

**UTD**

**CS6360.003 Database Design**

**Prof. Jalal Omer**

## **ONLINE AUCTION DATABASE**

### **Final Report**

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## **Section 1**

### **Introduction**

#### **System Description**

Our system/program will contain information about each valid member (buyers and sellers) and will be recognized by their unique identification number and is detailed with other information including phone number, Member Location, Member name, E-mail address, and password.

Users participating in our system would be either buyers or sellers. In the database, the buyer's shipping address would be stored and from the seller's end, the bank account number and the routing number will be stored.

The products for sale are listed by the seller and are allocated a unique article the number assigned by the system. Products are also described by the article name, beginning bid price, bidding increment, auction start date, and the auction end date.

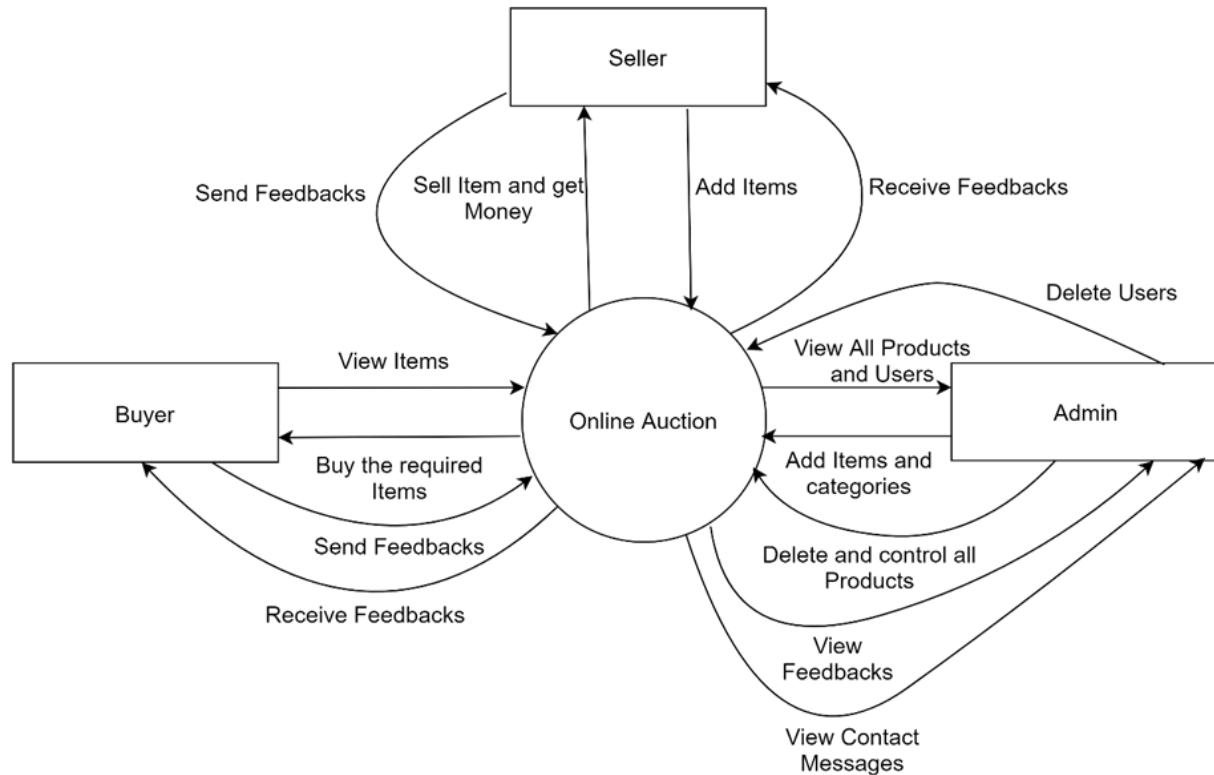
A predefined categorization hierarchy is also used to categorize elements.

Bids are placed on things buyers are interested in. The Bid amount and the Bid occurrence time are being recorded in the database. The purchaser with the utmost bid at the end of the auction is announced the winner and then the agreement between the buyer and seller is set about.

Rating the facility is implemented in our system through which buyer and seller can rate their individual feedback regarding their completed deal and can comment as well.

## Section 2 System Requirements

### 2.1 System Architecture Diagram



### 2.2 Functional Requirements

Functional Requirements of	Functional Requirements
Login	The system should allow the users to log in only after verifying the username and password.
	The system should restrict unauthorized users from logging in.
	Facilitate the login process by remembering username and password.

	A new user should be able to create a new account.
	Users can Sign Out.
Browser	The system should allow users to bid on all available and desired products.
	The System should allow users to view expired as well as live biddings.
	The System should allow sellers to advertise the product they want to sell.
	The System should allow buyers to view their purchase history.
Administration	Admin should be able to control, view, delete, and search all the products.
	Admin should be able to view all the users and their feedbacks.
	Admin should be able to view messages between buyers and sellers.
	Admin should be able to delete a user's account in case of a violation of website policies.
	Admin should be able to view all the users whether it is buyers or sellers.
	Admin should be able to add categories in the database.

### 2.3 Non-Functional Requirements

NFR Type	NFR	Description
Time	Latency	Time period between issuing of command and response received for it.
Application Access	Multi-user Bids	Multiple-user bidding for the same item at a given point of time, will be able to put up bids.
Performance	System Performance	Time taken to access the information stored in the database, should not take more than a minute.
		The application should load in less than a minute.
		The application should be able to handle 1000 transactions per hour.
		The database should be able to handle/store a minimum of 5 Gb's of data.
Availability	Operational Hours	Maintenance times/Downtime when upgrading the application.

## **2.4 Interface Requirements**

### **1. Hardware Requirements:**

- RAM: 2 GB or higher
- OS: Windows 8 or higher
- Hard disk space: 10GB
- CPU: i5 core

### **2. Software Requirements:**

- Java (to create the Application program) / JDBC (for connection purposes)
- MySQL (for database creation)

### **3. User Interface Requirements:**

- Admin
- Sign up (for old buyer/sellers and new buyers/sellers)
- Buyer's Page
- Seller's Page

### **4. Front-end Technology:**

- JSP
- JavaScript
- CSS

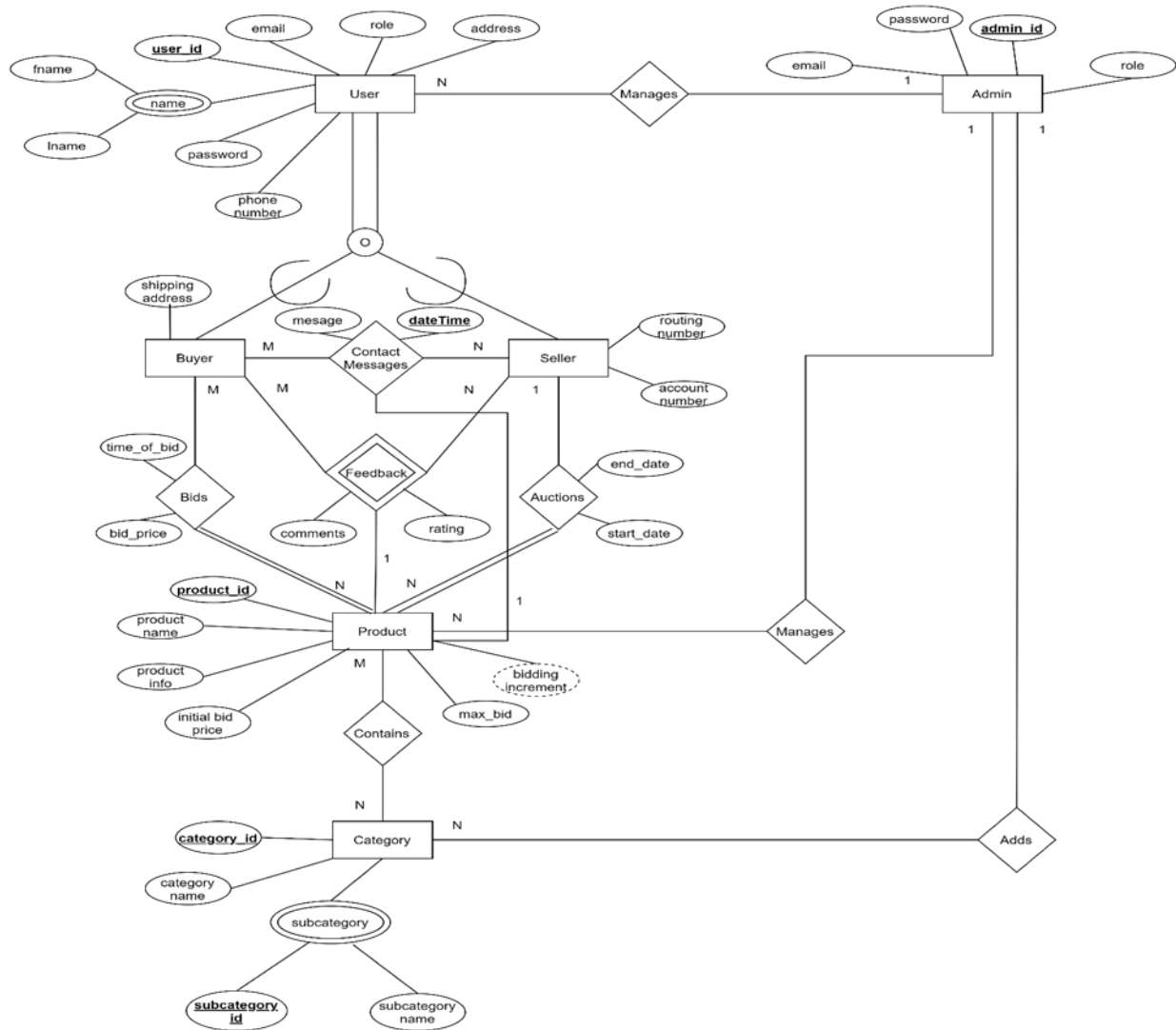
### **5. Back-end Technology:**

- Java – Spring Boot
- MySQL Database

## Section 3

### Conceptual Design of the Database

#### 3.1 ER Diagram





### 3.2 Data Dictionary

ADMIN		
admin_id	INT	Primary Key of the table.
email	VARCHAR	Email ID of the admin.
Phone_number	VARCHAR	Phone Number of the admin.
password	VARCHAR	Password which will be set by admin to login to the account.

USER		
user_id	INT	Primary Key of the table.
email	VARCHAR	User Email ID.
role	VARCHAR	User role. i.e. either Buyer or Seller.
address	VARCHAR	User Address.
fname	VARCHAR	User first name.
lname	VARCHAR	User last name.
password	VARCHAR	password which will be set by user to login to the account.
phone_number	VARCHAR	User Phone Number.
managed_by	VARCHAR	Admin name. Ref: ADMIN.

SELLER		
seller_id	INT	Primary Key of the table.
user_id	INT	Seller id. Ref: USER.
routing_number	VARCHAR	Seller routing number of payment purpose.
account_number	VARCHAR	Seller account number of payment purpose.

<b>BUYER</b>		
buyer_id	INT	Primary Key of the table.
user_id	INT	Seller id. Ref: USER.
shipping_address	INT	Shipping Address of the user for delivery purpose.

<b>CATEGORY</b>		
category_id	INT	Primary Key of the table.
category_name	VARCHAR	Name of the Category. Eg. Sports.
creaed_by	INT	Id of the Admin who will add this category to system.

<b>SUBCATEGORY</b>		
sub_category_id	INT	Primary Key of the table.
sub_category_name	VARCHAR	Name of the Sub-category. Eg. Tennis-racket.
Category_id	INT	Id of the Category under which this sub-category falls.

<b>PRODUCT</b>		
product_id	INT	Primary Key of the table.
product_name	VARCHAR	Name of the product.
product_info	VARCHAR	Product Information.
initial_bid_price	INT	Price at which the bid starts.
max_bid_price	INT	Price at which the bid stopped.
Image_path	VARCHAR	Image of the product
managed_by	INT	Id of the admin.
sub_category_id	INT	Id of the sub-category.

<b>FEEDBACK</b>		
feedback_id	INT	Primary Key of the table
seller_id	INT	Id of the seller who sold the product.
buyer_id	INT	Id of the buyer who gives the feedback.
product_id	INT	Id of the product for which feedback is given.
feedback_time	DATETIME	Time at which feedback is given.
rating	INT	Rating buyer gave for the product purchased.
comments	VARCHAR	Comment buyer gave for the product purchased.

<b>AUCTION</b>		
auction_id	INT	Primary Key of the table
seller_id	INT	Id of the seller who sold the product.
product_id	INT	Id of the product purchased.
auction_date	DATETIME	Date on which auction took place.
expiration_date	DATETIME	Date on which auction will expire.

<b>BIDS</b>		
bids_id	INT	Primary Key of the table
buyer_id	INT	Id of the buyer who gives the feedback.
product_id	INT	Id of the product purchased.
bid_time	DATETIME	Time at which an individual made a bid.
bid_price	INT	Price of the bid an individual submitted for a given product.

<b>CONTACTMESSAGES</b>		
contactmessages_id	INT	Primary Key of the table
seller_id	INT	Id of the seller who sold the product.
buyer_id	INT	Id of the buyer who purchased the product.
product_id	INT	Id of the product for which buyer is contacting the seller.
message_time	DATETIME	Time at which an individual made a bid.
messages	VARCHAR	Text communication that took place between buyer and seller.

### 3.3 Business Rules

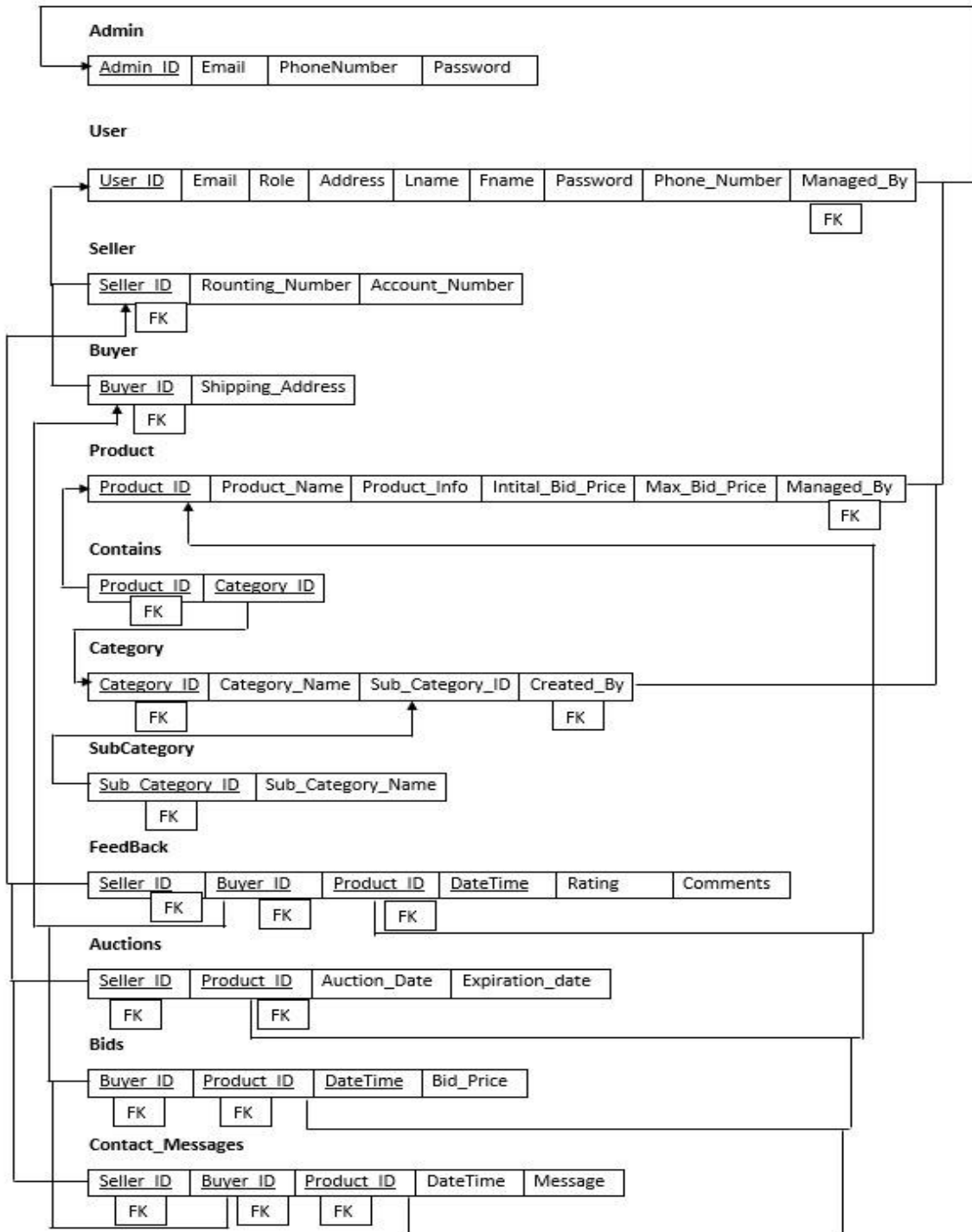
Below is the list of business rules we have taken in our project:

- Admin can view all contact messages/feedbacks, manages data from buyers and sellers.
- User can either be buyer or seller or it can be both.
- Buyer can bid on multiple products.
- Seller can auction for one or more products.
- A product might fall under multiple categories.
- Buyers and sellers can send feedback after completion of the transaction.

## Section 4

### Logical Database Schema

#### 4.1 Schema of the Database



## 4.2 SQL statements for constructing the Schema

```
CREATE DATABASE online_auction;
```

```
USE online_auction;
```

```
CREATE TABLE ADMIN (  
  admin_id    VARCHAR (5) NOT NULL,  
  email       VARCHAR (25),  
  phone_number  VARCHAR (10) NOT NULL,  
  passcode    VARCHAR (10) NOT NULL,  
  PRIMARY KEY (admin_id)  
);
```

```
CREATE TABLE USER (  
  user_id     VARCHAR (5)    NOT NULL,  
  email       VARCHAR (25)   NOT NULL,  
  role        VARCHAR (15),  
  address     VARCHAR (30),  
  fname       VARCHAR (15)   NOT NULL,  
  lname       VARCHAR (15)   NOT NULL,  
  passcode    VARCHAR (10)   NOT NULL,  
  phone_number  VARCHAR (10)  NOT NULL,  
  managed_by  VARCHAR (5),  
  PRIMARY KEY (user_id),  
  FOREIGN KEY (managed_by) REFERENCES ADMIN (admin_id)  
);
```

```
CREATE TABLE SELLER (  
seller_id      VARCHAR (5)      NOT NULL,  
routing_Number  VARCHAR (9)      NOT NULL,  
account_Number  VARCHAR (12)     NOT NULL,  
PRIMARY KEY (seller_id),  
FOREIGN KEY (seller_id) REFERENCES USER (user_id)  
);
```

```
CREATE TABLE BUYER (  
buyer_id        VARCHAR (5)      NOT NULL,  
shipping_Address VARCHAR (30)     NOT NULL,  
PRIMARY KEY (buyer_id),  
FOREIGN KEY (buyer_id) REFERENCES USER (user_id)  
);
```

```
CREATE TABLE CATEGORY (  
category_id    VARCHAR(5)        NOT NULL,  
category_name   VARCHAR(20)       NOT NULL,  
created_by     VARCHAR(5)        NOT NULL,  
PRIMARY KEY (category_id),  
FOREIGN KEY (created_by) REFERENCES ADMIN(admin_id)  
);
```

```
CREATE TABLE SUBCATEGORY (  
sub_category_id  VARCHAR(5)       NOT NULL,  
sub_category_name VARCHAR(15)     NOT NULL,
```

```
category_id          VARCHAR(5),  
PRIMARY KEY (sub_category_id)  
);
```

```
CREATE TABLE PRODUCT (  
product_id    INT(5) NOT NULL,  
product_name  VARCHAR(20)    NOT NULL,  
product_info  VARCHAR(500),  
initial_bid_price INT        NOT NULL,  
max_bid_price    INT          NOT NULL,  
managed_by  INT(5) NOT NULL,  
sub_category_id    INT(5) NOT NULL,  
Image_path  VARCHAR(500),  
PRIMARY KEY (product_id),  
FOREIGN KEY (managed_by) REFERENCES ADMIN(admin_id),  
FOREIGN KEY (sub_category_id) REFERENCES SUBCATEGORY(sub_category_id)  
);
```

```
CREATE TABLE FEEDBACK(  
seller_id    VARCHAR(5) NOT NULL,  
buyer_id     VARCHAR(5) NOT NULL,  
product_id   VARCHAR(5) NOT NULL,  
feedback_time    DATETIME ,  
rating        INT,  
comments     VARCHAR(250),
```



```
PRIMARY KEY (seller_id, buyer_id, product_id),  
FOREIGN KEY (seller_id) REFERENCES SELLER(seller_id),  
FOREIGN KEY (buyer_id) REFERENCES BUYER(buyer_id),  
FOREIGN KEY (product_id) REFERENCES PRODUCT(product_id)  
);
```

```
CREATE TABLE AUCTIONS (  
    auction_id    VARCHAR(5) NOT NULL,  
    seller_id     VARCHAR(5) NOT NULL,  
    product_id    VARCHAR(5) NOT NULL,  
    auction_date  DATETIME NOT NULL,  
    expiration_date DATETIME,  
    PRIMARY KEY (seller_id, product_id, auction_date),  
    FOREIGN KEY (seller_id) REFERENCES SELLER(seller_id),  
    FOREIGN KEY (product_id) REFERENCES PRODUCT(product_id)  
);
```

```
CREATE TABLE BIDS(  
    buyer_id     VARCHAR(5) NOT NULL,  
    product_id   VARCHAR(5) NOT NULL,  
    bid_time     DATETIME,  
    bid_price    INT,  
    PRIMARY KEY (buyer_id, product_id),  
    FOREIGN KEY (buyer_id) REFERENCES BUYER(buyer_id),  
    FOREIGN KEY (product_id) REFERENCES PRODUCT(product_id));
```

```
CREATE TABLE CONTACTMESSAGES(  
seller_id VARCHAR(5) NOT NULL,  
buyer_id VARCHAR(5) NOT NULL,  
product_id VARCHAR(5) NOT NULL,  
message_time DATETIME NOT NULL,  
messages VARCHAR(250),  
PRIMARY KEY (seller_id, buyer_id, product_id, message_time),  
FOREIGN KEY (seller_id) REFERENCES SELLER(seller_id),  
FOREIGN KEY (buyer_id) REFERENCES BUYER(buyer_id),  
FOREIGN KEY (product_id) REFERENCES PRODUCT(product_id)  
);
```

## Section 5

### Functional Dependencies

#### 5.1 Functional Dependencies

##### Admin Relation:-

- Admin\_id  $\rightarrow$  {Email, Phone, Number, Password}
- Email  $\rightarrow$  {Admin\_id, Phone\_number, Password}
- Phone\_number  $\rightarrow$  {Admin\_id, Email, Password}

##### User Relation:-

- User\_id  $\rightarrow$  {Email, Role, Address, Lname, Fname, Phone\_number}
- Email, Phone\_number, Role  $\rightarrow$  {User\_id, Address, Fname, Lname}
- Email, Password  $\rightarrow$  {User\_id, Fname, Lname, Role}

##### Seller Relation:-

- Seller\_id  $\rightarrow$  {Routing\_number, Account\_number}

##### Buyer Relation:-

- Buyer\_id  $\rightarrow$  {Shipping\_address}

##### Bid Relation:-

- BuyerID, ProductID  $\rightarrow$  {Date, Time, Bid\_Price}
- BuyerID, Date, Time  $\rightarrow$  {ProductID, Bid\_Price}
- ProductID, Bid\_Price  $\rightarrow$  {BuyerID, Date, Time}

##### Auction Relation:-

- SellerID, ProductID  $\rightarrow$  {Auction\_Date, Expiration\_Date}

##### Product Relation:-

- Product\_id  $\rightarrow$  {Product\_name, Product\_info, Initial\_bid\_price, Max\_Bid\_price, Manage\_by}
- Product\_id, Product\_name  $\rightarrow$  {Product\_info, Initial\_bid\_price, Max\_bid\_price}
- Product\_name  $\rightarrow$  {Product\_info, Initial\_bid\_price, Max\_bid\_price}

##### Category Relation:-

Category\_id  $\rightarrow$  {Category\_name, Sub\_category\_id, created\_by}  
Category\_id, Sub\_category\_id  $\rightarrow$  {category\_name}  
Sub\_category\_id  $\rightarrow$  {Category\_name}

**SubCategory:-**

- Sub\_category\_id → Sub\_category\_name

**Feedback Relation:-**

- Seller\_id, Buyer\_id, Product\_id → {DateTime, Rating, Comments}
- Product\_id, DateTime → {Seller\_id, Buyer\_id, Rating, Comments}
- Product\_id → {Rating, Comments}

**Contact\_Messages:-**

- Seller\_id, Buyer\_id, Product\_id, DateTime → {Message}
- Buyer\_id, Product\_id, DateTime → {Seller\_id, Message}
- Seller\_id, Buyer\_id, DateTime → {Product\_id, Message}
- Seller\_id, Product\_id, DateTime → {Buyer\_id, Message}

## Section 6

### The User Guide of the System

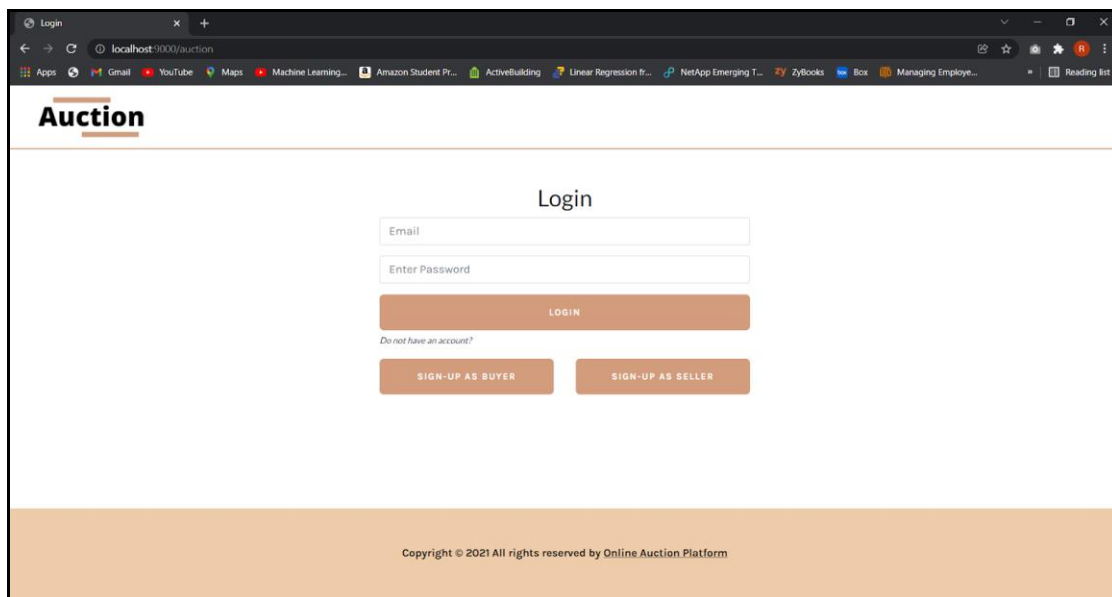
*To run this application, you can type the following as a URL on Google Chrome:  
**Localhost:9000/auction***

#### 6.1 The User Manual of the System

##### 1. User Login:

This page has 2 functionalities.

- An existing user can log in using his/her credentials.
- A new user can log in as either a Buyer or Seller.



The screenshot shows a web browser window with the URL `localhost:9000/auction`. The page features the "Auction" logo at the top left. The main heading is "Login". Below it are two input fields: "Email" and "Enter Password". A large orange button labeled "LOGIN" is positioned below the password field. A link that says "Do not have an account?" is located below the "LOGIN" button. At the bottom of the login section are two orange buttons: "SIGN-UP AS BUYER" and "SIGN-UP AS SELLER". The footer of the page contains the text "Copyright © 2021 All rights reserved by Online Auction Platform".

## 2. Buyer Sign Up Page:

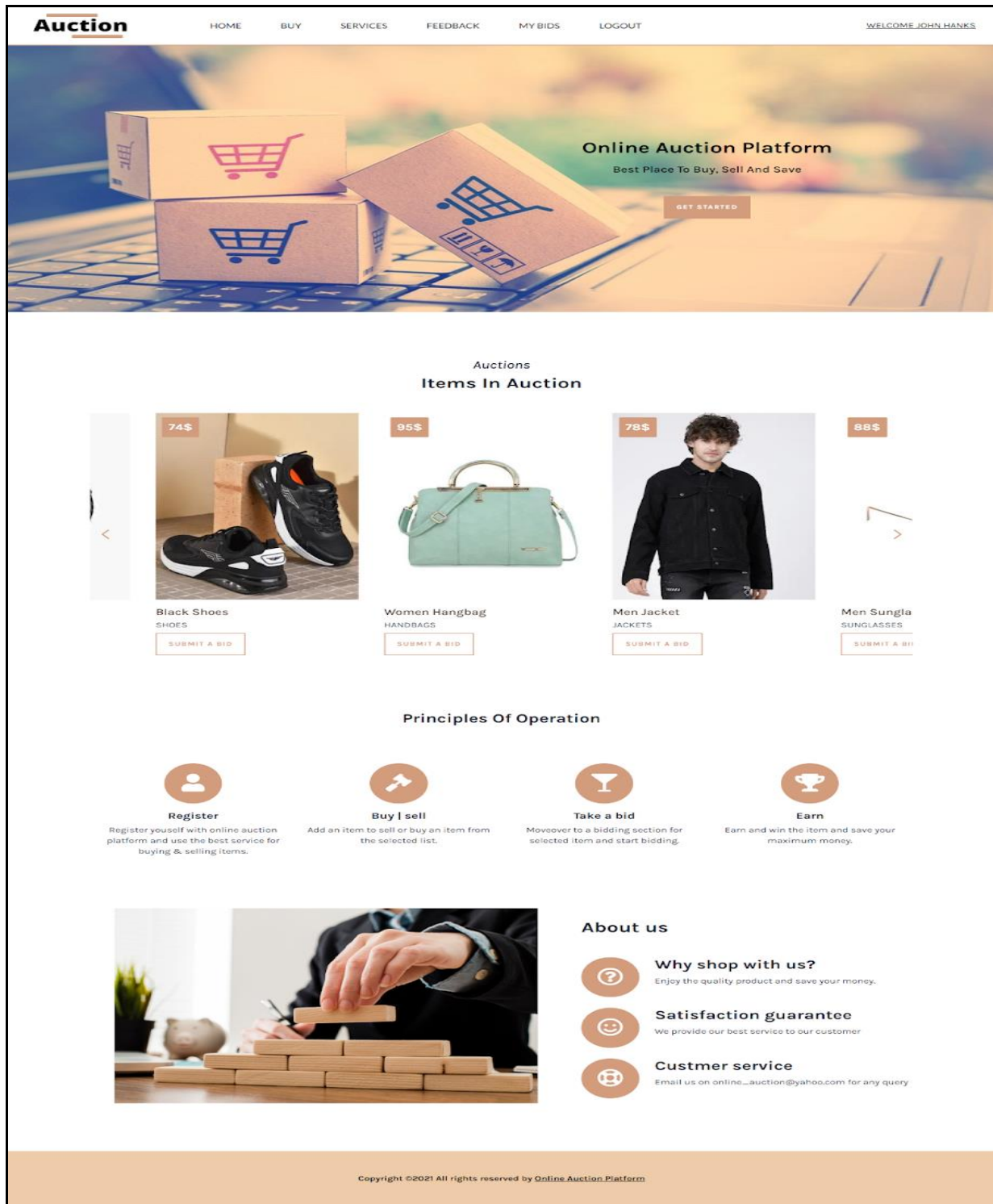
Once a new user decides to register as a Buyer, he/she will be redirected to the buyer sign-up page.

The screenshot shows the 'Buyer Sign Up' page. At the top left is the 'Auction' logo. The title 'Buyer Sign Up' is centered. Below it are input fields for First Name, Last Name, Email, Address, Shipping Address, Phone Number, Password, and Confirm Password. A brown 'REGISTER' button is below these fields. A link 'Already have an account? Sign In' is centered below the button. The footer contains the text 'Copyright ©2021 All rights reserved by Online Auction Platform'.

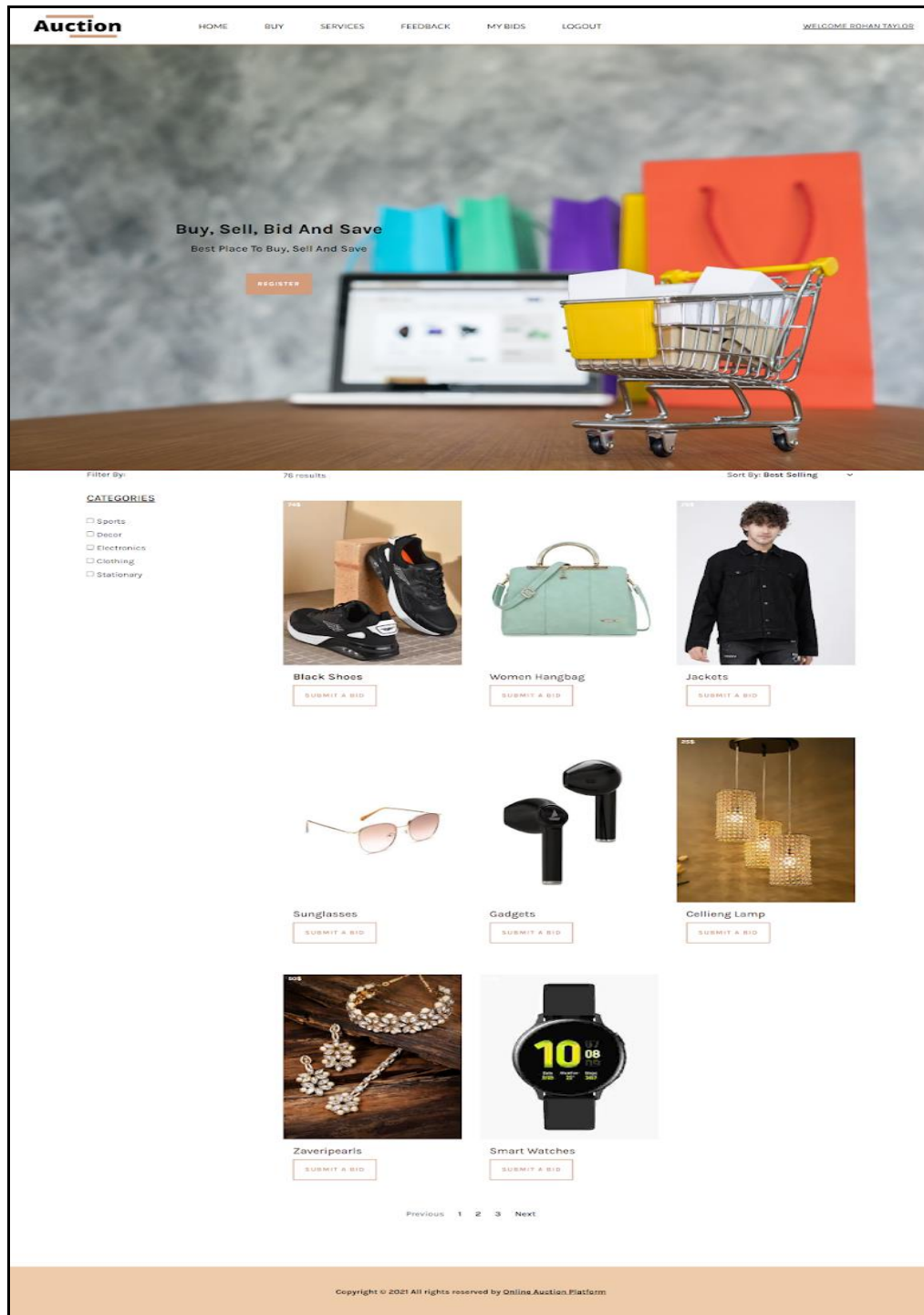
## 3. Seller Sign Up Page: If a new user decides to register as a Seller, he/she will be redirected to the seller sign-up page.

The screenshot shows the 'Seller Sign Up' page. At the top left is the 'Auction' logo. The title 'Seller Sign Up' is centered. Below it are input fields for First Name, Last Name, Email, Address, Phone Number, Routing Number, Account Number, Password, and Confirm Password. A brown 'REGISTER' button is below these fields. A link 'Already have an account? Sign In' is centered below the button. The footer contains the text 'Copyright ©2021 All rights reserved by Online Auction Platform'.

4. **Buyer Home Page:** Once the user has logged in as a Buyer, he /she will be redirected to the buyer home page where the user will be able to view:
  - Recommended products.
  - The tab on the top of the page allows the buyer to navigate between different pages.



5. **Buy Product Page:** Now if the buyer wants to buy any product, he/she can:
- Either click on the products on the home page and place bids on them (as per the user's liking).
  - Or the user can click on the BUY option available at the top of the page to view all products being auctioned. This will take the user to the buy product page.






## 6. Product Bid Page:

- Once the buyer decides to buy a product, he/she can click on the product of his/her choice from the buy product page.
- Once the user clicks on the product, he/she can view the product details and place a bid (as per the user's liking).

**Auction**[HOME](#)[BUY](#)[SERVICES](#)[FEEDBACK](#)[MY BIDS](#)[LOGOUT](#)[WELCOME ROHAN TAYLOR](#)



**Men black shoes**  
**\$74**

No of bids

Bid Start Date 11/26/2021

Bid Price \$  .00


[SUBMIT A BID](#)

or

[BUY NOW](#)

**Product Description**  
All sellers, or estate agents acting on their behalf, must have our 'due diligence checklist' available to prospective buyers at open for inspections.

**Seller**



Stony Johnson

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7. **Service Page:** Clicking on the SERVICES option available at the top of the page will open the services page. Here the user/buyer can get an idea of the services the website has to offer.

**Auction**[HOME](#)[BUY](#)[SERVICES](#)[FEEDBACK](#)[MY BIDS](#)[LOGOUT](#)[WELCOME ROHAN TAYLOR](#)



## Our Services




### Buy Products

Online Auction platform provides customer a reliable option to buy items.



### Sell Products

You can list new or used items and pay a final value fee only when it sells. You're protected by policies, monitoring, and our customer service team.



### Submit a Bid

Moveover to a bidding section for selected item and start bidding.



### Win a Bid

Earn and win the item and save your maximum money.



## About us



### Why shop with us?

Enjoy the quality product and save your money.



### Satisfaction guarantee

We provide our best service to our customer



### Custmer service

Email us on [online\\_auction@yahoo.com](mailto:online_auction@yahoo.com) for any query

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8. **Bid Transactions for Buyer Page:** Here the buyer can view all his/her previous bids.

The screenshot shows a web browser window with the URL `localhost:9000/bids/getBids`. The page title is "Auction" and the user is logged in as "WELCOME ROHAN TAYLOR". The main heading is "My Bids". Below the heading, there is a search bar and a "Show 10 entries" dropdown. The table displays the following data:

Product Name	Bid Time	Bid Price
Lamy safari pen	2020-10-06 00:00:00.0	120
One Plus 9	2020-10-12 00:00:00.0	150
Sofa set	2020-10-03 00:00:00.0	35

Showing 1 to 3 of 3 entries

Previous 1 Next

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9. **Feedback to Admin Page:** On this page, the buyer can send concerns regarding any issues the user is facing on the website, feedbacks related to products, etc. to the Admin. The buyer can do so by clicking on the FEEDBACK option available at the top of the page.

The screenshot shows the "Feedback to Admin" page. The user is logged in as "WELCOME ROHAN TAYLOR". The page has two tabs: "Feedback for Admin" (selected) and "Feedback for Product". The "Get In Touch" section contains the following form fields:

- First Name
- Last Name
- Email
- Phone
- Message

Below the form is a "SEND MESSAGE" button. The "Contact Info" section provides the following details:

- Address: 800 W Campbell Rd, Richardson, TX 75080, USA
- Phone: +1 409 917 1890
- Email Address: [onlineauction@yahoo.com](mailto:onlineauction@yahoo.com)

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10. **Feedback to Seller Page:** If the buyer has queries, concerns, or reviews regarding a certain product, the buyer can send feedback to the seller by clicking on the feedback to seller option under feedback.

**Auction**

HOMEBUYSERVICESFEEDBACKMY BIDSLOGOUT

WELCOME ROHAN TAYLOR

Feedback for AdminFeedback for Product

First Name

Last Name

Email

Phone

Product Name

Select a Category

Select a Sub-Category

Message

Image

Choose FileNo file chosen

SEND MESSAGE

Contact Info

Address  
800 W Campbell Rd, Richardson, TX 75080, USA

Phone  
[+1 499 917 1890](tel:+14999171890)


Email Address  
[onlineauction@yahoo.com](mailto:onlineauction@yahoo.com)

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11. **Buyer Update Profile Page:** If the buyer wants to change any information on his/her profile he/she can do so by clicking on the top right corner of the page (welcome prompt).

**Auction**[HOME](#)[BUY](#)[SERVICES](#)[FEEDBACK](#)[MY BIDS](#)[LOGOUT](#)

### Profile



First Name

Last Name

Email

Address

Shipping Address

Phone

Password

Confirm Password

**UPDATE**

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12. **Sell Product page for Seller:** Once the user logs in as a seller, he/she can sell a product by simply clicking on the SELL option available at the top of the seller page. The seller can:

- Upload images of the product
- Description of the product
- Starting Bid price
- Start date of the bidding

**Auction**HOMESELLSERVICESFEEDBACKMY AUCTIONSLOGOUTWELCOME ROSE COLLYMORE

### Upload Product Details

Title

Description

Initial Bid Price

\$

.00

Select Category

Select a Category

Select Sub-category

Select a Sub-Category

Bid Start Date

dd-mm-yyyy

Image

Choose File

No file chosen

UPLOAD

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13. **Seller Auction Transaction Page:** On this page, the seller can view all of his/her auctioned products. The seller can view this by clicking on the My Auctions option available at the top of the seller page.

The screenshot displays the 'My Auctions' page of an online auction platform. The page features a navigation bar with links to HOME, SELL, SERVICES, FEEDBACK, MY AUCTIONS, and LOGOUT. The user is logged in as 'ROSE COLLYMORE'. The main content area shows a table of auctioned products with the following data:

Product Name	Product Initial Bid Price	Auction Date	Auction Expiration Date
I-Phone 11	600	2021-10-01 00:00:00.0	2021-10-08 00:00:00.0
Sofa set	3000	2021-10-01 00:00:00.0	2021-10-08 00:00:00.0
Tennis Raquet	15	2021-10-06 00:00:00.0	2021-10-13 00:00:00.0

The page also includes a search bar, a 'Show 10 entries' dropdown, and pagination controls (Previous, 1, Next). The footer contains the copyright notice: Copyright ©2021 All rights reserved by Online Auction Platform.

14. **Admin Login:** The Admin will have a different login to the website. Here the Admin can use his/her credentials to log in to the website.

The screenshot displays the 'Admin Login' page of an online auction platform. The page features a navigation bar with links to HOME, SELL, SERVICES, FEEDBACK, MY AUCTIONS, and LOGOUT. The user is logged in as 'ROSE COLLYMORE'. The main content area shows a login form with the following fields:

- Email
- Enter Password

The page also includes a 'LOGIN' button. The footer contains the copyright notice: Copyright ©2021 All rights reserved by Online Auction Platform.

15. **All Users Page for Admin:** Here the Admin can view all the user details (buyers and sellers) who have registered with the auction website. He/she can do so by clicking on the USER'S option available at the top of the admin page.

Auction

DASHBOARD

USERS

PRODUCTS

FEEDBACK

WELCOME ADMIN XYZ@GMAIL.COM

Users

Show10entries

Search:

First Name	Last Name	Email	Phone Number	Role	Action
adit	harris	adit@gmail.com	9721237890	buyer	Deactivate
finch	steller	finch@gmail.com	9761237894	seller	Deactivate
John	Hanks	jhanks@gmail.com	4684561321	buyer	Deactivate
jose	millier	jose@gmail.com	4575217890	buyer	Deactivate
Rainam	Shah	rshah@gmail.com	4168465165	buyer	Deactivate
Rainam	Shah	rshah@gmail.com	7953215386	buyer	Deactivate
rohan	taylor	rohan@gmail.com	4561237890	buyer	Deactivate
rose	collymore	rose@gmail.com	4781245210	seller	Deactivate
stony	johnson	stony@gmail.com	8761237845	seller	Deactivate
First Name	Last Name	Email	Phone Number	Role	Action

Showing 1 to 9 of 9 entries

Previous

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Next

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## Section 7

### Additional Queries and/or Views

#### VIEW 1:

CREATE VIEW MAX\_BIDDER

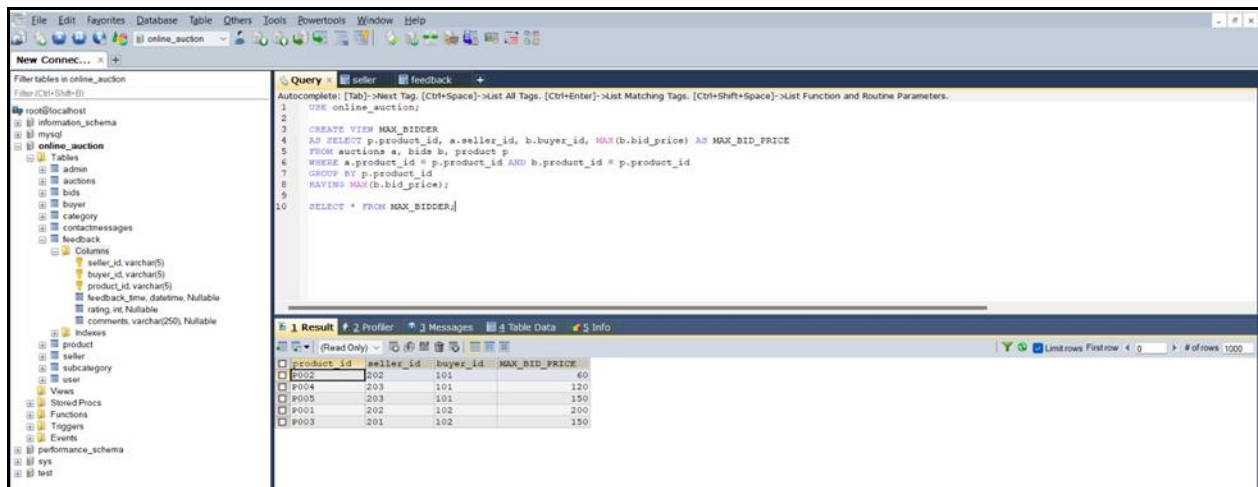
AS SELECT p.product\_id, a.seller\_id, b.buyer\_id, MAX(b.bid\_price) AS MAX\_BID\_PRICE

FROM auctions a, bids b, product p

WHERE a.product\_id = p.product\_id AND b.product\_id = p.product\_id

GROUP BY p.product\_id

HAVING MAX(b.bid\_price);



The screenshot shows a MySQL IDE window with a query editor and a results pane. The query editor contains the following SQL code:

```
1 USE online_auction;
2
3 CREATE VIEW MAX_BIDDER
4 AS SELECT p.product_id, a.seller_id, b.buyer_id, MAX(b.bid_price) AS MAX_BID_PRICE
5 FROM auctions a, bids b, product p
6 WHERE a.product_id = p.product_id AND b.product_id = p.product_id
7 GROUP BY p.product_id
8 HAVING MAX(b.bid_price);
9
10 SELECT * FROM MAX_BIDDER;
```

The results pane shows the output of the query, displaying a table with 4 columns: product\_id, seller\_id, buyer\_id, and MAX\_BID\_PRICE. The table contains 5 rows of data:

product_id	seller_id	buyer_id	MAX_BID_PRICE
P002	102	101	60
P004	203	101	120
P005	203	101	150
P001	202	102	200
P003	201	102	150

## VIEW 2:

CREATE VIEW RECOMMENDED\_PRODUCTS

AS SELECT p.product\_id, p.product\_name, AVG(f.rating) AS AVG\_RATING

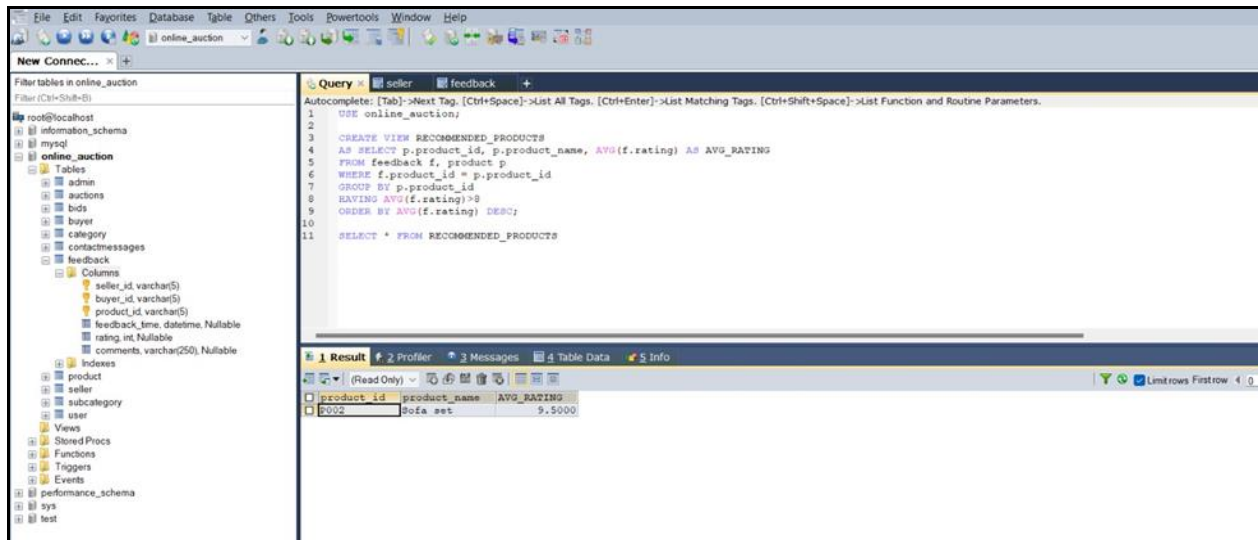
FROM feedback f, product p

WHERE f.product\_id = p.product\_id

GROUP BY p.product\_id

HAVING AVG(f.rating)>8

ORDER BY AVG(f.rating) DESC;



## References

1. Fundamentals of Database Systems, 7th edition by Emlasri and Navathe
2. <https://spring.io/guides/gs/accessing-data-jpa/>
3. <https://www.baeldung.com/spring-data-jpa-query>
4. <https://www.javaguides.net/2018/09/spring-mvc-using-spring-boot2-jsp-jpa-hibernate5-mysql-example.html>

## **Conclusion and Future Work**

### **Conclusion**

In conclusion, the Online Auction Database will allow users to buy products from different sellers registered on the website by placing bids on the product. In the end, the user with the highest bid will be able to buy the product from the seller.

During the development of this project, we have learned how to use the Spring tool suite, which provides a ready-to-use environment to implement, debug, run and deploy JAVA applications. And we connected the application to the database using JDBC. In process of doing so, we were able to understand how the connection happens.

We understood the business logic involved in building an Online Auction Database. With this project, we also had the opportunity to see in practice the modelling techniques (use cases, user stories, EER diagrams, Database schema, Database constraints, Functional dependencies) learned during the Database design course.

### **Future Work**

The online auction portal works very well in all of its functionality. However, some future works can be done on the existing system:

- Add an SSL security system. Since a registered seller can post new auctions, the buyer places bids, the users send messages, etc., username and password are sensible data. So it could be useful to protect these data from being intercepted by a third party.
- Add a chat room to the portal. It would be nice for a user to enter a chat room to talk with other users about auctions or any other topic. This chat can be realized using the Java Applet technology.
- Add more attractive graphics to the web pages of the portal. The site is very easy to browse, also for new users, because the pages are simple and clear. However, the graphics of the site is also much simple, so it could be the case to improve it to attract more users.
- Add a credit card payment system. It would be nice for users to make payments using their own credit cards to exchange money with the help of the website.