SportSphere: An Online Sports Equipment Store

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1. Project Scope

SportSphere is a comprehensive online sports equipment store that provides customers with a seamless shopping experience while offering practical management tools for administrators and delivery agents. The system is designed to handle product listings, shopping carts, orders, payments, and delivery tracking through a **Database Management System (DBMS)** for optimal performance.

Key Stakeholders & Functionalities

- **1. Customers** create accounts with a unique email and secure login. They browse sports gear like football, cricket, and fitness accessories. Items are added to a shopping cart before placing an order. Customers track deliveries, provide feedback, and earn loyalty points.
- **2. Admins** manage inventory by adding, updating, and removing products. They analyze sales performance and track revenue trends. Customer feedback is reviewed to enhance service quality. Admins ensure smooth store operations and promotional programs.
- **3. Delivery Agents** receive orders based on availability and location. They update the system with real-time delivery status. Agents ensure timely and accurate product deliveries. Their performance impacts customer satisfaction and service efficiency.

The main goal of this project is to create an efficient **Database Management System** that meets the needs of administrators, customers, and delivery agents. Along with functional requirements, non-functional factors like scalability and user accessibility will also be crucial to SportSphere's success. The platform ensures data consistency and integrity by implementing a structured database design based on an **Entity-Relationship (ER) model** that defines the relationships between various entities.

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2. Technical Requirements

SportsSphere is built using a modern tech stack to ensure high performance, scalability, and security:

- **Database Management**: MySQL / PostgreSQL
- **Backend Development**: Python with Flask / PHP
- **Frontend Development**: HTML, CSS, JavaScript, ReactJS

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3. System Functionality

3.1 Customer Management

- **Signup & Secure Login** with encrypted passwords.
- **Browse & Search** products by categories or brands.
- **Shopping Cart & Checkout** integration.
- **Real-time Order Tracking**: Customers can check their order status in real-time
- **Loyalty Points System** for customer engagement.
- **Order History & Reviews** for feedback and service improvement.

3.2 Admin Management

- **Login** with encrypted passwords
- **Inventory, Store & Delivery Agents Management:** Manages inventory, store operations, and delivery agents for efficient order fulfillment.
- **Order & Sales Analysis** for revenue tracking.
- **Customer Feedback** View and analyze customer feedback to improve the platform.

3.3 Delivery Partner Management

- **Signup & Login** with encrypted passwords
- **Order Assignment & Acceptance** based on availability.
- **Live Status Updates** on deliveries.
- **Task Tracking** dashboard.

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4. Contribution

All team members actively collaborated through meetings, brainstorming, and iterative development. Contributions were evenly distributed across design, development, testing, and documentation. This ensured the successful implementation of all functionalities within deadlines.

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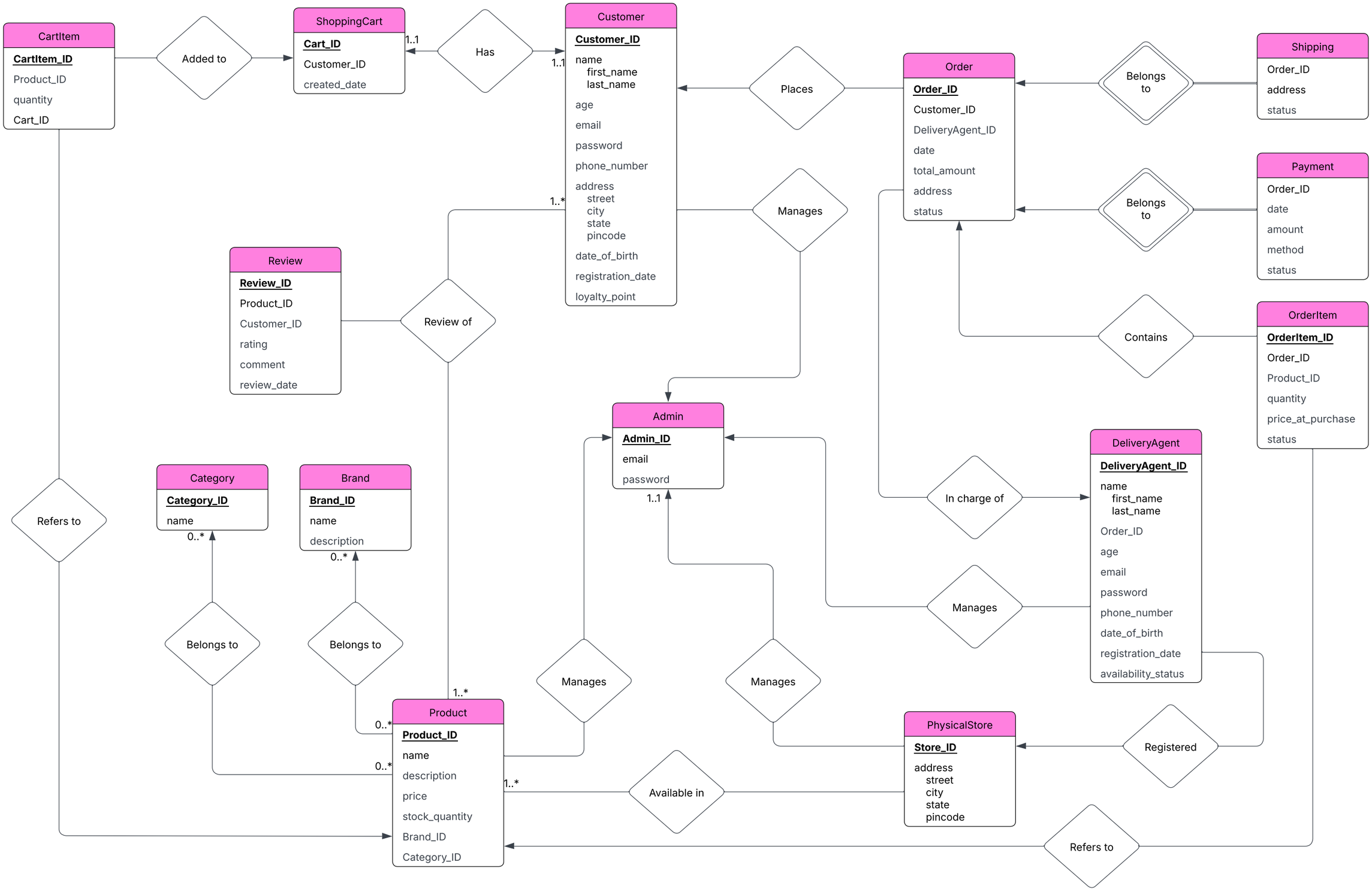
5. Reference Sources & Website

1. **ChatGpt**
2. **DeepSeek**
3. **BlackBox**
4. **GeeksforGeeks**: https://www.geeksforgeeks.org/how-to-design-er-diagrams-for-e-commerce-website/
    a. Changes we made:
        i. Modify Entities & Relationships: introduce more entities and relationships
        ii. Refine Attributes: for better data representation
        iii. Introduce Constraints: Primary keys, Foreign keys, and constraints
        iv. Integrate New Functionalities: like Real-time tracking for customers, admin and delivery agents.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ShoppingCart
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created_date
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Customer_ID
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