestic economy.
* **Challenges for Local Brands:** Local brands face challenges such as limited brand awareness, lack of online presence, and competition from international brands.
* **Opportunities for Growth:** E-commerce platforms offer significant opportunities for local brands to reach a wider audience, build brand recognition, and increase sales.

### Market Overview:

* **E-commerce Landscape:** Analyze the size, growth rate, and key players in the Egyptian e-commerce market.
* **Consumer Behavior:** Understand consumer preferences, online shopping habits, and factors influencing purchase decisions.
* **Internet Penetration:** Assess the level of internet connectivity and smartphone usage in Egypt.
* **Payment Methods:** Evaluate the availability and popularity of different payment methods (e.g., credit cards, digital wallets, cash on delivery).

### Opportunities for Local Brands:

* **Leveraging E-commerce Platforms:** Explore opportunities to list products on our e-commerce platforms.
* **Search Engine Optimization (SEO):** Optimize websites for search engines to improve organic visibility.
* **Mobile Optimization:** Ensure websites and mobile apps are optimized for a seamless user experience on mobile devices.

### Challenges and Recommendations:

* **Challenges:** Identify key challenges faced by local brands in the e-commerce space, such as logistics, payment options, and competition.
* **Recommendations:** Provide actionable recommendations to overcome these challenges and capitalize on market opportunities.

## Benchmarking

### Overview:

**Our Project:**

* An online marketplace dedicated to Egyptian brands, designed to enhance visibility and accessibility for local products.
* Aims to connect local businesses directly with consumers through a comprehensive shopping platform

**صنع في مصر:**

* A platform that promotes Egyptian products and brands, primarily focusing on raising awareness about locally made goods.
* Emphasizes national pride and the quality of Egyptian craftsmanship.

### Goals:

**Our Project:**

* Establish a sustainable online marketplace.
* Leverage AI for enhanced product search capabilities.
* Provide a unique shopping experience tailored to consumer needs.

**صنع في مصر:**

* Promote local products and foster national pride among consumers.
* Raise awareness about the availability and quality of Egyptian goods.

### Target Audience:

**Our Project:**

* Primarily targets young adults and working professionals (ages 18-45) across urban and suburban areas.
* Also includes students, expatriates, and tourists interested in local products.

**صنع في مصر:**

* Broadly targets all Egyptian consumers interested in supporting local products, appealing to a diverse demographic.

### Features:

**Our Project:**

* Comprehensive e-commerce functionalities, including user registration, AI-powered image search, shopping cart, and brand partnership systems.
* Focus on user experience with a mobile-friendly design and social media integration.
* Prices may be more competitive for smaller quantities, especially considering potential import duties and shipping costs.

**صنع في مصر:**

* Primarily focuses on promoting products and brands rather than a full e-commerce experience.
* May include features for browsing products but lacks extensive shopping functionalities.

### Community and Economic Impact:

**Our Project:**

* Directly aims to stimulate local economies by increasing sales for Egyptian brands and creating job opportunities.
* Seeks to build a community of consumers and local businesses, fostering loyalty and engagement.

**صنع في مصر:**

* Focuses on raising awareness and supporting local artisans and businesses but may not provide direct sales facilitation, which limits immediate economic impact.

### Technological Integration:

**Our Project:**

* Plans to utilize advanced technology, such as AI for product discovery and a robust platform for managing product listings and customer interactions.

**صنع في مصر:**

* Likely employs a simpler technological framework, focusing more on promotion rather than advanced e-commerce capabilities.

### Additional Points About UI/UX For Our Project:

* Responsive Design: Ensure that your website adapts seamlessly to different screen sizes, making it easy to navigate on mobile devices.
* Touch-Optimized Elements: Design elements that are easy to tap and interact with on touchscreens.
* Hamburger Menus: Consider using hamburger menus to condense navigation options on smaller screens.
* **Account Dashboard:** Provide a personalized dashboard where users can access their order history, saved items, and account settings.
* **Search Functionality:** Provide a robust search bar that allows users to quickly find products or information.
* **Products Review:** Ensure that user is able to review and see other users reviews on specific products and interact with them through comments.

# Data Gathering

## Overview:

* **Purpose:** The goal of this data collection is to gather information on Egyptian local brands for an online shopping platform. The objective is to compile a database of brands in categories like clothing, makeup, and skincare, including product offerings, price ranges, digital presence, and other key details.
* **Data Sources:** Data will be sourced from:
  + Official websites of the local brands
  + Social media pages (Instagram, Facebook, etc.)
* **Data Collection Methods:**
  + **Online Research:** Manual research will be conducted to gather brand information from their websites and social media accounts.
* **Data Quality Assurance:** To ensure data accuracy, all collected data will be verified by cross-referencing multiple sources (websites and social media). Team members will regularly review data entries to ensure consistency. If there are discrepancies, follow-up research will be conducted.

## Data Collection Procedures:

### Timeline:

* + Week 1-2: Initial research and data gathering from websites and social media.
  + Week 3: Data verification and cross-referencing.
  + Week 4: Final data review and compilation into the database.

### Roles and Responsibilities:

* + **Zeyad (Data Gathering Lead):** Responsible for organizing the data collection process and gathering data from primary sources.
  + **Sara, Sandreen, Mostafa (Data Scraper):** In charge of automating the collection of product details.
  + **Ali, Mohamed (Data Verifier):** Responsible for verifying and ensuring data accuracy by cross-checking sources.
  + **Ahmed Reem (Database Manager):** Oversees data entry into the database and ensures data integrity.

## Data Management Plan:

### Data Storage:

* + **Database:** The main repository for all brand information, hosted on a cloud server.
  + **Local Storage:** Backup files will be stored on local drives for safety and quick access.
  + **Cloud Storage**: Backup Images using Cloudinary.

### Data Security:

* + Access to the cloud server will be restricted through login credentials.
  + Regular backups will be taken to avoid data loss.
  + Sensitive information will be encrypted where necessary.

### Data Access:

* + Only authorized team members will have full access to the database.
  + Other team members will have restricted access depending on their roles (e.g., data verification, analysis).

# Requirements Analysis

## Functional Requirements:

### Types of Users Across the Platform

* **Customer:** The primary user role, representing individuals who purchase products on the platform.
* **Merchant:** Businesses that sell and manage (creating, adding, deleting) their products through the platform.
* **Admin:** The highest level of administrative authority, with full control over the platform and its settings, will be responsible for managing the overall platform, including user accounts, products, and orders.

### Users Roles and Permissions

* **Admin:**
  + Create, edit, and delete, toggle roles for user’s accounts (Merchant and customer).
  + Manage all products, categories, and brands.
  + Create, edit, and delete products.
  + Approval of the requests created by Merchant to add new products.
  + Manage system settings and configurations.
  + Process payments and refunds.
  + Monitor platform performance and analytics.
  + Handle customer support inquiries.
  + Access and modify system code.
  + Oversee platform security and compliance.
* **Merchant:**
  + Add, edit, and delete only their own products
  + Set product prices, quantities, and availability.
  + View sales analytics and performance metrics.
  + Communicate with customers by reviews.
  + Access merchant-specific settings and tools.
  + Cannot manage user accounts or system settings.
* **Customer:**
  + Create and manage an account.
  + Browse and search for products.
  + Filter Products based on attributes (e.g., price, category, brand, color, size).
  + Add products to their cart.
  + Remove or clear items from their cart.
  + Add, remove Products to his Wishlist.
  + View both Wishlist and cart.
  + Checkout and place orders.
  + View order history and tracking.
  + View and Write reviews for products.

### Authentication and Authorization

* **User Registration:**
  + Allow users to create accounts with unique email addresses and passwords.
  + Implement strong password requirements to enhance security.
  + Provide options for social login (e.g., Google, Facebook) for convenience.
* **Login Process:**
  + Verify user credentials upon login to ensure authorized access.
  + Implement robust password hashing and salting to protect against unauthorized access.
  + Consider using multi-factor authentication (MFA) for enhanced security, requiring additional verification factors (e.g., SMS codes, security tokens).
* Profile Management:
  + Permit users to update their profile information, change passwords, and manage preferences.
* **Password Recovery:**
  + Provide a password recovery or reset mechanism to allow users to regain access to their accounts in case of forgotten passwords.
  + Implement security measures to prevent unauthorized password resets.
* **Role-Based Access Control (RBAC):**
  + Assign different roles to users based on their privileges (e.g., customer, merchant, admin).
  + Define permissions for each role to control access to different features and resources.
  + Ensure that users can only access features and data that they are authorized to see.
* **Token-Based Authentication:**
  + Issue unique tokens to authenticated users to identify them in subsequent requests.
  + Use secure token generation and storage mechanisms to prevent unauthorized access.
  + Set expiration times for tokens to mitigate security risks.
* **Data Encryption:**
  + Encrypt sensitive data (e.g., credit card information, personal data) at rest and in transit to protect against unauthorized access.
  + Use strong encryption algorithms and protocols.
* **Input Validation:**
  + Validate user input to prevent malicious attacks like SQL injection and cross-site scripting (XSS).
  + Sanitize user input before processing it.

### Product Management

* **Admin:**
  + Add, edit, and delete products over the platform.
  + Create, edit, and delete categories and brands.
  + Upload product images.
  + Track product stock levels in real-time to ensure accurate availability information.
* **Merchant:**
  + Add, edit, and delete products for their specific brand.
  + Assign products to appropriate categories.
  + Manage product attributes, prices, quantities, and availability.
  + Create product bundles, offering discounts or incentives for purchasing multiple products together.
  + Upload product images.
  + Adjust stock levels manually (e.g., for returns, damaged goods).
* **Customer:**
  + Browse and search for products.
  + View product details, including images, descriptions, and prices.
  + Filter products by category, brand, price, and other attributes.
  + Navigate across recommended and featured products.

### Product Search and Filtering

* **Keyword Search:**
  + Implement a robust search function that allows customers to find products by keyword, description, or brand.
  + Consider using natural language processing for improved search results.
* **Filtering Options:**
  + Provide filters for various product attributes (e.g., price, category, brand, color, size).
  + Allow customers to refine their search based on their preferences.
* **AI-Powered Image Search:**
  + Users can upload an image to find similar products within our database, with the system returning the top 10 matches.

### Shopping Cart

* **Product Addition:**
  + Allow customers to add products to their shopping cart with ease.
  + The Platform will provide a clear indication of added products, such as a confirmation message or updated cart total.
* **Product Removal:**
  + Enable customers to remove products from their shopping cart if they change their minds.
  + The Platform will provide a clear confirmation message upon removal.
* **Quantity Adjustment:**
  + Allow customers to adjust the quantity of products in their shopping cart.
  + Ensure that the cart total is updated accordingly.
* **Cart Persistence:**
  + Maintain the shopping cart across sessions, even if the customer closes their browser or logs out.
  + The Platform will use session cookies to save cart data, even if they log out or close their browser.
* **Cart Summary:**
  + Display a clear summary of the shopping cart, including product names, quantities, prices, and total cost.
  + Provide options to view more details about individual products.
* **Wishlist Functionality:**
  + Allow customers to save products to a Wishlist for later purchase.
  + Provide a seamless transition from Wishlist to cart.

### Checkout and Payment

* **Shipping Information:**
  + Collect customer's shipping information, including address, phone number, and preferred delivery method.
  + Validate shipping address and provide real-time shipping estimates.
* **Payment Options:**
  + Offer a variety of payment methods, including credit cards, debit cards, digital wallets (e.g., PayPal, Apple Pay), and cash on delivery.
* **Order Confirmation:**
  + Display an order confirmation page that summarizes the order details, including products, quantities, shipping information, and payment method.
  + Provide an option for customers to print or save the order confirmation.
* **Order Tracking:**
  + Provide a link to track the order status on the order confirmation page or in the customer account.
* **Secure Payment Integration:**
  + Integrate with secure payment gateways to process transactions securely.
  + Ensure that all sensitive data is encrypted and transmitted securely.
* **Error - Success Handling:**
  + Provide clear error messages if there are issues with payment or shipping information.
  + Provide a success message or page after payment completion.

### Reviews and Ratings

* **Customer Reviews:**
  + Allow customers to submit reviews for products they have purchased.
  + Require customers to log in or create an account to submit reviews.
  + Provide a rating system (e.g., stars) for customers to rate products.
  + Allow merchants to publicly reply to customer reviews, fostering engagement and building trust.
* **Review Moderation:**
  + Implement a review moderation process to prevent spam, inappropriate content, or fake reviews.
  + Review and approve or reject reviews before they are published.
  + Product pages should display average ratings and customer reviews.
* **Product Pages:**
  + Display average product ratings and the number of reviews on product pages.
  + Show individual reviews with timestamps and customer names (if allowed).

### Other Features

* **Profile Information:**
  + Allow customers to view and edit their personal information, including name, email address, phone number, and shipping address.
  + Provide a secure password change option.
* **Customer Wishlist:**
  + Enable customers to add products to their Wishlist.
  + Allow customers to remove products from their Wishlist or move them to their shopping cart.
* Customer Support
  + Provide multiple channels for customers to contact support (email, phone, live chat).
  + Offer a comprehensive FAQ section to address common customer inquiries.

## Non-Functional Requirements:

### Performance:

* **Response time:** We used the latest technologies available to provide fast performance with reduced response time which makes users enjoy the best performance experience. (e.g., loading the homepage, searching for a product).
* **Scalability:** Of course, a big idea needs scalability to include a larger number of users, and we provide this in our application by scalability database.
* **Peak Traffic:** The platform should be able to handle increased traffic during peak times, such as holidays or sales events.

### Security:

* **Data protection:** we used mechanisms like (e.g., using multi-factor authentication, Using secure token generation) for protecting user's and admin's sensitive data (e.g., passwords, payment information)
* **Secure Payment Processing:** The payment gateway should comply with relevant security standards (e.g., PCI DSS).
* **Hack prevention:** validation and sanitize the inputs before process to make sure that it’s not cyberattacks like SQL injection or XSS.

### Accessibility:

* **Compliance with Standards:** Adhere to accessibility guidelines (e.g., WCAG) to ensure the platform can be used by people with disabilities.
* **Alternative Text for Images:** Provide descriptive text for images to assist visually impaired users.

### Availability:

* **Uptime:** Our system is designed to be 99.99% ready to use at all times, allowing for the convenience of use at any time.
* **Recovery plans:** There is feedback can the users use to report if there is any problem and there are plans to follow to guarantee their rights.

### Usability:

* **User interface:** Designed to be smooth and easy to use and surely, make users understand how to use and reach to what they want by best ways.
* **Responsive Design:** The website will adapt to different screen sizes (desktop, tablet, mobile) for optimal user experience.
* **User-Friendly Checkout:** The checkout process should be straightforward and secure.

### Reliability:

* **Stability:** Our system is stable to provide to users deal with it safely.
* **Data accuracy:** Surely, it’s important to care about the quantity of products that will be shown to users to know if it’s available or not.
* **Data Backup:** Regularly back up critical data to ensure recoverability in case of data loss.

### Integration:

* **Third-Party Integrations:** Integrate with relevant third-party services (e.g., payment gateways, shipping providers, marketing tools).
* **RESTful APIs:** Provide well-documented RESTful APIs for developers to interact with the platform's functionality.
* **API Security:** Implement robust security measures (e.g., OAuth, API keys) to protect sensitive data.
* **API Documentation:** Provide clear and comprehensive API documentation to guide developers in using the platform's APIs.

### Maintainability:

* **Ease of modification:** merchants can modify anything about their products easily and quickly and admins can do this but have more accessibility.
* **Code Quality:** Ensure clean, well-structured code for easier maintenance and updates.
* **Documentation:** Complete documentation of all processes, system components and what it does.
* **Modularity:** Design the platform with modular components for easier updates and scalability.

## Technical Requirements:

### Project Management and Documentation

* Project planning and organization: Notion
* Task management: GitHub Projects
* Documenting: Microsoft Word - Excel
* Development Environment: Visual Studio Code
* Version Control: Git
* Repository: GitHub
* Design Tool: Figma

### Frontend Development

* Framework: ReactJS
* CSS Framework: Tailwind CSS & Bootstrap
* UI Component Library: Daisy UI

### Backend Development

* Server-Side Framework: Node.js
* Web Framework: Express.js
* Database: MongoDB
* Authentication: JSON Web Tokens (JWT)
* API Development: RESTful APIs
* Testing Tool: Postman

### Mobile App Development

* Framework: Flutter
* Programming Language: Dart

# User Stories – Flow

## User Stories:

### Customer-Centric User Stories

* **As a customer,** I want to create and manage my account, including updating my personal information and preferences.
* **As a customer,** I want to have a secure login process with options for social login and password recovery.
* **As a customer,** I want to be able to easily browse and search for products on the platform.
* **As a customer**, I want to be able to browse through different categories, brand and filter products for my specific needs.
* **As a customer,** I want to add products to my cart and proceed to check out with seamless experience.
* **As a customer,** I want to be able to save products to a Wish list for later purchase.
* **As a customer,** I want to receive clear and timely communication about my order status, including shipping updates and delivery confirmation.
* **As a customer,** I want to be able to read product reviews and ratings from other customers.
* **As a customer,** I want to receive personalized product recommendations based on my purchase history and browsing behavior.
* **As a customer,** I want to have a variety of payment options available, including credit cards, debit cards, and digital wallets.
* **As a customer,** I want to have easy access to customer support through multiple channels, such as email, phone, and live chat.
* **As a customer,** I want to receive prompt and helpful responses to my inquiries and issues.
* **As a customer,** I want to have access to a comprehensive FAQ section with answers to common questions.
* **As a customer,** I want to be able to track my order history and view previous purchases.

### Merchant-Centric User Stories

* **As a merchant,** I want to easily add, edit, and delete products on the platform.
* **As a merchant,** I want to be able to create and manage product variations (e.g., size, color) within a single listing.
* **As a merchant,** I want to be able to upload high-quality product images and videos.
* **As a merchant,** I want to have the ability to set product prices, quantities, and availability.
* **As a merchant,** I want to be able to track product stock levels in real-time and receive notifications when stock is low.
* **As a merchant,** I want to be able to create and manage promotions and discounts for my products.
* **As a merchant,** I want to have access to detailed sales analytics and performance metrics to track the success of my products.
* **As a merchant,** I want to be able to receive feedback from customers through product reviews and ratings.
* **As a merchant,** I want to be able to track order status and communicate with customers about shipping updates and my sales analytics.
* **As a merchant,** I want to be able to connect with payment gateways to accept various payment methods.
* **As a merchant,** I want to be able to communicate with customers through messaging or live chat.

### Admin-Centric User Stories

* **As an admin,** I want to be able to manage user accounts, including creating, editing, and deleting them.
* **As an admin,** I want to be able to assign different roles and permissions to users based on their needs.
* **As an admin,** I want to be able to manage product categories and brands.
* **As an admin,** I want to be able to set up and customize the platform's appearance and branding.
* **As an admin,** I want to be able to manage system settings, including payment gateways, shipping options, and tax rates.
* **As an admin,** I want to be able to review and approve or reject product listings submitted by merchants.
* **As an admin,** I want to be able to manage product reviews and ratings, ensuring they comply with platform guidelines.
* **As an admin,** I want to be able to handle customer disputes and resolve issues between merchants and customers.
* **As an admin,** I want to have access to detailed analytics and reporting on platform performance, user behavior, and sales.
* **As an admin,** I want to be able to implement and manage security measures to protect the platform and user data.
* **As an admin,** I want to have tools to manage and respond to customer support inquiries.

## User Flow:

### Customer Starting Point: Customer visits the platform's homepage.

* **Step 1: Sign Up**
  + User clicks on the "Sign Up" or "Create Account" button.
  + User enters their email address, password, and other required information (e.g., name, address).
  + User agrees to the terms of service and privacy policy.
  + User clicks "Create Account."
* **Step 2: Account Confirmation**
  + Platform sends a confirmation email with code to the user's registered email address.
  + Users enter the code on the confirmation page to verify their account.
  + User is redirected to login page.
* **Step 3: Login**
  + Users can log in to their account using their email address and password.
  + Platform offers a password recovery option for forgotten passwords.
* **Step 4: Profile Management**
  + Users can update their personal information (e.g., name, address, phone number).
  + Users can change their password.
  + User can access his cart and Wishlist.
* **Step 5: Browse Products**
  + Users can browse through product categories, brands, and use search filters.
  + Users can view product details, including images, descriptions, and prices.
  + Users can read product reviews and ratings.
* **Step 6: Mange Wishlist**
  + Users can add products to their Wishlist.
  + Users can view their Wishlist.
  + User can remove and clear items form his Wishlist.
  + Users can add products to their cart through Wishlist.
* **Step 7: Mange Cart**
  + Users can add products to their shopping cart.
  + Users can view their cart contents and adjust quantities.
  + User can remove items from his cart.
  + User can clear his cart items.
* **Step 8: Checkout**
  + User proceeds to checkout.
  + User enters shipping information and selects a payment method.
  + User reviews their order and confirms the purchase.
  + Users can track their order status.
* **Step 9: Customer Support**
  + Users can contact customer support for inquiries or issues.
  + Platform offers multiple channels for support (email, phone).
* **Step 10: Reviews and Ratings**
  + Users can write reviews and ratings for purchased products.
  + Users can view other customers’ reviews.

### Merchant Starting Point: Merchant logs in to the platform.

* **Step 1: Access Merchant Dashboard**
  + Merchant navigates to their merchant dashboard.
  + Merchant views his own brand products list
* **Step 2: Product Listing**
  + Merchant clicks on the "Add Product" button.
  + Merchant enters product details:
    - Product name
    - Description
    - Price
    - Quantity
    - Availability
    - Category
    - Brand
    - Merchant uploads product image.
    - other variations (e.g., size, color).
* **Step 3: Edit Product**
  + Merchant can edit details for the product.
  + Merchant can add discounts for the product.
* **Step 5: Product Listing Review**
  + Platform reviews the product listed to be Approved (Pending)
  + If approved, the product is published.
  + Merchant can view real-time stock levels.
* **Step 8: Manage Orders**
  + Merchant can view and manage orders related to their products.
  + Merchant can track order status and communicate with customers.
* **Step 9: View Analytics**
  + Merchant can access sales data, including total sales, revenue, and customer demographics.
  + Merchant can read product reviews and ratings from customers.

### Admin Starting Point: Admin logs in to the platform.

* **Step 1: Access Admin Dashboard**
  + Admin navigates to the admin dashboard.
* **Step 2: User Management**
  + Admin can create, edit, and delete user accounts.
  + Admin can assign different roles and permissions to users (e.g., customer, merchant, admin).
* **Step 3: Product Management**
  + Admin can manage product categories and brands.
  + Admin can create products with details.
  + Admin can review and approve or reject product listings submitted by merchants.
* **Step 4: Platform Settings and Analytics**
  + Admin can customize the platform's appearance and branding (e.g., logo, colors, theme).
  + Admin can manage system settings, including payment gateways, shipping options, and tax rates.
  + Admin can access detailed analytics on platform performance, user behavior, and sales.
* **Step: Security and Compliance**
  + Admin can implement security measures (e.g., password policies, data encryption).
  + Admin can ensure compliance with relevant regulations (e.g., GDPR).
* **Step 7: Customer Support**
  + Admin can view and manage customer support inquiries.
  + Admin can respond to customer inquiries and resolve issues.
  + Admin can handle disputes between merchants and customers.

# Diagrams

## Use Case Diagrams:

### Admin:

### Customer:

### Marchant:

## Class Diagram:

## Context Diagram:

## DFD Diagram:

## Sequence Diagram:

## Architecture Diagram:

# Feasibility Study

## Technical Feasibility

## Financial Feasibility

## Operational Feasibility

## Risk Assessment

# Project Plan

## Timeline

## Milestones

## Resource Allocation

# System Design

## Database Design (ERD)

## UI/UX Mockups

## UXUX Studies

# Implementation

## Development Environment Setup

## Development Methodology

## Coding Standards

## Version Control

# Testing

## Test Plan

## Test Cases

## Test Results

# Deployment

## Deployment Plan

## User Manual

# Conclusion

## Summary:

## Impact Assessment:

## Future Work:

# References

## List of resources, libraries, and tools used in the project.