Online bidding marketplace for reselling trending products

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Business Problems

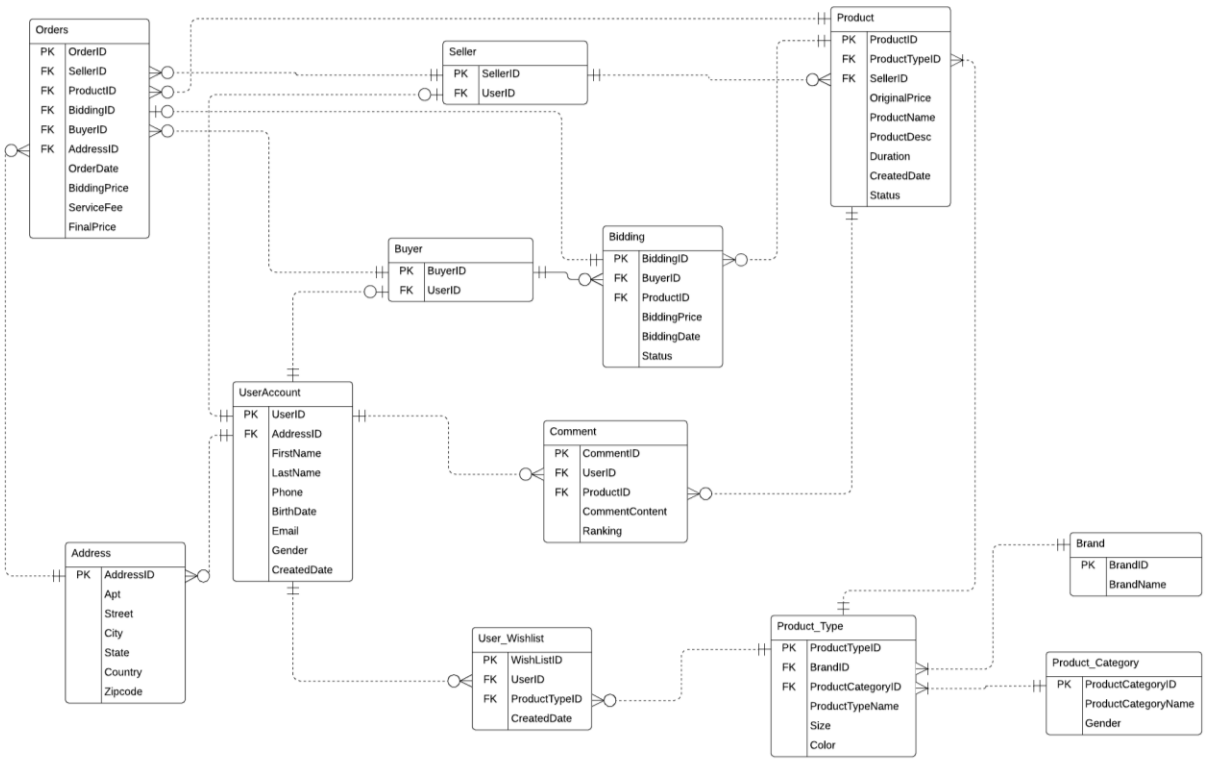
The database is designed to support the successful operation of the website, and it can only be used by approved employees. The core business of the website is a bidding system that enables transactions between sellers and buyers, so the company would pay special attention to the transaction integrity and users' behaviors. Business problems being addressed by the database include:

1. To record and maintain the key information of users, products, orders, etc.
2. To track and report the users' activities and the current trend of the products.
3. To provide information to improve brand behavior.

Business Rules

1. Each user can buy or sell multiple products on the platform.
2. Each user can add multiple products into his/her wishlist.
3. The same product type, for example, a jacket with the code WC12345, can be sold by multiple sellers.
4. Each product type posted by a single seller will create a new record in the Product entity.
5. Each product can be bidden by multiple buyers.

Entities and Relationships



Key Design Decisions

1. **UserAccount:** To store the key information of users, including names, contacts and birth dates. Each row represents a single user.
2. **Buyer:** To distinguish the buyer roles of users. A user can choose to be a buyer or not.
3. **Seller:** To distinguish the seller role of users. A user can choose to be a seller or not.
4. **Orders:** To store the key information of completed bidding products, including the seller, the product, the buyer, and the final bidding price.
5. **Bidding:** To store the bidding information in the process. Each row represents one bidding.
6. **Product:** Because the same product type can be sold by multiple sellers, we created an entity called product to store the product information uploaded by a single seller. Information includes the original price set by sellers for later biddings, the customized product name for each product, the allowed bidding duration of the product and its transaction status.
7. **Product_Type:** Product type records attributes of products, such as color, size, official name and so on. A product type will be automatically generated for each product if there is no existent product type.
8. **Product_Category:** To store the information of product category. Typical product category examples are shoes, jackets, etc. The product_category entity is designed to reduce repeating groups.
9. **Brand:** To store the key information of the brands which produce those products. Each row represents one brand.
10. **User_Wishlist:** To store the wishlisted products of users. The created date is included to enable the notification of potential expirations. Each row represents a product added by a user.
11. **Address:** To store the key information of the address of users when completing orders, including the zip code, country, state, city, street, and the apartment number. The address entity is to reduce repeating groups.
12. **Comment:** To store the key information of the comments made by users on the products, including comment contents, rankings of the products. The comment entity can encourage users to leave comments on the products and thus enhance the bidding community.