

Database Schema Design

In our application, we have designed a database schema to efficiently store and manage data related to user profiles, artworks, auctions, and bids. This schema is implemented using Django models, ensuring the integrity and flexibility of our data.

UserProfile Model

- This model represents user profiles in our system.
 - Key Fields:
 - id: Primary key to uniquely identify each user profile.
 - user: Foreign key to link to another user model (e.g., Django's built-in User model).
 - email_addr: Stores the user's email address.
 - shipping_addr: Stores the user's shipping address.
 - create_date: Records the timestamp of profile creation.
 - password_hash: Stores a secure password hash for user authentication.
 - user_type: Captures the user's role or type within the system.

Artwork Model

- This model is used to represent artworks created by users.
 - Key Fields:
 - id: Primary key to uniquely identify each artwork.
 - artist: Foreign key to link to the user profile of the artist who created the artwork.
 - create_date: Records the timestamp of artwork creation.
 - description: Contains a description of the artwork.
 - image_url: Stores a Cloudinary URL for the artwork's image.
 - artwork: Self-referential foreign key to represent relationships between artworks (e.g., artwork series).

Auction Model

- This model manages auctions for artworks.
 - Key Fields:
 - id: Primary key to uniquely identify each auction.
 - artwork: Foreign key to link to the artwork being auctioned.
 - create_date: Records the timestamp of auction creation.
 - status: Stores the current status of the auction (e.g., "open" or "closed").
 - is_active?: Indicates if the auction is currently active.
 - end_date: Records the end date and time of the auction.
 - reserve_price: Specifies the reserve price for the auction.

Bids Model

- This model stores bids placed by users in auctions.
 - Key Fields:
 - id: Primary key to uniquely identify each bid.
 - bidder: Foreign key to link to the user profile of the bidder.
 - auction: Foreign key to link to the auction associated with the bid.
 - amount: Records the bid amount.
 - bid_time: Records the timestamp when the bid was placed.

Relationships

- The schema defines the following relationships:
 - UserProfile to Artwork: One-to-many relationship (one user can have many artworks).
 - Artwork to Auction: One-to-many relationship (one artwork can be part of many auctions).
 - Auction to Bids: One-to-many relationship (one auction can have many bids).
 - Bids to UserProfile (bidder): Many-to-one relationship (many bids can be associated with one user profile).

This database schema provides a robust foundation for our application, enabling us to manage user profiles, artwork creations, auctions, and bids efficiently while maintaining data integrity.