



# Boba Vehicles

Team Members:

Yuehui Wang, Chengwei Lin, Dikan Chen, Jiaxin Liang, Yunqi Zhang, Zhouqian Jiang

# Table of Contents

<b>Table of Figures</b>	<b>3</b>
<b>1. Introduction</b>	<b>4</b>
<b>2. Conceptual Database Design</b>	<b>5</b>
2.1 Requirement Analysis	5
Sale Items	5
Categories	5
Classification Tree	6
Suppliers	6
Registered Users	7
Rating	7
Browse	8
Search	8
Sale	9
Bidding	9
Order and Sale Reports	10
Delivery	10
Clearance	10
VIP	11
2.2 Conceptual Design	12
<b>3. Refined Schema</b>	<b>19</b>
<b>4. SQL Statements</b>	<b>20</b>
<b>5. Technology Overview</b>	<b>27</b>
5.1 Development Tool	27
5.2 Languages	27
5.3 Database	28
<b>6. System Prototype and Framework</b>	<b>29</b>
6.1 System Prototype	29
6.2 System Framework	36
<b>7. Reflection</b>	<b>36</b>
<b>8. Conclusion</b>	<b>37</b>

## **Table of Figures**

<b>Figure 1</b>	11
<b>Figure 2</b>	12
<b>Figure 3</b>	13
<b>Figure 4</b>	13
<b>Figure 5</b>	14
<b>Figure 6</b>	14
<b>Figure 7</b>	15
<b>Figure 8</b>	15
<b>Figure 9</b>	16
<b>Figure 10</b>	17
<b>Figure 11</b>	18
<b>Figure 12</b>	28
<b>Figure 13</b>	28
<b>Figure 14</b>	29
<b>Figure 15</b>	29
<b>Figure 16</b>	29
<b>Figure 17</b>	31
<b>Figure 18</b>	32
<b>Figure 19</b>	33
<b>Figure 20</b>	34
<b>Figure 21</b>	35

## **1. Introduction**

Boba Vehicles is a new startup company that create a convenient platform for buyers and sellers of both cars and bikes to conduct transactions. Boba Vehicles allows sellers to put their desirable prices for the items they want to sell. In the meanwhile, Boba Vehicles also give buyers a chance to bid prices for the items they like but not below the minimum threshold of which the seller has set at the beginning. Boba Vehicles categorize vehicles according to two genres “Motor Vehicles” and “Bicycles”. The subsequent sub categories are divided into different genre like SUV, Mini Vans etc. We provide services from the very beginning to the very end including delivery. We also provide ratings to facilitate buyers to have a better preview of the seller. We also value our customers who spend certain amount of money on our website by giving out VIP and also tempting discounts. To complete all of our proposed features, we are going to use Node.js, Javascript, HTML, CSS and MySQL to implement the frontend and backend of our website.

## **2. Conceptual Database Design**

### **2.1 Requirement Analysis**

#### **Sale Items**

The items that are sold by Boba are vehicles, including both motor vehicles and bicycles. The sources of the items can be either suppliers or an individual. A dealership or a bicycle shop can price their new or used vehicles for selling, or an individual can sell his used cars or bicycles on the website. There are two options for a vehicle to sell: listed price or by auction. Listed price

option can be applied to both new and used vehicles, while auction are only applicable to used vehicles. Regarding the auction function, a minimum price should be specified by sellers. A unique identifier number will be assigned to each item, and a brief description provided by sellers, such as color, model and configuration information, will also be associated with each item when they are listed online.

## Categories

The items sold at Boba are categorized by a predefined classification tree. There are in total three levels in this classification tree. The root of the tree is labeled as “ALL” to represent all items. Items are classified into “Motor Vehicles” and “Bicycles” in the second level. And detailed types are defined in the third tier. Each node is either the subcategory of the upper level or the parent of the lower level, and all items can be specified by a path through this classification tree. Because items sold at Boba are very specific, there are less than on average fifteen subcategories under each node. The classification tree is shown below:

### Classification Tree

- ALL
  - Motor Vehicle
    - Sedan
    - Coupe
    - Hatchback
    - SUV
    - Truck
    - Pickup
    - Minivan
    - Van
    - Supercar
    - Limo
  - Bicycle
    - Road Bikes
    - Mountain Bikes

- Hybrid Bikes
- Cruiser Bikes
- BMX Bikes
- Folding Bikes
- Recumbent Bikes
- Tandem Bikes

## Suppliers

Anyone can be a supplier or buyer or both!

The suppliers of our car selling website could be either car dealers that sells thousands and thousands of cars or individuals who are just trying to get rid of their old Honda Civic. In order to become a supplier, one only needs to register on the website as a supplier and from there, he or she can list their cars on the website for potential buyers to browse.

Although, not fully determined yet at this point, the suppliers will need to have their email address to register. Which will also later be used as a way of authentication for the suppliers to login. In order to be a supplier, you will need to provide additional information such as your physical address and etc.

Suppliers are responsible for listing their vehicles on the website. Suppliers will also be reviewed by their buyers.

Once a user purchases a vehicle from the supplier, the listing will be marked “sold”.

## Registered Users

As mentioned, anyone can be a supplier, buyer or both! Therefore, to register yourself as a buyer is no different than to register yourself as a supplier.

To register as a user, one needs to have an email address, which will later be used as a login method. Any person can register themselves as a user on the website and start browsing for vehicles.

However, there are two types of users in the system. Regular users and VIP users.

For exclusive benefits of being a VIP user, please see the VIP user section below.

Every one starts off as a regular user. A regular user has the ability to browse, purchase (either one-time offer or bidding) vehicles from the listings.

## Rating

Registered users are able to rate and comment on a specific seller after purchasing, regarding the quality of both product sold by the seller and service made by the seller. The rating score is scaled from 1 to 5, where 5 is the highest score. The ratings and comments can be referred by other buyers in the future when they want to purchase a vehicle from that seller. This rating system is capable of supervising sellers to deliver best product and service to their customers.

## Browse

Since different categories are associated with the cars and bikes, the user can easily browse through our website. Different genre are arranged in a tree-like manner and that under each categories and there are sub-categories which gives more refined result. For example, if the user wants to get a car that's a sedan of a specific color/year/brand/new cars/old cars, he can directly go under motor vehicle—sedan. The color/year/brand/new car/old car etc. under different attribute that is belongs to the category sedan. The same kind of category falls under bikes. The bike have differently categories and kinds as well for people to browse through.

## Search

If the person who wants to browse does not have a specific target or the name of the car, he can go directly to the “search” box and key in keywords. The result found will return a set of result that contains the keywords in its description. Search function aims to facilitate searchers whose needs that does not fall under specific category. The result will be shown instantaneously. The maximum number of result can be returned to the page is fixed to be at most 50 cars with the highest relevance ensure the accuracy of the search. Another feature what we will add in is search by rating of the seller. This kind of search can filter out the more trustworthy sellers for the person who is searching.

## Sale

A sale item is a vehicle which is listed on the website for sale. Sale items are classified into different categories based upon types, and distributed and stored in the database. They can be looked up based on their types and other filter options. The types and other properties of the items are set by the sellers when they put the items up for sale. When a buyer wants to purchase an item on the website, he/she has to go through several steps to place the order. The steps include: sign up an account for first time purchase, sign in, input the name, shipping and billing address, contact information, and select payment method.

## Bidding

An auction is process of buying and selling items by offering them up for bid, then selling them to the highest bidder. For sellers, it is option to list auction-style at any start price. If a seller chose to list action-style, he/she has to consider the listing duration because listings can

be listed for 10, 15, or 30 days on the website. For buyers, there is no limit to how many times they can bid on a listing. Their maximum bid is kept secret. No one can see their maximum bid while they are winning an auction. Their maximum bid is only revealed if they are outbid and no longer in the lead. And once a bid is placed, the bid cannot be cancelled. It doesn't matter when a buyer bid. If his/her bid is the highest, he/she will win the auction, and he/she is obligated to complete the purchase by sending full payment to the seller. If a seller chose to list auction-style and also set a Buy It Now price, then buyers can skip the bidding process to buy the item by clicking Buy It Now.

## Order and Sale Reports

Order and sale reports are public, and renewed every week. The order and sale reports contain every car that is sold this week, and the picture, feature, price, sale amount of the car can be seen on our website. Each month, there will be two ranking lists of sale amount, one for cars, and one for bikes. Under the list, there is a chart showing average price of each used and brand new vehicle on the list from the past six months. These are created only to help both sellers and buyers make a wiser decision.

## Delivery

The buyers have two choices for delivery: they can either choose to pick up from the nearest dealer, or they can schedule a delivery. The delivery fee is determined by the suppliers, and will be printed under the price on the website. VIPs can have deliveries for free.

## Clearance

Clearance section is used for sales promotion. Items could be marked for clearance by their suppliers for various reasons like the items are not selling well, or the suppliers are in bankruptcy, or they are looking for fast cash flow to pay their bills, etc. These sale items will appear in the clearance section with an original price and a current lower price. Any registered users could enter into this page, select what they want, fill shipping and billing address, contact information, and select payment method. However, the VIP extra discounts are not allowed to be used on clearance items.

## VIP

Registered users will be in different VIP levels according to how much they consume on our website. The higher VIP level represents the more extra discount. It is important to note that the extra discount cannot be used on clearance items. The benefit of every VIP level and minimum consumption requirement are as follows:

VIP Level	Minimum Consumption	Extra Discount
1	\$50,000	1% off
2	\$90,000	2% off
3	\$200,000	5% off

If you are a VIP user, you are not subject to delivery fee charges.

## 2.2 Conceptual Design

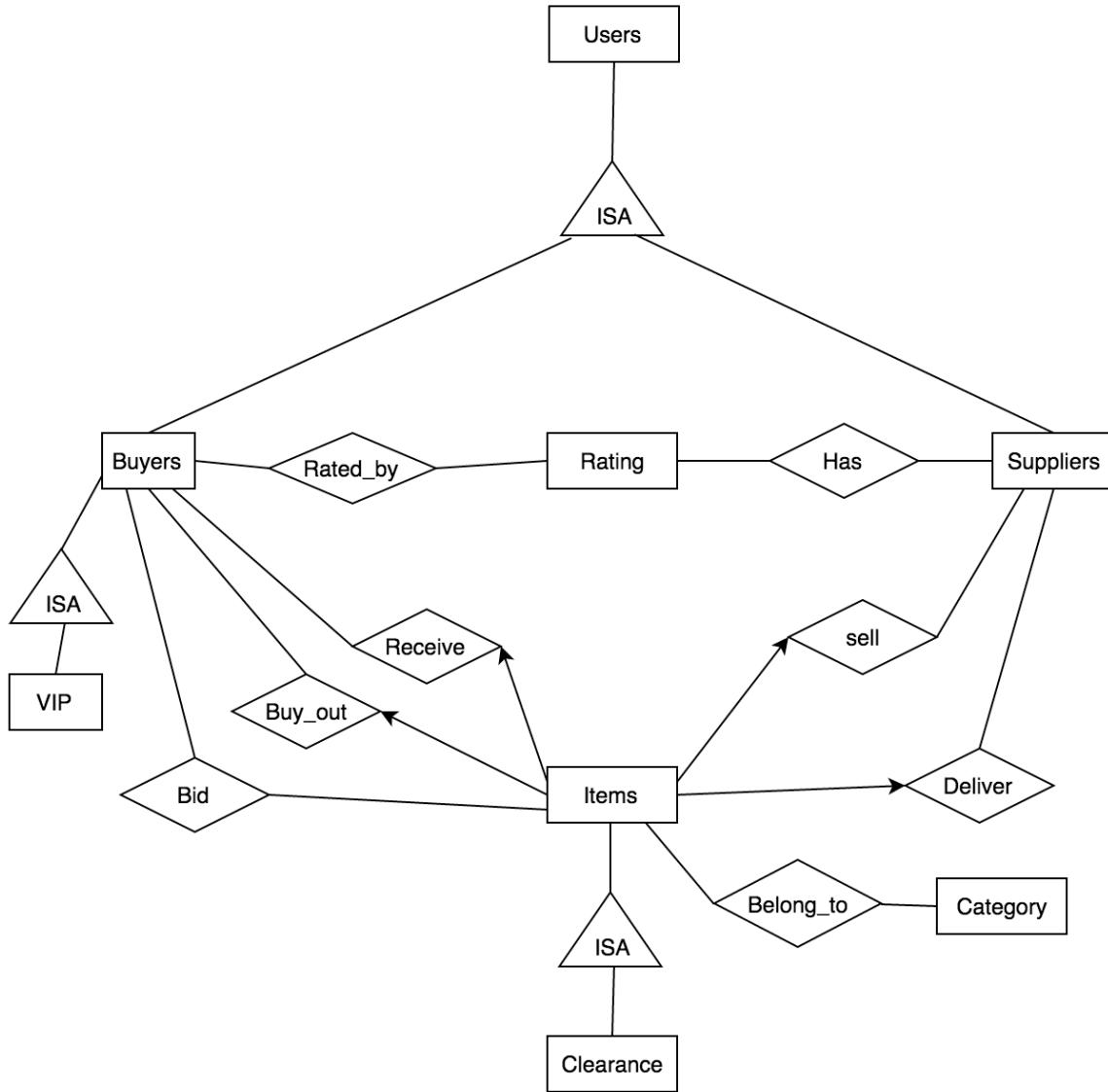
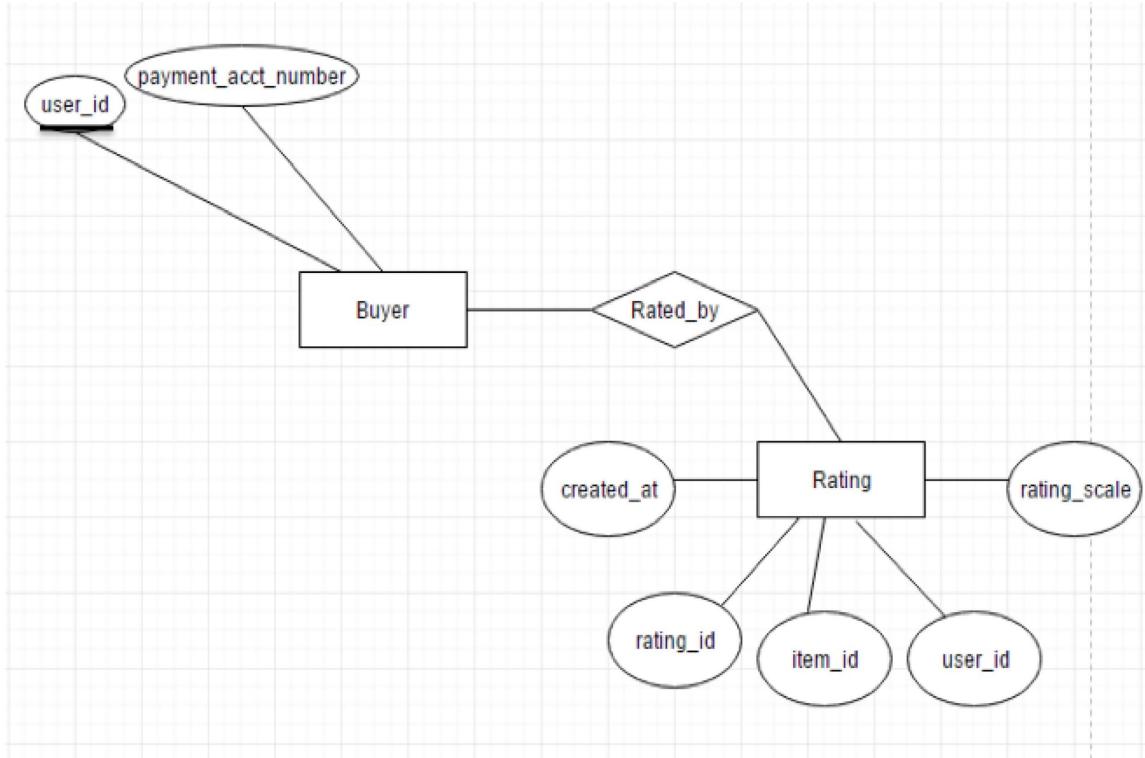


Figure 1 - Conceptual Design Overview

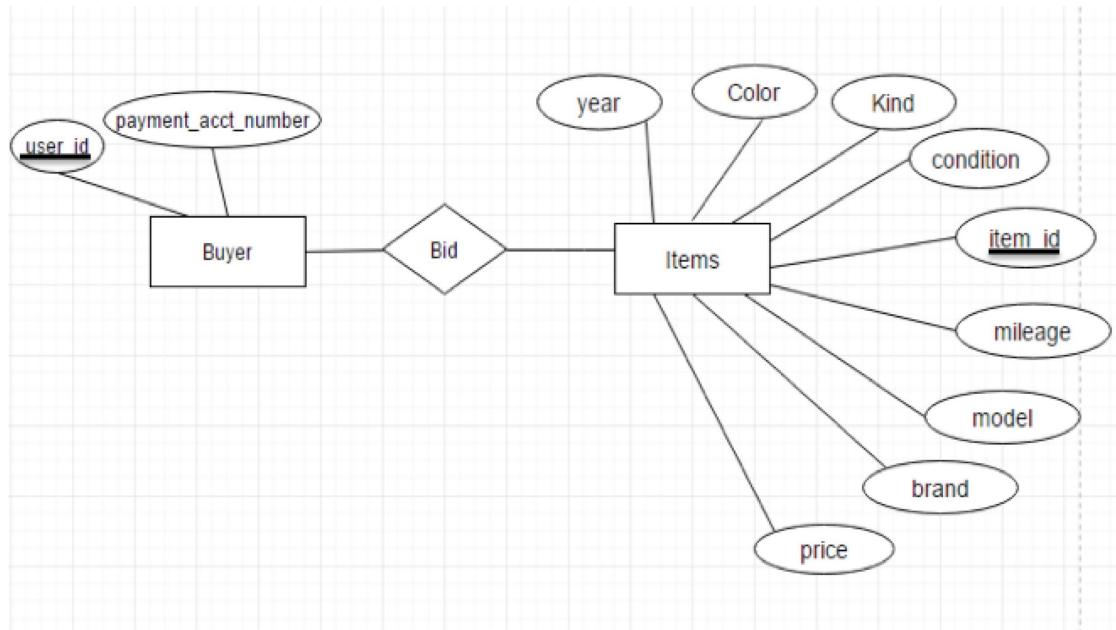
Figure 1 shows a general ER diagram of the conceptual design. Users can either be buyers or suppliers. Buyers can rate suppliers through rating function. There are two options for buyers to buy items: bid or buy out. Many buyers can bid many items, while only one buyer can

buy out items. Suppliers can sell items and each item can be sold by one supplier. Suppliers deliver items to buyers. Items can only be delivered by one supplier and can only be received by one buyer. Items belong to category entity. Some of the buyers are VIP and some of the items are on sale.



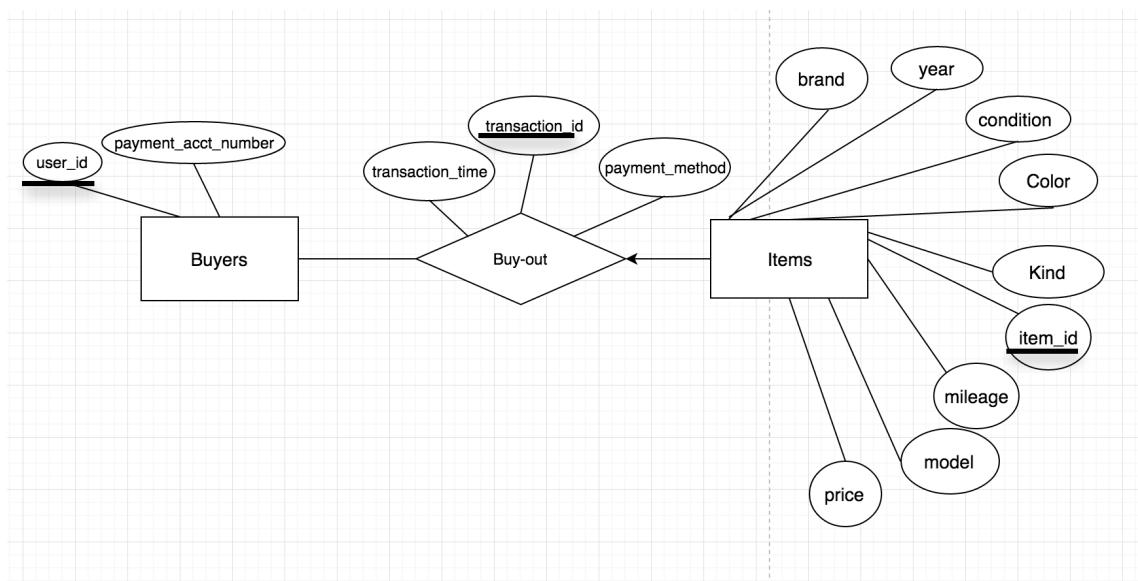
**Figure 2 - Relationship between Buyers and Ratings**

Buyers rate ratings. Buyers have two attributes, in which the user\_id is the primary key. Rating has four attributes and rating\_id is the primary key.



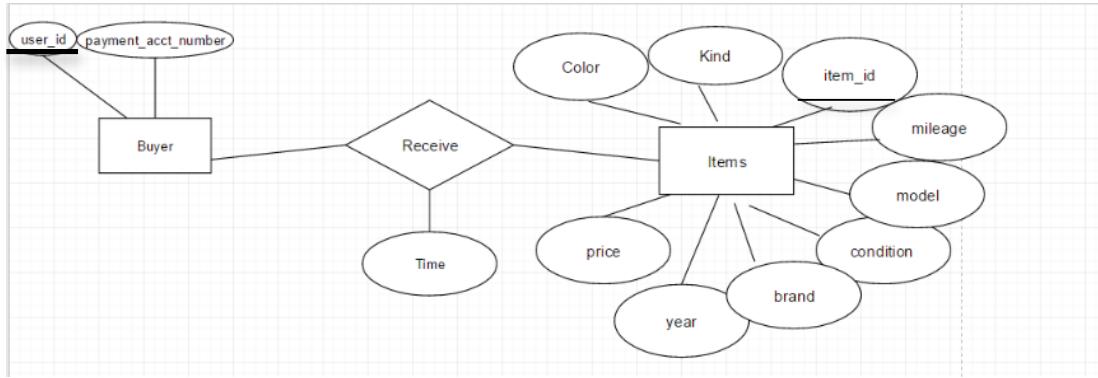
**Figure 3 - Relationship between Buyers and Items**

Buyers bid items. There are nine attributes in items entity, and the item\_id is the primary key.



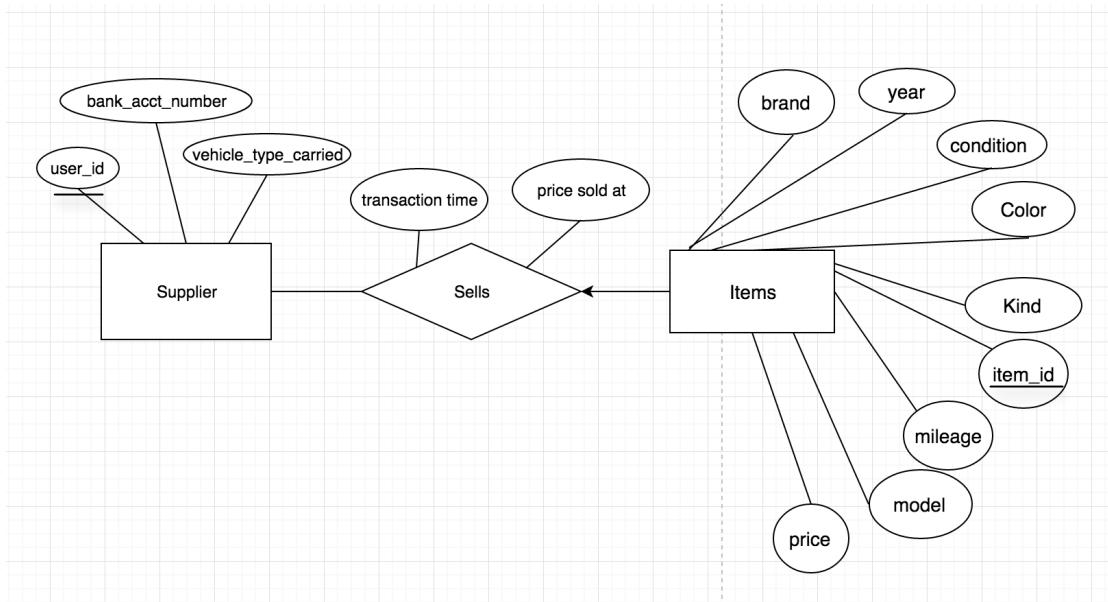
**Figure 4 - Buyers Buy out Items**

Buyers can also buy out items. Buy\_out relationship set has three attributes, and `transaction_id` is the primary key.



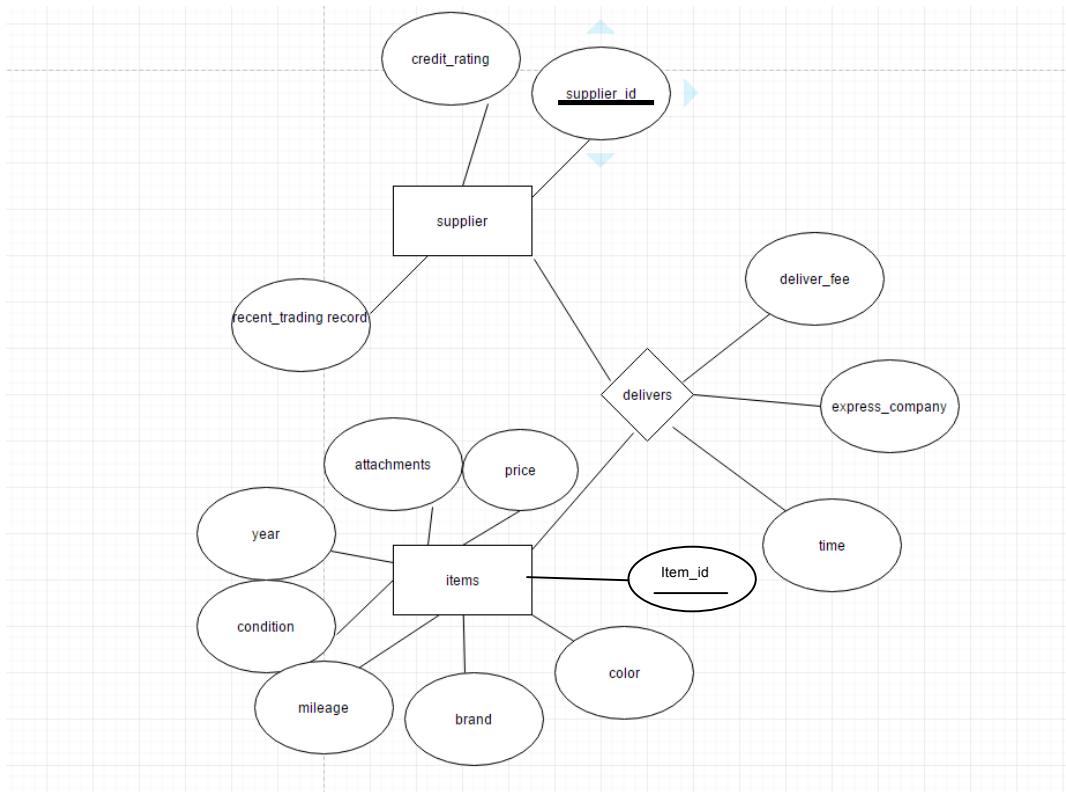
**Figure 5 - Buyers Receive Items**

Buyers receive items from supplier. There is only one attribute in receive relation set.



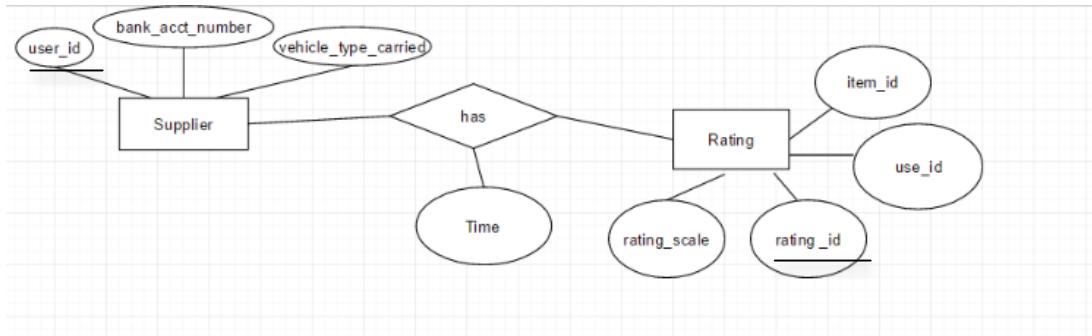
**Figure 6 - Relationship between Suppliers and Items**

Suppliers sell items. There are three attributes for supplier and two attributes in sell relationship set.



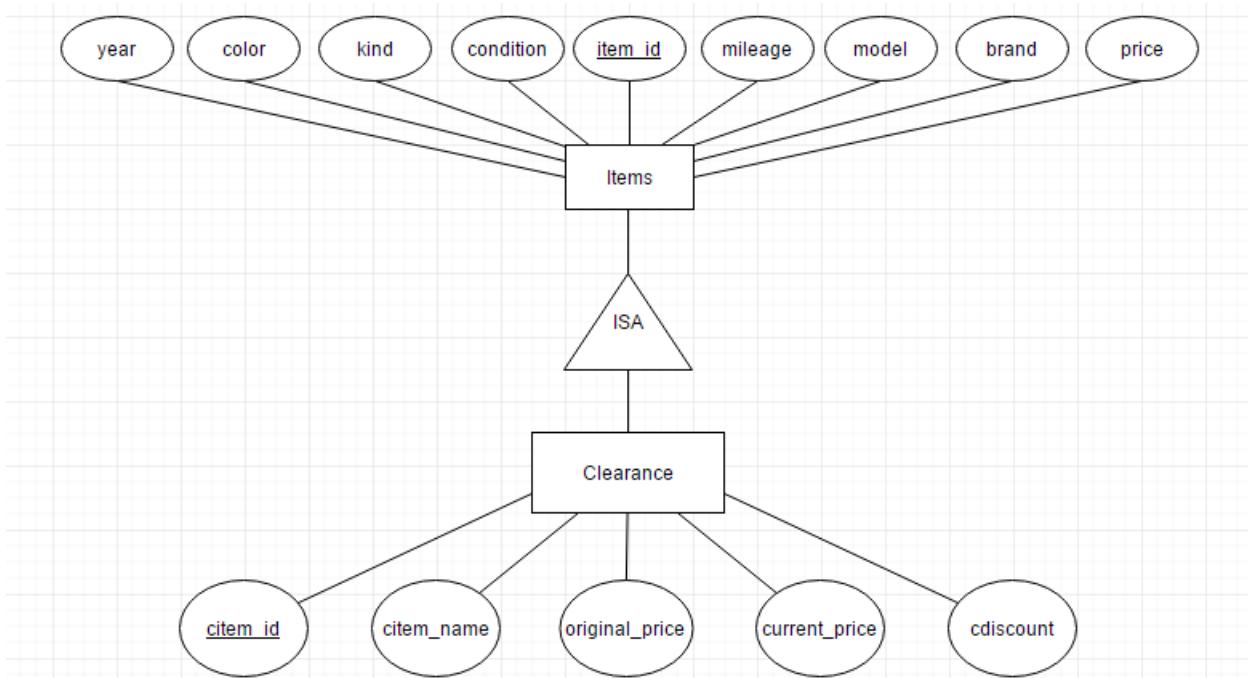
**Figure 7 - Suppliers Deliver Items**

Supplier deliver items to buyers. There are three attributes in deliver relation set.



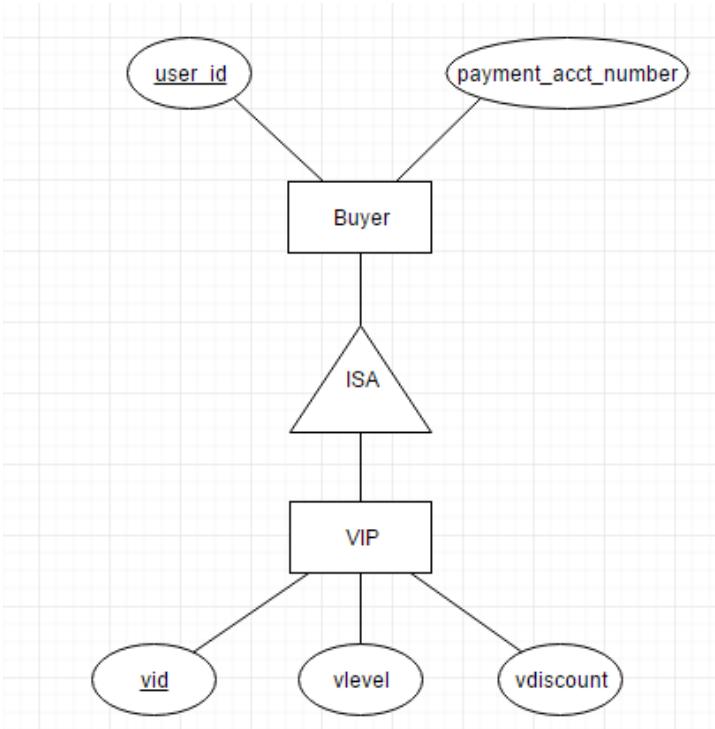
**Figure 8 - Relationship between Suppliers and Rating**

Suppliers have rating from buyers. There is only one attribute in has relation set.



**Figure 9 - Relationship between Items and Clearance**

Some of the items are on sale. Items have nine attributes and clearance has five attributes, in which the `citem_id` is the primary key for clearance.



### **Figure 10 - Relationship between Buyers and VIPs**

Some of the buyers are VIP. There are three attributes in VIP, and vid is the primary key.

### 3. Refined Schema

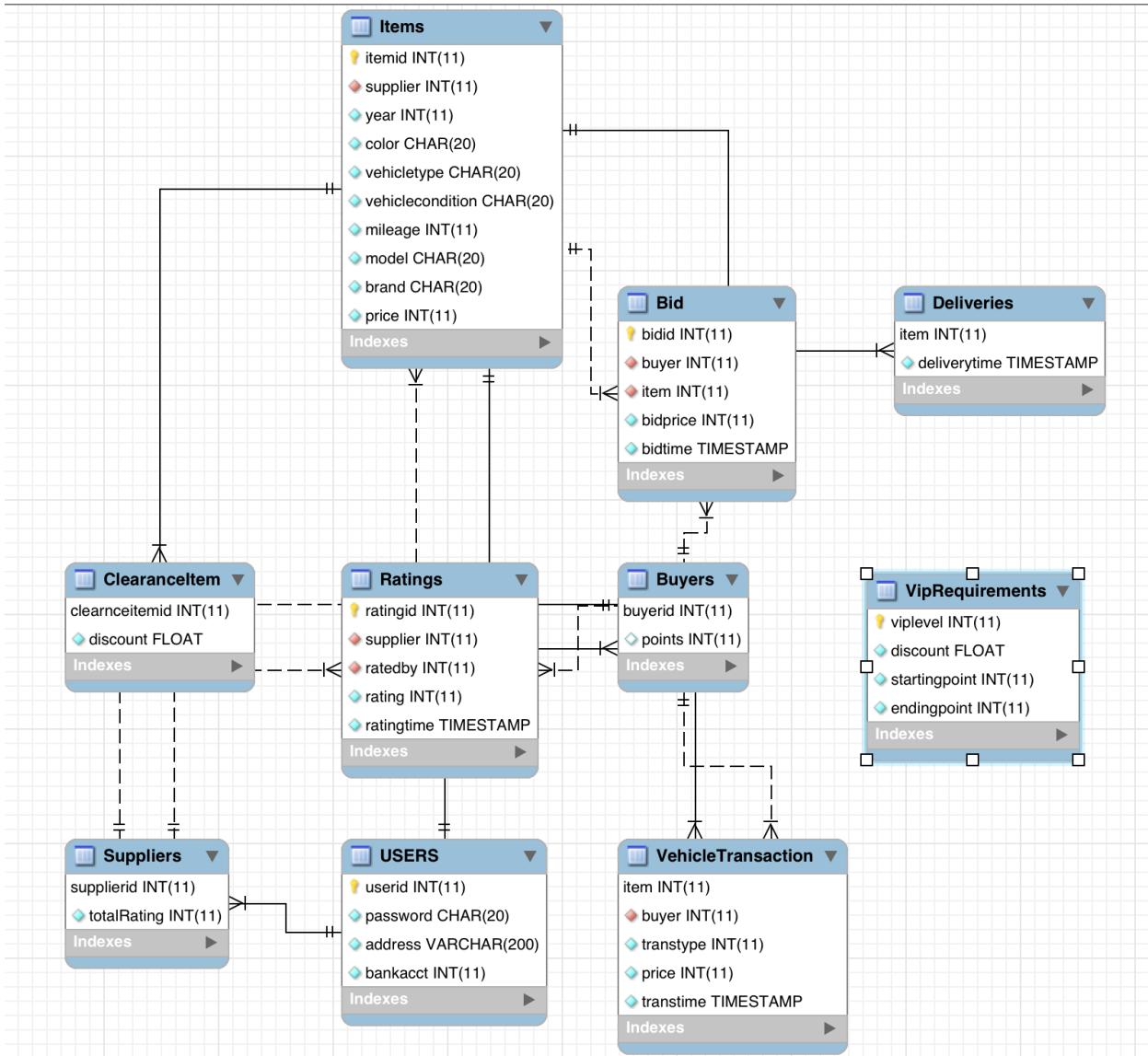


Figure 11 - Refined Schema

## 4. SQL Statements

```
CREATE database BobaVehicles;
```

**Users** - Users table will have 4 attributes in the table, they are userid, password, address and bank account. The userid is an integer typed field. The password is a 20-character string. The address is a 200-character string. The bank account is an integer. The primary key for this table is userid. Users can be buyers or suppliers, therefore buyers and suppliers have an IS-A relationship with the USERS table.

```
CREATE TABLE USERS
(userid INTEGER,
password CHAR(20) not null,
address VARCHAR(200) not null,
bankacct INTEGER not null,
PRIMARY KEY (userid));
```

**Buyers** - Buyers table has an IS-A relationship with Users table. Buyers table has a buyerid that references to the Users table's userid, which is a primary key. Buyerid also has a feature that when the user is deleted, the buyer should be deleted as well. In addition, the users table has additional field, points, that will help the buyers keep track of how many points have been earned at the website. Points will be defaulted to be 0.

```
CREATE TABLE Buyers
```

```

(buyerid INTEGER NOT NULL,
points INTEGER default 0,
PRIMARY KEY(buyerid),
FOREIGN KEY(buyerid)
REFERENCES USERS(userid)

ON DELETE CASCADE ON UPDATE CASCADE

);

```

**Suppliers** - Suppliers table has an IS-A relationship with Users table. Buyers table has a supplierid that references to the Users table's userid, which is a primary key. Supplierid also has a feature that when the user is deleted, the supplier should be deleted as well. In addition, the users table has additional field, vehicleType, that will indicate the type of vehicles that the suppliers sell.

```

CREATE TABLE Suppliers

(supplierid INTEGER NOT NULL,
totalrating INTEGER,
PRIMARY KEY(supplierid),
FOREIGN KEY(supplierid)
REFERENCES USERS(userid)

ON DELETE CASCADE ON UPDATE CASCADE

);

```

**Ratings** - The ratings table stores all ratings for each item. Only templates are allowed to have ratings, so we need to use a foreign key to associate each rating with a template. We associate each rating with each user, so that we are able to tell which ratings belong to which user, and each item a user has purchased.

```
CREATE TABLE Ratings
(ratingid INTEGER NOT NULL,
supplier INTEGER NOT NULL,
ratedby INTEGER NOT NULL,
rating INTEGER NOT NULL DEFAULT 0,
ratingtime timestamp NOT NULL,
PRIMARY KEY (ratingid),
FOREIGN KEY (supplier)
    REFERENCES Suppliers(supplierid),
FOREIGN KEY (ratedby)
    REFERENCES Buyers(buyerid)
);
```

**Items** - The Items table stores all the items that will be sold by suppliers. Each item is uniquely determined by the primary key “itemid”. There are several attributes in the Items table to describe the property of each item, such as year, color, mileage, model and so on. A foreign key “supplier” is created to reference this table to the Supplier table, in order to create a bridge between suppliers and the items they are selling.

```

CREATE TABLE Items

(itemid INTEGER NOT NULL,
supplier INTEGER NOT NULL,
year INTEGER NOT NULL DEFAULT 1900,
color CHAR(20) NOT NULL,
vehicletype CHAR(20) NOT NULL,
vehiclecondition CHAR(20) NOT NULL,
mileage INTEGER NOT NULL DEFAULT 0,
model CHAR(20) NOT NULL,
brand CHAR(20) NOT NULL,
price INTEGER NOT NULL,
PRIMARY KEY (itemid),
FOREIGN KEY (supplier)
    REFERENCES Suppliers(supplierid)

);

```

**Clearance** - The ClearanceItem table stores all the clearance items. Every item could be marked as clearance item so each clearance item is referenced with an item. When an item was marked as clearance, store the information of clearance item in ClearanceItem table. clearanceitemid and discount are the attributes of the relation. The clearanceitemid is the primary key, discount means the discount of the clearance items.

```

CREATE TABLE ClearanceItem

(clearnceitemid INTEGER NOT NULL,

```

```
discount FLOAT NOT NULL DEFAULT 0.0,  
PRIMARY KEY (clearnceitemid),  
FOREIGN KEY (clearnceitemid)  
    REFERENCES Items(itemid)  
);
```

**Bids** - The bids table stores all bids that have been made. All bids have to be associated with a buyer and an item. When bids are made, we also use bidding ID, bidding price, and bidding time as attributes to make the bid be able to determine. When an item has reached its ending time, the highest bid will be found for that item. Then the price of item will be updated with the highest bid, and a new transaction will be created.

```
CREATE TABLE Bid  
(bidid INTEGER NOT NULL,  
buyer INTEGER NOT NULL,  
item INTEGER NOT NULL,  
bidprice INTEGER NOT NULL,  
bidtime TIMESTAMP NOT NULL,  
PRIMARY KEY (bidid),  
FOREIGN KEY (buyer)  
    REFERENCES Buyers(buyerid)  
    ON DELETE CASCADE ON UPDATE CASCADE,  
FOREIGN KEY (item)  
    REFERENCES Items(itemid)
```

```
    ON DELETE CASCADE ON UPDATE CASCADE  
);
```

**VipRequirements** - The VipRequirements table is an information table to store the requirements for being a VIP. The vplevel, discount, startingpoint and endingpoint are the attributes of this table, vplevel is the primary key. This table stores the discount that the buyers at each vip level can have, the range of the points for being aVIP.

```
CREATE TABLE VipRequirements  
(vplevel INTEGER NOT NULL,  
discount FLOAT NOT NULL,  
startingpoint INTEGER NOT NULL,  
endingpoint INTEGER NOT NULL,  
PRIMARY KEY (vplevel)  
);
```

**Transactions** - The transaction table will store all purchases made by the buyers. It will include both vehicle purchases and the winning bid for a vehicle. We use item ID, buyer ID, transaction type, price, and purchasing time as attributes.

```
CREATE TABLE VehicleTransaction  
(item INTEGER NOT NULL,  
buyer INTEGER NOT NULL,  
transtype INTEGER NOT NULL DEFAULT 0,
```

```
    price INTEGER NOT NULL,  
    transtime TIMESTAMP NOT NULL,  
    PRIMARY KEY (item),  
    FOREIGN KEY (item)  
        REFERENCES Items(itemid),  
    FOREIGN KEY (buyer)  
        REFERENCES Buyers(buyerid)  
);
```

**Deliveries** - The delivery table stores the deliver ID, deliver time, and transaction ID. We use transaction ID as a foreign to associate each delivery with a template. We associate each deliver ID, with each transaction ID, and deliver time, so that we are able to see each delivery, and link each delivery with the transaction.

```
CREATE TABLE Deliveries  
(item INTEGER NOT NULL,  
    deliverytime TIMESTAMP NOT NULL,  
    PRIMARY KEY (item),  
    FOREIGN KEY (item)  
        REFERENCES Items(itemid)  
);
```

## **5. Technology Overview**

### **5.1 Development Tool**

- **Node.js, Mysql, jQuery, Bootstrap, Express View Engine**

We will use Node.js to develop the backend of our website. We chose this because it is easy to set up for web development. Also, Node.js is an easy language to learn quickly, so it's the best option for our team members who aren't experienced with it.

### **5.2 Languages**

- **EJS**
- **CSS**
- **JavaScript**

We will use PHP to develop the backend of our website. We chose this because it is easy to set up for web development. Also, PHP is an easy language to learn quickly, so it's the best option for our team members who aren't experienced with it. We will also use HTML 5, CSS, and JavaScript to develop the frontend of our website.

### **5.3 Database**

- **MySQL**

We will use MySQL as the database storage. The reason we choose it is because it is easy to use, secure, fast, it manages memory very well, and it supports development interfaces like PHP, which will be used later to develop the web page. We choose to use a relational database system

because of its multiple advantages that are helpful to develop the application. RDBMSs provide data access using a natural structure and organization of the data, and allow multiple database users to access a database simultaneously, and its simplicity makes the slower-speed data structure a fair trade-off.

### Frameworks and Libraries

- **MySQL Workbench**

We will use Bootstrap as web Frameworks. Bootstrap contains HTML- and CSS- based design templates for typography, forms, buttons, navigation and other interface components like JavaScript extensions, which makes our jobs much easier. Bootstrap makes our applications workable on multiple devices. We will use MySQL workbench to visualize the databases.

## 6. System Prototype and Framework

### 6.1 System Prototype

The screenshot shows a web-based sign-up form titled "Sign up". At the top, there is a header bar with the text "Boba Vehicles." on the left and "Home Log In Sign Up" on the right. Below the header, the title "Sign up" is centered. The form consists of several input fields: "Type" (radio buttons for "Buyer" and "Supplier", with "Buyer" selected), "Name" (text input containing "LeBron James"), "Email" (text input containing "example@example.com"), "Password" (text input placeholder "Enter your password here ..."), "Address" (text input placeholder "100 Main Street, Springfields, PA 10030"), and "Bank Account" (text input placeholder "010101"). At the bottom of the form is a blue "Register" button.

**Figure 12 - Sign Up Interface**

Welcome back.

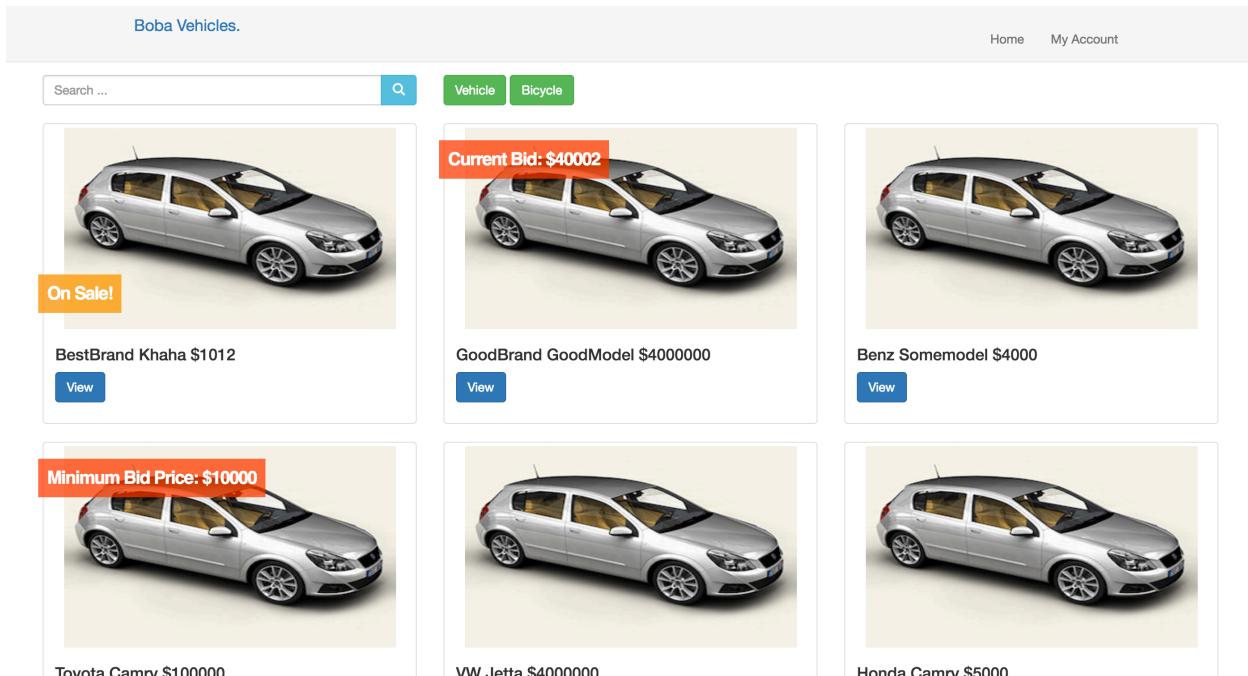
**Figure 13 - Log in Interface**

⚠ Your account email or password is wrong, try again. ×

Welcome back.

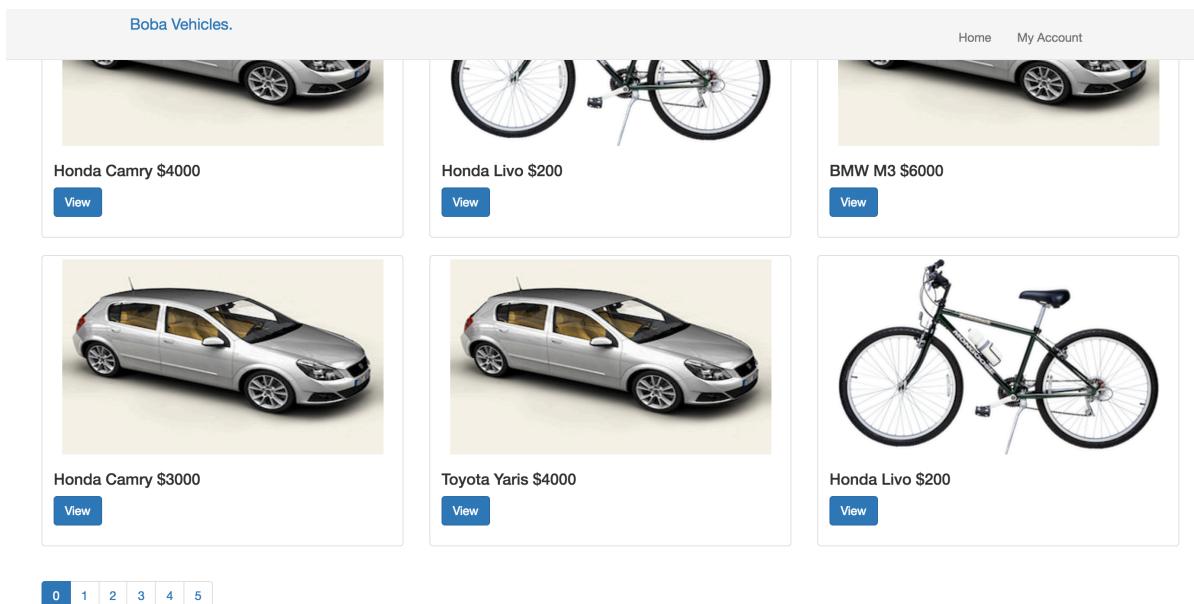
**Figure 14 - Log in Errors**

If the user entered the wrong password or login username, error message will pop out and remind the user that the information entered is incorrect and he will be prompted to enter again.



**Figure 15 - Search Items**

This is browsing items page. There are two kinds of vehicles sold on our website: vehicle and bicycle. They are listed on the top of the webpage. The users can browse the items sold on our website by selecting categories.



**Figure 16 - Browse Items**

In this page, user is able to browse the items sold on our website or search the items by categories. When clicking individual item, a page contains complete product information will show up.

The screenshot shows a web form titled "Enter you vehicle info here:" for listing a vehicle. The form fields include:

- Type:  Motor Vehicle  Bicycle
- Brand: Toyota
- Model: Camry
- Year: 20000
- Mileage: 10010
- Color: green
- Condition:  New  Used
- Price: 100000
- Biddable:  Yes  No
- Bid Starting Price: 10000
- Bid Ending Date: 12/29/2016 11:59 PM

A blue "submit" button is located at the bottom of the form.

**Figure 17 - Interface of Listing Items**

Here is a page for the seller to put in more specific information shown above.



Benz Something 1900  
Sold By Lambo Vehicles

\$400000

**In Stock**

**Minimum Bid Price: \$20000**

**Current Bid: \$200550**

**Bid Ending Time: 2016-12-16 20:23:44**

**Bidding history**

Mike                    \$200550

11/30/2016, 5:53:10

PM

Justin                \$200500

11/30/2016, 2:38:29

AM

Mary                \$200050

11/30/2016, 2:38:16

AM

Justin                \$200010

11/30/2016, 2:38:04

AM

Mary                \$200000

11/30/2016, 2:37:23

AM

**Buy Out**

**Bid with price**

enter your bid price here...

[Seller Reviews](#)

[Vehicle Info](#)

Jack

11/30/2016, 2:33:14 AM



Your car is amazing!

Mary

11/30/2016, 2:36:25 AM



The service was very good!

### Figure 18 - Detailed Information of Listed Items

Once users have registered on the website and provided their credit card information, they can start to purchase or bid items. Once they select a specific item they want to purchase, the seller

information, listed price, minimum bidding price, bid ending time and all the bidding history (including bidder's name, bidding time and bidding price) can be seen in the item description.

Users can either buy out the item, or they can bid the item as long as the price they offer is higher than the previous high bid.

At the bottom of the item description, users can review the ratings of this seller provided by other previous buyers, and they can also leave their own ratings and comments there.

Boba Vehicles. Home My Account

## My Profile

Name: Jack  
User ID: 1  
Address: 9325 Gulfstream Rd, Frankfort, IL, 60423  
Bank Account: 123451

Log Out

### Order History

Item ID	Brand	Model	Seller	Purchase Time	Price	Delivery Status	Transaction Type	Leave Rating
13	Honda	Camry	Cheap Like Water	11/30/2016, 2:32:25 AM	\$ 4000	Not Delivered	Buy	Rate
41	Honda	Livo		11/30/2016, 5:51:46 PM	\$ 18413	Not Delivered	Buy	Rate
107	Test	prium	Lambo Vehicles	11/30/2016, 2:31:25 AM	\$ 100000	Not Delivered	Buy	Rate
113	Mercedes Benz	S500	Big Car Dealer	11/30/2016, 2:17:30 PM	\$ 50000	Not Delivered	Buy	Rate

**Figure 19 - Buyers Profiles**

This is the Order History page, here you can see the screenshots of your recent transactions with buyers and suppliers. We can also see item ID, vehicle details, price, and transaction type. You can also see your Bank Account on this page to decide your further transaction.

Boba Vehicles.

Home Sell My Account

## My Profile



Name:	Lambo Vehicles
User ID:	14
Address:	53 Pilgrim Street San Angelo, TX 76901
Bank Account:	102901284

[Log Out](#)

### Sold Vehicles

Vehicle ID	Brand	Model	Listed Price	Sold Price	Delivery Status
83	GMC	Yukon	7000	7000	<span>Delivered</span>
107	Test	prium	100000	100000	<span>Not Delivered</span>

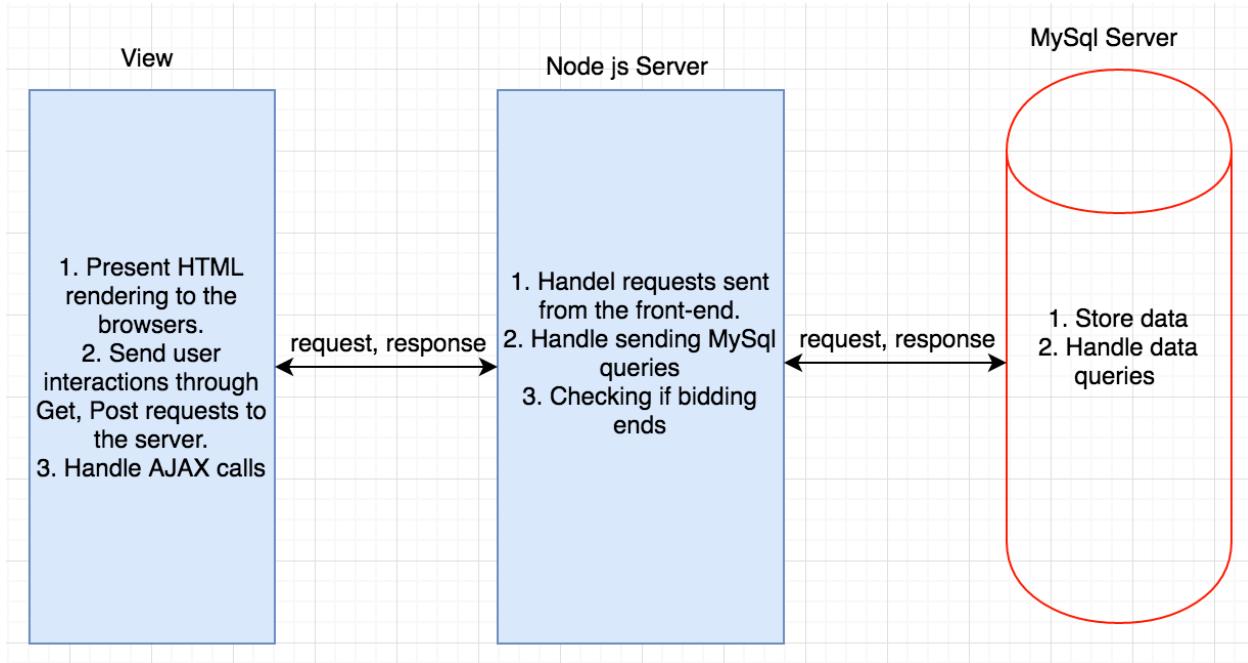
### Active Listings

Vehicle ID	Brand	Model	Listed Price	Biddable	Min Bidding Price	Current Bid	Bid End Date
5	Toyota	Tacoma	9000	<span>Not Biddable</span>			
7	GMC	Yukon	7000	<span>Not Biddable</span>			
47	Honda	Civic	12312	<span>Not Biddable</span>			

**Figure 20 - Sellers Profiles**

Here is a page for user to see and keep track of which ones are active and their perspective status for bidding. It also provides the user with the order status. Sold items can be updated by the seller and the buyer can then see whether the item has been delivered or not.

## 6.2 System Framework



**Figure 21 - System Framework**

## 7. Reflection

We have pretty much completed all the features proposed and in the phase three report. One feature that is not included is the credit card information. Hence the user cannot save his credit card information under his profile, which can be a bit inconvenient for them. Another feature is that we do not have enough time to figure out how to connect the email server, hence we do not have the feature of sending confirmation email after the user has registered. We could have done it with more time.

## **8. Conclusion**

This document sums up the phase I and phase II, and phase III of Boba Vehicles' design specifications. Included are the schema designs, SQL queries to generate the schemas and the specifications for all entities involved in the project. The database now contains some randomly generated data for demonstration.