

E-bay

E-commerce Database System

Project Report

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Section 1: Requirements

Consider a database system for an e-commerce website (e.g., eBay) that facilitates online selling and buying of products. The data requirements for this system are summarized as follows:

1. The e-commerce website offers membership which is uniquely identified by its username and/or email address. Each member account also has additional information such as contact and payment information, account type, and sign-in security details.
2. A member can be a seller, a buyer, or both. A seller account has shipping from address and credit merchant account (e.g., VISA) number for receiving payments. A buyer account has a shipping address for billing and shipping purposes.
3. A seller can list items for sale in either an “auction” or “buy-now”. To sell the same items in both auction and buy-now, a seller has to list them separately. Each listing contains details of the item’s description, condition, location, and available quantity. It also has the item category and type of shipping offered.
4. In a buy-now listing, buyers buy items directly based on the price set in the listing. A buyer can set item quantity in its purchase. The number of items sold and available product quantity is tracked for buy-now listings.
5. In an auction listing, the seller sets the reserve price (i.e., the minimum amount the seller is willing to sell the item for), auction end time, and bid increment value. The winning bid and winning buyer (i.e., the buyer with the winning bid) are determined at the end of the auction. The product quantity is fixed for an auction. A seller must create multiple auction listings with unique IDs to sell the same item multiple times.
6. A seller cannot buy or bid on its own listed items.
7. At the end of each item purchase, either through buy-now or auction, a unique order number is created that identifies the corresponding buyer and seller, order time, expected and actual shipping dates, the total amount to be paid, and seller fees.
8. Comments and ratings for both buyer and seller are recorded for every order. Each member’s feedback score is calculated based on the ratings (from buyer and seller) from its orders.

Section 2: EER Diagram

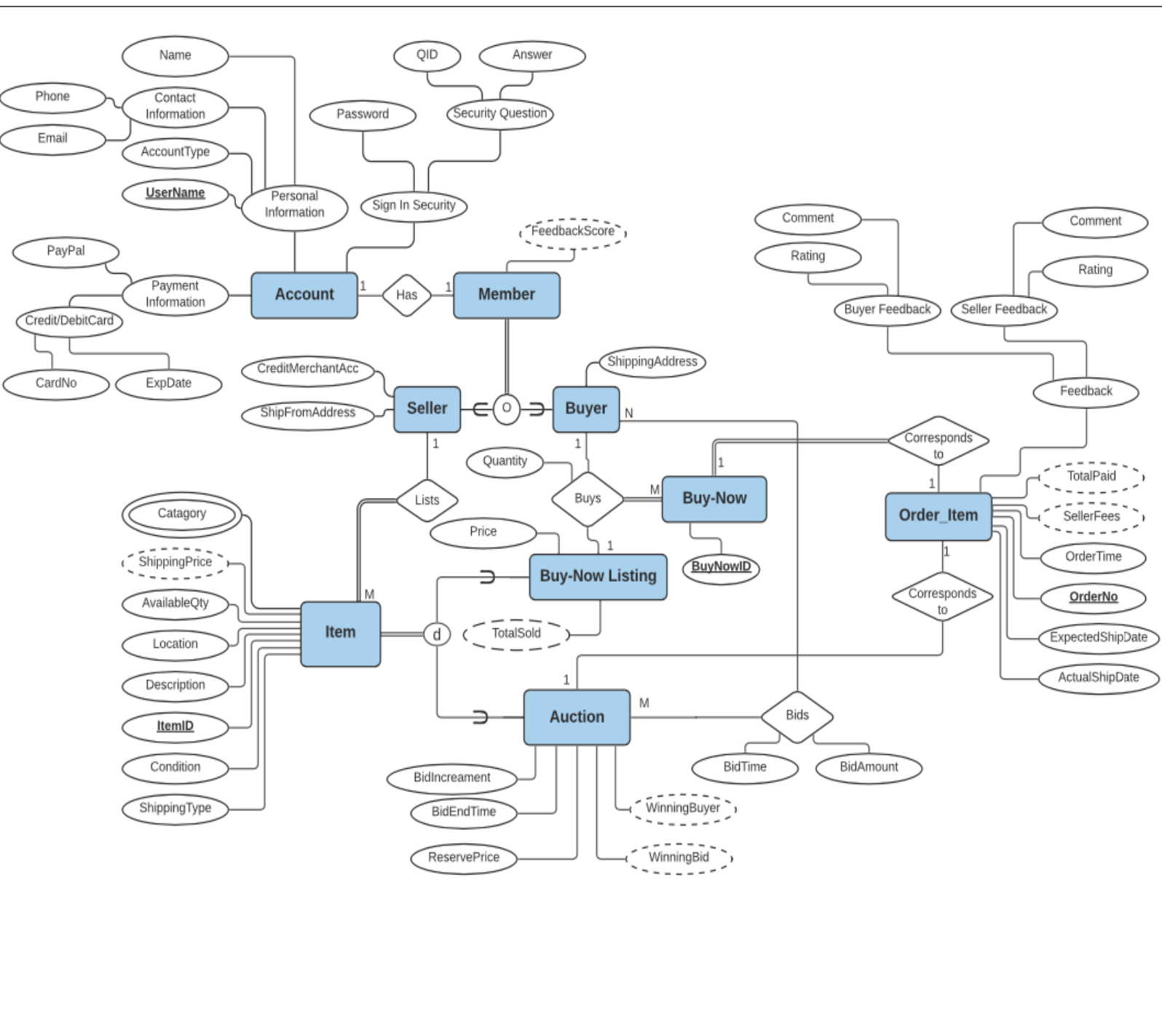


Figure 1: Initial EER diagram

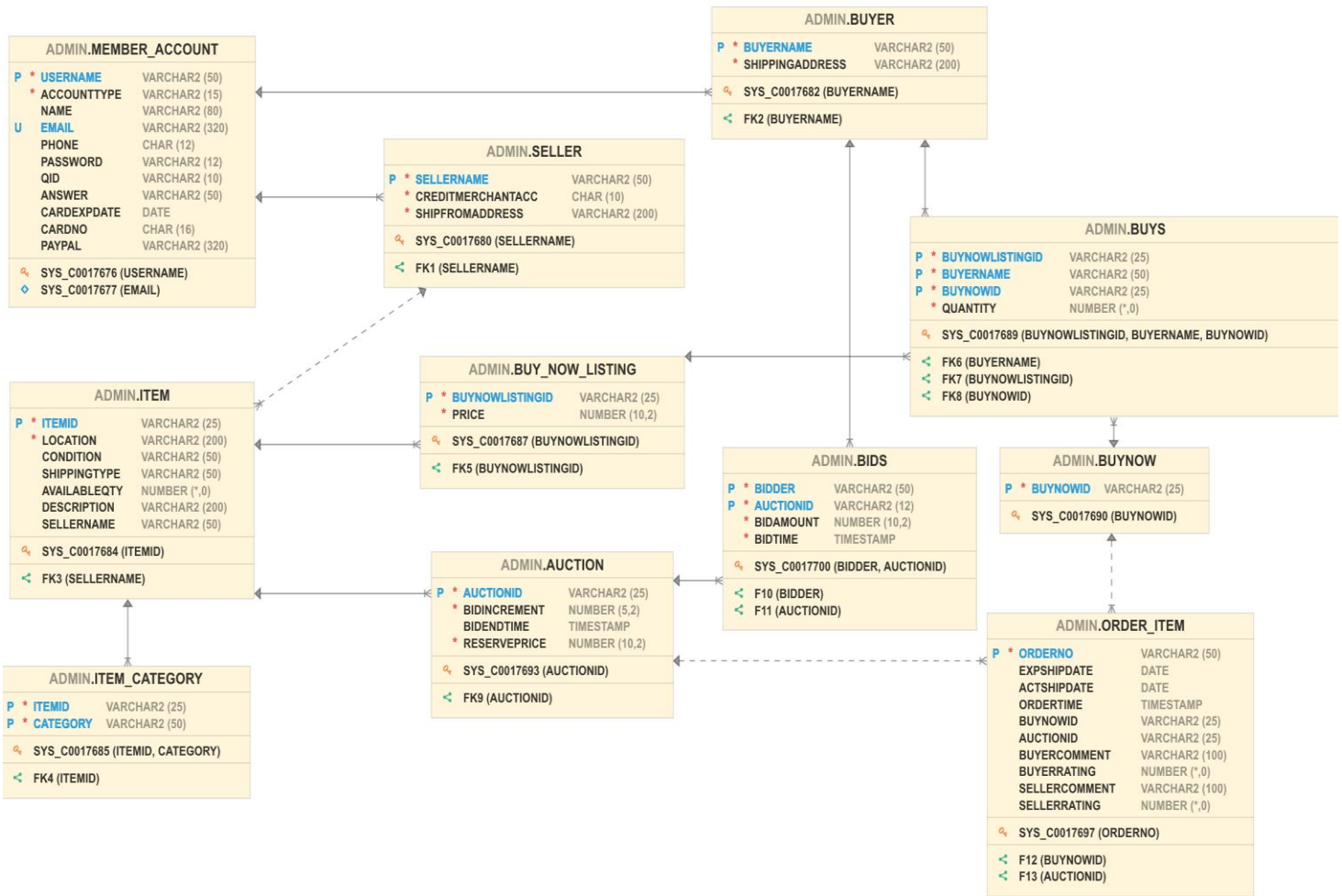


Figure 2: Final EER diagram

Section 3: Relational Schema

Member_Account

| | | | | | | | | | | |
|-----------------|-------------|------|-------|-------|----------|-----|--------|-------------|--------|--------|
| <u>UserName</u> | AccountType | Name | Email | Phone | Password | QID | Answer | CardExpDate | CardNo | PayPal |
|-----------------|-------------|------|-------|-------|----------|-----|--------|-------------|--------|--------|

Seller

| | | |
|-----------------------|-------------------|-----------------|
| <u>SellerName(FK)</u> | CreditMerchantAcc | ShipFromAddress |
|-----------------------|-------------------|-----------------|

Buyer

| | |
|----------------------|-----------------|
| <u>BuyerName(FK)</u> | ShippingAddress |
|----------------------|-----------------|

Item

| | | | | | | |
|---------------|----------|-----------|--------------|--------------|-------------|----------------|
| <u>ItemID</u> | Location | Condition | ShippingType | AvailableQty | Description | SellerName(FK) |
|---------------|----------|-----------|--------------|--------------|-------------|----------------|

Item_Category

| | |
|-------------------|-----------------|
| <u>ItemID(FK)</u> | <u>Category</u> |
|-------------------|-----------------|

Buy_Now_Listing

| | |
|----------------------------|-------|
| <u>BuyNowListingID(FK)</u> | Price |
|----------------------------|-------|

Buys

| | | | |
|----------------------------|----------------------|---------------------|----------|
| <u>BuyNowListingID(FK)</u> | <u>BuyerName(FK)</u> | <u>BuyNowID(FK)</u> | Quantity |
|----------------------------|----------------------|---------------------|----------|

BuyNow

| |
|-----------------|
| <u>BuyNowID</u> |
|-----------------|

Auction

| | | | |
|----------------------|--------------|------------|--------------|
| <u>AuctionID(FK)</u> | BidIncrement | BidEndTime | ReservePrice |
|----------------------|--------------|------------|--------------|

Bids

| | | | |
|-------------------|----------------------|-----------|---------|
| <u>Bidder(FK)</u> | <u>AuctionID(FK)</u> | BidAmount | BidTime |
|-------------------|----------------------|-----------|---------|

Order_Item

| | | | | | | | | | |
|----------------|-------------|-------------|-----------|---------------------|----------------------|--------------|-------------|---------------|--------------|
| <u>OrderNo</u> | ExpShipDate | ActShipDate | OrderTime | <u>BuyNowID(FK)</u> | <u>AuctionID(FK)</u> | BuyerComment | BuyerRating | SellerComment | SellerRating |
|----------------|-------------|-------------|-----------|---------------------|----------------------|--------------|-------------|---------------|--------------|

Referential Integrity Constraints

- TABLE Seller has FOREIGN KEY(SellerName) that REFERENCES Member_Account(UserName)
- TABLE Buyer has FOREIGN KEY(BuyerName) that REFERENCES Member_Account(UserName)
- TABLE Item has FOREIGN KEY(SellerName) that REFERENCES Seller(SellerName)
- TABLE Item_Category has FOREIGN KEY(ItemID) that REFERENCES Item(ItemID)
- TABLE Buy_Now_Listing has FOREIGN KEY(BuyNowListingID) that REFERENCES Item(ItemID)
- TABLE Auction has FOREIGN KEY(AuctionID) that REFERENCES Item(ItemID)
- TABLE Bids has FOREIGN KEY(Bidder) that REFERENCES Buyer(BuyerName)
- TABLE Bids has FOREIGN KEY(AuctionID) that REFERENCES Auction(AuctionID)
- TABLE Order_Item has FOREIGN KEY(BuyNowID) that REFERENCES BuyNow(BuyNowID)
- TABLE Order_Item has FOREIGN KEY(AuctionID) that REFERENCES Auction(AuctionID)
- TABLE Buys has FOREIGN KEY(BuyNowListingID) that REFERENCES Buy_Now_Listing(BuyNowListingID)
- TABLE Buys has FOREIGN KEY(BuyerName) that REFERENCES Buyer(BuyerName)
- TABLE Buys has FOREIGN KEY(BuyNowID) that REFERENCES BuyNow(BuyNowID)

Section 4: Normalization

Member_Account: It obeys all 1st, 2nd, 3rd Normalization forms.

There is only one key 'UserName' in Member_Account.

All the column data 'AccountType, Name, Email, Phone, Password, QID, Answer, CardExpDate, CardNo, PayPal' depends upon only the key 'UserName'.

The 1st Normal form is obeyed since there is no duplicate data.

The 2nd Normal form is obeyed since the column data 'AccountType, Name, Email, Phone, Password, QID, Answer, CardExpDate, CardNo, PayPal' only depends upon the whole key value which is 'UserName'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the whole key or the composite key.

Seller: It obeys all 1st, 2nd, 3rd Normalization forms.

Seller has only one key 'SellerName'. The column data 'CreditMerchantAcc, ShipFromAddress' depends upon only the key.

The 1st Normal form is obeyed since there is no duplicate data.

The 2nd Normal form is obeyed since the column data 'CreditMerchantAcc, ShipFromAddress' only depends upon the whole key value which is 'SellerName'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

Buyer: It obeys all 1st, 2nd, 3rd Normalization forms.

Buyer has only one key 'BuyerName'. The column data 'ShippingAddress' depends upon only the key.

The 1st Normal form is obeyed since there is no duplicate data.

The 2nd Normal form is obeyed since the column data 'ShippingAddress' only depends upon the whole key value which is 'BuyerName'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

Item: It obeys all 1st, 2nd, 3rd Normalization forms.

There is only one key 'ItemID' in Item. All the column data 'Location, Condition, ShippingType, AvailableQty, Description, SellerName' depends upon only the key 'ItemID'.

The 1st Normal form is obeyed since there is no duplicate data.

The 2nd Normal form is obeyed since the column data 'Location, Condition, ShippingType, AvailableQty, Description, SellerName' only depends upon the whole key value which is 'ItemID'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the whole key or the composite key.

Item_Category: It obeys all 1st, 2nd, 3rd Normalization forms.
Item_Category has a composite key 'ItemID, Category'.

The 1st Normal form is obeyed since there is no duplicate data.
The 2nd Normal form is obeyed since both the column data are key.
The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the whole key or the composite key.

Buy_Now_Listing: It obeys all 1st, 2nd, 3rd Normalization forms.
The column data 'BuyNowListingID' in Buy_Now_Listing is the key.

The 1st Normal form is obeyed since there is no duplicate data.
The 2nd Normal form is obeyed since the column data 'Price' only depends upon the key value which is 'Buy_Now_Listing'.
The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the whole key or the composite key.

Buys: It obeys all 1st, 2nd, 3rd Normalization forms.
Buys has a composite key 'BuyNowListingID, BuyerName, BuyNowID'. The column data 'Quantity' depends upon only the key values.

The 1st Normal form is obeyed since there is no duplicate data.
The 2nd Normal form is obeyed since the column data 'Quantity' only depends upon the whole key value which is 'BuyNowListingID, BuyerName, BuyNowID'.
The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

BuyNow: It obeys all 1st, 2nd, 3rd Normalization forms.
BuyNow has only one key 'BuyNowID'. There is no column data other than the key.

The 1st Normal form is obeyed since there is no duplicate data.
The 2nd Normal form is obeyed since the only column data is also the key.
The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

Auction: It obeys all 1st, 2nd, 3rd Normalization forms.
Auction has only one key 'AuctionID'. The column data 'BidIncrement, BidEndTime, ReservePrice' depends upon only the key.

The 1st Normal form is obeyed since there is no duplicate data.
The 2nd Normal form is obeyed since the column data 'BidIncrement, BidEndTime, ReservePrice' only depends upon the whole key value which is 'AuctionID'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

Bids: It obeys all 1st, 2nd, 3rd Normalization forms.

Bids has a composite key 'Bidder, AuctionID'. The column data 'BidAmount and BidTime' depends upon only the key.

The 1st Normal form is obeyed since there is no duplicate data.

The 2nd Normal form is obeyed since the column data 'BidAmount and BidTime' depends upon the whole key value which is 'Bidder' and 'AuctionID'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

Order_item: It obeys all 1st, 2nd, 3rd Normalization forms.

Order_Item has a composite key 'OrderNo, AuctionID, BuyitNowID'. The column data 'ExpShipDate, ActShipDate, OrderTime, BuyerComment, BuyerRating, SellerComment, SellerRating' depends upon the keys.

The 1st Normal form is obeyed since there is no duplicate data.

The 2nd Normal form is obeyed since the column data 'ExpShipDate, ActShipDate, OrderTime, BuyerComment, BuyerRating, SellerComment, SellerRating' depends upon the whole key value which is 'OrderNo, AuctionID, BuyitNowID'.

The 3rd Normal form is obeyed as there is no column data that depends on any other data other than the key.

Section 5: Relational Schema after Normalization

Since there was no violation for 1NF, 2NF & 3NF found, therefore, the Relational Schema remains the same as before.

Section 6: Table Insertion using SQL commands

```
/* Part-1: Create table statements */
```

```
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 )
);

CREATE TABLE Buyer (
    BuyerName         varchar(50),
    ShippingAddress    varchar(200) not null,
    primary key (BuyerName )
);

CREATE TABLE Item (
    ItemID            varchar(25),
    Location           varchar(200) not null,
    Condition          varchar(50),
    ShippingType       varchar(50),
    AvailableQty       integer,
    Description        varchar(200),
    SellerName         varchar(50),
    primary key (ItemID)
);

CREATE TABLE Item_Category (
    ItemID            varchar(25),
    Category          varchar(50),
    primary key (ItemID,Category)
);

CREATE TABLE Buy_Now_Listing (
    BuyNowListingID   varchar(25),
    Price             decimal(10,2) not null,
    primary key (BuyNowListingID)
);

CREATE TABLE Buys (
    BuyNowListingID   varchar(25),
    BuyerName         varchar(50),
    BuyNowID          varchar(25),
    Quantity          integer not null,
    primary key (BuyNowListingID,BuyerName,BuyNowID)
);

CREATE TABLE BuyNow (
    BuyNowID          varchar(25),
    primary key (BuyNowID)
);

```

```

CREATE TABLE Auction (
    AuctionID      varchar(25),
    BidIncrement   decimal(5,2) not null,
    BidEndTime     timestamp,
    ReservePrice   decimal(10,2) not null,
    primary key (AuctionID)
);

CREATE TABLE Bids (
    Bidder         varchar(50),
    AuctionID      varchar(25),
    BidAmount      decimal(10,2) not null,
    BidTime        timestamp not null,
    primary key (Bidder, AuctionID )
);

CREATE TABLE Order_Item (
    OrderNo        varchar(50),
    ExpShipDate    date,
    ActShipDate    date,
    OrderTime      timestamp,
    BuyNowID       varchar(25),
    AuctionID      varchar(25),
    BuyerComment   varchar(100),
    BuyerRating    integer,
    SellerComment  varchar(100),
    SellerRating   integer,
    primary key (OrderNo )
);

/* Part-2: Foreign Keys and Triggers */

ALTER TABLE Seller ADD CONSTRAINT fk1 FOREIGN KEY(SellerName) REFERENCES
Member_Account(Username) ON DELETE SET NULL;

ALTER TABLE Buyer ADD CONSTRAINT fk2 FOREIGN KEY(BuyerName)REFERENCES
Member_Account(Username)ON DELETE SET NULL;

ALTER TABLE Item ADD CONSTRAINT fk3 FOREIGN KEY(SellerName)REFERENCES
Seller(SellerName)ON DELETE SET NULL;

ALTER TABLE Item_Category ADD CONSTRAINT fk4 FOREIGN KEY(ItemID)REFERENCES
Item(ItemID)ON DELETE CASCADE;

ALTER TABLE Buy_Now_Listing  ADD CONSTRAINT fk5 FOREIGN
KEY(BuyNowListingID)REFERENCES Item(ItemID) ON DELETE SET NULL;

ALTER TABLE Auction ADD CONSTRAINT fk9 FOREIGN KEY(AuctionID)REFERENCES
Item(ItemID)ON DELETE SET NULL;

ALTER TABLE Buys ADD CONSTRAINT fk6 FOREIGN KEY(BuyerName)REFERENCES
Buyer(BuyerName)ON DELETE CASCADE;

ALTER TABLE Buys ADD CONSTRAINT fk7 FOREIGN KEY(BuyNowListingID)REFERENCES
Buy_Now_Listing(BuyNowListingID)  ON DELETE CASCADE;

```

```

ALTER TABLE Buys ADD CONSTRAINT fk8 FOREIGN KEY(BuyNowID)REFERENCES
BuyNow(BuyNowID)ON DELETE CASCADE;

ALTER TABLE Bids ADD CONSTRAINT f10 FOREIGN KEY(Bidder)REFERENCES
Buyer(BuyerName)ON DELETE CASCADE;

ALTER TABLE Bids ADD CONSTRAINT f11 FOREIGN KEY(AuctionID)REFERENCES
Auction(AuctionID)ON DELETE CASCADE;

ALTER TABLE Order_Item ADD CONSTRAINT f12 FOREIGN KEY(BuyNowID)REFERENCES
BuyNow(BuyNowID)ON DELETE SET NULL;

ALTER TABLE Order_Item ADD CONSTRAINT f13 FOREIGN KEY(AuctionID)REFERENCES
Auction(AuctionID)ON DELETE SET NULL;

/* In case, need to start-over */

drop table member_account;
drop table seller;
drop table buyer;
drop table item;
drop table item_category;
drop table Buy_Now_Listing;
drop table auction;
drop table bids;
drop table buys;
drop table buynow;
drop table order_item;

/* In case, need to check the table values */

select * from member_account;
select * from seller;
select * from buyer;
select * from item;
select * from item_category;
select * from Buy_Now_Listing;
select * from auction;
select * from bids;
select * from buys;
select * from buynow;
select * from order_item;

/* In case, need to create the tables for apex application */

Create table projectuser.member_account as (select * from
admin.member_account);
Create table projectuser.item as (select * from admin.item);
Create table projectuser.buyer as (select * from admin.buyer);
Create table projectuser.seller as (select * from admin.seller);
Create table projectuser.item_category as (select * from
admin.item_category);
Create table projectuser.buy_now_listing as (select * from
admin.buy_now_listing);
Create table projectuser.buynow as (select * from admin.buynow);
Create table projectuser.buys as (select * from admin.buys);

```

```

Create table projectuser.bids as (select * from admin.bids);
Create table projectuser.order_item as (select * from admin.order_item);
Create table projectuser.auction as (select * from admin.auction);

/* In case, need to start-over for apex application*/

drop table projectuser.member_account;
drop table projectuser.item;
drop table projectuser.buyer;
drop table projectuser.seller;
drop table projectuser.item_category;
drop table projectuser.buy_now_listing;
drop table projectuser.buynow;
drop table projectuser.buys;
drop table projectuser.bids;
drop table projectuser.order_item;
drop table projectuser.auction;

```

Section 7: Procedures and Triggers

Procedures:

```

/*A Stored Procedure that will calculate and display the winning buyer and
winner bid for that particular item and will store the all information in
the log file for each item.*/

```

```

CREATE TABLE WinBid_Log (
ItemID                VARCHAR(25),
Winning_Buyer         varchar(50),
Winning_Bid           decimal(10,2)
);

create or replace PROCEDURE Display_Win_Bids AS

thisItem Bids%ROWTYPE;
CURSOR AuctBids IS
  Select * from bids where (auctionid, bidamount) in (SELECT b.auctionid,
max(b.bidamount) FROM Bids B  group by b.auctionid);

BEGIN
OPEN AuctBids;
LOOP
  FETCH AuctBids INTO thisItem;
  EXIT WHEN (AuctBids%NOTFOUND);
  INSERT INTO WinBid_Log VALUES (thisItem.AuctionID, thisItem.Bidder,
thisItem.BidAmount);

  dbms_output.put_line('Item_ID:  '||thisItem.AuctionID);
  dbms_output.put_line('Winning Buyer:  '||thisItem.Bidder);
  dbms_output.put_line('Winner Bid:  '||thisItem.BidAmount);

END LOOP;
CLOSE AuctBids;
END;

```

```

begin
Display_Win_Bids();
end;

/*For checking*/
select * from WinBid_Log;
drop table WinBid_Log;

/* A Procedure that will update the available item quantity for a particular
item when a seller wants to add additional items.*/

create or replace PROCEDURE Item_Increase(itemnumber IN item.itemid%TYPE, qty
IN integer) AS

thisItem item%ROWTYPE;

CURSOR Dept5Emps IS
SELECT i.* FROM item i WHERE i.itemid=itemnumber
FOR UPDATE;

BEGIN
OPEN Dept5Emps;
LOOP
    FETCH Dept5Emps INTO thisItem;
    EXIT WHEN (Dept5Emps%NOTFOUND);
    dbms_output.put_line(thisItem.itemid);
    dbms_output.put_line(thisItem.availableqty);
    UPDATE item SET availableqty = availableqty + qty
    WHERE itemid= thisItem.itemid;

END LOOP;
CLOSE Dept5Emps;
END;

begin
Item_Increase('157334185326',1);
end;

/* A Stored Function that receives a seller username as input and calculates
the average rating scale given to that seller */

create or replace PROCEDURE Seller_Rating(sellername IN
Seller.Sellername%TYPE) AS

Rate number;
BEGIN

select avg(o.sellerrating) into rate from order_item o, buys b, item i where
i.itemid=b.buynowlistingid and b.buynowid=o.buynowid and
i.sellername=sellername;
dbms_output.put_line('Average Rating = ' || Rate);
END;

```

```

begin
Seller_Rating('bhumipatr');
end;

/*A Procedure that receives an item number as input, and displays all bids
(i.e. auction number, bidder number, bid amount, bid date and time) for that
particular item.*/

create or replace PROCEDURE Display_All_Bids(itemnumber IN
Bids.AuctionID%TYPE) AS

thisItem Bids%ROWTYPE;

CURSOR AuctBids IS
SELECT B.* FROM Bids B WHERE B.AuctionID=itemnumber;

BEGIN
OPEN AuctBids;
LOOP
    FETCH AuctBids INTO thisItem;
    EXIT WHEN (AuctBids%NOTFOUND);
    dbms_output.put_line(thisItem.Bidder || '          ' || thisItem.AuctionID
|| '      ' || thisItem.BidAmount || ' ' || thisItem.BidTime);
END LOOP;
CLOSE AuctBids;
END;

begin
Display_All_Bids('153788526369');
end;

```

Triggers:

/*A Trigger which prevents any update or delete of Item details if there is an existing bid on that item.*/

```

CREATE or REPLACE TRIGGER Item_details_changes
BEFORE DELETE OR UPDATE  ON Item
FOR EACH ROW
DECLARE
TYPE itemid_b          IS TABLE OF item.itemid%TYPE;
bid_item               itemid_b;

BEGIN
    SELECT          auctionid
    BULK COLLECT INTO bid_item
    FROM            auction;

    FOR j IN 1..bid_item .COUNT() LOOP
        IF :NEW.itemid = bid_item(j)
        THEN
            Raise_Application_Error(-20000, 'Item exists on bid');
        END IF;
    END LOOP;
END;

```

```

/*For checking*/
UPDATE item SET availableqty = availableqty + 1
WHERE itemid= '142453768060';

/*A Trigger which prevents any quantity of buy-now Item that will greater
than the available quantity of the item in the store.*/

CREATE or REPLACE TRIGGER Buy_Quantity_changes
BEFORE INSERT OR UPDATE OF quantity ON BUYS
FOR EACH ROW
DECLARE
    itemquantity number;
BEGIN
    select availableqty into itemquantity from item where
itemid=:NEW.buynowlistingid;
    if itemquantity < :NEW.Quantity
        then Raise_Application_Error(-20000, 'Exceeded the available
quantity');
    end if;
END;

/*For checking*/
UPDATE BUYS SET quantity= 5000
WHERE buynowlistingid= '202452890737';

/*A trigger that prevents a seller to buy or bid on its own listed items.*/

CREATE or REPLACE TRIGGER Seller_Bids
BEFORE INSERT ON Bids
FOR EACH ROW
DECLARE
    sellerid varchar(50);
BEGIN
    select sellername into sellerid from item where itemid=:NEW.auctionid;
    if sellerid < :NEW.bidder
        then Raise_Application_Error(-20000, 'Can not be a bidder');
    end if;
END;

CREATE or REPLACE TRIGGER Seller_Buy
BEFORE INSERT ON Buys
FOR EACH ROW
DECLARE
    sellerid varchar(50);
BEGIN
    select sellername into sellerid from item where
itemid=:NEW.buynowlistingid;
    if sellerid < :NEW.buyername
        then Raise_Application_Error(-20000, 'Can not be a buyer');
    end if;
END;

```



```
/*A trigger that prevents a bidder to bid on an item after auction end time.*/
```

```
CREATE or REPLACE TRIGGER Bidder_Bids
  BEFORE INSERT ON Bids
  FOR EACH ROW
  DECLARE
    bidtime timestamp;
BEGIN
  select bidentime into bidtime from auction where
  auctionid=:NEW.auctionid;
  if bidtime < SYSDATE
    then Raise_Application_Error(-20000, 'Auction time ended');
  end if;
END;
```

Section 8: APEX Application

Auction Details

| Search: All Text Columns Go Actions Edit Save Add Row Reset | | | | |
|---|--------------|-----------|------------|--|
| Bidder | Auctionid | Bidamount | Bidtime | |
| samsconite | 113057858307 | 1031 | 12/1/2020 | |
| sandmanmin | 113057858307 | 1089 | 12/1/2020 | |
| sellingonamazon | 113057858307 | 1092 | 12/2/2020 | |
| tuserius | 113057858307 | 1093 | 12/2/2020 | |
| blutek | 113057858307 | 1102 | 12/2/2020 | |
| sky-b-2012 | 113057858307 | 1115 | 12/2/2020 | |
| wu81-for-hy | 113057858307 | 1127 | 12/2/2020 | |
| supersales4less | 113057858307 | 1159 | 12/2/2020 | |
| systems999 | 124579747592 | 555 | 12/21/2020 | |
| daniely2003 | 124579747592 | 608 | 12/21/2020 | |
| hyundeag | 124579747592 | 627 | 12/21/2020 | |
| supersales4less | 124579747592 | 646 | 12/21/2020 | |
| burlhartautomotiveinc | 124579747592 | 694 | 12/21/2020 | |
| newegg | 124579747592 | 699 | 12/21/2020 | |
| sandmanmin | 124579747592 | 710 | 12/21/2020 | |
| dell-official-store-usa-refurbished | 138636310750 | 243 | 12/18/2020 | |
| mobilepros1 | 138636310750 | 290 | 12/18/2020 | |
| shopbest2u | 138636310750 | 347 | 12/18/2020 | |
| sandmanmin | 138636310750 | 350 | 12/18/2020 | |
| hyundeag | 138636310750 | 362 | 12/18/2020 | |
| tuserius | 142453768060 | 486 | 12/16/2020 | |

Figure 3: Interactive Grid Report

Bids Summary

| Itemid ↑ | Winning Buyer | Winning Bid |
|--------------|-------------------------------------|-------------|
| 113057858307 | supersales4less | 1159 |
| 124579747592 | sandmanmin | 710 |
| 138636310750 | hyundeag | 362 |
| 142453768060 | newegg | 626 |
| 143018538922 | supersales4less | 576 |
| 153788526369 | tuserius | 1129 |
| 156926262853 | dell-official-store-usa-refurbished | 1126 |
| 157334185326 | systems999 | 662 |
| 157745905795 | tuserius | 344 |
| 157997279939 | supersales4less | 1136 |
| 161665149377 | mobilepros1 | 829 |
| 162763740503 | sandmanmin | 938 |
| 167814295325 | sellingonamazon | 676 |
| 168172621953 | shopbest2u | 450 |
| 168341386690 | sandmanmin | 303 |

1 - 15 Next ►

Figure 4: Classic Report

Dashboard

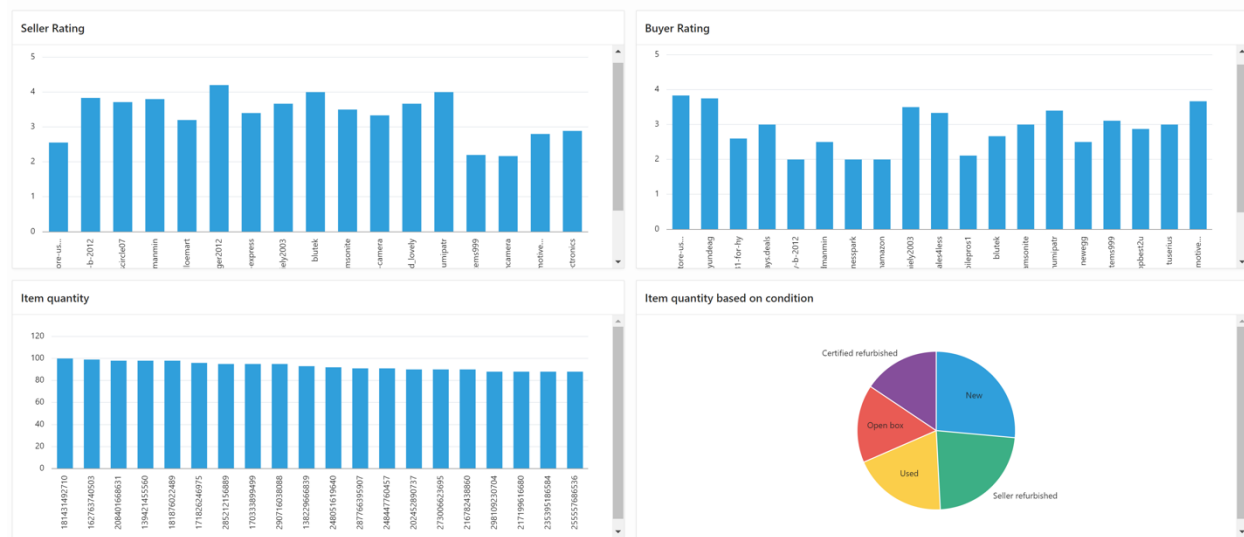


Figure 5: Dashboard

Item

| | | |
|--|---|---|
| CR 202452890737 90 Tampa, Florida, USA | SR 170333899499 95 Tulsa, Oklahoma, USA | OB 237807745182 73 Reno, Nevada, USA |
| NE 157334185326 13 Riverside, California, USA | OB 298109230704 88 Milwaukee, Wisconsin, USA | NE 219729757287 30 Minneapolis, Minnesota, USA |
| NE 161665149377 16 Lexington-Fayette, Kentucky, USA | CR 201249186276 43 New York, New York, USA | CR 238834471952 87 Philadelphia, Pennsylvania, USA |
| NE 250456031325 34 Birmingham, Alabama, USA | CR 216782438860 90 Tulsa, Oklahoma, USA | US 155272509829 62 Charlotte, North Carolina, USA |

Figure 6: Item Cards

Order Summary

| Q | Go | Actions | Reset |
|--------------|-------------------------------------|-----------------------|------------|
| Orderno | Sellername | Buyername | Total Paid |
| Order-582140 | helloemart | nybusinesspark | 58 |
| Order-550128 | daniely2003 | tuserius | 1827 |
| Order-568826 | daniely2003 | systems999 | 2610 |
| Order-539272 | dell-official-store-usa-refurbished | sandmanmin | 1074 |
| Order-507745 | dell-official-store-usa-refurbished | shopbest2u | 3580 |
| Order-578240 | dell-official-store-usa-refurbished | mobilepros1 | 1432 |
| Order-556061 | dell-official-store-usa-refurbished | tuserius | 1790 |
| Order-544583 | thewirelesscircle07 | daniely2003 | 574 |
| Order-572541 | thewirelesscircle07 | bhumipatr | 3444 |
| Order-582447 | thewirelesscircle07 | always.deals | 574 |
| Order-544462 | samsonite | nybusinesspark | 371 |
| Order-505791 | samsonite | mobilepros1 | 3339 |
| Order-562727 | systems999 | mobilepros1 | 3630 |
| Order-560876 | systems999 | samsonite | 605 |
| Order-512581 | systems999 | burkhartautomotiveinc | 3025 |

Figure 7: Interactive Report

Item Shipping Date

| December 2020 | | | | | | | months | week | day | list |
|---------------|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat | | | | |
| 29 | 30 | 1 | 2 | 3 | 4 | 5 | Order-588022 Order-538075 Order-538452 Order-537784 Order-537086 Order-537084 | Order-537128 Order-538043 Order-540882 Order-537093 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | Order-588006 Order-538025 Order-538075 Order-537084 Order-540882 Order-538006 | Order-538025 Order-538075 Order-537084 Order-537093 Order-538006 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | Order-588008 Order-537084 Order-538025 Order-538075 Order-537084 Order-538006 | Order-538025 Order-538075 Order-537084 Order-537093 Order-538006 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 | Order-588009 Order-537084 Order-538025 Order-538075 Order-537084 Order-538006 | Order-538025 Order-538075 Order-537084 Order-537093 Order-538006 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 |
| 27 | 28 | 29 | 30 | 31 | 1 | 2 | Order-588009 Order-538025 Order-538075 Order-537084 Order-537093 Order-538006 | Order-538025 Order-538075 Order-537084 Order-537093 Order-538006 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 | Order-537084 Order-537093 Order-537744 Order-537148 Order-538023 |

Figure 8:Calendar