Design Document

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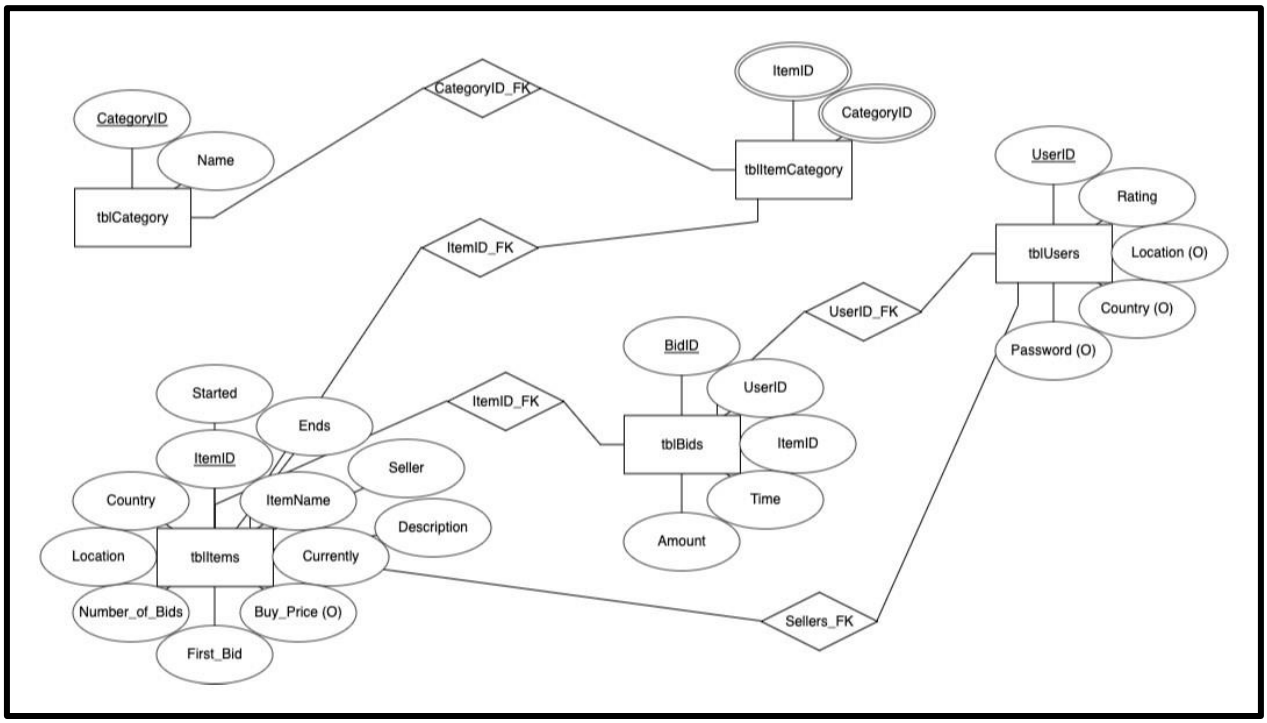
CS 434 DBMS



Above is the updated ER Diagram for my current database. One of the biggest changes from the previous ERD was that I added *tblItemCategory* which holds CategoryIDs for various Items. This allowed me to remove CategoryID from tblItems.

I added the following primary keys to my database:

- tblBids:BidID
- tblUsers:UserID
- tblCategory:CategoryID
- tblItems:ItemID

I added the following foreign keys to my database:

- tblBids:UserID references tblUsers(UserID) - tblBids:ItemID references tblItems(ItemID)
- tblItems:Seller references tblUsers(UserID)
- tblItemCategory:CategoryID references tblCategory(CategoryID)
- tblItemCategory:ItemID references tblItems(ItemID)

Next, I ALTERED my tables to add NOT NULL constrants to the “required” entity attributes. I also added CHECK() constraints to make sure int values were not negative. These changes can be found in *DBUpdateScript.sh*.

Further, I added a trigger which updates the aggregate counts on tblItems once there has been a new bid places in tblBids. I also added indicies on tblItems(Description), tblCategory(Name), and tblItems(Seller). As required, tblUsers was added a new field called password (varchar(255)) as required by the requirements document. The trigger is wrapped inside a Transaction. This allows for transaction mechanism to be put in place to support concurrency. All bids by users are processed as an atomic transaction.