ONLINE AUCTION SYSTEM

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Online Auction System – Final Report

Team 9

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ABSTRACT

We have built an online auction system where users can create an account as a seller, buyer or both. As a seller they can upload their products for auction with a minimum price and as a buyer they can place bids for products.

The site acts as a platform to bring together prospective buyers and sellers who are looking to obtain or sell any item.

INTRODUCTION

We propose to build an online auction system where Users will be able to create an account as a seller, buyer or both. As a seller, it enables a User to upload their products for auction with a minimum price and as a buyer he can place bids for products.

The product is sold to the highest bidder with his account deducted and the account of the seller is credited with the bid value.

The website can be used to do the following

- Create New Account as seller, buyer or both
- Update account details
- Add balance to ones' account
- Browse through all products available for bidding
- Buy and sell different products

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REQUIREMENTS

Actors:

- User - A user surfs through the site without initiating any transaction or process.
- Seller - A user with selling privileges and is the one who can set up his products for online auction
- Buyer - A user with buying privileges and is the one who can bid for a product in an auction
- System - A System manages the user registration and is accountable for the entire auction process

Uses Cases:

- Browse through catalogue - A user wants to browse through the website o [#User] - browses through the website to see the various auctions and products available.

- User Registration - The registration process for the user

- [#Buyer] - User requests for a template to create account as a buyer
- [#System] - Provides 'Buyer' template
- [#Buyer] - Fills and submits the template
- [#System] - Validates the template and creates a new buyer account
- [#Seller] - User requests for a template to create account as a seller
- [#System] - Provides 'Seller' template
- [#Seller] - Fills and submits the template
- [#System] - Validates the template and creates a new seller account

- Updating Account Details - A user can update his/her account details

- [#Buyer] - Requests for a template to update personal details and/or add money to his wallet.
- [#System] - System provides a template for updating personal details or adding money to wallet.
- [#Buyer] - Buyer updates the template and sends it back to system.
- [#System] - Updates the profile of the buyer and generates unique Transaction ID if the buyer adds money to his account
- [#Seller] - Requests for a template to update personal details
- [#System] - System provides a template for updating personal details o
  [#Seller] - Seller updates the template and sends it back to system.
- [#System] - Updates the profile of the seller

- ❖ Initiate Auction - The process of initiating an auction

- ➢ [#Seller] - A seller requests the system for a template for adding new items to be auctioned.
- ➢ [#System] - System provides template to the seller to add items for auction
- ➢ [#Seller] - Seller adds the item to be auctioned and the necessary details about the products, including the Minimum Selling Price and Auction timeframe in the template and requests approval from the System
- ➢ [#System] - Receives request for starting a new auction.
  Verifies the auction details including the minimum selling price and approves/rejects the auction.

- ❖ Bidding - Process of bidding for an item

- ➢ [#Buyer] - Finds an appropriate auction to bid for, requests system for a template to place the bid.
- ➢ [#System] - Provides the template to buyer to place the bid. o [#Buyer] - Updates the template with his/her bid and waits for approval from the system.
- ➢ [#System] - Receives request for a bid from Buyer.
  Validates account balance of Buyer for the bid and approves/rejects it.

- ❖ Winning Bid Notification - Provides notification to the buyer with the winning bid

- ➢ [#System] - provides a notification to the highest bidder that the auction is completed, he/she is the winner and has 24 hr window to decide on accepting or decline the item.
- ➢ [#Buyer] - Should decline or accept to buy the product within 24 hours.

- ❖ Buyer Accepts product - The buyer accepts to buy the item, for which he has won the auction

- ➢ Includes [Winning Bid Notification]
- ➢ [#Buyer] - Agrees to buy the product
- ➢ [#System] - Provides a template to provide shipping details
- ➢ [#Buyer] - Updates the template with shipping details and final confirmation
- ➢ [#System] - Debits the buyer's account and sends buyer information to seller

- ❖ Buyer Rejects product - The buyer declines to buy the item, for which he has won the auction o Includes [Winning Bid Notification]

- ➢ [#Buyer] - Declines to buy the product o [#System] -
  - Downgrades the Buyer rating because of order rejection and penalizes the buyer with 10% of the bid amount.

- If any, the next higher bidder is notified about the victory, else the Seller is notified that there was no Buyer for the item.

❖ Auction Completion (if buyer accepts) - The next sequence of actions, if the user accepts an item o Include [Buyer Accepts product]:

- ➢ [#System] - the Seller is notified about the Auction completion buyer details is sent to the seller
- ➢ [#Seller] - ships the item and confirms to the system o [#System] - Credits the seller account
- ➢ [#Buyer] - A buyer can rate the seller on successful completion of the transaction

❖ Auction Completion (if buyer declines) - The next sequence of actions, if the user declines item

- ➢ Include [Buyer Rejects product]
- ➢ [#System] - Performs the following actions
  - Notifies the seller of bid cancellation
  - provides the seller with an option to restart the auction or end it
- ➢ [#Seller] - Restarts the auction

➢ Alternate flow [Auction Process] – Seller ends the auction

➢ [#System] - Provides confirmation w.r.t seller action

❖ Update Auction details - Seller updates the auction details after the auction starts

➢ [#Seller] - A seller can either requests the system for a template for updating auction details or can choose to delete the auction

- ➢ [#System] - System provides template to the seller to change items for auction or delete it
- ➢ [#Seller] - Seller updates the template and submits it
- ➢ [#System] - System gets the request and processes it

❖ User interactions - Interactions between the buyer and seller

- ➢ [#Buyer] - Buyer asks a query related to a product to the corresponding seller
- ➢ [#Seller] - Seller responds to the queries of buyers

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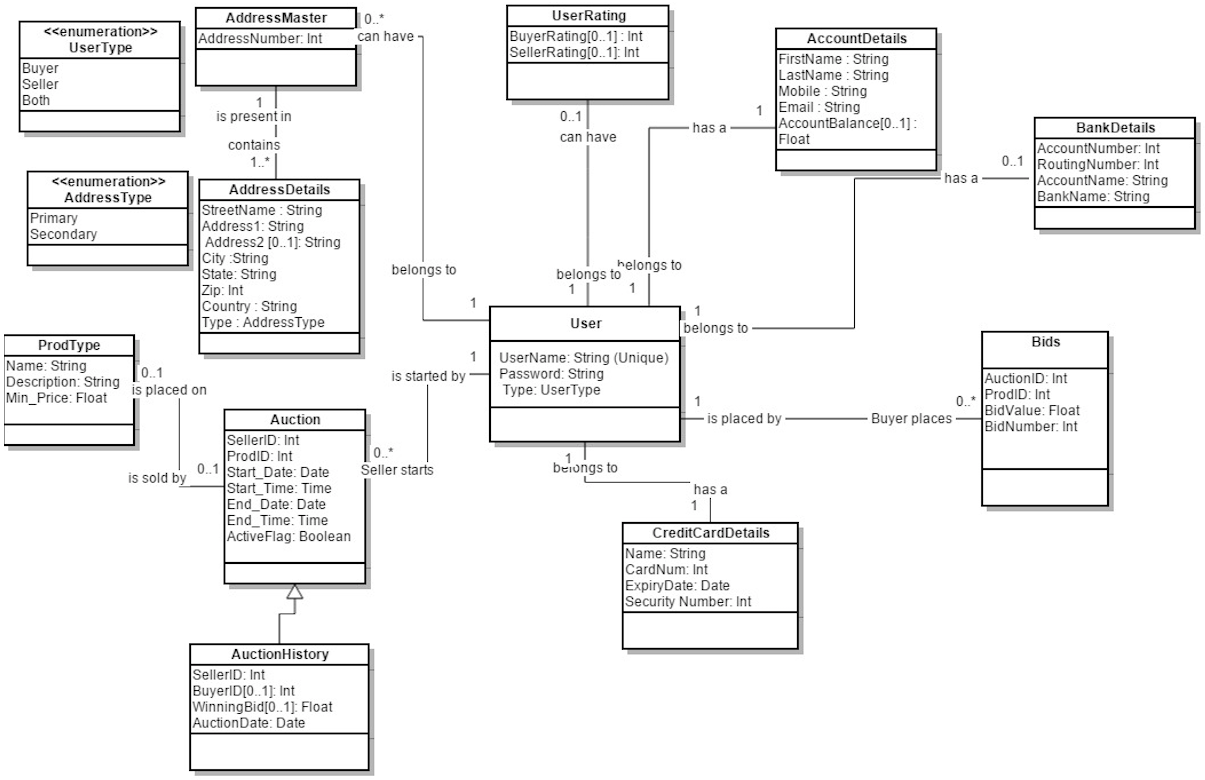
DESIGN



Relational Schema

```
create table user(
userid int primary key auto_increment,
username varchar(80) unique,
password varchar(80) not null,
type  enum('buyer','seller','both'));

create table accountdetails(
userid int primary key,
firstname varchar(200) not null,
lastname varchar(200),
mobile double,
email varchar(200) not null,
accountbalance float);

alter table accountdetails add foreign key (userid) references user(userid);

create table addressmaster(
```

```
addressnumber int auto_increment not null unique,
userid int,
primary key(userid,addressnumber));

alter table addressmaster add foreign key (userid) references user(userid) on delete cascade
on update cascade;

create table address(
addressnumber int primary key,
street varchar(255) not null,
addressline1 varchar(255) not null,
addressline2 varchar(255),
city varchar(100) not null,
state varchar(100) not null,
zip int not null,
country varchar(100) not null,
type enum('primary','secondary'));

alter table address add foreign key (addressnumber) references
addressmaster(addressnumber) on delete cascade on update cascade;

create table userrating(
userid int primary key,
foreign key (userid) references user(userid) on delete cascade on update cascade,
buyerrating int,
sellerrating int);

create table bankdetails(
userid int primary key,
foreign key (userid) references user(userid) on delete cascade on update cascade,
accountnumber double not null,
routingnumber double not null,
accountname varchar(255),
bank varchar(255));

create table creditcarddetails(
userid int,
foreign key (userid) references user(userid) on delete cascade on update cascade,
name varchar(255) not null,
cardnum bigint not null,
expmonth int,
expyear int,
cvv int,
primary key(userid,cardnum));
```

```
create table prodtype(
prodid int primary key auto_increment,
name varchar(255),
description varchar(255),
minprice float,
image LONGBLOB);

create table auction(
auctionid int primary key auto_increment,
sellerid int,
prodid int,
startdate date,
enddate date,
active boolean);

alter table auction add foreign key (sellerid)references user(userid) on delete cascade on
update cascade;
alter table auction add foreign key (prodid)references prodtype(prodid) on delete cascade on
update cascade;

create table bids(
auctionid int,
prodid int,
buyerid int,
bidvalue float not null,
primary key(auctionid,buyerid));

alter table bids add foreign key (auctionid) references auction(auctionid) on delete cascade
on update cascade;
alter table bids add foreign key (prodid) references prodtype(prodid) on delete cascade on
update cascade;
alter table bids add foreign key (buyerid) references user(userid) on delete cascade on
update cascade;

create table auctionhistory(
auctionid int primary key,
buyerid int,
sellerid int,
winningbid float,
auctiondate date);

alter table  auctionhistory add foreign key (buyerid) references user(userid);
alter table  auctionhistory add foreign key (sellerid) references user(userid);
```

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IMPLEMENTATION

The following software were used:

Software	Purpose	Reference
MySQL 5.7.10	Database system	[1]
Apache Tomcat 8.0.30	Web servlet container	[2]
Java 1.8.0_45	Programming language	[3]
JSP 2.2	Server page tool	[4]

DISCUSSION

All the use cases have been implemented and tested by several users.

- The website acts as a platform to connect buyers and sellers.
- The website offers the users an online platform to buy and sell products of their interests at reasonable prices.

Discussion - 1.docx

CONCLUSION

We have built a fully functional online auction website for buying and selling items. Sellers can upload products for sale at any time through the web interface. Buyers can bid for any product that is available in an auction, as long as they have an account balance that matches or exceeds the current value of the product. Hence we have achieved all the goals that we had mentioned in our project proposal successfully.

REFERENCES

1. MySQL Documentation: http://dev.mysql.com/doc/
2. Apache Tomcat: http://tomcat.apache.org
3. W3schools: http://www.w3schools.com
4. Java: http://www.java.com