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, 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(ItemID, name, currently, buy_price, first_bid, number_of_bids, started, ends, Seller_UserID(foreign key), description)

Item_id is the primary key in Items and Seller_userid is the foreign key.

Categories(ItemID, category)

The tuple of (item_id, category) is the primary key in Categories

Sellers(UserID, rating, location, country)

UserID is the primary key in Sellers

Bidders(UserID, rating, location, country)

UserID is the primary key in Bidders

Bids(ItemID(foreign key), Bidder_UserID (foreign key), Amount, Time)

The tuple of (ItemID, Bidder_UserID,Amount) is the primary key, and ItemID and Bidder_UserID are the foreign keys.

ER Diagram: