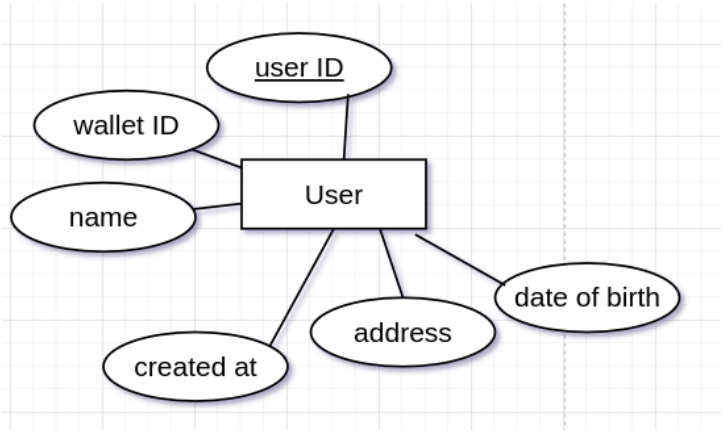
BitAuction Database ERD

Identified Entities

1. `Users` Table

Purpose: Stores information about users, who can be **buyers** or **sellers**.
Columns:

- `user_id` (**PK**) → Unique identifier for each user.
- `wallet_address` (**Unique**) → Stores the blockchain wallet address for authentication.
- `role` → Defines whether the user is a **Buyer** or **Seller**.
- `created_at` → Timestamp of account creation.
- `address` → Address of the user.
- `date_of_birth` → Date of birth of user.



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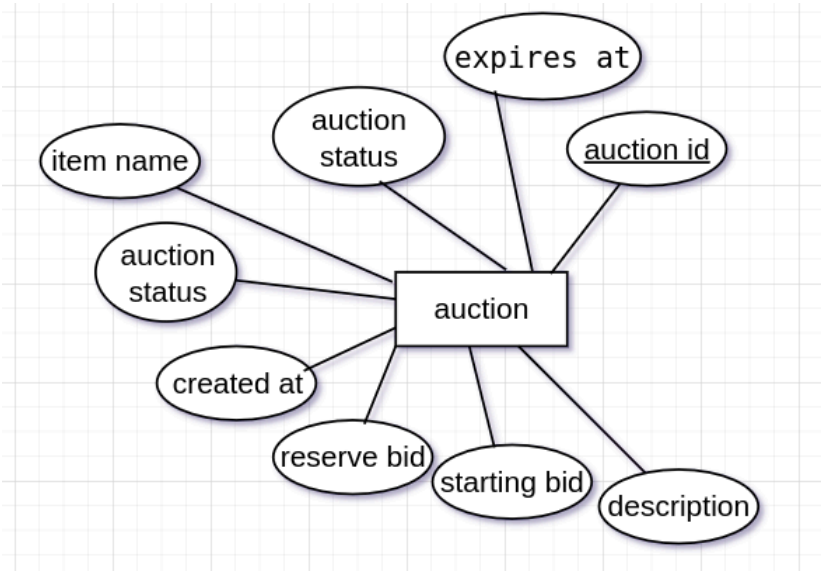
2. `Auctions` Table

Purpose: Stores auction details created by sellers.
Columns:

- `auction_id` (**PK**) → Unique auction identifier.
- `item_name` → Name of the item being auctioned.
- `starting_bid` → The minimum bid required to start the auction.

- `reserve_bid` → The minimum price the seller is willing to accept.
- `auction_status` → Enum (`Active`, `Completed`, `Canceled`) to track auction progress.
- `created_at` → Auction creation timestamp.
- `expires_at` → Auction end time.
- `description` → Text description of the auctioned item.
- `photo` → Refer to the url of the photos.



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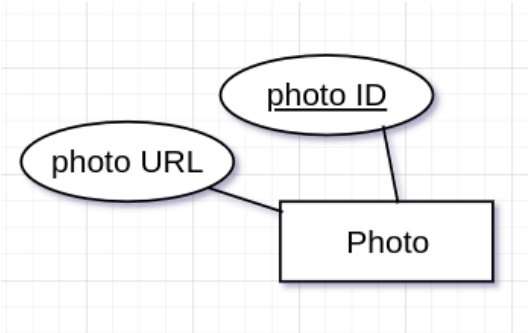
3. `photo` Table

Purpose: Stores photos related to auction items.
Columns:

- `photo_id` (**PK**) → Unique identifier for each photo.
- `photo_url`→ The actual image file (should be stored as a **URL**).



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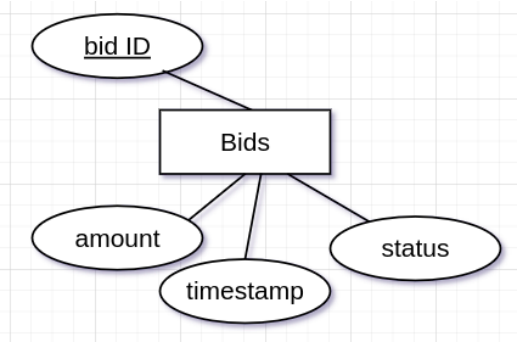
4. `Bids` Table

Purpose: Stores bids placed by buyers on auctions.
Columns:

- `bid_id` (**PK**) → Unique identifier for each bid.
- `amount` → Bid amount.
- `timestamp` → Time when the bid was placed.
- `status` → Enum (`Pending`, `Confirmed`, `Withdrawn`) indicating bid state.



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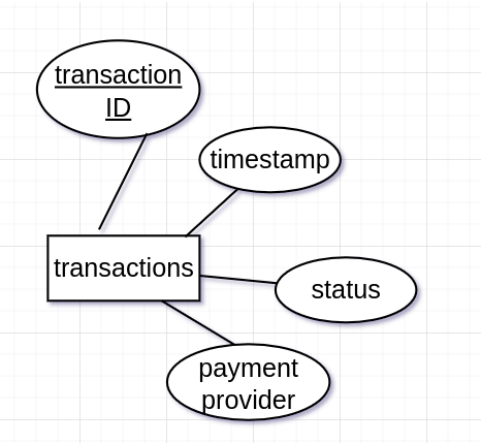
5. `Transactions` Table

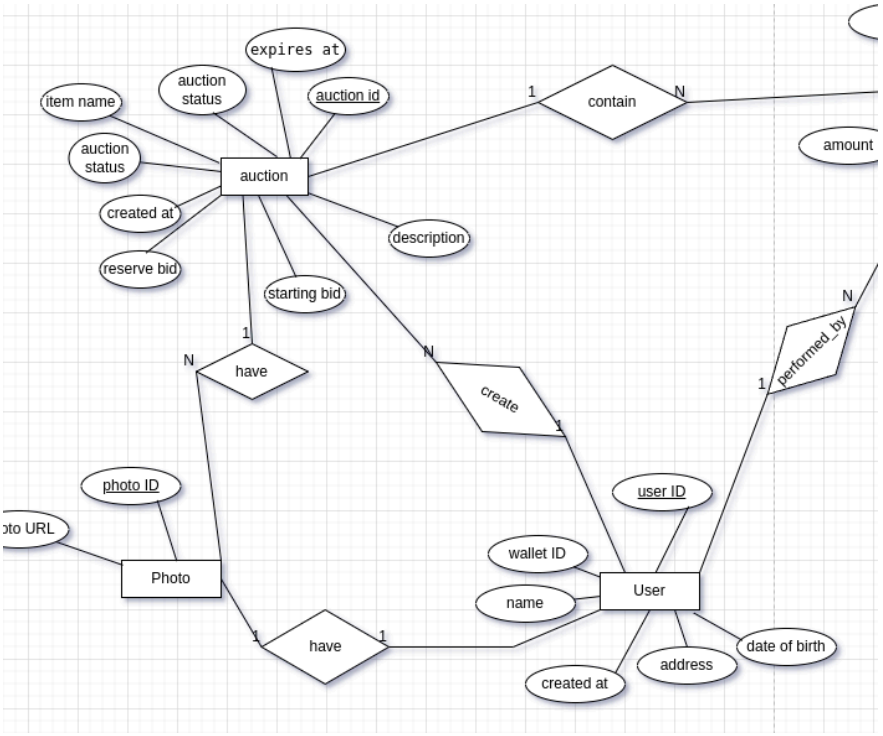
Purpose: Stores finalized auction transactions.
Columns:

- `transaction_id` (**PK**) → Unique identifier for each transaction.
- `status` → Enum (`Pending`, `Completed`, `Failed`) indicating transaction status.
- `timestamp` → Time when the transaction was completed.
- `payment provider` → Provider used for paying with specific currency.

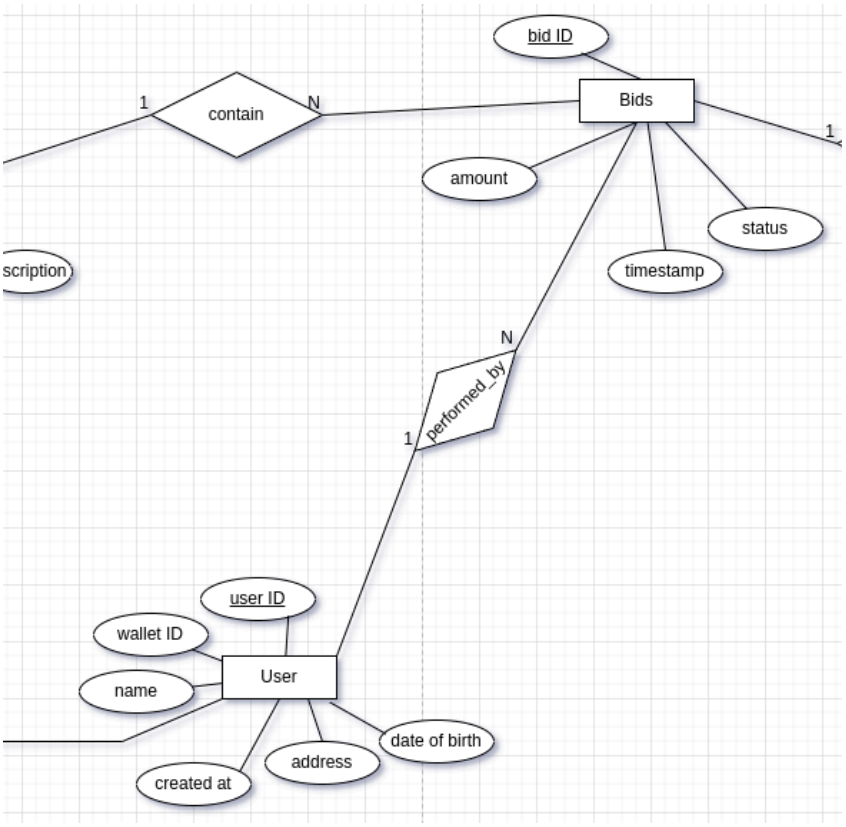


Relationships in the Database

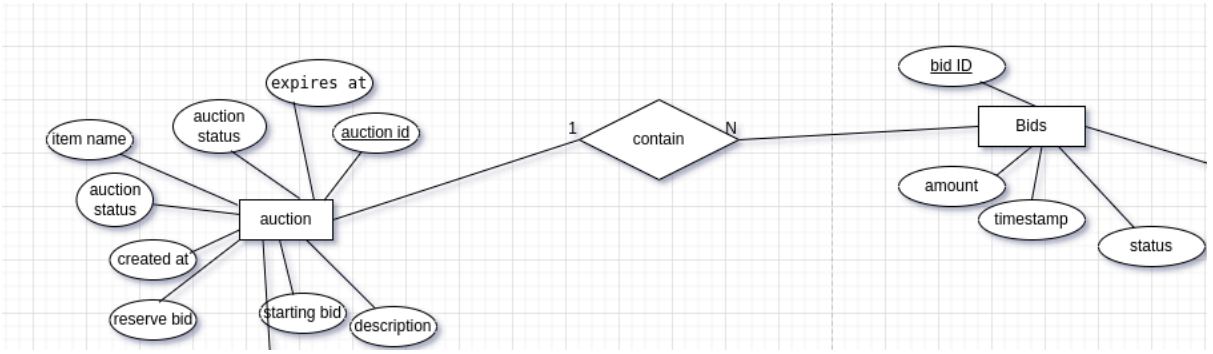
1. **A user (`users`) can create multiple auctions (`auctions.seller_id`).**



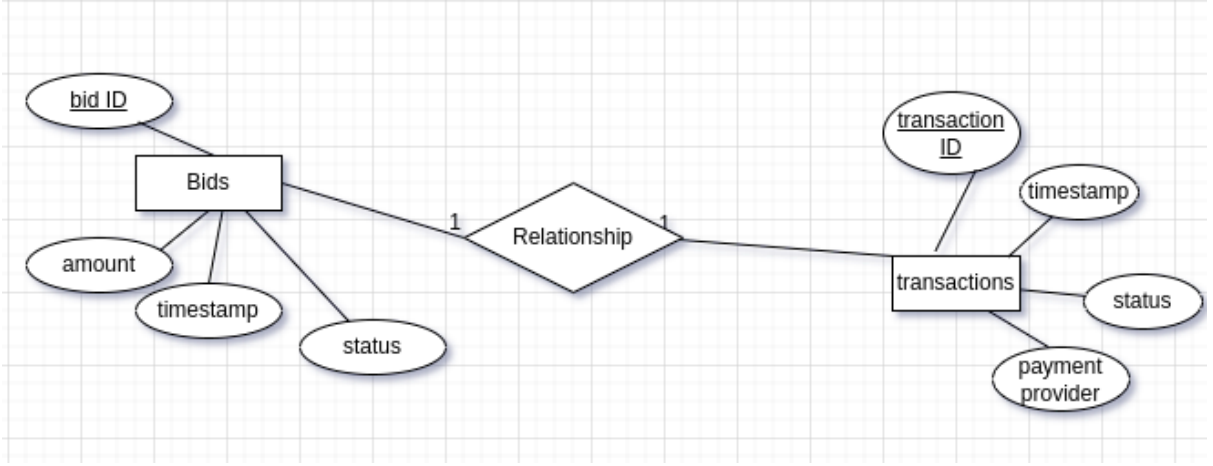
2. **A user (`users`) can place multiple bids (`bids.bidder_id`).**



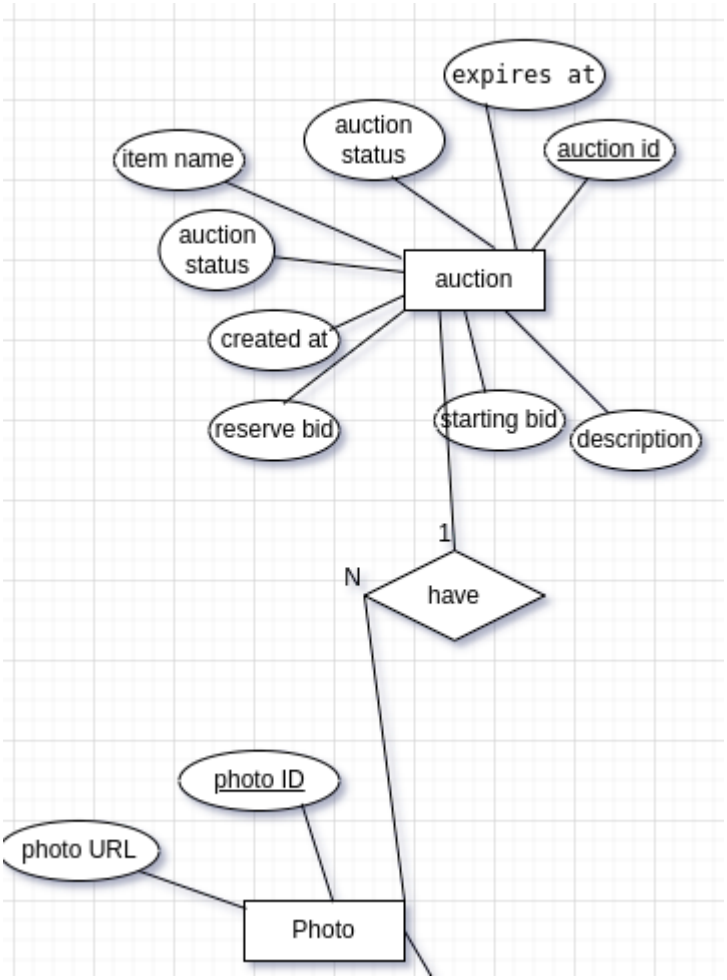
3. **An auction (`auctions`) can receive multiple bids (`bids.auction_id`).**



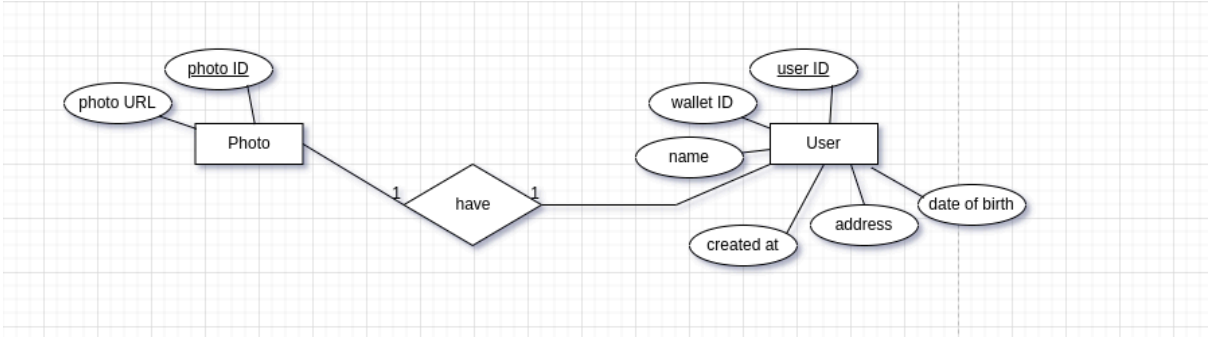
4. **A successful auction leads to a transaction that builds from the last bid in the auction (`transactions.bid`).**



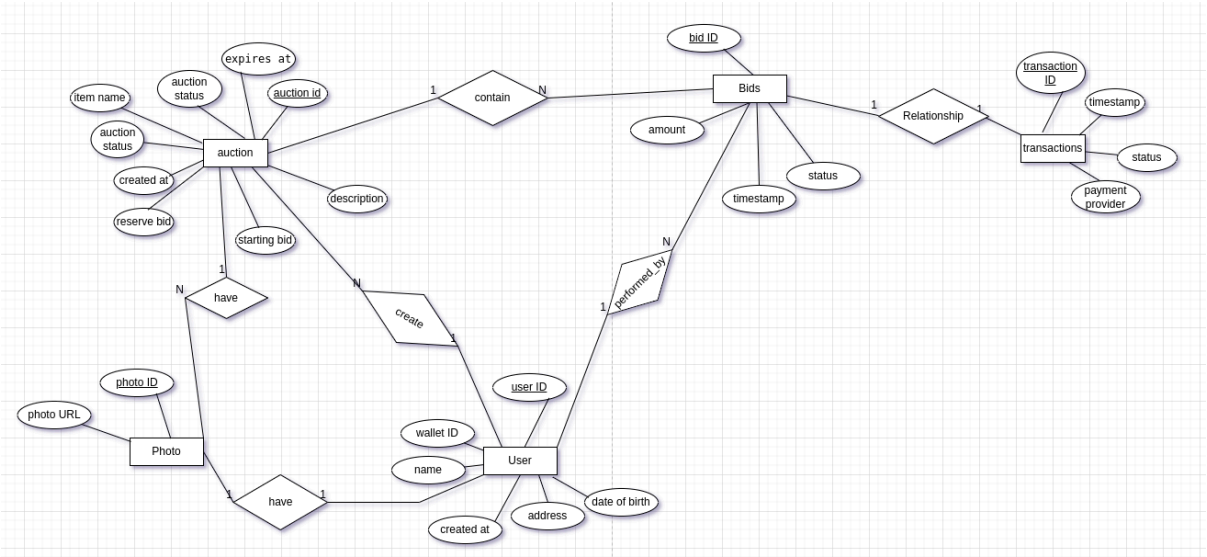
5. **An auction can have multiple photos (`photo.auction_id`).**



6. **A user can have a photo**



Data Model



Relational Schema