



This ER Diagram consists of three entities (Seller, Item, and Bidder) and two relations (Auction, and Bid). Seller has a primary key of User_ID (string), and attributes Country(string), location(string), and rating(num). Bidder also uses User_ID (string) as a primary key, with attributes Country(string), location(string), and rating(num). Item has a tuple of Item_ID (num) and Category(array) as a primary key, and attributes Name(string), and Description(string). Item is also represented each time with one of its unique categories each time. For example, if Item Bucky|Football, plushy, Doll|Bucky Badger Plush|5713 existed, it would be stored each time with only one of its categories each time. Seller has a Many-to-One relation to Item, through relation auction since a user can have multiple items up for sale, but an item can only have one seller. Auction has a primary key of Start(string), End(string), and foreign key of Seller User_ID and Item Item_ID all as a tuple. Auction also has attributes: First_Bid(string), Currently(string), Number_of_Bids(num), and Buy_Price(string). For example, Auction (Start, End, Seller User ID, Item item ID, First_Bid, Currently, Number_of_Bids, Buy_Price). Bidder has a One-to-One relation to Item, through relation Bid since a user can only have one bid at a time per item and an item will only have one winning bid at a time. Bid has a primary key of time(string), amount(string), and foreign keys of Bidder User_ID and Item Item_ID all as a tuple. For example, Bid(Time, Amount, Bidder User ID, Item Item ID).