1 Translation from the E-R model to the Relational Model

Write the relational database that corresponds to the E-R model of Figure 2.22 in the book.

2 Query Languages

Consider the following relational database for **ebay**:

- **Item**: (ItemID, Name, InitialPrice, CurrentPrice)
- **Bidder**: (BidderID, Name, Email, FeedbackRating)
- **Seller**: (SellerID, Name, Email, FeedbackRating, Country)
- **PaymentOption**: (SellerID, Option)
- **Category**: (CategoryName)
- **Belong**: (ItemID, CategoryName)
- **SubCategory**: (CategoryName, SubCategoryName)
- **Bid**: (BidderID, ItemID, Bidvalue, Time)
- **Sell**: (SellerID, ItemID)

Consider the following queries. For which query it is indicated the query language(s) in which you are asked to purchase the query. Please note that it is possible that a query (or queries) cannot be expressed in the query language that is indicated. If this is the case, you must justify your answer.

1. Find the names of the sellers who have a feedback rating of 100% and are located in Denmark. [Tuple relational calculus and Datalog]
2. Find the IDs of the sellers who sell only items that belong to category “Oil Painting”. [Algebra]
3. Find the IDs of the sellers who accept all the available forms of payment. [Algebra and Tuple relational calculus]
4. Find the IDs of the sellers who sell an oil painting that is more expensive than some oil painting sold by a dealer in Denmark. [Algebra, SQL]
5. For each oil painting sold, find the ID of the bidder who purchased the item and its final cost (assume that no two bidders bid the same amount). [SQL and QBE]
6. Find the most expensive item purchased by “Jane Wu”. [QBE]
7. Find all the subcategories (at any level) of category “Art”. [Algebra, Datalog]