

ACKNOWLEDGEMENT

We take this opportunity to express our heartfelt gratitude and deep sense of appreciation to all those who have contributed to the successful completion of our project titled “**FootFront – Multi vendor Footwear Ecommerce Platform**” carried out as part of our academic curriculum at **St. Xavier’s College (Autonomous)**.

This project has been a valuable learning journey, combining theoretical knowledge with practical implementation. Through the processes of requirement gathering, system analysis, Data Flow Diagrams (DFDs), Entity Relationship Diagram (ERD), and Data Dictionary development, we were able to gain comprehensive insight into the design and functionality of an e-commerce system.

First and foremost, our heartfelt thanks go to the **Department of Computer Science of St. Xavier’s College (Autonomous)** for providing us with the necessary facilities, resources, and a supportive environment to carry out this project successfully. We would also like to acknowledge the valuable guidance of our faculty members, whose expertise and feedback strengthened our understanding of software development methodologies and documentation.

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We are especially grateful to our project group members — **Mayur Chandora (23-CS-010)**, **Rahul Chandora (23-CS-011)**, and **Yash Mehta (24-CS-3068)** — for their dedicated efforts, teamwork, and cooperation. Each member contributed meaningfully in various phases, including system design, database structuring, interface creation, and backend development. Our collaboration and coordination were the key factors that made this project a success.

This project stands as a testament to the collective effort, learning, and guidance we received from everyone who played a part in making “**FootFront – Multi vendor Footwear Ecommerce Platform**” a success

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1 INTRODUCTION

FootFront – Multi vendor Footwear Ecommerce Platform is a web-based e-commerce platform developed to streamline and enhance the online footwear shopping experience. The project is designed to unite multiple footwear vendors on a single platform where sellers can manage their stores independently, and customers can browse, compare, and purchase products conveniently through a unified interface.

Unlike generic e-commerce platforms that lack specialization, FootFront focuses exclusively on the footwear segment, offering tailored features such as size-based stock control, style and color filtering, vendor-specific dashboards. The system also integrates secure payment processing through Razorpay, ensuring smooth and safe transactions for all users.

The project's development followed a structured **Software Development Life Cycle (SDLC) approach, encompassing requirement gathering, system analysis, DFDs (Data Flow Diagrams), ERD (Entity Relationship Diagram), and Data Dictionary creation**. These stages ensured that the design, functionality, and data management aspects were thoroughly planned and executed.

From the admin's perspective, FootFront provides comprehensive control over vendors, products, orders, and users. Vendors benefit from a simplified business management dashboard, while customers enjoy a user-friendly interface that supports wishlists, reviews, and order tracking.

By focusing solely on footwear, FootFront bridges the gap between customers seeking reliable, category-specific shopping experiences and vendors desiring a flexible, easy-to-manage online store. The platform empowers local footwear sellers—from small shoemakers to established brands—to expand their reach and compete in the digital marketplace.

Ultimately, FootFront stands as a blend of academic learning and real-world application, demonstrating how effective system design and technology integration can create a specialized, scalable, and user-centered e-commerce solution.

We have the tagline “**From Clicks to Kicks**”

2 COMPANY PROFILE

Company Name: **Codroit.in**

About the Company

Codroit is a dynamic and innovative software development company driven by a team of passionate professionals committed to transforming ideas into powerful digital experiences. Founded by a group of technology enthusiasts, Codroit specializes in building scalable, secure, and user-friendly digital solutions tailored to meet modern business needs.

The company focuses on delivering end-to-end IT services, including custom web development, mobile app development, cloud-based platforms, UI/UX design, and digital transformation consulting. Codroit's approach blends creativity with technology, ensuring that every project aligns with the client's goals and provides measurable impact.

Vision

To become a global IT leader by delivering secure, scalable, and innovative technology solutions that empower businesses and enhance user experiences.

Mission

To empower businesses through reliable, user-centered, and cost-effective IT solutions that foster growth, efficiency, and digital excellence.

Contact Details

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3 PROJECT PROFILE

Project Title: FootFront - Multi vendor Footwear Ecommerce Platform

Project Tagline: From Clicks to Kicks

Institution: St. Xavier's College (Autonomous), Ahmedabad

Department: Computer Science

Domain: E-Commerce (Footwear)

Type: Web Application

Internal Guide: Sr. Kanickai Mary

External Guide: Mr. Varun Bajaj

Project Team:

- Mayur Chandora (23-CS-010)
- Rahul Chandora (23-CS-011)
- Yash Mehta (24-CS-3068)

3.1 EXISTING SYSTEM

In the current scenario, several e-commerce platforms such as Culture Circle, Mainstreet, and VegNonVeg cater primarily to premium or limited-edition footwear markets. These existing systems focus heavily on branded sneakers and luxury footwear, leaving out a large segment of casual, budget, and functional shoe buyers and vendors.

Moreover, most of these platforms operate under closed seller models, allowing only curated or exclusive vendors to list their products. This approach restricts opportunities for small-scale sellers, local shoemakers, or emerging footwear brands who wish to reach a wider audience.

From the customer's perspective, the experience on such platforms is limited due to:

- A narrow product range that ignores mid-range or everyday footwear.
- High pricing, making products inaccessible for general users or students.

Furthermore, these systems do not provide multi-vendor integration, which means customers must visit separate sites to compare and purchase footwear. Vendors, too, lack tools for updating stock, or order tracking within a unified environment.

Hence, there is a need for a dedicated, inclusive, and vendor-friendly platform focused entirely on the footwear segment.

3.2 PROPOSED SYSTEM

The FootFront platform has been proposed to overcome the limitations of the existing systems by providing a comprehensive and user-centric e-commerce solution focused solely on footwear. It enables multiple vendors—from local sellers to established brands—to register, list, and manage their stores independently under a unified system.

Key features of the proposed system include:

- Universal Vendor Access: Any verified seller can list and manage products through a personalized dashboard.
- Comprehensive Footwear Catalog: Covers all types of footwear — casual, formal, sports, and budget-friendly — with advanced search and filter options (size, color, price, etc.).
- Secure Payment Gateway Integration: Razorpay ensures safe and smooth transactions for customers.
- Customer Convenience: Single-cart checkout across multiple vendors, wishlist management, product reviews, and order tracking.
- Admin Dashboard: Provides centralized control over vendors, customers, orders, complaints, and platform analytics.

By focusing exclusively on the footwear domain, **Footfront - Multi vendor Footwear Ecommerce Platform** bridges the gap between specialized sellers and customers. It delivers a modern, transparent, and scalable platform that benefits all stakeholders while ensuring an efficient and satisfying shopping experience.

3.3 ENTITIES

We primarily have 4 Entities in our Project:

- 1) Admin**
- 2) Vendor**
- 3) Customer**
- 4) Visitor**

3.4 REQUIREMENT GATHERING

ADMIN – THE OVERSEER

- Secure Access: Logs in using admin credentials to access the main dashboard.
- Customer Management: Monitors customer activities, updates account details, and blocks accounts for policy violations.
- Vendor Management: Approves, updates, and blocks vendor accounts; oversees vendor activities and compliance.
- Category Management: Manages footwear categories and subcategories.
- Product Oversight: Manages vendor-listed products to maintain platform quality.
- Order Management: Monitors and manages orders across all vendors; resolves escalations when necessary.
- Review & Rating Monitoring: Views and moderates customer reviews and ratings to maintain authenticity.
- Complaint Handling: Reviews and resolves customer and vendor complaints.

VENDOR – FOOTWEAR SELLER

- Business Setup & Approval: Registers on the platform by providing business details, GST number, and identity verification; can log in with credentials only after admin approval.
- Product Management: Manages footwear listings with descriptions, pricing, and multiple product images.
- Inventory Control: Manages size-wise stock levels to prevent overselling and maintain accurate availability.
- Order Fulfillment: Manages the entire order process including invoice generation, shipment, and status updates.
- Performance Insights: Monitors sales data, sell-through rates, and low-stock alerts to improve business decisions.

CUSTOMER – FOOTWEAR BUYER

- Account Access: Logs in securely to access personal dashboard and order history.
- Product Browsing: Views products across all categories with detailed descriptions and specifications.
- Profile Management: Manages account details, delivery addresses, and personal preferences.
- Order Management: Manages product purchases by adding items to cart, proceeding to checkout, and completing payment.
- Cart & Wishlist: Manages cart and wishlist by adding or removing products for future purchase consideration.
- Feedback System: Manages reviews and ratings for purchased products to assist other customers.
- Complaint Management: Submits and tracks overall platform-related complaints

VISITOR – EXPLORER

- Account Registration: Registers on the platform by providing basic details to create a customer account.
- Catalog Browsing: Views all available products and categories without the need to log in.
- Review Reading: Reads customer reviews and ratings to assist in purchase decisions.
- Registration Prompts: Receives prompts to sign up when attempting to add products to cart or wishlist.

3.5 DEVELOPMENT TOOLS AND TECHNOLOGIES USED

The development of **Footfront - Multi vendor Footwear Ecommerce Platform** involved a combination of modern web technologies and tools to ensure scalability, responsiveness, and efficiency. Each technology was selected based on its compatibility, security, and ability to deliver a smooth user experience for both customers and vendors.

Front-End Technologies



- **HTML5 (HyperText Markup Language):**

Used to design the structural framework and layout of all web pages, ensuring semantic and accessible content presentation.



- **CSS3 (Cascading Style Sheets):**

Applied for styling, color schemes, and responsive design across devices.



- **JavaScript:**

Added interactivity and dynamic functionality such as form validation, page transitions, and real-time updates.

Back-End Technologies



- **Python (Programming Language):**

Served as the core backend language for implementing server-side logic and data handling.



- **Django Framework:**

Provided a robust, secure, and scalable web development environment with built-in authentication, ORM (Object Relational Mapping), and admin control features.

Database Management System



- **MySQL:**

A relational database used for structured storage and efficient management of data related to users, products, vendors, and transactions. It supports complex queries and ensures data integrity across multiple relationships.

Payment Gateway

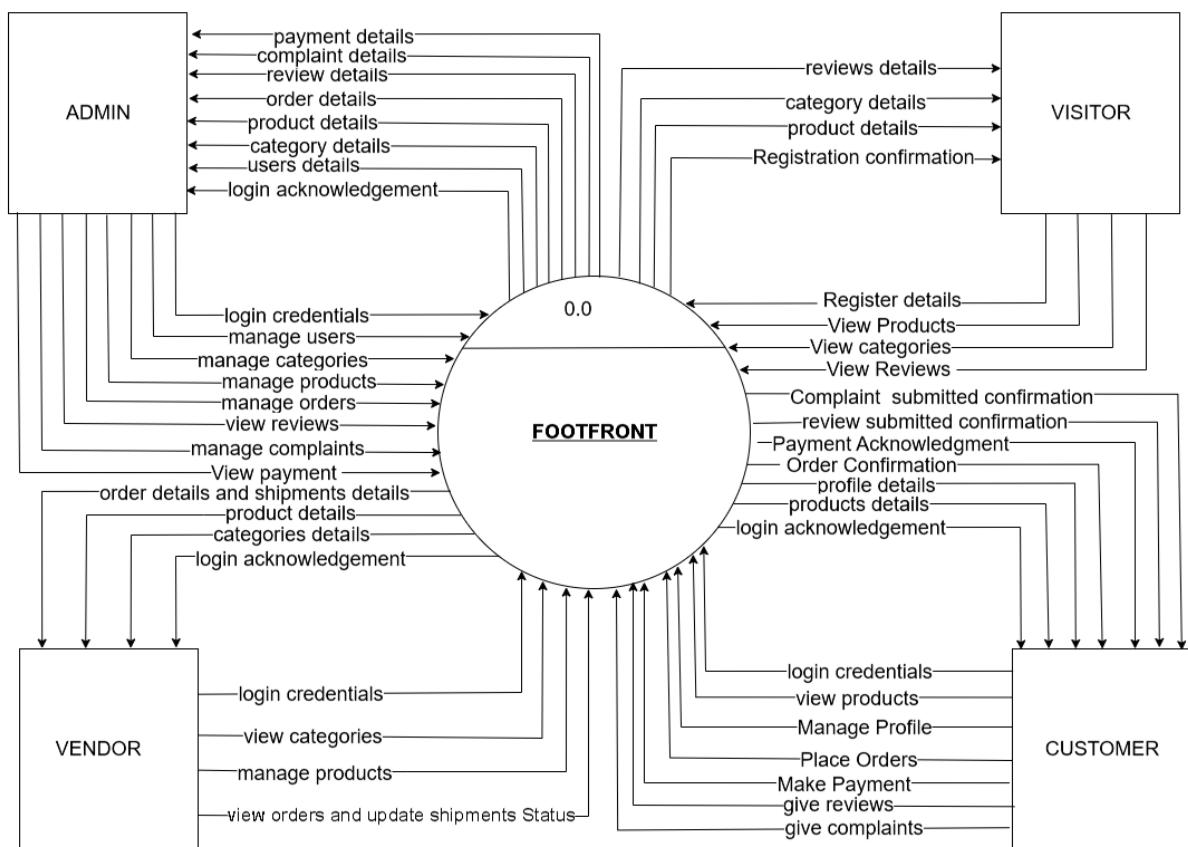
- **Razorpay Integration:**
 Implemented for secure and seamless online payments, supporting multiple payment methods such as UPI, credit/debit cards, and net banking.

Development Tools & Environment

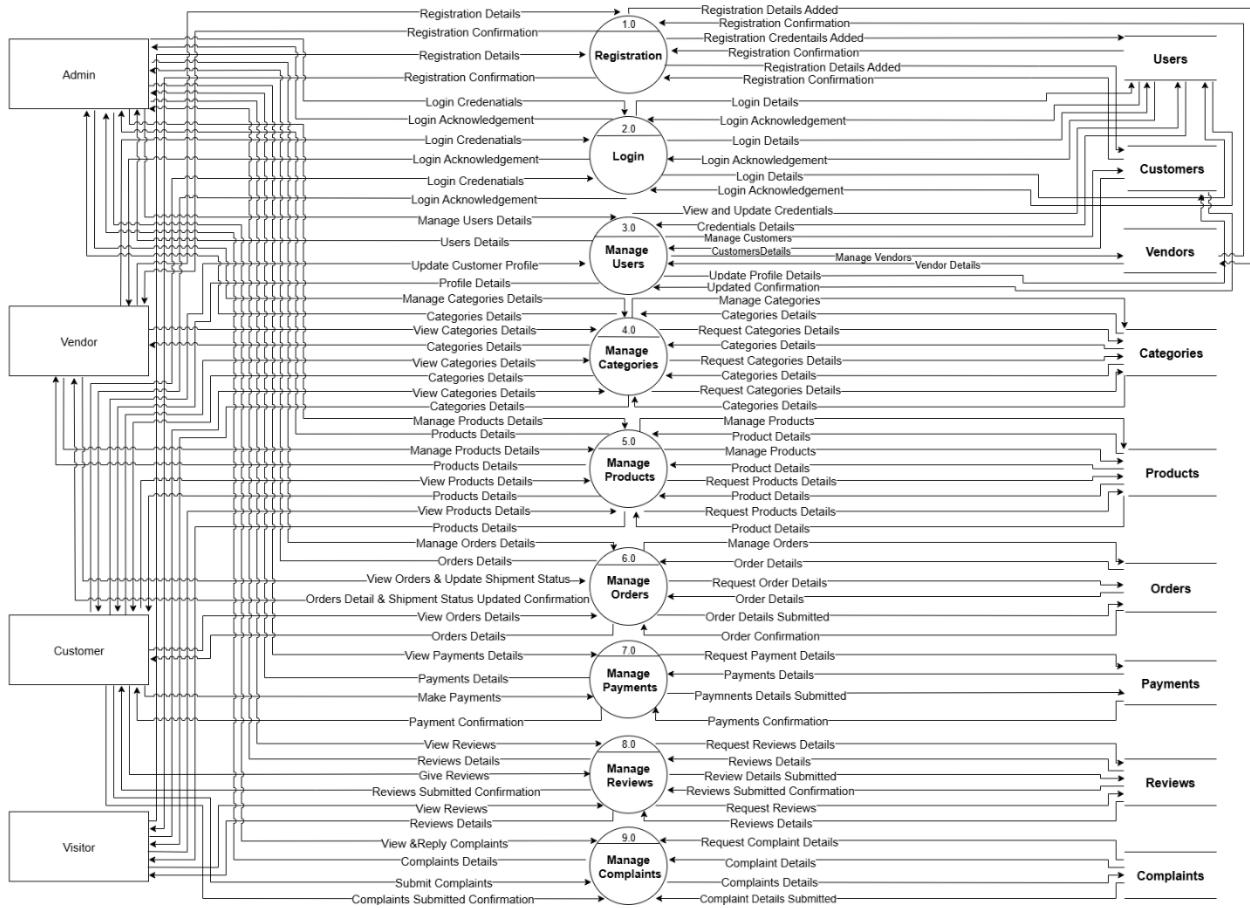
- **Visual Studio Code:** Used as the primary code editor for development and debugging.
- **XAMPP / MySQL Workbench:** Assisted in managing and testing the local database.
- **Git & GitHub:** Utilized for version control, collaboration, and backup of project files.
- **Browser Developer Tools:** Used for testing responsiveness, debugging, and performance optimization.
- **MS Office:** Used for Project Documentation, Reporting, Presentations, etc.

4 DATA FLOW DIAGRAMS

4.1 CONTEXT LEVEL DFD

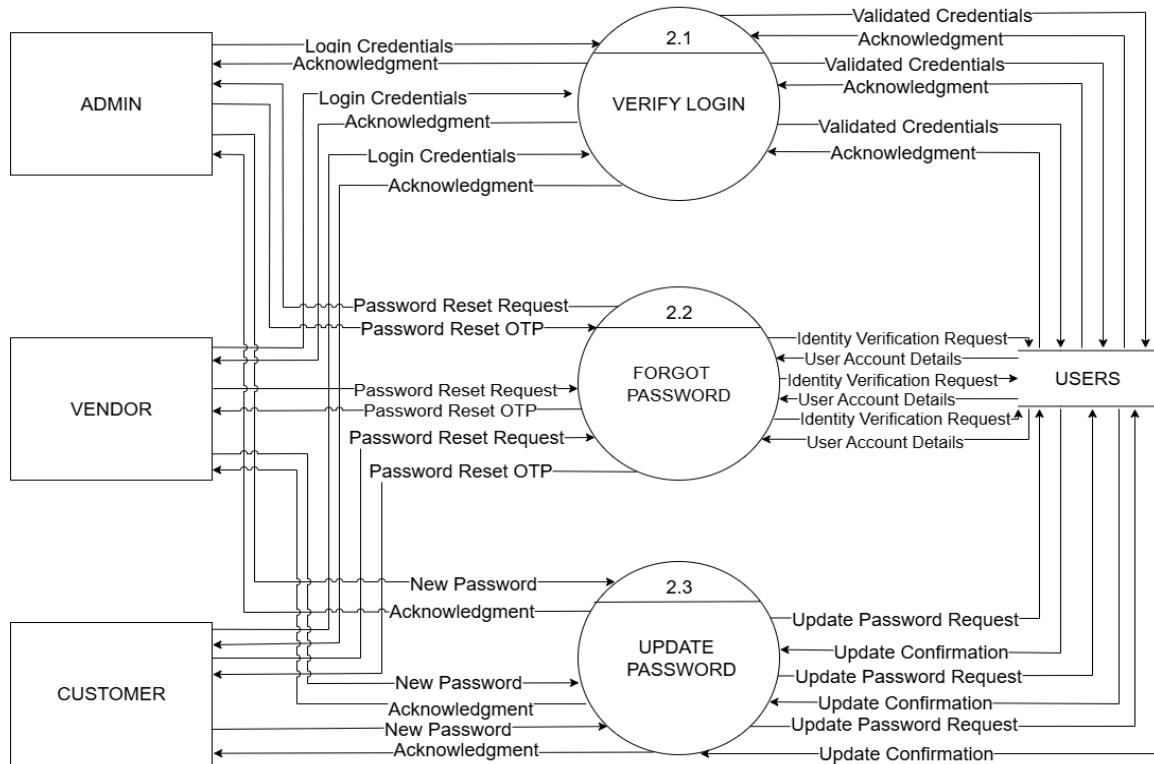


4.2 LEVEL 1 DFD

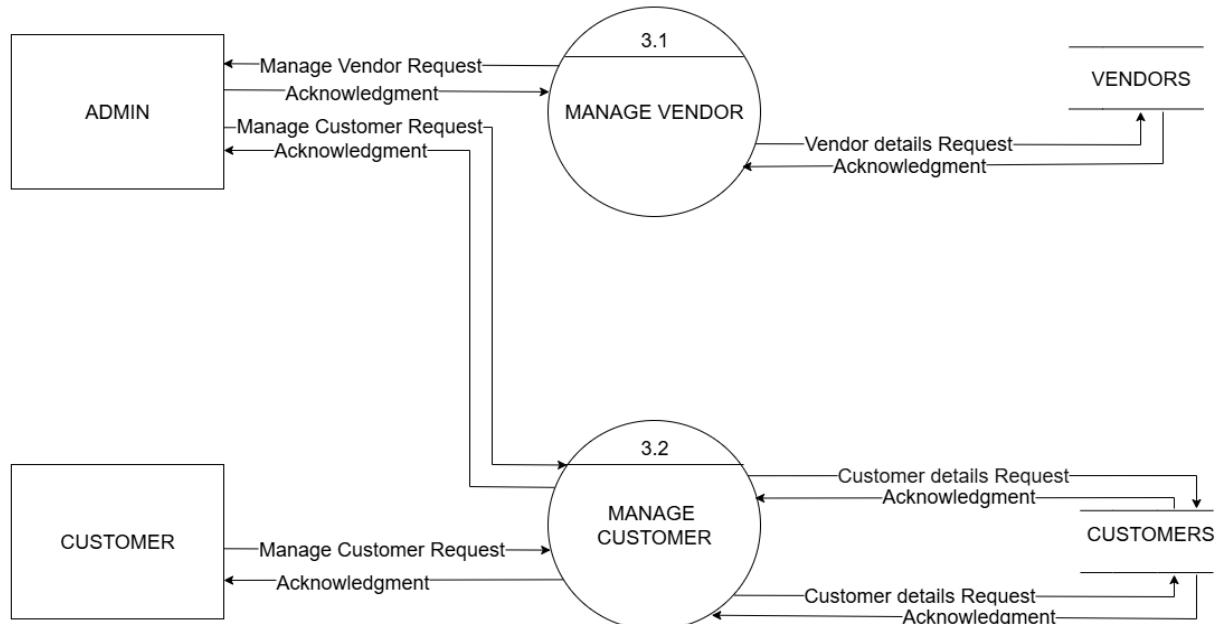


4.3 LEVEL 2 DFD

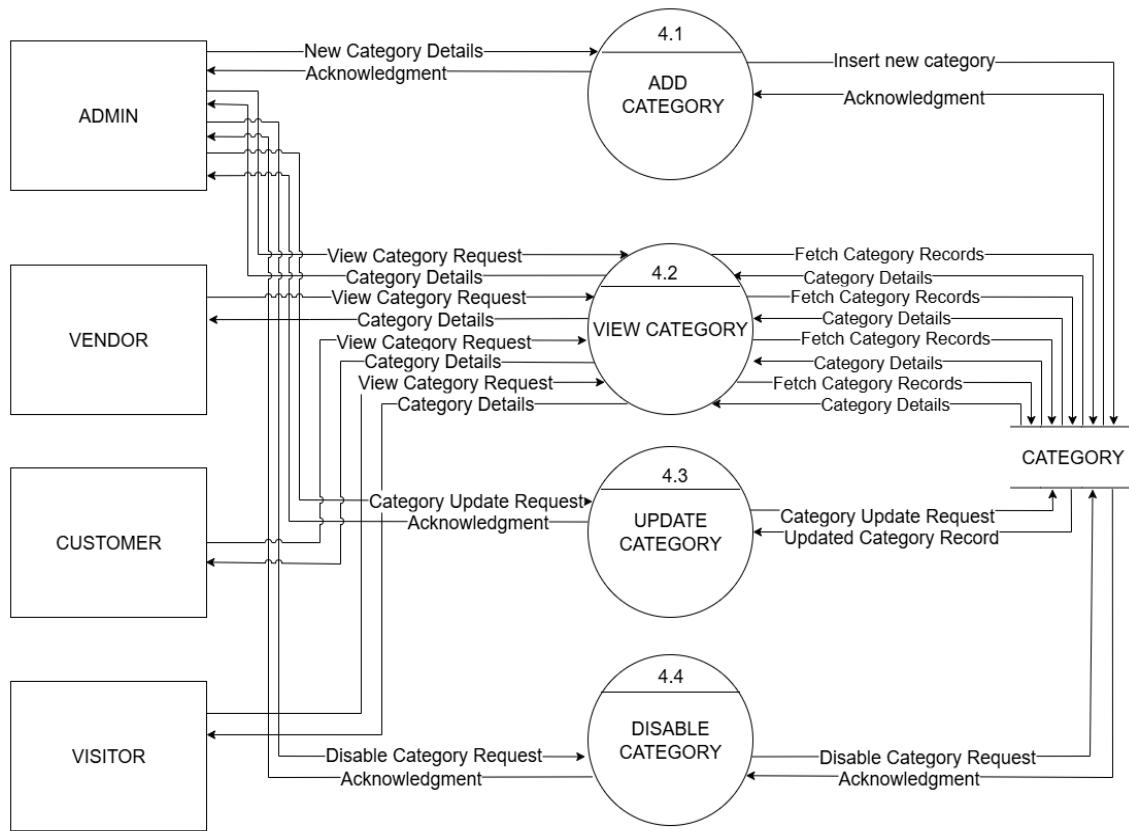
4.3.1 LEVEL 2 DFD FOR LOGIN



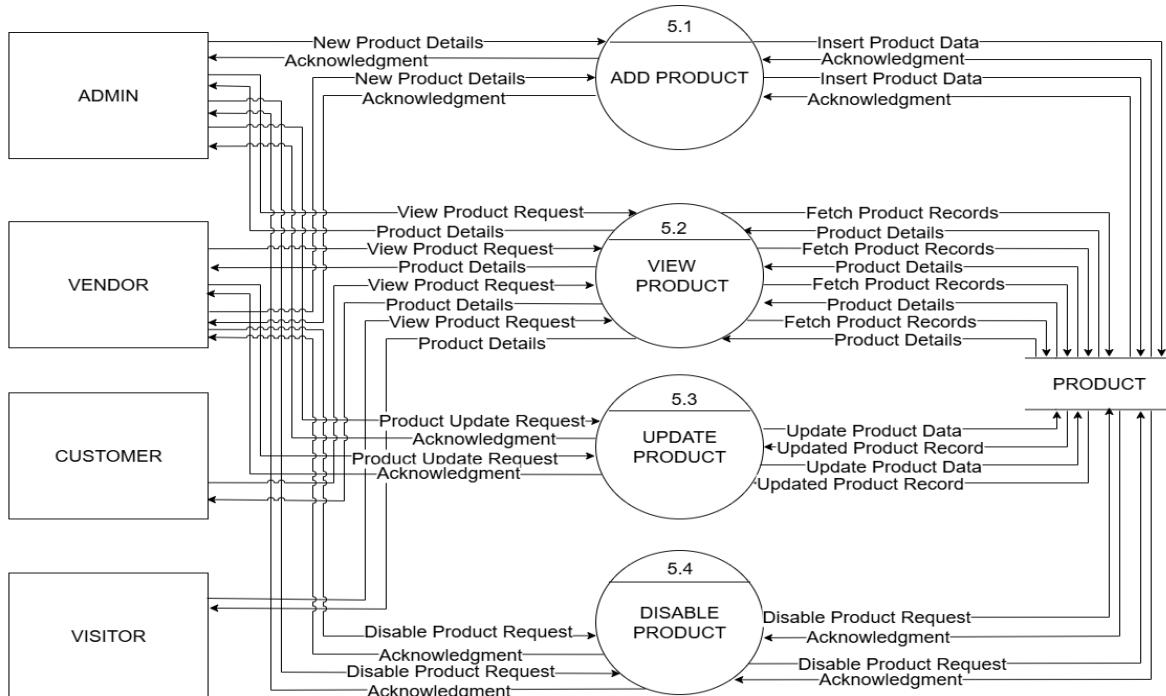
4.3.2 LEVEL 2 DFD FOR MANAGE USERS



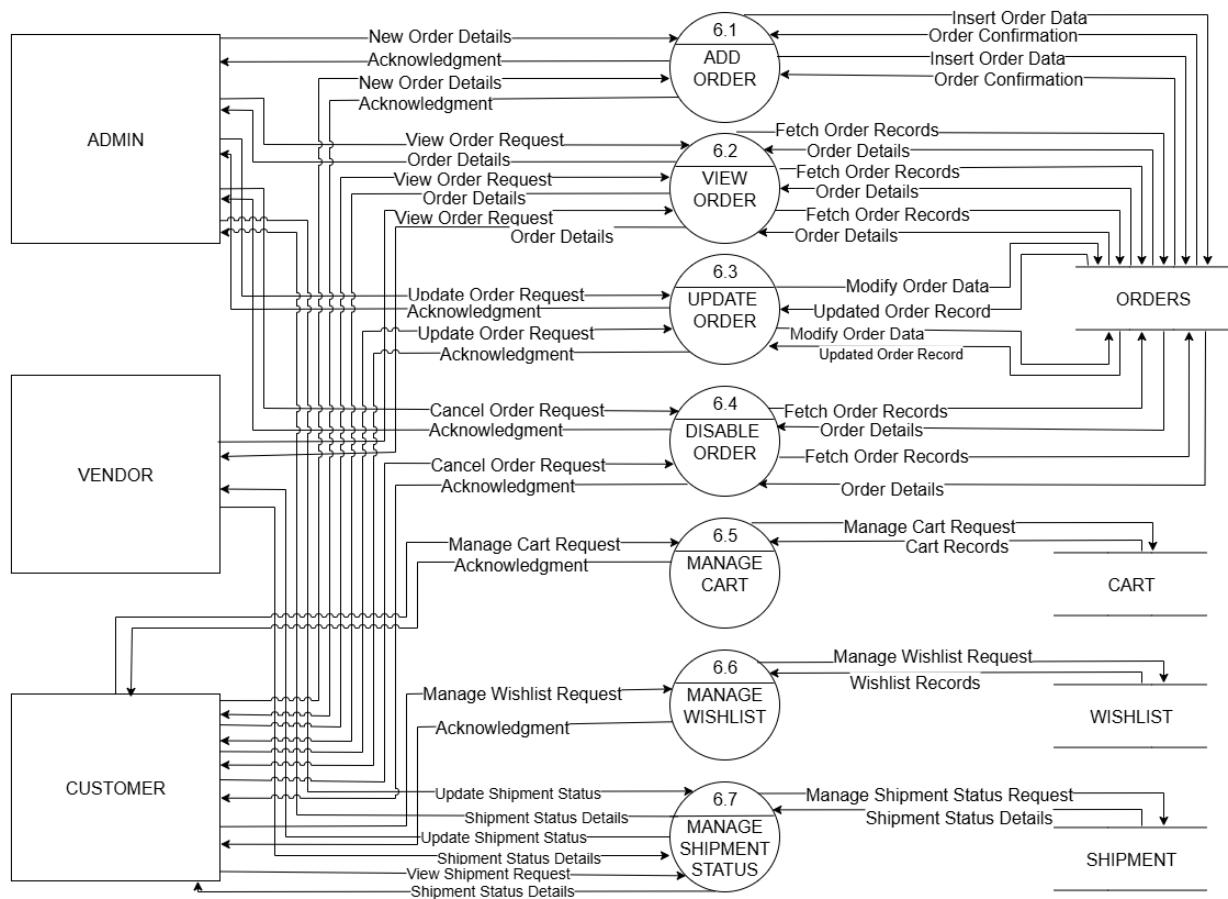
4.3.3 LEVEL 2 DFD FOR MANAGE CATEGORIES



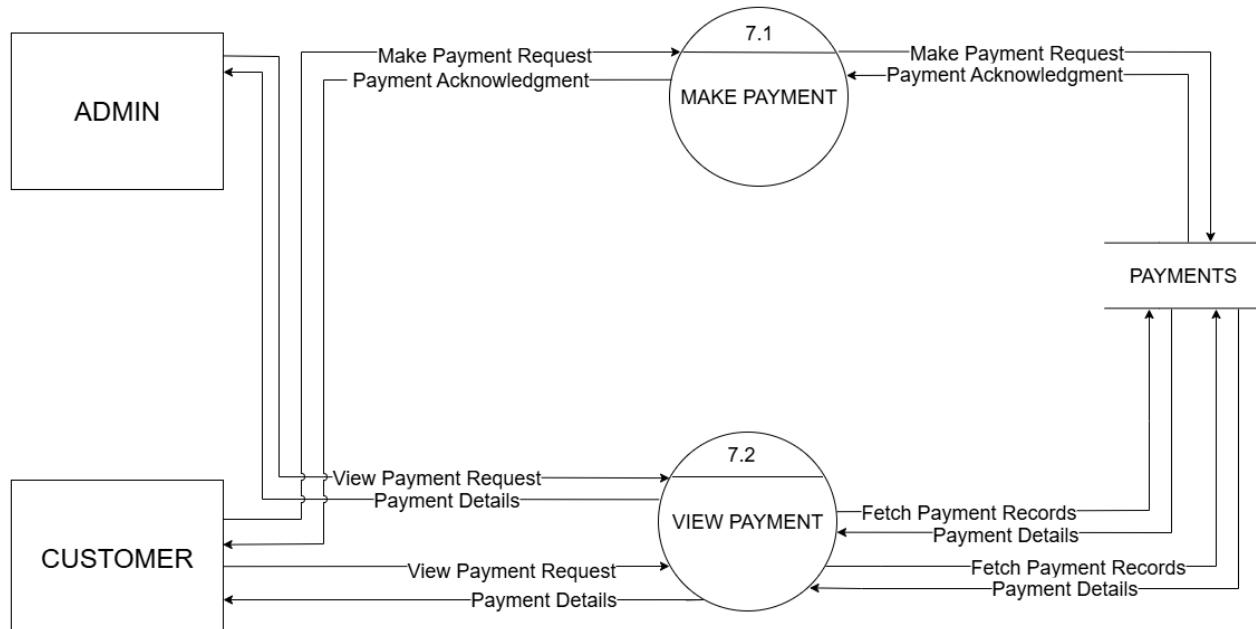
4.3.4 LEVEL 2 DFD FOR MANAGE PRODUCTS



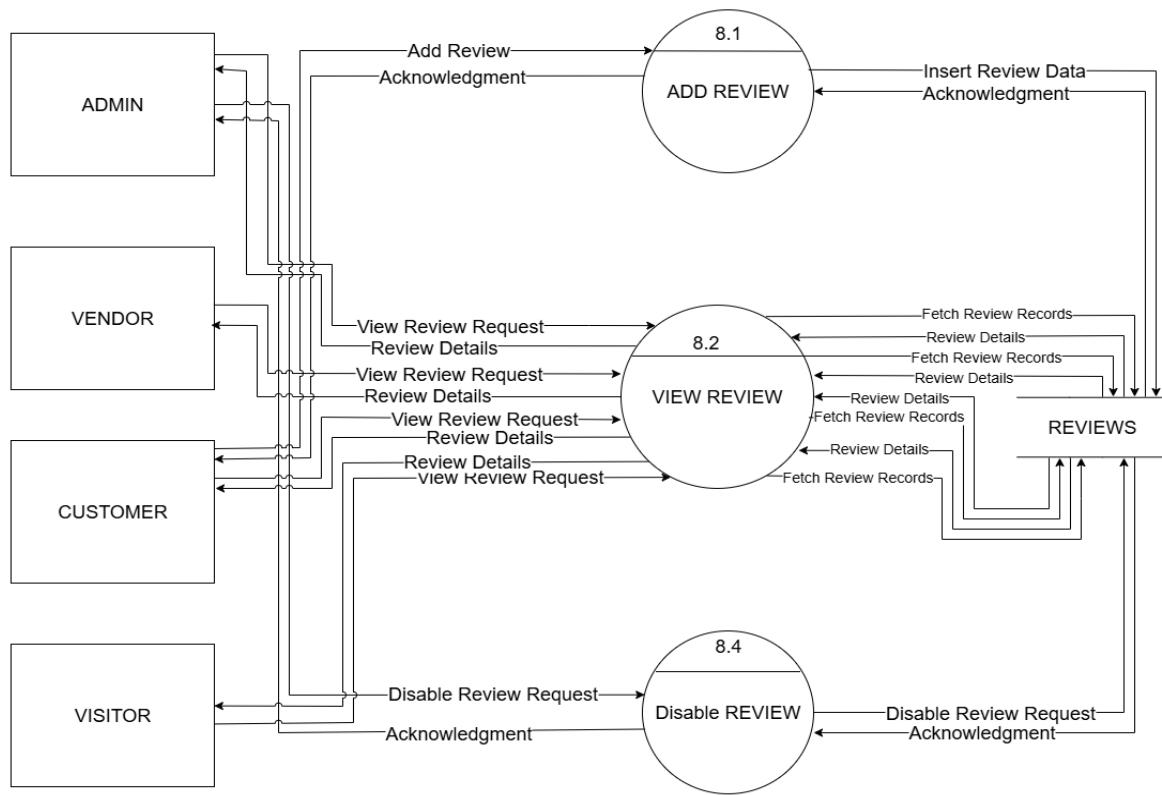
4.3.5 LEVEL 2 DFD FOR MANAGE ORDER



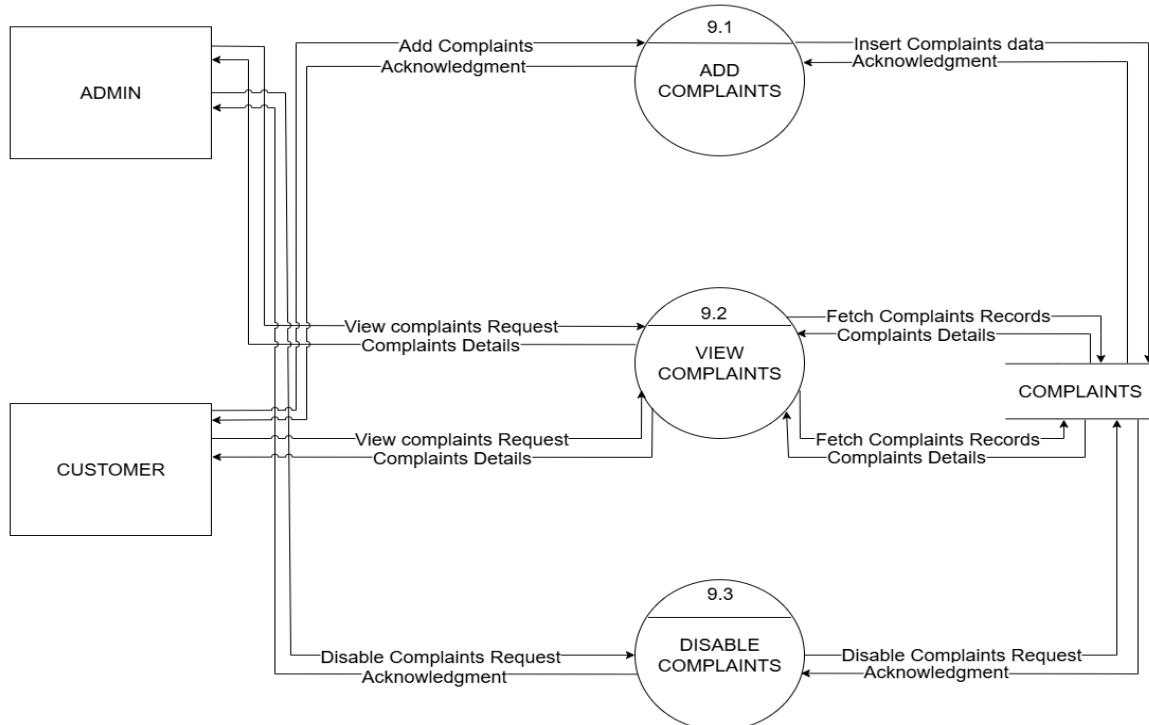
4.3.6 LEVEL 2 DFD FOR MANAGE PAYMENTS



4.3.7 LEVEL 2 DFD FOR MANAGE REVIEWS

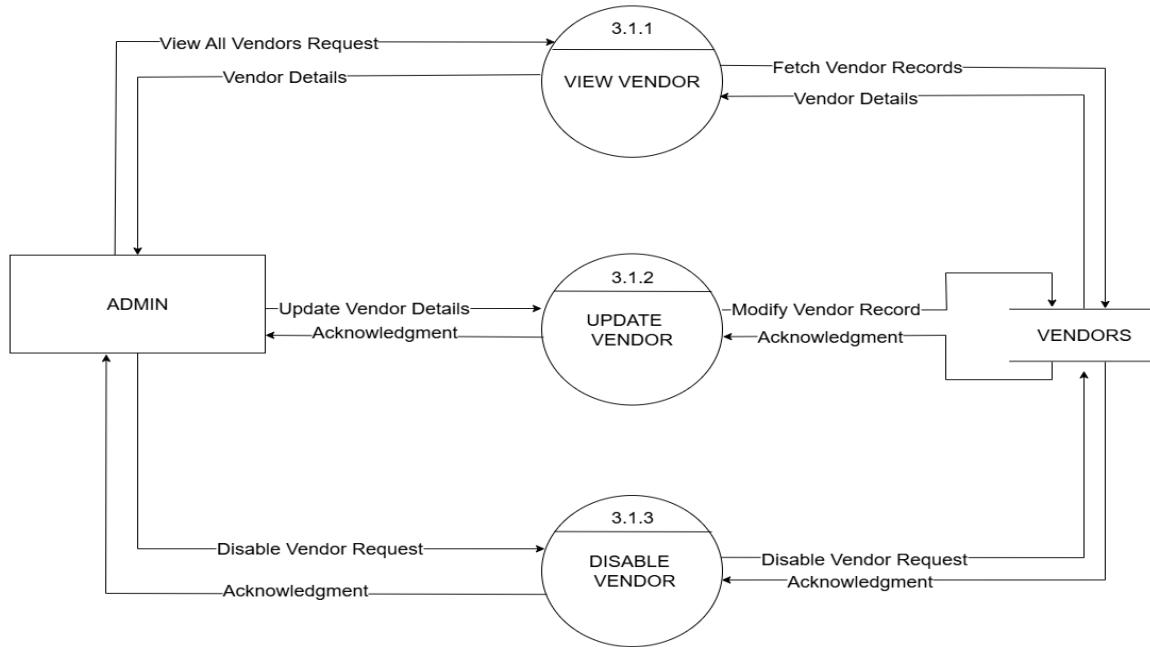


4.3.8 LEVEL 2 DFD FOR MANAGE COMPLAINTS

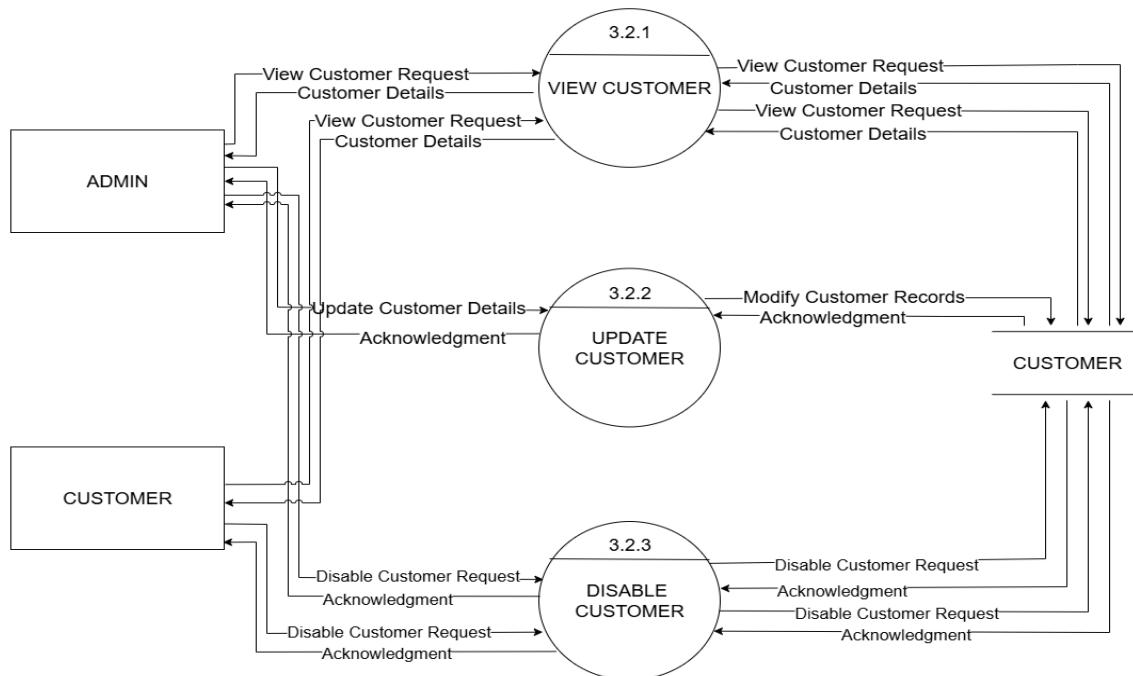


4.4 LEVEL 3 DFD

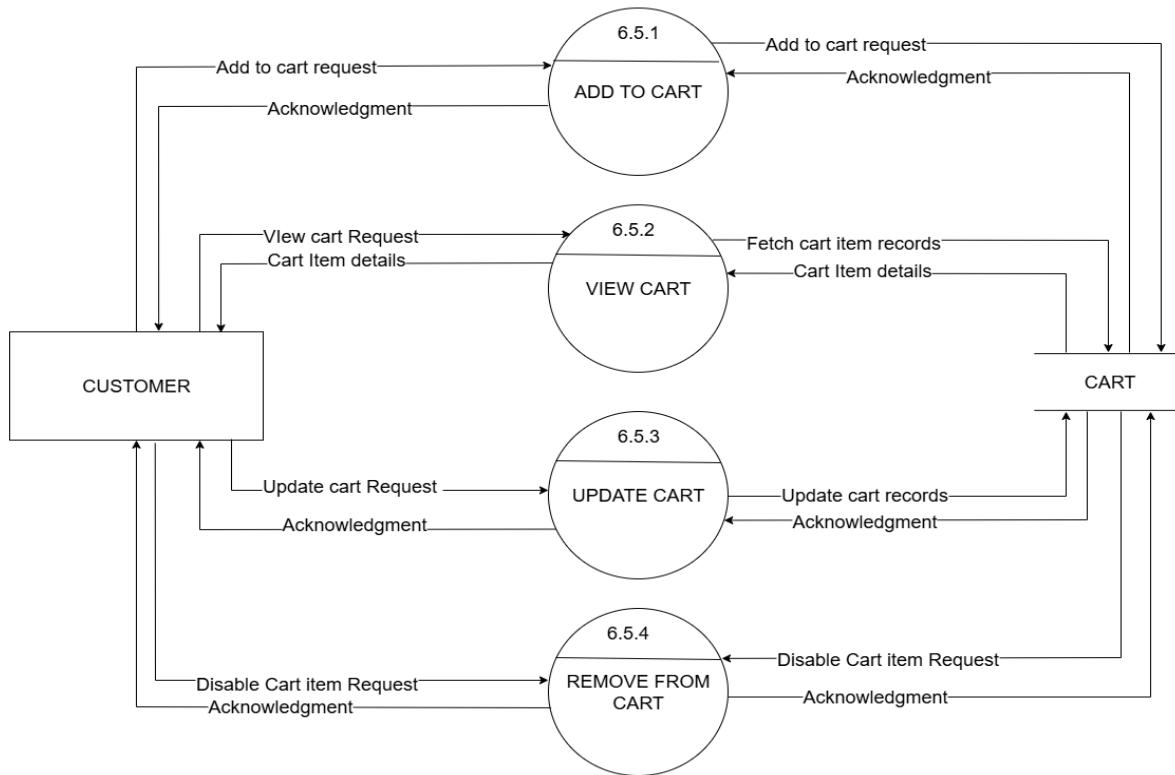
4.4.1 LEVEL 3 DFD FOR MANAGE VENDOR – MANAGE USERS



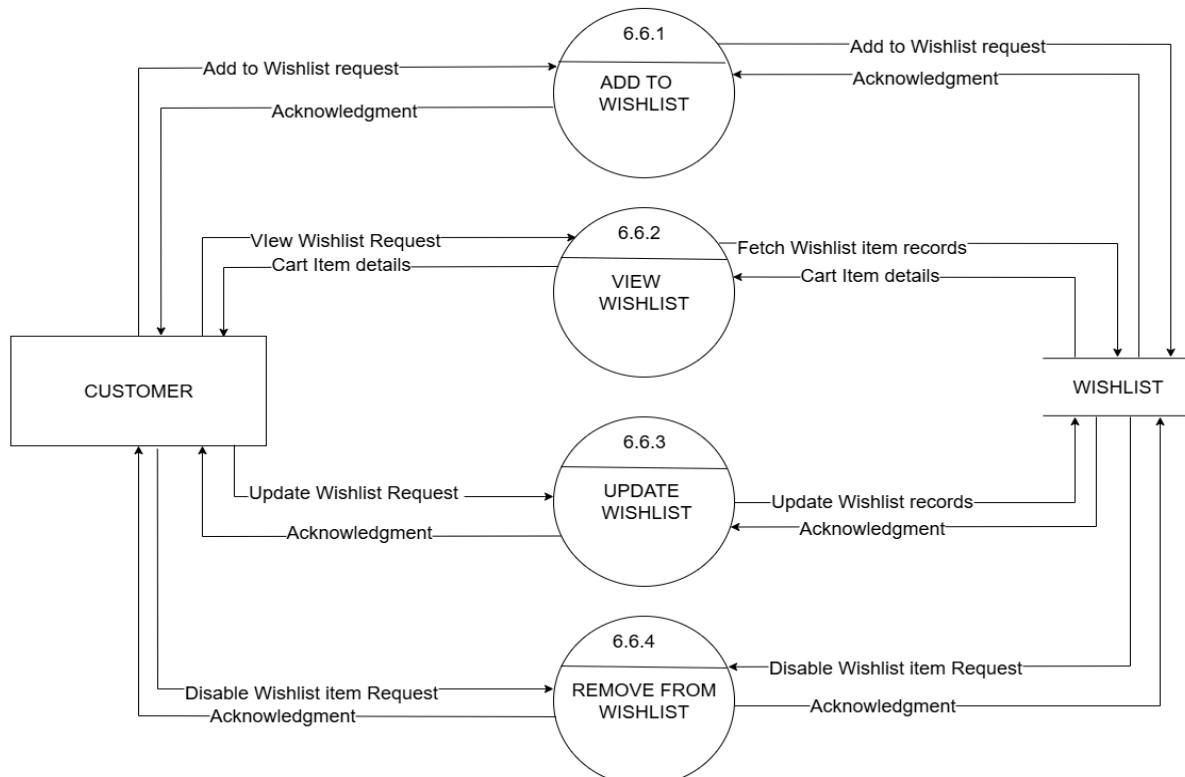
4.4.2 LEVEL 3 DFD FOR MANAGE CUSTOMER – MANAGE USERS



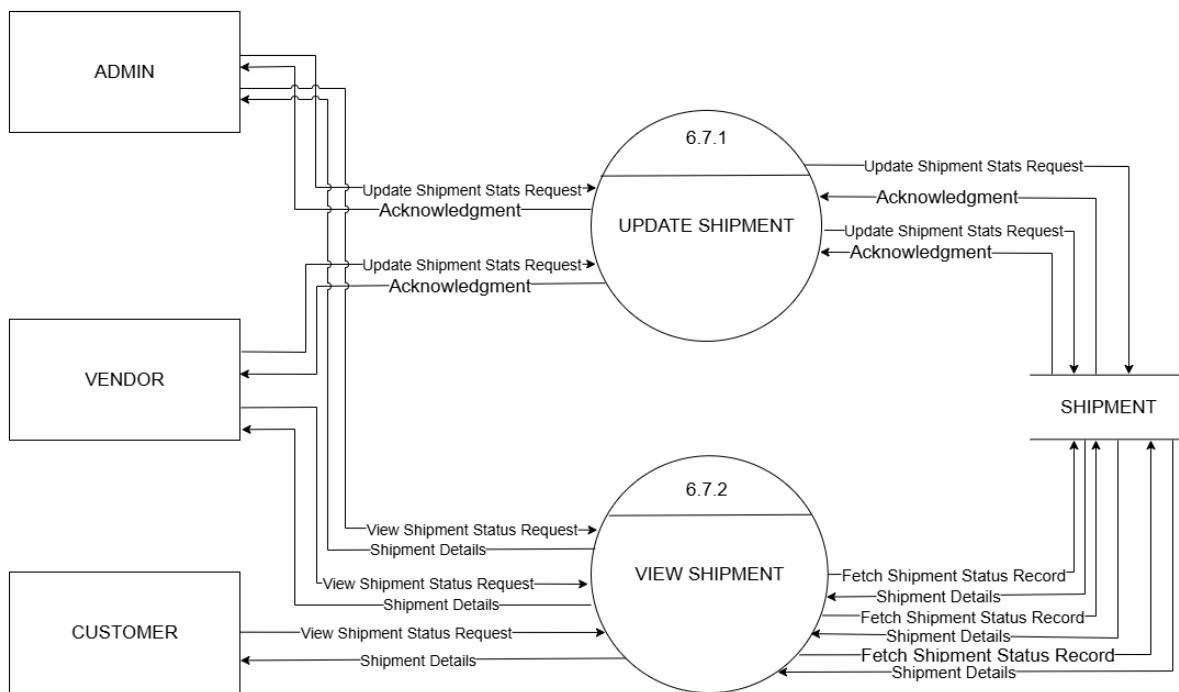
4.4.3 LEVEL 3 DFD FOR MANAGE CART - MANAGE ORDER



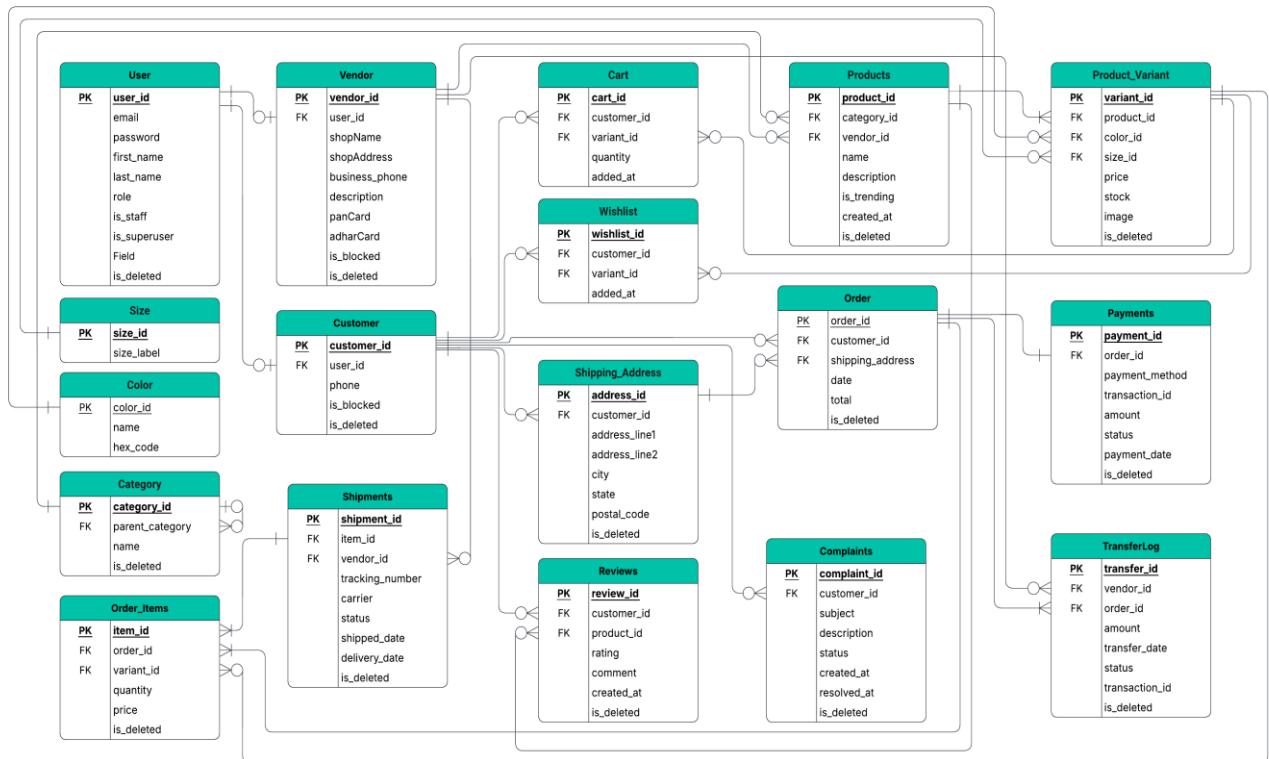
4.4.4 LEVEL 3 DFD FOR MANAGE WISHLIST – MANAGE ORDER



4.4.5 LEVEL 3 DFD FOR MANAGE SHIPMENT STATUS – MANAGE ORDER



5 ENTITY RELATIONSHIP DIAGRAM



6 DATA DICTIONARY

USER TABLE

Stores basic account information for all users including login credentials and profile details.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|--------------------------------|--|
| user_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each user. |
| email | Email | 75 | Unique | The user's email address, used for login. |
| password | Varchar | 75 | Not Null | Hashed password for the user. |
| first_name | Varchar | 75 | Not Null | User's first name. |
| last_name | Varchar | 75 | Not Null | User's last name. |
| role | Varchar | 10 | Not Null | Choices ('admin', 'vendor', 'user') |
| is_staff | Boolean | - | Default False | Indicates if the user can access the admin site. |
| is_superuser | Boolean | - | Default False | Indicates if the user has all permissions. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

CUSTOMER TABLE

Contains details specific to customers who purchase products on the platform.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|--------------------------------|--|
| customer_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each customer. |
| user_id | Integer | - | Foreign Key | References user table |
| phone | Varchar | 13 | Unique | Customer's phone number. |
| is_blocked | Boolean | - | Default False | Indicates if the customer is blocked. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

VENDOR TABLE

Holds information about sellers or vendors who list footwear products.

| Field | Data Type | Size | Constraint | Description |
|----------------|-----------|------|--------------------------------|---|
| vendor_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each seller. |
| user_id | Integer | - | Foreign Key | References user table |
| shopName | Varchar | 30 | Unique | Name of the seller's footwear store. |
| shopAddress | Varchar | 500 | Not Null | Physical address of the seller's shop. |
| business_phone | Varchar | 10 | - | Business contact number for the seller. |
| description | Varchar | 1000 | - | A brief description of the seller's business. |
| panCard | Image | - | - | Image of the seller's PAN card. |
| adharCard | Image | - | - | Image of the seller's Aadhar card. |
| is_blocked | Boolean | - | Default False | Indicates if the seller is blocked. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

SHIPPING ADDRESS TABLE

Stores multiple shipping addresses associated with each customer.

| Field | Data Type | Size | Constraint | Description |
|---------------|-------------|------|--------------------------------|--|
| address_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each shipping address. |
| customer_id | Foreign Key | - | Foreign Key | References customer table |
| address_line1 | Varchar | 75 | Not Null | The first line of the shipping address. |
| address_line2 | Varchar | 75 | Not Null | The second line of the shipping address. |
| city | Varchar | 30 | Not Null | The city of the shipping address. |
| state | Varchar | 30 | Not Null | The state of the shipping address. |
| postal_code | Varchar | 10 | Not Null | The postal code of the shipping address. |
| is_deleted | Boolean | - | Not Null, Default False | Indicates if the record is soft-deleted. |

CATEGORY TABLE

Defines product categories and supports hierarchical (parent-child) classification.

| Field | Data Type | Size | Constraint | Description |
|-----------------|-----------|------|--------------------------------|--|
| category_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each footwear category. |
| name | Varchar | 100 | Not Null | Name of the footwear category. |
| parent_category | Integer | - | FK to Category(id) | For hierarchical categories (Men → Sports → Running Shoes) |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

COLOR TABLE

Lists available color options for product variants with their display hex codes.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|-----------------------------|---|
| color_id | Integer | | Primary Key, Auto-Increment | Unique ID for each color |
| name | Varchar | 50 | Unique | Color name (e.g., "Black", "White/Red") |
| hex_code | Char | 7 | Not Null | Hex code for frontend color display (e.g., "#000000") |

SIZE TABLE

Contains standardized shoe size labels for product variants.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|-----------------------------|---|
| size_id | Integer | - | Primary Key, Auto-Increment | Unique ID for each shoe size |
| size_label | Varchar | 20 | Unique | Size label (e.g., "UK 8", "US 10", "EU 42") |

PRODUCT TABLE

Stores core product information such as name, vendor, and category

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|--------------------------------|--|
| product_id | Integer | - | Primary Key, Auto-Increment | Unique product ID |
| vendor_id | Integer | - | Foreign Key | References Vendor table |
| name | Varchar | 150 | Not Null | Product model name (e.g., "Air Max 270") |
| category_id | Integer | - | Foreign Key | References Category table |
| description | Varchar | 200 | Not Null | Detailed description |
| is_trending | Boolean | - | Default False | Marks product as trending |
| created_at | DateTime | - | Default Current Timestamp | When the product was created |
| is_deleted | Boolean | - | Default False | Soft-delete flag |

PRODUCT VARIANT TABLE

Represents variations of a product by size, color, and price

| Field | Data Type | Size | Constraint | Description |
|------------|-----------|------|-----------------------------|-------------------------------------|
| variant_id | Integer | - | Primary Key, Auto-Increment | Unique ID for each variant |
| product_id | Integer | - | Foreign Key | References Product table |
| size_id | Integer | - | Foreign Key | References Size table |
| color_id | Integer | - | Foreign Key | References Color table |
| price | Decimal | 10,2 | Not Null | Price of this specific variant |
| stock | Integer | - | Not Null | Stock quantity for this variant |
| image | Image | - | Not Null | Main display image for this variant |
| is_deleted | Boolean | - | Default False | Soft-delete flag |

CART TABLE

Tracks items added by customers to their shopping carts before checkout

| Field | Data Type | Size | Constraint | Description |
|-------------|-----------|------|--------------------------------|---|
| cart_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each cart item. |
| customer_id | Integer | - | Foreign Key | References Customer table |
| variant_id | Integer | - | Foreign Key | References Product Variant table |
| quantity | Integer | - | Not Null | The number of units of the product in the cart. |
| added_at | DateTime | - | Default Current Timestamp | The date the item was added to the cart. |

WISHLIST TABLE

Records products customers have saved for potential future purchase.

| Field | Data Type | Size | Constraint | Description |
|-------------|-----------|------|--------------------------------|---|
| wishlist_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each wishlist item. |
| customer_id | Integer | - | Foreign Key | References Customer table |
| variant_id | Integer | - | Foreign Key | References Product variant table |
| added_at | DateTime | - | Default Current Timestamp | The date and time the product was added. |

ORDER TABLE

Contains overall order details such as customer, total amount, and shipping address.

| Field | Data Type | Size | Constraint | Description |
|-------------|-----------|----------|--------------------------------|--|
| order_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each order. |
| customer_id | Integer | - | Foreign Key | References Customer table |
| address_id | Integer | - | Foreign Key | References Shipping Address table |
| date | Date | - | Not Null | The date the order was placed. |
| total | Decimal | 10, 2 | Not Null | The total amount of the order. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

ORDER ITEM TABLE

Lists individual products and quantities included in each order.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|--------------------------------|---|
| item_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each item within an order. |
| order_id | Integer | - | Foreign Key | References Order table |
| variant_id | Integer | - | Foreign Key | References Product variant table |
| quantity | Integer | - | Not Null | The quantity of the product ordered. |
| price | Decimal | 10,2 | Not Null | The price of the product at the time of purchase. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

SHIPMENT TABLE

Tracks delivery details for each ordered item, including vendor and tracking number

| Field | Data Type | Size | Constraint | Description |
|-----------------|-----------|------|--------------------------------|---|
| shipment_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each shipment. |
| item_id | Integer | - | Foreign Key | References Order item table |
| vendor_id | Integer | - | Foreign Key | References Vendor table |
| tracking_number | Varchar | 75 | Unique | The unique tracking number. |
| carrier | Varchar | 100 | Not Null | The shipping company. |
| status | Varchar | 50 | Not Null | Current status of the shipment. |
| shipped_date | DateTime | - | Not Null | The date and time the order was shipped. |
| delivery_date | DateTime | - | Not Null | The estimated or actual date of delivery. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

PAYMENT TABLE

Stores payment transaction data for customer orders.

| Field | Data Type | Size | Constraint | Description |
|----------------|-----------|------|--------------------------------|---|
| payment_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each payment transaction. |
| order_id | Integer | - | Foreign Key | References Order table |
| payment_method | Varchar | 50 | Not Null | The method used for payment. |
| transaction_id | Varchar | 255 | Unique | The unique transaction ID. |
| amount | Decimal | 10,2 | Not Null | The total amount paid. |
| status | Varchar | 50 | Not Null | Current status of the payment. |
| payment_date | DateTime | - | Not Null | The date and time the payment was made. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

REVIEW TABLE

Contains customer feedback and ratings for purchased products.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|--------------------------------|---|
| review_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each product review. |
| product_id | Integer | - | Foreign Key | References Product table |
| customer_id | Integer | - | Foreign Key | References Customer table |
| rating | Integer | - | Min: 1, Max: 5 | The numerical star rating. |
| comment | Varchar | 255 | Not Null | The textual comment for the review. |
| created_at | DateTime | - | Default Current timestamp | The date and time the review was submitted. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

COMPLAINTS TABLE

Logs customer complaints and their resolution status.

| Field | Data Type | Size | Constraint | Description |
|--------------|------------------|-------------|--------------------------------|--|
| complaint_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each complaint. |
| customer_id | Integer | - | Foreign Key | References Customer table |
| subject | Varchar | 100 | Not Null | A brief summary of the complaint. |
| description | Varchar | - | Not Null | A detailed description of the complaint. |
| status | Varchar | 50 | Not Null | Current status of the complaint. |
| created_at | DateTime | - | Default current timestamp | The date and time the complaint was submitted. |
| resolved_at | DateTime | - | Not Null | The date and time the complaint was resolved. |
| is_deleted | Boolean | - | Default False | Indicates if the record is soft-deleted. |

TRANSFER LOG TABLE

Records payment transfers made to vendors for their completed orders.

| Field | Data Type | Size | Constraint | Description |
|----------------|------------------|-------------|--------------------------------|--|
| transfer_id | Integer | - | Primary Key, Auto-Incrementing | Unique identifier for each transfer record. |
| vendor_id | Integer | - | Foreign Key | References Vendor table |
| order_id | Integer | - | Foreign Key | References Order table |
| amount | Decimal | 10,2 | Not Null | The amount transferred to the seller. |
| transfer_date | DateTime | - | Not Null | The date and time the transfer was initiated. |
| status | Varchar | 50 | Not Null | Current status of the transfer (e.g., 'Pending', 'Completed', 'Failed'). |
| transaction_id | Varchar | 255 | Unique | The transaction ID from the payment system. |
| is_deleted | Boolean | | Default False | Indicates if the record is soft-deleted. |

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