CREATE TABLE Users (

userid int(10) NOT NULL auto\_increment,

email varchar(255)NOT NULL,

password varchar(255)NOT NULL,

address varchar(255),

phonenumber varchar(255),

PRIMARY KEY( userid)

);

CREATE TABLE Dealers (

userid int(10) NOT NULL,

dealershipname varchar(255) NOT NULL,

mainpersonofcontact varchar(255)NOT NULL,

revenue real NOT NULL,

dealershipcategorey varchar(255),

PRIMARY KEY( userid ),

FOREIGN KEY(userid) REFERENCES users ON DELETE CASCADE,

UNIQUE(email)

);

CREATE TABLE RegisteredUsers (

userid int(10) NOT NULL,

name varchar(255) NOT NULL,

age real,

gender varchar(255),

annualincome real NOT NULL,

PRIMARY KEY( userid ),

FOREIGN KEY(userid) REFERENCES users ON DELETE CASCADE,

UNIQUE(email)

);

CREATE TABLE BankAccount(

userid int(10),

accountno int(10),

routingno int(10) NOT NULL,

bankname char(20),

PRIMARY KEY(userid,accountno),

FOREIGN KEY(userid) REFERENCES Users ON DELETE CASCADE

);

**#Weak relationship set MoneyIn is included into weak enity BankAccount**

**#together with owner userid**

CREATE TABLE vehicles (

vin char(17),

category varchar(255),

make varchar(255) NOT NULL,

model varchar(255) NOT NULL,

year char(4) NOT NULL,

mileage int DEFAULT VALUE 0,

description varchar(255),

PRIMARY KEY( vin )

);

CREATE TABLE Owns(

**#To include the total and key constrains for vehicles, suggest**

**#to include Owns into Vehicles.**

vin char(17),

userid int(10),

PRIMARY KEY (vin, userid),

FOREIGN KEY (vin) REFERENCES Vehicles ON DELETE CASCADE,

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE,

);

CREATE TABLE Auctions(

auctionid int(10) AUTO\_INCREMENT,

vin char(17) NOT NULL,

sellerid int(10),

startdate date,

enddate date NOT NULL,

reserveprice double NOT NULL,

buynowprice double NOT NULL,

PRIMARY KEY(auctionid),

FOREIGN KEY(vin) REFERENCES Vehicles ON DELETE CASCADE,

FOREIGN KEY(sellerid) REFERENCES users ON DELETE NO ACTION,

);

CREATE TABLE ListForAction(

**#(1) added key constrains for vehicles because each vehicle can**

**# be in at most one auction.**

**#(2) To enforce the total and key constraints for auctions,**

**# suggest to include ListForAction into entity Auctions**

vin char(17),

userid int(10),

auctionid int(10) NOT NULL,

PRIMARY KEY (vin),

FOREIGN KEY (vin) REFERENCES Vehicles ON DELETE CASCADE,

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE,

FOREIGN KEY (auctionid) REFERENCES Auctions ON DELETE CASCADE

);

CREATE TABLE Bids(

bidid int(10) AUTO\_INCREMENT,

bidderid int(10) NOT NULL,

amount double NOT NULL,

timestamp timestamp NOT NULL,

PRIMARY KEY(bidid),

FOREIGN KEY(bidderid) REFERENCES Users ON DELETE CASCADE

);

CREATE TABLE PlaceBid (

**#(1) added total participation constrains for bids**

**#(2) To enforce the total participation constrains, suggest to**

**# include PlaceBid into Bids entity**

userid int(10),

auctionid int(10),

bidid int(10),

PRIMARY KEY (userid, auctionid, bidid),

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE,

FOREIGN KEY (auctionid) REFERENCES Auctions ON DELETE CASCADE,

FOREIGN KEY (bidid) REFERENCES Bids ON DELETE CASCADE

);

CREATE TABLE Closed(

**#(1) added total participation constrains for Auctions because**

**# all Auctions have to be closed at auction enddate or**

**# buynowprice**

**#(2) To enforce the total participation constraints for Auction,**

**# suggest to include Closed into Auctions entity set**

auctionid int(10),

userid int(10),

bidid int(10),

closeDate date NOT NULL,

PRIMARY KEY (auctionid),

FOREIGN KEY (auctionid) REFERENCES Auctions ON DELETE CASCADE,

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE

FOREIGN KEY (bidid) REFERENCES Bids ON DELETE CASCADE,

);

CREATE TABLE Transactions{

transactionid int(10) AUTO\_INCREMENT,

bidid int(10) NOT NULL,

auctionid int(10) NOT NULL,

transactionstate varchar(255) NOT NULL,

transactiondate date NOT NULL,

PRIMARY KEY (transactionid),

FOREIGN KEY (bidid) REFERENCES Bids ON DELETE CASCADE,

FOREIGN KEY (auctionid) REFERENCES Auctions ON DELETE CASCADE

};

CREATE TABLE Delivered(

userid int(10),

transactionid int(10),

deliveredDate date NOT NULL,

PRIMARY KEY (userid, transactionid),

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE

FOREIGN KEY (transactionid) REFERENCES Transactions ON DELETE

CASCADE,

);

CREATE TABLE Returned(

**#deleted connection between returned & vehicles because**

**#transactionid contains auctionid and auctionid contains vin**

userid int(10),

transactionid int(10),

returnedDate date NOT NULL,

PRIMARY KEY (userid, transactionid),

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE

FOREIGN KEY (transactionid) REFERENCES Transactions ON DELETE

CASCADE,

);

CREATE TABLE Reviews (

reviewid int(10) NOT NULL AUTO\_INCREMENT,

reviewerid int(10),

sellerid int(10),

auctionid int(10),

reviewdate date,

review varchar(255),

rating int(2),

PRIMARY KEY( reviewid ),

FOREIGN KEY(reverwrid) REFERENCES Users ON DELETE NO ACTION,

FOREIGN KEY(sellerid) REFERENCES Users ON DELETE CASCADE

FOREIGN KEY(auctionid) REFERENCES Auctions

);

CREATE TABLE Rate (

**#(1) added total participation constrains to Reviews because each**

**# review is rated by an user**

**#(2) To enforce the total participation constrains, suggest to**

**# include Rate into Reviews**

userid int(10),

reviewid int(10),

PRIMARY KEY (userid, reviewid),

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE,

FOREIGN KEY (reviewid) REFERENCES Reviews ON DELETE CASCADE

);

CREATE TABLE DisplayFloor(

displayid int(10) AUTO\_INCREMENT,

userid int(10) NOT NULL,

vin char(17) NOT NULL,

PRIMARY KEY(displayid),

UNIQUE(vin),

FOREIGN KEY(vin) REFERENCES Vehicles ON DELETE CASCADE,

FOREIGN KEY(userid) REFERENCES Users ON DELETE CASCADE

);

CREATE TABLE Media(

mediaid int(10) AUTO\_INCREMENT,

displayid int(10) NOT NULL,

filetype char(10)NOT NULL,

filename varchar(20) NOT NULL,

PRIMARY KEY(mediaid),

FOREIGN KEY(displayid) REFERENCES DisplayFloor ON DELETE

CASCADE,

);

CREATE TABLE UploadsMedia(

**#(1) added key and total participation constraints to Media**

**# because each media is uploaded by one user**

**#(2) To enforce the total participation, suggest to incldue**

**# UploadsMedia into Media entity**

mediaid int(10),

userid int(10) NOT NULL,

PRIMARY KEY(mediaid),

FOREIGN KEY(mediaid) REFERENCES Media ON DELETE CASCADE,

FOREIGN KEY(userid) REFERENCES Users ON DELETE CASCADE,

);

CREATE TABLE BelongsTo(

mediaid int(10),

displayid int(10),

PRIMARY KEY(mediaid,displayid),

FOREIGN KEY(mediaid) REFERENCES Media ON DELETE CASCADE,

FOREIGN KEY(displayid) REFERENCES DisplayFloor ON DELETE CASCADE

);

CREATE TABLE Events(

eventid int(10) AUTO\_INCREMENT,

eventdate date NOT NULL,

location varchar(255) NOT NULL,

description char(255)NOT NULL,

PRIMARY KEY(eventid),

);

CREATE TABLE CreateEvent(

**#(1) added key and total participation constrains to events**

**# because each event is created by exactly one user**

**#(2) to enforce the total participation constrains, suggest to**

**# include CreateEvent into Events**

eventid int(10),

organizerid int(10) NOT NULL,

PRIMARY KEY(eventid),

FOREIGN KEY(organizerid) REFERENCES Users(userid) ON DELETE

CASCADE

);

CREATE TABLE AttendingEvent(

userid int(10),

eventid int(10),

PRIMARY KEY(userid, eventid),

FOREIGN KEY(userid) REFERENCES Users ON DELETE CASCADE

FOREIGN KEY(eventid) REFERENCES Events ON DELETE CASCADE

);

CREATE TABLE Discussions {

discussionid int(10) AUTO\_INCREMENT,

discussion varchar(255) NOT NULL,

timestamp timestamp NOT NULL,

PRIMARY KEY (discussionid),

FOREIGN KEY (vin) REFERENCES Vehicles ON DELETE CASCADE,

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE

};

CREATE TABLE PostDiscussion {

**#(1) Added connection to vehicles because discussions are about**

**# vehicles.**

**#(2) Added key and total participation constrains to discussions**

**# because all discussions are posted by users even an user can**

**# post**

**# multiple discussions**

**#(3) to enforce the total participation constrains, suggest to**

**# include PostDiscussion into Discussions**

discussionid int(10),

userid int(10),

vin char(17) NOT NULL,

PRIMARY KEY (discussionid),

FOREIGN KEY (discussionid) REFERENCES Discussions ON DELETE

CASCADE

FOREIGN KEY (userid) REFERENCES Users ON DELETE CASCADE

FOREIGN KEY (vin) REFERENCES Vehicles ON DELETE CASCADE,

};