

Homework 1

Group 5

TA: 葉承翰

E-mail: jerry.yeh0531@gmail.com

Tools

Many database systems provide tools for database design that support E-R diagrams. These tools help a designer create E-R diagrams, and they can automatically create corresponding tables in a database. There are also several database-independent data modeling tools that support E-R diagrams and UML class diagrams. The drawing tool Dia, which is available as freeware, supports E-R diagrams and UML class diagrams.

Description

Consider an ONLINE_AUCTION database system in which members (buyers and sellers) participate in the sale of items. The data requirements for this system are summarized as follows:

- The online site has members, each of whom is identified by a unique member number and is described by an e-mail address, their first name, middle name, last name, password, and home address.
- A member may be a buyer or a seller. A buyer has a shipping address recorded in the database. A seller has a bank account number and routing number recorded in the database.
- Items are placed by a seller for sale and are identified by a unique item number assigned by the system. Items are also described by an item title, a description, a picture for the item, starting bid price, bidding increment, the start date of the auction, and the end date of the auction.
- Items are also categorized based on a fixed classification hierarchy (for example, a modem may be classified as COMPUTER → HARDWARE → MODEM).
- Buyers make bids for items they are interested in. Bid price and time of bid are recorded. The bidder at the end of the auction with the highest bid price is declared the winner, and a transaction between buyer and seller may then proceed.
- The buyer and seller may record feedback regarding their completed transactions. Feedback contains a rating of the other party participating in the transaction (1–10) and a comment.

Design an enhanced entity-relationship diagram for the ONLINE_AUCTION database and build the design using a data modeling tool such as ERwin or Rational Rose.