
SYNOPSIS

ON

E-Commerce Website Using MERN Stack



Submitted By

Guided By

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Project Title:

E-Commerce Website Using MERN Stack

1. Introduction

In today's digital world, online shopping is an essential part of life. This project aims to develop a user-friendly e-commerce platform using the MERN stack. The website will allow users to browse products, add them to the cart, and complete purchases using secure payment methods.

2. Objectives

- i. To develop a secure and interactive shopping website.
- ii. To allow users to browse, search, and filter products.
- iii. To provide secure authentication and user management.
- iv. To implement an admin panel for product and order management.

3. Scope

- i. The website will include user authentication, product management, and a shopping cart.
- ii. Users will be able to view product details and place orders.
- iii. Payment gateways will be integrated for online transactions.
- iv. The system will be scalable for future enhancements.

4. Methodology & System Design

- i. The project will follow the Agile model for development.
- ii. The system will use the MERN stack (MongoDB, Express.js, React.js, Node.js).
- iii. The database schema will include Users, Products, Orders, and Payments tables.
- iv. System Design(ER diagram and DFD)(continue in last)

5. Technologies Used

- i. Frontend: React.js, Bootstrap, Redux
- ii. Backend: Node.js, Express.js
- iii. Database: MongoDB
- iv. Authentication: JWT (JSON Web Token)

6. Hardware & Software Requirements

- i. Hardware: Minimum 4GB RAM, i5 Processor
- ii. Software: Windows/Linux, VS Code, Node.js, MongoDB

7. Modules of the Project

The project is divided into multiple modules to manage different aspects of the e-commerce system.

1. Admin Module

- Manage product categories and subcategories
- Add, update, and delete products

- Manage users (customers, sellers)
- View and process orders
- Manage payments and refunds
- Generate sales reports and analytics

2. User (Customer) Module

- User registration and login
- Browse and search products
- Add products to cart and wishlist
- Place and track orders
- Make payments securely
- Manage profile and order history
- Write reviews and rate products

3. Seller (Vendor) Module (if applicable for a multi-vendor e-commerce platform)

- Seller registration and login
- Add, update, and manage products
- View and process customer orders
- Manage stock and inventory
- View earnings and sales reports

4. Shopping Cart & Checkout Module

- Add/remove products from the cart
- Apply promo codes and discounts
- Select shipping methods
- Enter billing and shipping details
- Choose a payment method and place orders

5. Payment Gateway Module

- Integration with payment services (PayPal, Stripe, Razorpay, etc.)
- Secure payment processing
- Order confirmation and invoicing

6. Order Management Module

- Order placement and confirmation
- Shipping and tracking system integration
- Order cancellation and return processing

7. Review & Rating Module

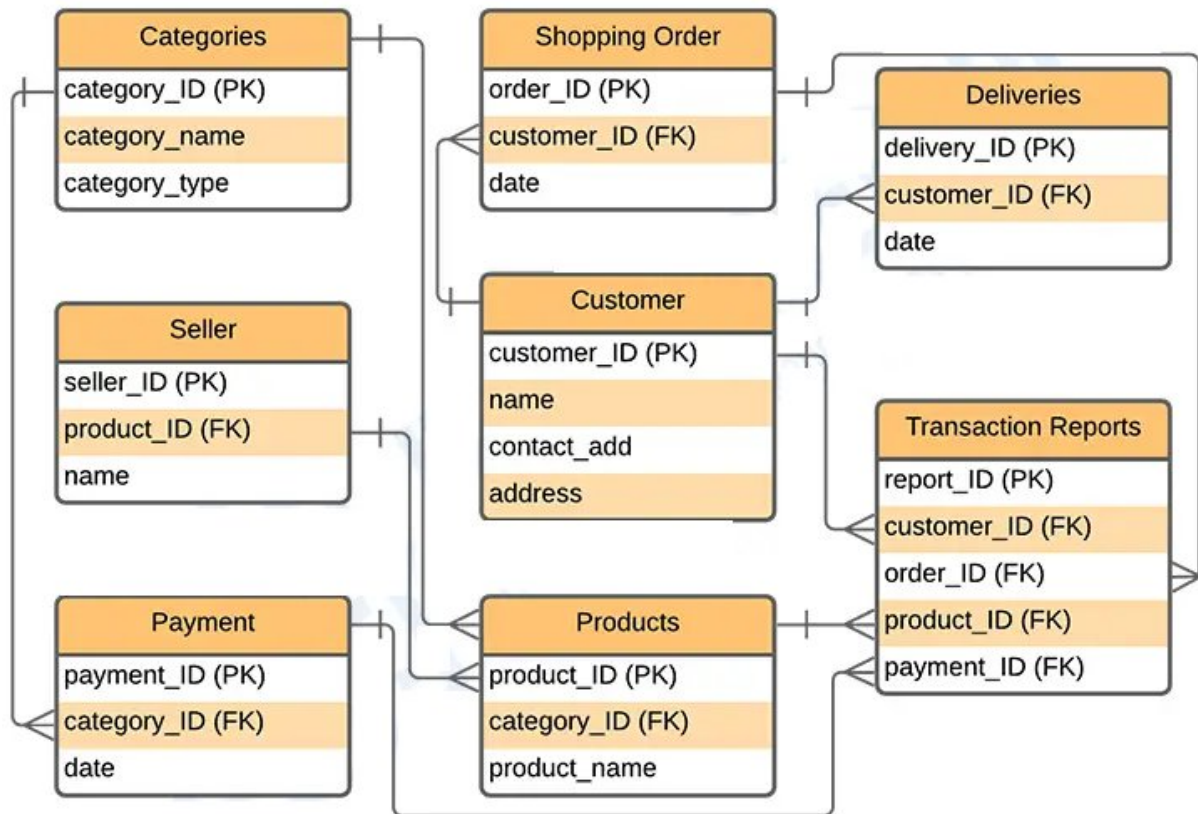
- Users can rate and review products
- View average ratings and feedback

8. Customer Support Module

- Help center with FAQs
- Live chat and contact support
- Complaint and issue resolution

8. ER Diagram

E-COMMERCE WEBSITE SYSTEM

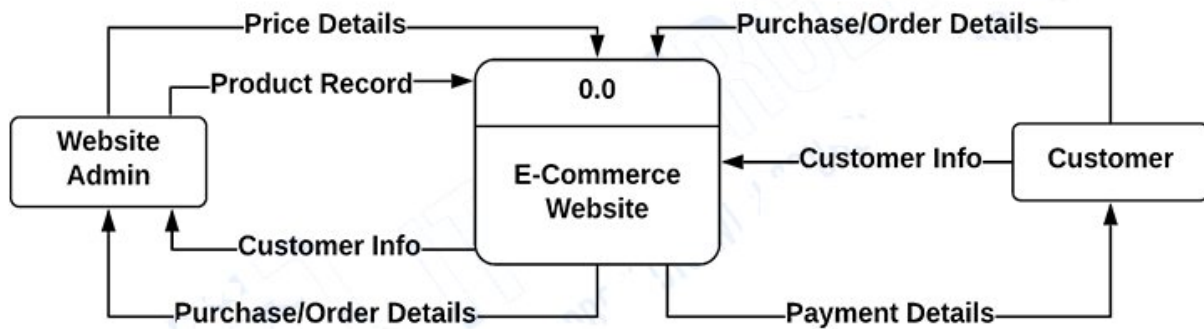


ENTITY RELATIONSHIP DIAGRAM

9. DFD (Data Flow Diagram)

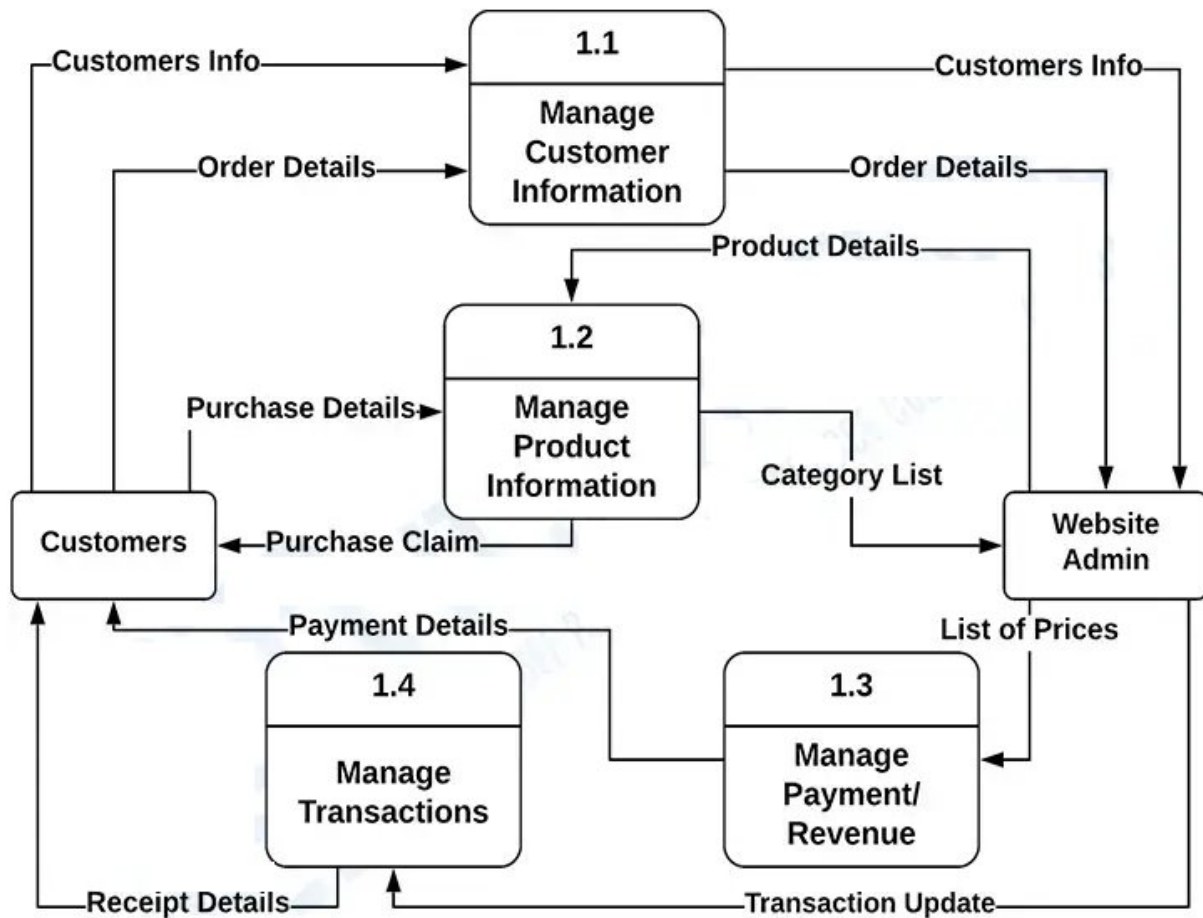
(A Level-0 DFD showing how users interact with the system.)

E-COMMERCE WEBSITE SYSTEM



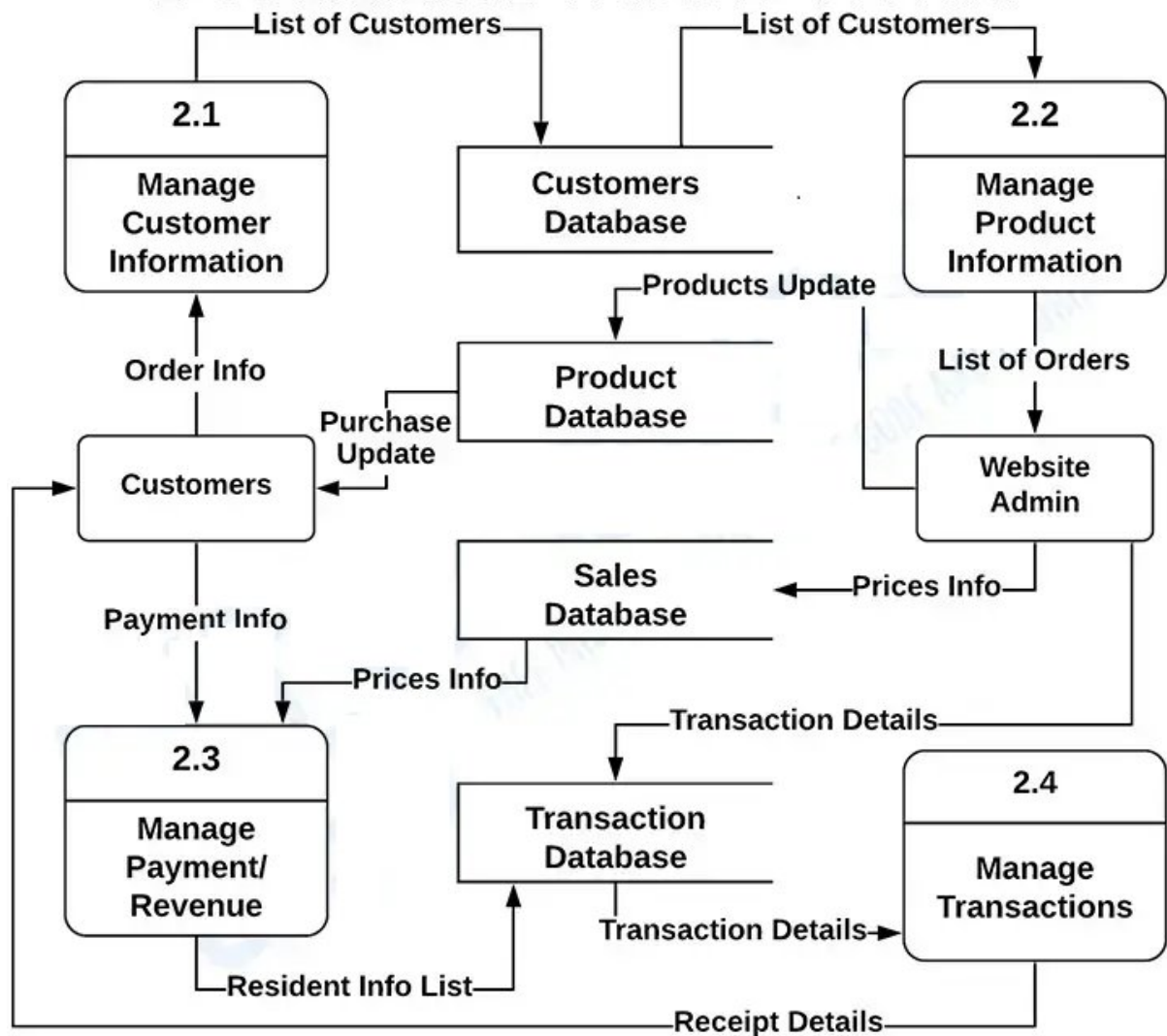
DATA FLOW DIAGRAM LEVEL 0

E-COMMERCE WEBSITE SYSTEM



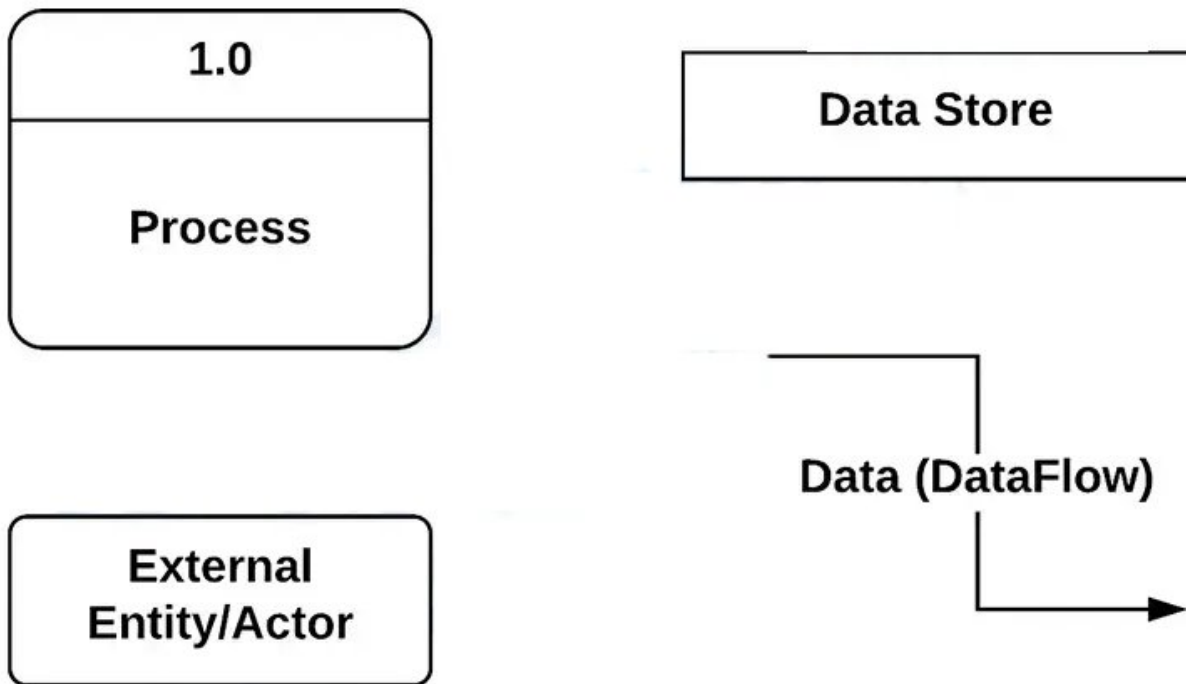
DATA FLOW DIAGRAM LEVEL 1

E-COMMERCE WEBSITE SYSTEM



DATA FLOW DIAGRAM LEVEL 2

DATA FLOW DIAGRAM SYMBOLS



10. Expected Outcomes

A fully functional e-commerce website where users can buy products.

- i. A secure authentication system for users and admins.
- ii. An admin dashboard for product and order management.

11. Conclusion

This project will provide an efficient and user-friendly e-commerce platform. In the future, features like AI-powered recommendations and mobile app support can be added.