MIS 6326 DATABASE MANAGEMENT

BUY, BID & SELL

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Problem Description

Problem Statement

With the increasing use of online platforms, there are many applications that have been in the public eye in recent times. E-commerce provides you an easy way to sell products to a large customer base. People can Buy & Sell through the use of this platform The purpose of any e-commerce website is to narrow down their broad ideas and enable them to finalize the products they want to purchase. Now, with the help of this project, customers can buy and sell the products in an more efficient way.

Organization Description

Company Overview

The term electronic commerce (ecommerce) refers to a business model that allows companies and individuals to buy and sell goods and services over the Internet. Ecommerce can be conducted over computers, tablets, smartphones, and other smart devices. One such ecommerce website is Buy & Sell where customers can buy and sell the products of their choice.

Selling

The users on Buy&Sell can post the items they want to sell with an amount fixed to the products they sell. When another user is interested in their product, they can buy through the online ecommerce platform.

Buying

The users on Buy&Sell can buy the items they want to buy from the postings of products posted by other users on the platform. The entire process of both buying and selling is taken care by Buy&Sell.

Bidding

The Seller posts a product and then the buyers can bid their desired value to purchase the product. Also, there consists a buy now price through which a user can instantly purchase the product.

Customers

Customers, also known as users are the main part who will be interacting with the e-commerce website to buy or sell the products.

Scope of Database

Member Account Table

The Member_Account table contains the information of the members such as their name, email, gender, phone, etc. The username refers to the username the users have uniquely set for their accounts, whereas the account type give the account number of the users registered with the website. The username is the primary key.

Seller Table

The sellername table holds all the information of the sellers registered with the website. The data includes details such as the creditmerchantacc and the shipment address. The sellername is the primary key in this table.

Item category Table

The Itemcategory table holds all the information of the sellers registered with the website. The data includes details such as the Itemid and the Itemcategory address. The Itemid is the primary key in this table.

Orders Table

The orders table creates and captures the information regarding all the orders. It becomes easier for the company to keep a track of all the orders if we have a separate database for these. OrderNo is the primary key in this table. The table contains various data like SellerName, BuyerName and Quantity.

Auction Table

This table holds the information about all the bidding that takes place. AuctionId is the primary key. The others columns included in the table are BidIncrement, BidEndTime and ReservePrice.

Buyer Table

The Buyer table holds all the information of the buyers registered with the website. The data includes details such as the buyername and the shipment address. The buyername is the primary key in this table.

Buy Now Listing Table

This table contains information regarding the buy now option. The BuyNowListingID is the primary key and apart from that the table also contains Price column.

Bids Table

The Bids table has all the data about the bidding that takes place on the website. This task is performed by the user. The Bidder is the primary key in this table. Along with that the table contains AuctionId, BidAmount and BidTime data.

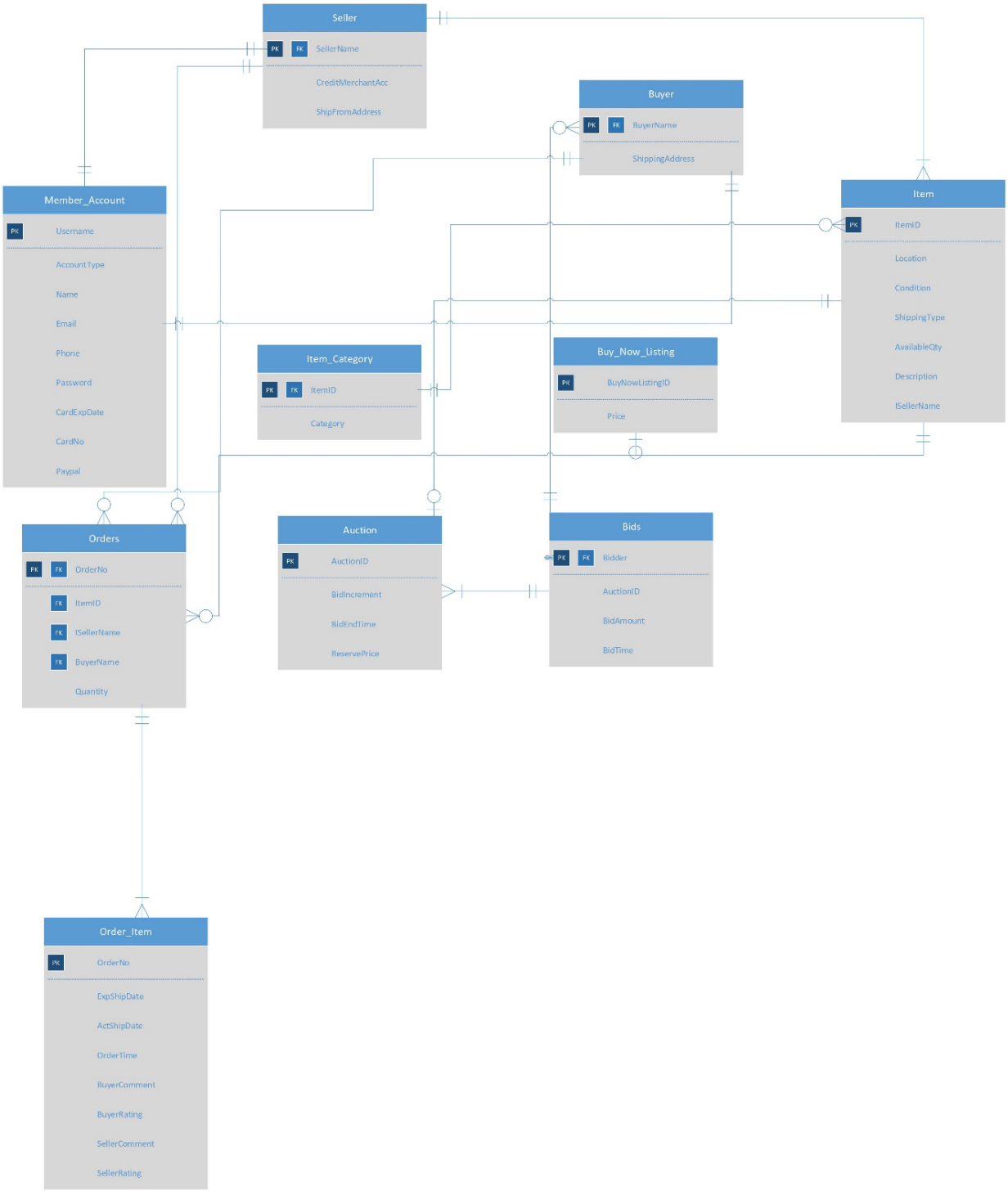
Item Table

The Item table holds all the information of the Items available on the website. The data includes details such as the Itemid, condition, ShippingType, etc. The Itemid is the primary key in this table.

Order Item Table

The Order Item table holds all the information of the orders that take place on the website. The data includes details such as the OrderNo, expected date, seller rating,etc. This database will help us keep a track of all the orders and their details. The Order No is the primary key in this table.

ER Diagram:


Seller
PK FK SellerName
CreditMerchantAcc
ShipFromAddress
Buyer
PK FK BuyerName
ShippingAddress
Member_Account
PK Username
AccountType
Name
Email
Phone
Password
CardExpDate
CardNo
Paypal
Item
PK ItemID
Location
Condition
ShippingType
AvailableQty
Description
ISellerName
Item_Category
PK FK ItemID
Category
Buy_Now_Listing
PK BuyNowListingID
Price
Orders
PK FK OrderNo
FK ItemID
FK ISellerName
FK BuyerName
Quantity
Auction
PK AuctionID
BidIncrement
BidEndTime
ReservePrice
Bids
PK FK Bidder
AuctionID
BidAmount
BidTime
Order_Item
PK OrderNo
ExpShipDate
ActShipDate
OrderTime
BuyerComment
BuyerRating
SellerComment
SellerRating

RELATIONAL DATABASE SCHEMA:

```
create database buy_sell;
use buy_sell;
CREATE TABLE Member_Account (
  UserName       varchar(50),
  AccountType    varchar(15) not null,
  Name     varchar(80),
  Email    varchar(320),
  Phone    char(12),
  Password  varchar(12),
  QID      varchar(10),
  Answer   varchar(50),
  CardExpDate    date,
  CardNo      char(16),
  PayPal      varchar(320),
  primary key (UserName),
  unique (Email)
);

CREATE TABLE Seller (
  SellerName       varchar(50),
  CreditMerchantAcc char(10) not null,
  ShipFromAddress   varchar(200) not null,
  primary key (SellerName )
);
```

Constraint Queries

```
use buy_sell;

ALTER TABLE Seller   ADD CONSTRAINT fk1 FOREIGN KEY(SellerName) REFERENCES
Member_Account(UserName) ;
ALTER TABLE Buyer  ADD CONSTRAINT fk2 FOREIGN KEY(BuyerName) REFERENCES
Member_Account(UserName) ;
ALTER TABLE Item ADD CONSTRAINT fk3 FOREIGN KEY(ISellerName) REFERENCES Seller(SellerName)  ;
ALTER TABLE Item_Category  ADD CONSTRAINT fk4 FOREIGN KEY(ItemID) REFERENCES Item(ItemID);
ALTER TABLE Buy_Now_Listing  ADD CONSTRAINT fk5 FOREIGN KEY(BuyNowListingID)  REFERENCES
Item(ItemID) ;
ALTER TABLE Orders ADD CONSTRAINT fk6 FOREIGN KEY(BuyerName)   REFERENCES Buyer(BuyerName);
ALTER TABLE Orders ADD CONSTRAINT fk7 FOREIGN KEY(ISellerName) REFERENCES Seller(SellerName)  ;
ALTER TABLE Orders  ADD CONSTRAINT fk8 FOREIGN KEY(ItemID ) REFERENCES Item(ItemID ) ;
ALTER TABLE Orders ADD CONSTRAINT fk9 FOREIGN KEY(OrderNo ) REFERENCES Order_Item(OrderNo);
ALTER TABLE Auction  ADD CONSTRAINT fk10 FOREIGN KEY(AuctionID)   REFERENCES Item(ItemID) ;
ALTER TABLE Bids  ADD CONSTRAINT f11 FOREIGN KEY(Bidder)  REFERENCES Buyer(BuyerName)  ;
ALTER TABLE Bids   ADD CONSTRAINT f12 FOREIGN KEY(AuctionID)   REFERENCES Auction(AuctionID) ;
```

Queries

Q1---top seller
```
select  Isellername from orders t1
inner join Order_Item t2 on t1.OrderNo = t2.OrderNo
where SellerRating =5;
```

Q2--orderno whose buyerrating is 4
```
select  t1.OrderNo from orders t1
inner join Order_Item t2 on t1.OrderNo = t2.OrderNo
where BuyerRating =4;
```

Q3---Certified refurbished items
```
select * from Item
where Condition = 'Certified refurbished'
```

Q4---seller who has availableqty more than 70
```
select SellerName from Seller t1
inner join orders t2 on t1.SellerName = t2.ISellerName
inner join Item t3 on t3.ItemID = t2.ItemID
where availableQty >70
```

Q5--- top bidding amount
```
select top 1 Bidder,max(bidAmount) from Bids
group by Bidder
order by max(bidAmount) desc
```

Q6---All Items of category Men
```
select t1.ItemID from Item_Category t1
inner join item t2 on t1.ItemID = t2.ItemID
where t1.Category like 'Men%'
```

Q7----itemid available for freeshipping or free Instore Pickup or free local pickup
```
select ItemID from Item
where ShippingType like '%Free%';
```

Q8---Itemid with min(availableqty) greater than 10 avilableqty in descending order
```
select ItemID,min(availableqty) as min_availableqty from Item
group by ItemID
having min(availableqty) > 10
order by min(availableqty) desc
```

Q9. Display the location of the item whose orderno is '910146412631'

```
-> select location
from item
INNER JOIN orders
on item.itemid=orders.itemid
where orderno=910146412631
```

Q10. Display auctionid, bidincrement and bidamount of the items whose bidamount is greater than 300

```
-> select auction.auctionid,auction.bidincrement,bids.bidamount
from auction
Inner Join bids
on auction.auctionid=bids.auctionid
where bidamount>1000
```

Q11. Display address, buyername whose itamid is 162763740503

```
-> select buyer.buyername,shippingaddress
from buyer
Inner Join Orders
on buyer.buyername=orders.buyername
where itemid=162763740503
```

Q12. Get the bidder,highest bidamount,Only list the bidamonut with average bidamount greater than 500.

```
-> select bidder,max(bidamount)
from bids
group by bidder
having avg(bidamount)>500
```

Q13. Get the Order numbers and Item ID's of the available quantities that are more than 30.

```
-> select Orders.OrderNo, Orders.ItemID, Item.AvailableQty
from orders
inner join item
on Orders.ItemID = Item.ItemID
where AvailableQty >= 30;
```

Q14. Get the Expired Ship Date, Active Ship Date and seller rating where quantity is greater than 3 and condition is new?

```
-> select Order_Item.ExpShipDate, Order_Item.ActShipDate, Order_Item.SellerRating
from Order_Item
inner join Orders
on Order_Item.OrderNo = Orders.OrderNo
inner join Item
on Orders.ItemID = Item.ItemID
```

```
where quantity >= 3 and condition = 'New';
```

Q15. Get all the Order Numbers of Orders which were shipped free

```
-> select orders.OrderNo
from orders
inner join item
on orders.itemID = item.itemID
where ShippingType = 'Free Shipping';
```

Q16.Get the Auction ID's, Bid Amount and Reserve prices of the Bidders where Reserve price is less than 600

```
->select auction.AuctionID, bids.BidAmount, auction.reserveprice from Auction
inner join bids on auction.auctionID = bids.AuctionID
where ReservePrice <= 600;
```