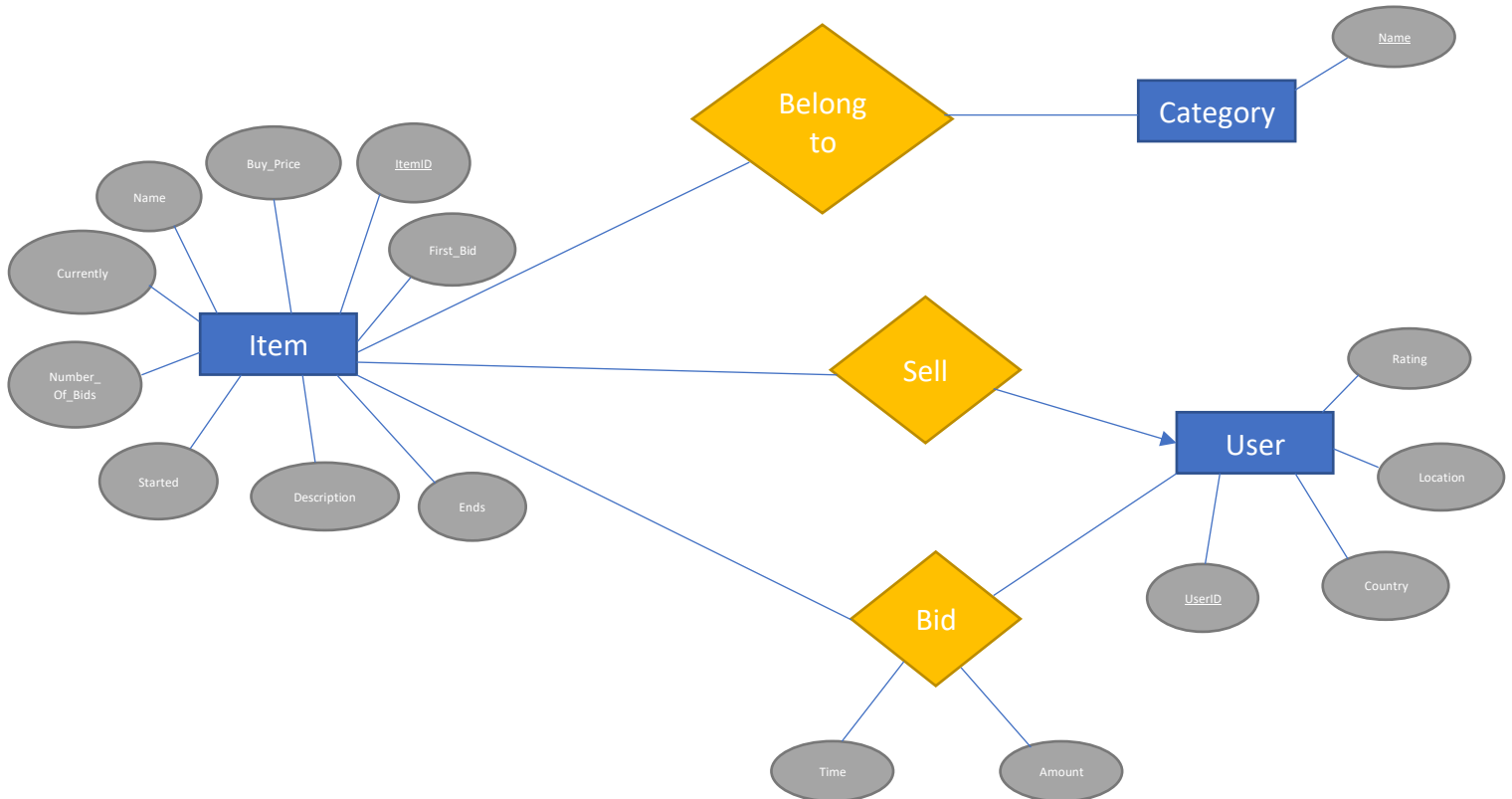


CS 564 Programming Project  
Project Design

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ER Diagram

**A. Entity Set: Items**

| No. | Attribute              | Type     | Description                                                                                                                                                                                             |
|-----|------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | ItemID (Primary Key)   | INTERGER | An identifier unique across all items                                                                                                                                                                   |
| 2   | Name                   | TEXT     | A short item description used as the auction's title                                                                                                                                                    |
| 3   | Currently              | FLOAT    | The current highest bid. This amount is always equal to the amount of the highest bid, or First_Bid if there are no bids                                                                                |
| 4   | Buy_Price              | FLOAT    | The price, chosen by the seller before the auction starts, at which a bidder can win the auction immediately. The seller may choose not to set such a price, in which case the element would be missing |
| 5   | First_Bid              | FLOAT    | The minimum qualifying first-bid amount, as determined by the seller before the auction starts. It does not mean there is a bid at all                                                                  |
| 6   | Number_of_Bids         | INTERGER | Number of Bids/Bid elements, each corresponding to a bid for a particular item                                                                                                                          |
| 7   | Started                | TEXT     | Auction start time                                                                                                                                                                                      |
| 8   | Ends                   | TEXT     | Auction end time. If this is in the past with respect to the current system time, the auction is closed. If in the future, the auction is still open                                                    |
| 9   | SellerID (Foreign Key) | TEXT     | Unique id for a user across all users                                                                                                                                                                   |
| 10  | Description            | TEXT     | The item's full description                                                                                                                                                                             |

**B. Entity Set: User**

| No. | Attribute            | Type     | Description                           |
|-----|----------------------|----------|---------------------------------------|
| 1   | Location             | TEXT     | Location of bidder                    |
| 2   | Country              | TEXT     | Country of bidder                     |
| 3   | UserID (Primary Key) | TEXT     | Unique id for a user across all users |
| 4   | Rating               | INTERGER | User's rating                         |

**C. Entity Set: Category**

| No. | Attribute | Type | Description                                                                     |
|-----|-----------|------|---------------------------------------------------------------------------------|
| 1   | Name      | TEXT | A category to which the item belongs. An item may belong to multiple categories |

**D. Relationship: Bid**

| No. | Attribute            | Type     | Description                           |
|-----|----------------------|----------|---------------------------------------|
| 1   | UserID (Foreign Key) | TEXT     | Unique id for a user across all users |
| 2   | ItemID (Foreign Key) | INTERGER | An identifier unique across all items |
| 3   | Time                 | TEXT     | Time of bid                           |
| 4   | Amount               | FLOAT    | Amount of bid                         |

**E. Relationship: Belong to**

| No. | Attribute              | Type     | Description                                                                        |
|-----|------------------------|----------|------------------------------------------------------------------------------------|
| 1   | ItemID (Foreign Key)   | INTERGER | An identifier unique across all items                                              |
| 2   | Category (Foreign Key) | TEXT     | A category to which the item belongs.<br>An item may belong to multiple categories |