

5 tables:

1. Items:

Purpose: Stores information related to items to be bidded. ItemID is the unique identifier for each item. Seller_ID is also stored in this table because Seller_ID is a one-to-one match to the item sold. Further details about sellers can be queried by associating **Seller_ID** with UserID in the Users table.

Attributes: ItemID, Name, **Seller_ID**, Buy_Price, Currently, First_Bid, Number_of_Bids, Started, Ends, Description.

2. Categories:

Purpose: Stores categories of all items in the Items table. With this table filled with categories, database managers can easily update items of one category.

Attributes: Category

3. ItemCategories:

Purpose: Stores detailed category information of each item in the Items table. Any category of that item will be stored here and thus itemid and category are the primary keys to identify each tuple. In addition, **itemid** and **category** are foreign keys as itemid can associate with Items table, and category can associate with Categories table.

Attributes: **itemid**, **category**

4. Bids:

Purpose: Stores information of any bids of any items in Items table. BiddedItemID, BidderID and Time serve to identify a unique bid. Besides, **BiddedItemID** can refer to ItemID in the Items table, and **BidderID** can refer to UserID in the Users table. Thus these two attributes function as foreign keys as well.

Attributes: **BiddedItemID**, **BidderID**, Time, Amount.

5. Users:

Purpose: Stores information of every user. Although users can play multiple roles, we decided to create a universal user table to catch all information for simplicity purpose. Since one user will have one account, UserID is used to trace each user.

Attributes: UserID, Rating, Location, Country

ER Diagram:

