



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 Item\_ID (num) as a primary key, and attributes Category(array), Name(string), and Description(string). 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).