ER Modeling & Schema Design - Report

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Schema Design:

To start designing our schema, we first studied the provided *items_schema.txt* file to gain an understanding of the attributes given in the data. We then used a Jupyter Notebook to more easily run tests and use functions to further break down the file, like retrieving all the keys from a single row, or checking the data types of dictionary or list elements. This would make it much easier to develop our code for Task C later on.

We decided that, based on the queries that we were required to complete with good performance in Task E, we would need at least the following relations: items, bidders, sellers, locations, bids, and categories. Since the *ItemID* attribute is unique to each item and is a required attribute, we decided it was the ideal attribute to use as the primary key in the schema.

Items(item_id, name, currently, buy_price, first_bid, number_of_bids, started, ends, description, item_sale (foreign key), item_bid (foreign key), item_category(foreign key))
Item_id is the primary key in Items and item_sale, item_bid, and item_category are the foreign keys.

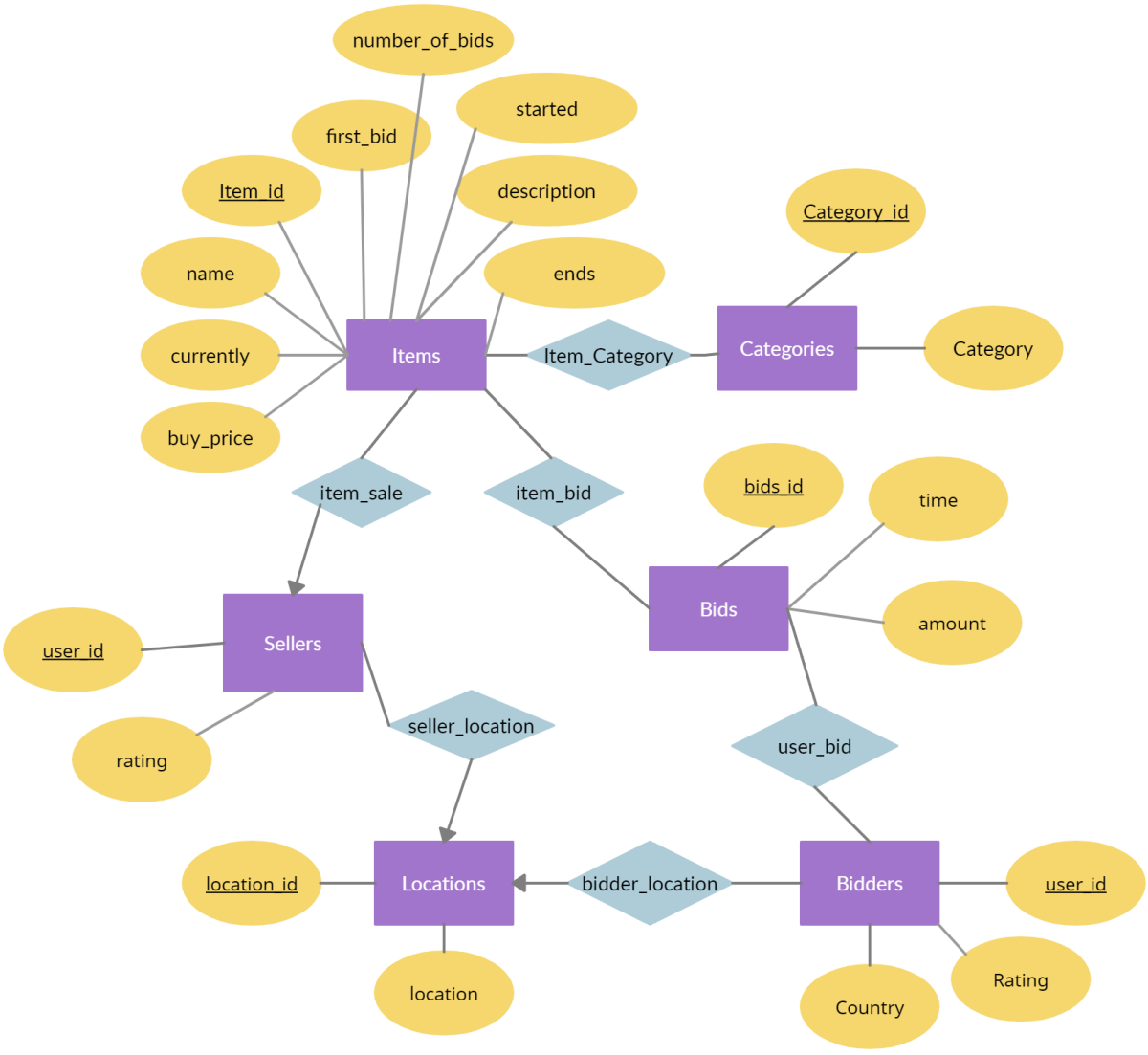
Categories(category_id, category)
Category_id is the primary key in Categories

Sellers(user_id, rating, location_id (foreign key))
User_id is the primary key in Sellers, and location_id is the foreign key.

Bidders(user_id, country, rating, location_id(foreign key))
User_id is the primary key in Bidders, and location_id is the foreign key.

Bids(bids_id, time, amount, user_bid(foreign key), item_id(foreign key))
Bids_id is the primary key in Bids, and user_bid and item_id is the foreign key.

ER Diagram:


number_of_bids
started
first_bid
Item_id
description
Category_id
name
ends
currently
Items
Item_Category
Categories
Category
buy_price
item_sale
item_bid
bids_id
time
Bids
amount
user_id
Sellers
seller_location
rating
user_bid
location_id
Locations
bidder_location
Bidders
user_id
location
Country
Rating