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CS 435

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Assignment 2 Description

**Description**

For this assignment, we are required to create an online auction database system application in which buyers and sellers participate in the sale of items.

**Explanation**

Firstly, I implemented a Member entity in which holds a unique key called Member Number. A Member can be one of two weak entities: a buyer or seller. Both weak entity types are a sub-type of the Member entity. Additionally, the Member relationship is disjoint because a buyer cannot be seller and vice versa.

Next, the buyer and seller both have a shared relationship to the weak entity Feedback. Since each seller and buyer can give a comment and a satisfaction evaluation on their transaction, it made sense to have them share the same relationship to the weak entity. Also, the buyer and seller have two separate relationships to the entity Item. The buyer will “bid on” an Item, in which will contain further attributes for information related to the bid (bid price, time of bid, etc.). The seller will simply “sell” the Item and this relationship contains no attributes.

Furthermore, the Item entity contains a unique key called Item Number and further attributes are withheld in this entity. The important implementation of the Item entity however, comes from its 1 to 1 relationship with the weak entity Item Classification. This weak entity will determine the type of classification group the specific item will fall in. Each Item Classification will have the unique key from the Item and then a classification ID. Leading to the next relationship, each Item Classification will “update” the Classification entity. This entity will contain a unique key called Classification ID (the one held as an attribute in the weak entity Item Classification). The vital attribute of Classification is the Parent Classification, which will reference the parent Classification in the heirachy. This current implementation allows for a recursive hierarchy of Classifications. Since we didn’t know how deep the classification hierarchy could go for an item, it made sense to implement it in a recursive fashion.

**Entities**

1. Entity: Member

Attribute(s): Member Number (key), Email Address, Phone Number, Password, Home Address, Name

Relationship(s): “is” Buyer, “is” Seller

1. Entity: Item

Attribute(s): Item Number (key), Description, Item Title, Start Date, End Date, Bidding Increment, Starting Bid Price

Relationship(s): “contains” Item Classification

1. Entity: Classification

Attribute(s): Classification ID (key), Name, Parent Classification

**Weak Entities**

1. Weak Entity: Buyer

Attribute(s): Shipping Address

Relationship(s): “bids on” Item, “provides” Feedback

1. Weak Entity: Seller

Attribute(s): Bank Account Number, Routing Number

Relationship(s): “sells” Item, “provides” Feedback

1. Weak Entity: Feedback

Attribute(s): Comment, Satisfaction Number

1. Weak Entity: Item Classification

Attribute(s): Item Number, Classification ID

Relationship(s): “updates” Classification

**Relationships**

1. Relationship: “is” – 1 to 1

Member “is” Buyer, Member “is” Seller

1. Relationship: “provides” – 1 to N

Buyer “provides” Feedback, Seller “provides” Feedback

1. Relationship: “bids on” – M to N

Attribute(s): Bid Price, Time of Bid

Buyer “bids on” Item

1. Relationship: “sells” – 1 to N

Seller “sells” Item

1. Relationship: “contains” – 1 to 1

Item “contains” Item Classification

1. Relationship: “updates” – 1 to 1

Item Classification “updates” Classification