Automated Toll Collection System
OBJECT ORIENTED PROGRAMMING 2
Section: N

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INTRODUCTION:

The automated toll collection system will work as a prepaid toll payment system which will save a lot of time since vehicles passing through the toll plaza won't have to stop to pay the toll anymore. Our country's toll collection system, is one of the sole reasons for the traffic jam on highways and we hope to offer a solution for this problem via this project.

USER CATEGORY:

There are two types of Users here. They are:
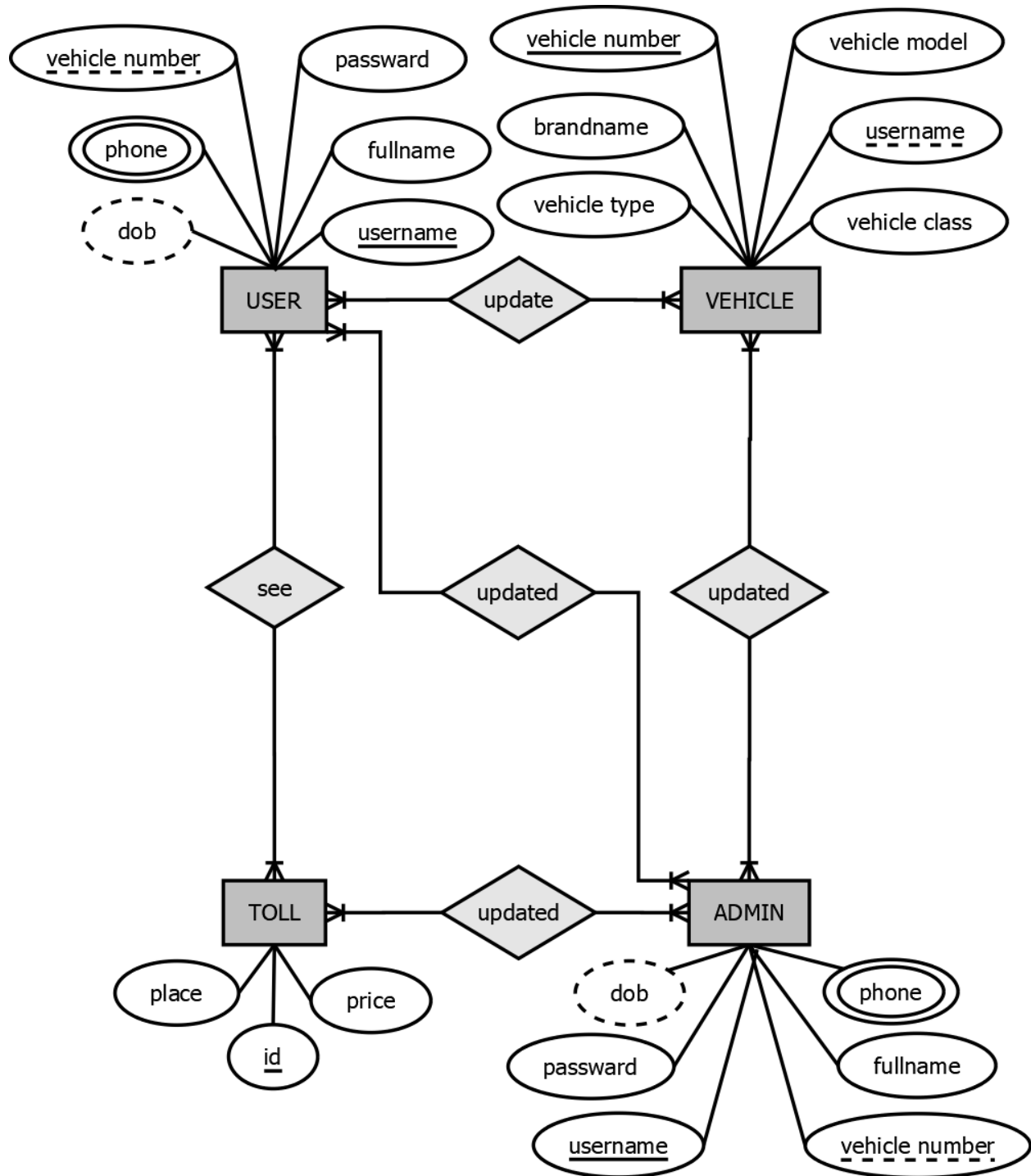- Admin
- User

FEATURE LIST:

In this project the "Admin" has the following features:
- Introducing different toll packages
- Managing those toll packages
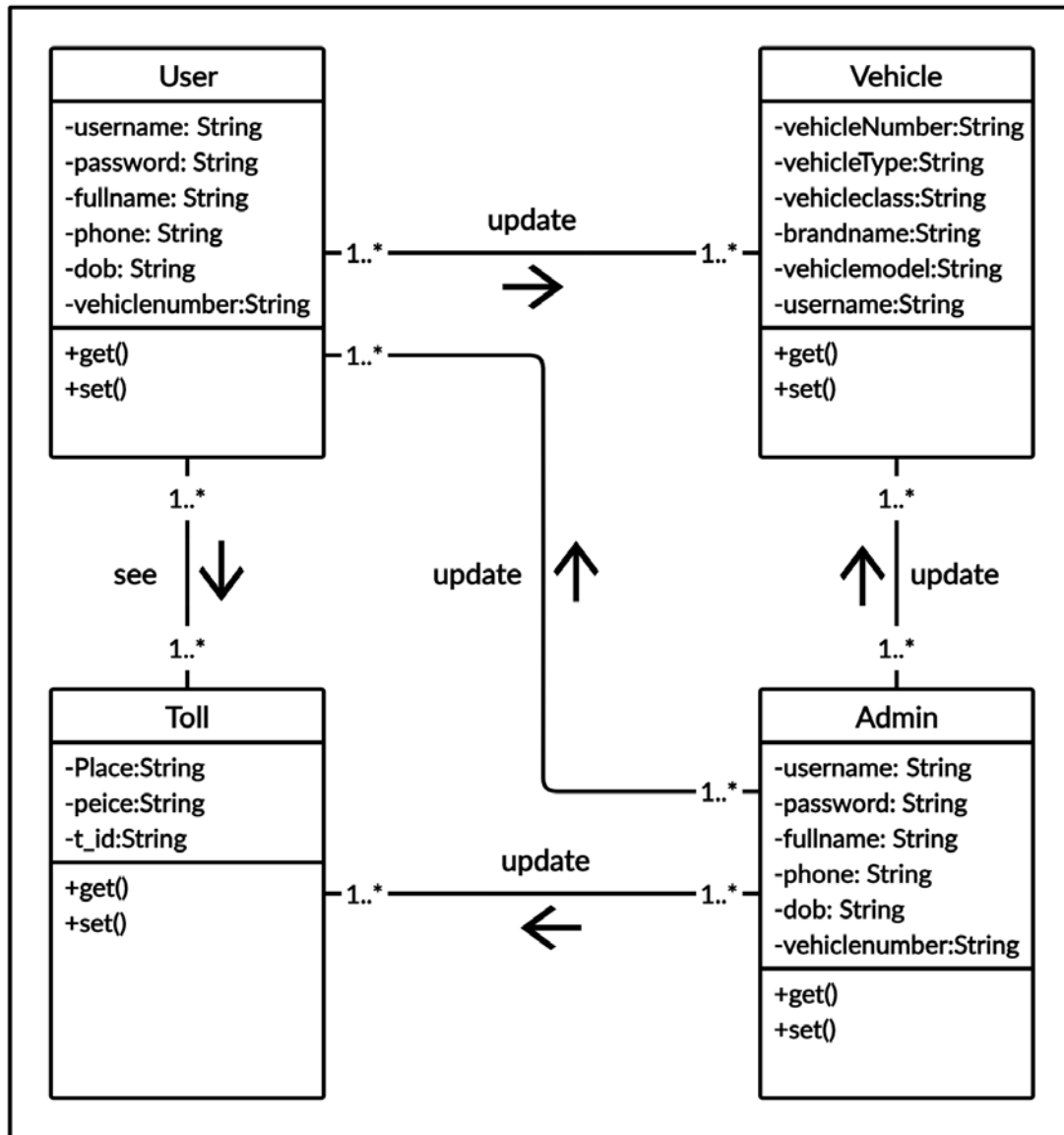- Checking reports of all toll transactions
- Checking existing user lists

In this project the "User" has the following features:
- Profile Creation
- Adding unlimited vehicles
- Managing existing vehicles
- Checking self-transaction history
- Checking all available toll places and their fares
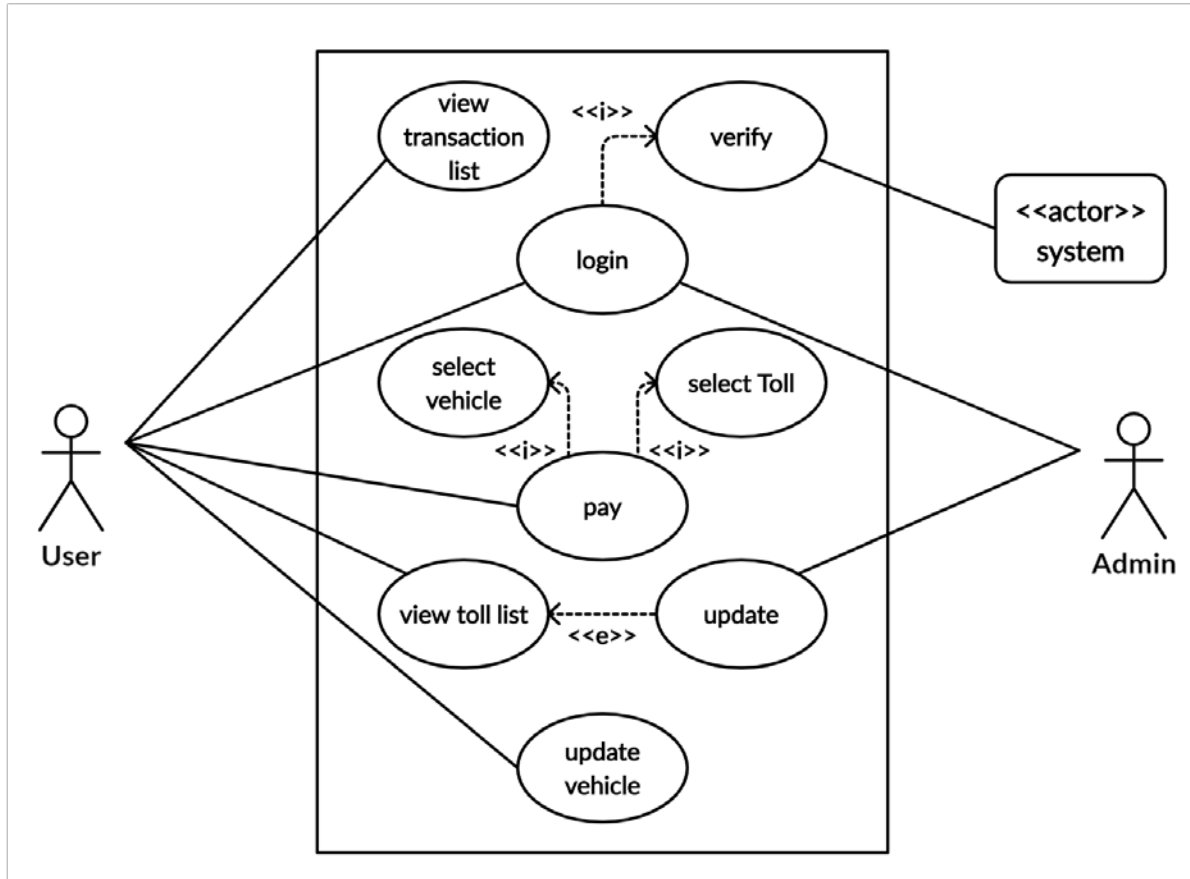- Paying the toll before crossing the gate

ER DIAGRAM

CLASS DIAGRAM

User

-username: String
-password: String
-fullname: String
-phone: String
-dob: String
-vehiclenumber:String

+get()
+set()

Vehicle

-vehicleNumber:String
-vehicleType:String
-vehicleclass:String
-brandname:String
-vehiclemodel:String
-username:String

+get()
+set()

update

1..* — 1..*

Toll

-Place:String
-peice:String
-t_id:String

+get()
+set()

Admin

-username: String
-password: String
-fullname: String
-phone: String
-dob: String
-vehiclenumber:String

+get()
+set()

see

update

update

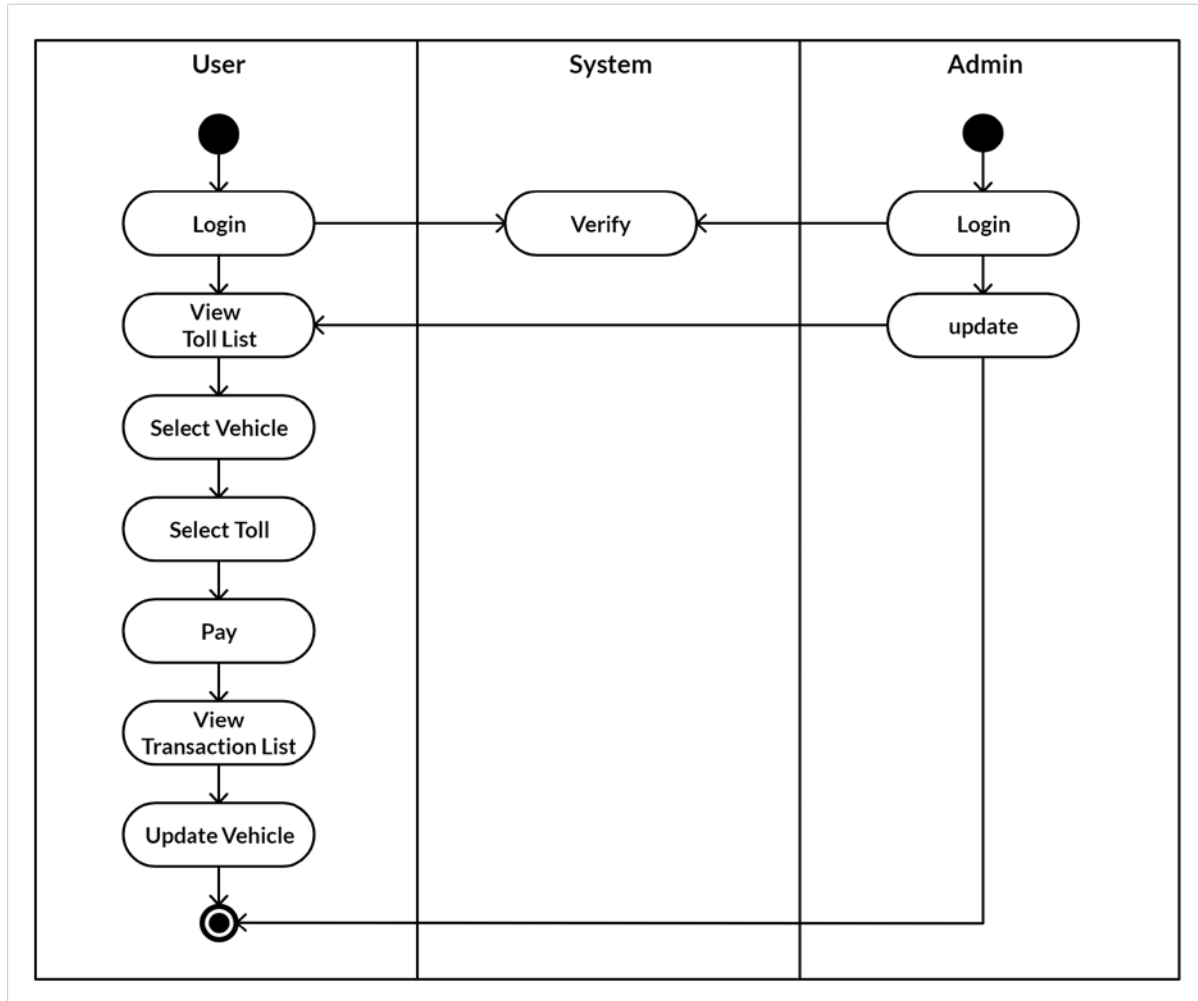update

1..*

USE CASE DIAGRAM

ACTIVITY DIAGRAM:

TABLE CREATION

USER:

```
CREATE TABLE `user` (
  `username` varchar(30) NOT NULL,
  `password` varchar(30) NOT NULL,
  `fullname` varchar(30) NOT NULL,
  `phone` varchar(15) NOT NULL,
  `dob` varchar(30) DEFAULT NULL,
  `vehiclenumber` varchar(20) DEFAULT NULL,
  `admin` int(11) NOT NULL DEFAULT 0
);
ALTER TABLE `user`
  ADD PRIMARY KEY (`username`),
  ADD UNIQUE KEY `username` (`username`);
```

TOLL

```
CREATE TABLE `toll` (
  `place` varchar(50) NOT NULL,
  `price` int(20) NOT NULL,
  `t_id` int(10) NOT NULL
);ALTER TABLE `toll` ADD PRIMARY KEY (`t_id`);
```

VEHICLE

```
CREATE TABLE `vehicle` (
  `brandname` varchar(30) NOT NULL,
  `vehiclemodel` varchar(40) NOT NULL,
  `vehiclenumber` varchar(20) NOT NULL,
  `vehicleclass` varchar(40) NOT NULL,
  `vehicletype` varchar(30) DEFAULT NULL,
  `username` varchar(30) DEFAULT NULL
); ALTER TABLE `vehicle` ADD PRIMARY KEY (`vehiclenumber`),
  ADD UNIQUE KEY `vehiclenumber` (`vehiclenumber`, `username`),
ADD FOREIGN KEY (`username`) REFERENCES `user` (`username`);
```

TRANSACTION

```
CREATE TABLE `transaction` (
  `id` int(11) NOT NULL,
  `placeName` varchar(30) DEFAULT NULL,
  `amount` int(20) NOT NULL,
  `vehiclenumber` varchar(30) DEFAULT NULL,
  `date` varchar(30) NOT NULL,
  `username` varchar(30) NOT NULL
); ALTER TABLE `transaction` ADD PRIMARY KEY (`id`);
```