



Product Dissection for Amazon

Step 1: Choose a Leading Platform: Company Overview:

Chosen Platform: Amazon (E-commerce)

Amazon.com, Inc. is a multinational technology company based in Seattle, Washington. It was founded by Jeff Bezos on July 5, 1994. Initially started as an online bookstore, Amazon has since expanded into a variety of sectors, including e-commerce, cloud computing, digital streaming, and artificial intelligence.

Step 2: Research:

Core Features of Amazon:

1. **Product Listings:** Comprehensive product catalog with detailed descriptions, reviews, and ratings.
2. **User Accounts:** Personalized accounts for customers and sellers.
3. **Shopping Cart:** Allows users to add and review items before purchase.
4. **Order Management:** Tracks orders from placement to delivery.
5. **Recommendations:** Personalized product suggestions based on user behavior.
6. **Search Functionality:** Advanced search options to find products easily.
7. **Payments:** Multiple payment methods including credit/debit cards, gift cards, and digital wallets.
8. **Prime Membership:** Exclusive benefits for members like faster shipping and access to Prime Video.
9. **Customer Support:** Extensive support options including chat, email, and phone.
10. **Review System:** Allows users to review and rate products

Step 3: Product Dissection and Real World Problems Solved by the Amazon

Standout Features:

- 1. Product Listings:** Solves the problem of product visibility for sellers and variety for buyers.
- 2. User Accounts:** Ensures a personalized shopping experience.
- 3. Shopping Cart:** Facilitates easy purchase decisions and order management.
- 4. Recommendations:** Enhances product discovery and increases sales.
- 5. Search Functionality:** Allows users to efficiently find desired products.

Step 4: Case Study on Real World Problems and Approach to Solving Them

Case Study 1:

Product Listings-

Problem: Sellers need a platform to list their products with sufficient information to attract buyers.-

Solution: Amazon provides a detailed product listing feature where sellers can add descriptions, images, prices, and stock information. This attracts more buyers by providing comprehensive product information.

Case Study 2:

Recommendations-

Problem: Users often face difficulty in discovering products they might like.-

Solution: Amazon's recommendation engine analyzes user behavior and suggests products they might be interested in, increasing user satisfaction and sales.

Step 5: Schema Design Based on Top Features

Entities and Relationships:-

1. User (**UserID(PK)**, Name, Email, Password, Address, Phone, PrimeStatus)
2. Product (**ProductID(PK)**, Name, Description, Price, Stock, CategoryID(FK), Rating)
3. Category (**CategoryID(PK)**, Name)
4. Order (**OrderID(PK)**, UserID(FK), OrderDate, ShippingDate, TotalAmount)
5. OrderItem (**OrderItemID(PK)**, OrderID(FK), ProductID(FK), Quantity, Price)
6. Cart (**CartID(PK)**, UserID(FK))
7. CartItem (**CartItemID(PK)**, CartID(FK), ProductID(FK), Quantity)
8. Review (**ReviewID(PK)**, UserID(FK), ProductID(FK), Rating, Comment, ReviewDate)
9. Recommendation (**RecommendationID(PK)**, UserID(FK), ProductID(FK))

Relationships:-

A User can have multiple Orders.-

A User can have multiple Reviews.-

A User can have multiple Recommendations.-

An Order can have multiple OrderItems.-

A Cart can have multiple CartItems.-

A Product belongs to one Category.-

A Product can have multiple Reviews.-

A User can have one Cart.

Step 6: Rationale Behind the Design

Entities and Relationships Rationale:-

User: Central entity for personalizing the shopping experience.

Product: Core entity for the e-commerce platform, linked to various other entities.

Category: Helps in organizing products and enhancing search functionality.

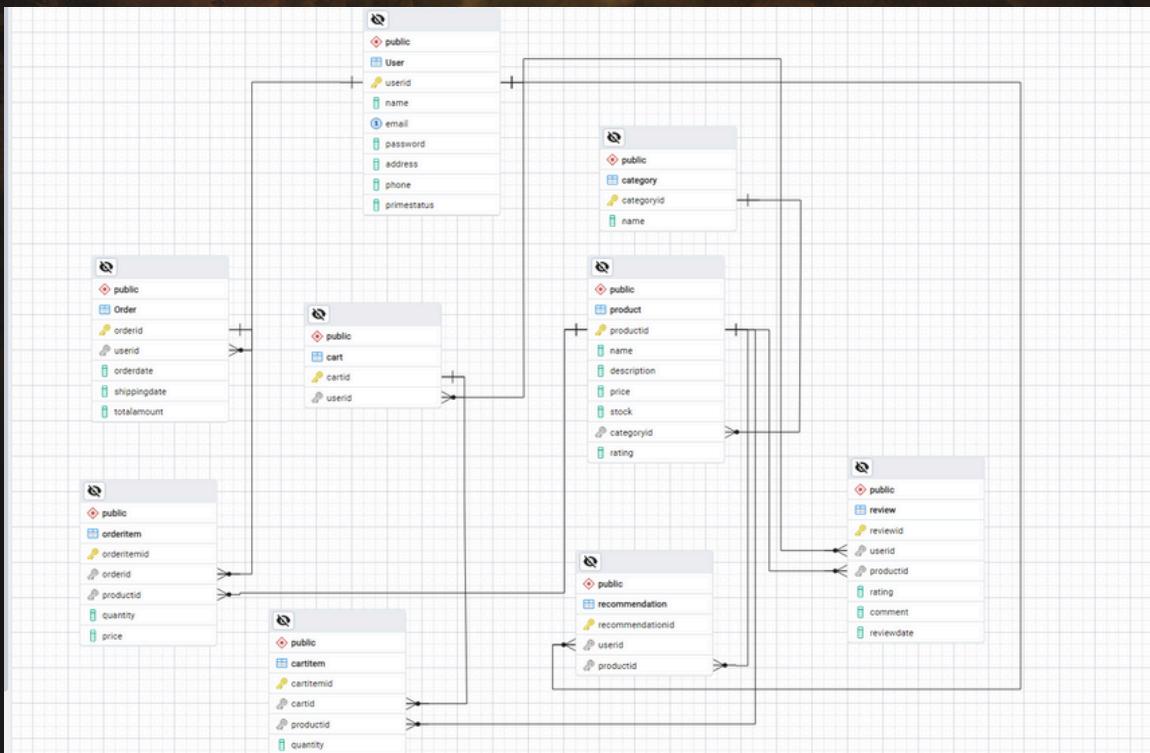
Order and OrderItem: Facilitate order tracking and management.

Cart and CartItem: Essential for managing the user's shopping process.

Review: Provides feedback mechanism for products.

Recommendation: Drives personalized user experience and increased sales.

Step 7: Create an ER Diagram



Conclusion:

This case study on Amazon's platform has provided a comprehensive understanding of how schema design plays a pivotal role in shaping its functionality and user experience. By dissecting the platform's core features and analyzing real-world problems and solutions, we have demonstrated the importance of a well-structured schema. The entities and relationships identified in this study align with Amazon's goals, ensuring efficient data management and enhancing the overall user experience. The insights gained from this analysis highlight the strategic decisions that underpin Amazon's data architecture and its ability to solve real-world challenges effectively.

Drive link

Vedio link

Github Link

ER Diagram link

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